PART I

PREGNANCY

Touch is a primordial communication that is before words; it is in fact a language beyond words. The art of skillful touch brings depth to the experience of pregnancy, integrating the changes a woman undergoes while communicating nurturing, safety, and comfort.

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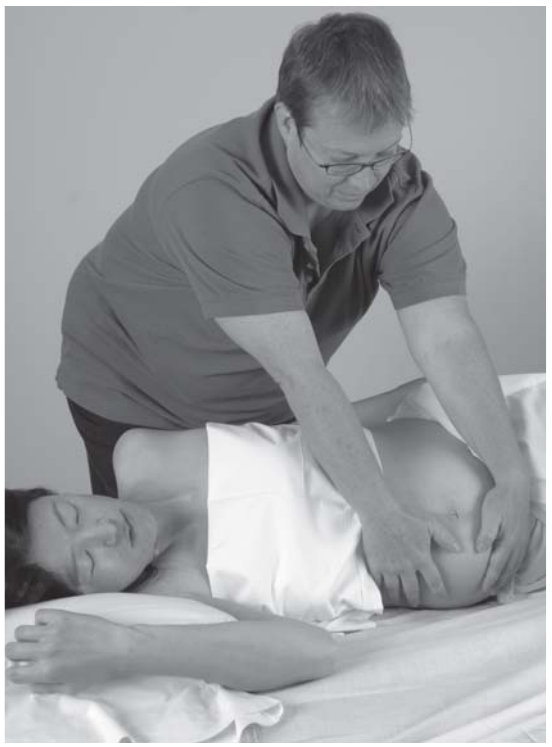

CHAPTER 1

MASSAGE DURING PREGNANCY: A UNIQUE OPPORTUNITY

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Understand the unique aspects of working with pregnant, laboring, and postpartum women.
- Describe an overview of the worldwide prevalence of touch traditions during pregnancy and birth.
- List and explain the benefits of touch during the childbearing cycle.
- Describe the multiple levels on which touch during pregnancy affects a woman and her babyís life.
- Discuss the myths and facts about the dangers of touch during pregnancy.

Massage therapists who work with women during their perinatal cycle have an exciting and unique opportunity to share in what is often the most life-changing and important experience of a woman's life—the process of creating, nurturing, and birthing life. Massaging pregnant women can be extraordinarily different from working with other clients. For instance, over the span of 9 months, a massage therapist observes and feels under her or his hands the subtle and dramatic changes that are occurring in a pregnant mother's body: changes in shape, composition, hormonal flow, fat and weight distribution, and posture. The therapist will see the normally nonpregnant client grow into a woman who is carrying 30 pounds or more of extra weight, mostly on the anterior side of her body, and some of it kicking visibly through her growing belly.

Additionally, in the course of her pregnancy, a woman often experiences important changes emotionally, energetically, and spiritually. The massage therapist who sees her regularly may witness the client's fluctuating sense of identity and her ultimate transformation into her new role as mother.

When working with pregnant, laboring, and postpartum women, massage therapists practice specific positioning to guarantee the safety of both the mother and baby. More pillows, supports, and cushioning as well as creativity will be needed to ensure comfort for each individual on your table. The use of sidelying and semi-reclining positions is a necessity, as well as learning to be mobile with your massage when a woman is in labor. Massage therapists who work often with pregnant women develop skills and versatility that will improve their ability to serve and meet the needs of a varied population.

Most amazingly, a massage therapist working with a pregnant woman has an opportunity to affect two people at once, while touching the skin of only one person. Each time a pregnant woman is massaged, the baby in utero, as well as the mother, is affected energetically and physically.

Massage therapists working frequently with pregnant clients also have an indirect and beneficial role in the birth passage of both mother and infant. With encouragement from the massage therapist, the client learns skills for relaxing when touched. When nurturing touch and emotional support is then offered during labor, the woman may find that she can more readily cultivate relaxation in this new

situation,[1,2] reducing pain[3] and her risks of medical interventions and premature birth,[4,5,6] and increasing her potential for a more satisfying birth experience. Additionally, the sessions of nurturing massage that the therapist has offered the mother during pregnancy or labor will give her first-hand experience in the therapeutic benefits of touch. Because of this, she may find that she naturally increases the frequency and duration of the nurturing touch and massage that she offers to her newborn.[7,8]

After the birth, the massage therapist might have the opportunity to meet the baby whom she saw moving inside the mother's belly and whom she had actually massaged through the maternal abdomen. Some women may choose to bring their infant with them to a massage session, and so the therapist will find herself or himself continuing to use sidelying position to support the mother who wishes to hold or nurse her infant during the massage. As she or he massages, the therapist will notice that physical adjustments in the postpartum client's body are continuing to occur for months after birth. Massage can assist the new mother's recovery from the musculoskeletal strains and hormonal stresses of pregnancy and birth and can continue to be an important aspect of a new mother's life. When trained in infant massage, the therapist may be asked to share with the parents ways of offering nurturing touch to their new baby.

The massage therapist has a unique role in the life of a childbearing woman who relies on the therapist for help with relief of discomforts and for enhancing the sensory experience of her pregnant body. Pregnancy, birth, and mothering are impressive events in a woman's life, and the memories of the massage therapist who supported her through those phases may remain imprinted in her mind for a lifetime.

The purpose of this chapter is to introduce you, the massage therapist, to the unique aspects of massage for pregnant women and to lay a theoretical foundation on which later chapters are built. Later chapters will cover the specifics of working with laboring and postpartum women. Covered below are a few traditions of touch for pregnancy that have been a foundation of perinatal care around the world, and some key benefits and issues to consider when offering massage to pregnant women.

TRADITIONS OF TOUCH FOR PREGNANCY

For centuries, midwives, doulas, and families have known well the benefits of supporting women through pregnancy, birth, and postpartum and have nurtured them with the healing tools of hands, words, water, and warm herbal oils (Figure 1.1).

FIGURE 1.1 **Ancient Peruvian doll imagery displaying women's hands-on support of the birthing woman.**
Used with permission from Aaron Rubinstein.

Massage accompanies childbirth nearly everywhere in the traditional world (except, of course, where the mother births alone).[9] According to Navajo tradition, the midwife was known as the "one who holds," referring to how she would often hold the pregnant woman from behind and massage her belly throughout labor while the woman birthed the infant.[10] In Indonesia, the term for "midwife" literally means, "someone who knows how to massage."[11]

In Guatemala and Belize, the midwife or *comadrona* teaches young women to care for their wombs with herbs and uterine self-massage prior to pregnancy (class notes from Rosita Arvigo's Mayan Abdominal Massage Professional Training, Massachusetts, 2000) then supports them throughout their pregnancy and in labor by massaging their backs, bellies, and legs.

In India and Bangladesh, a woman is often supported throughout her childbearing year with massage and touch from experienced women elders or the traditional midwife or "dai." In labor, according to ancient Ayurvedic prescription, a pregnant woman might be massaged by these elder women, who rub

scented oils into her back, legs, arms, breasts, and belly to assure good baby positioning and a healthy, comfortable birthing. For weeks after birth, the mother and baby both are massaged daily to aide in their recovery from the birth experience.[12-14]

While actual massage practices vary worldwide, touch has commonly been used during the perinatal cycle for similar reasons: as a means to reposition the baby during pregnancy, to ease pregnancy discomforts and labor pain, to assist the progress of labor, to stimulate release of the placenta and prevent postdelivery hemorrhage, to speed postpartum recovery, and to encourage lactation and ease engorgement discomfort.

Furthermore, it is important to note the tradition of respect that surrounds pregnancy and birth in many cultures and to continue that tradition in our approach to clients. As we learn to support women with touch and revive the practice of honoring women for their creative ability, we can remember others worldwide who still actively revere and honor women who have the capability of birthing. This is evidenced by people in Assam, India, where their ancient temple honors the "yoni" or vagina of the Goddess Khamakya (Figure 1.2). Once a year at this temple, the goddess is said to be menstruating and the stream that flows deep inside the temple turns red. People stand in line for days to be able to kneel by this stream and collect the red healing water — the menstrual blood of Khamakya. Men and women from around the country stop work and come to the temple to honor this symbol of her fertility. Women often run out of the temple, moved by their contact with the Great Mother goddess, crying, and calling out, "Ma, Ma, Ma"[16] (J. Thompson, Anthropology Professor, personal communication, 2002).

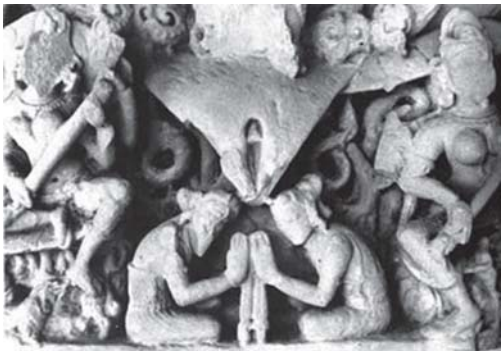

FIGURE 1.2 **Reverence for the Yoni.**
A twelfth-century Indian stone sculpture at Sixty-Four Temple. From Mookerjee A. Kali, the Feminine Force. Rochester, VT: Destiny Books, 1988. Courtesy of Thames and Hudson Ltd.

"Ma, Ma, Ma". . . it is a universal sound that has called for mother for thousands of years. It is a word that is embedded in our language in the words: *Mama, Mammal, Mammary*—words related to mothering. It is a sound that often emanates naturally from a newborn's voice when calling for mother.

The specific word that we know as "mama"—mother—exists in numerous languages: Russian, Mayan, Quechuan, Swahili, Albanian, Hungarian, Indonesian, Swahili, Turkish, Hawaiian, Arizona Hopi, Chickasaw, Chinook, Creek, and Koasati. Many other languages have words related to motherhood that sound similar (Table 1.1).

The cycle of pregnancy, birth, and becoming a mother, and a woman's role as creator and bearer of life, is revered and acknowledged with elaborate ceremonies by many. Women are respected, feared, and recognized as the source of all creation, or as "vessels of spiritual fire."[15] In some cultures, simply to touch the pregnant woman brings one closer to what is considered a divine energy. People have recognized that it is no small matter that women bleed on a monthly cycle and do not die, that women bleed in a way that is related to creative energy rather than to wounding, to birthing rather than dying. It is no small matter either to have two people making use of one external body or to have women nourish life with milk produced in her breasts. An Orthodox Jewish woman described that in her tradition, a woman in her menses is revered for reflecting the creative power of the Divine: the power to bring another human being into life. Thus, she is treated deferentially by men, especially during this time in her monthly cycle (Y. Ableman, Chabad House, personal communication, 2002).

Table 1.1 Words for "Mother" Around the World

Language	Word(s)
Afrikaans	Ma, Moeder
Armenian	Mayrig
Czech	Matka, Matinka
Danish	Mor
Hopi (Arizona)	Maama
Hungarian	Mama
Mayan	Mamah
Old English	Modor
Polish	Matka
Quechuan	Mama
Slovak	Mamika, Mamka
Spanish	Madre
Swahili	Mama
Vietnamese	Me, Me de
Zulu	Umame

Traditional Birth Practices:

Japanese Pregnancy Massage

More than 120 years ago, Dr. George Engelmann described the methods of a Japanese healer caring for pregnant women after their fifth month of pregnancy: the healer "manipulates the abdomen of the patient, who clings about his neck, pressing his shoulders against her breasts, and pressing his knees between hers, so that she is firmly supported. Then he practices a lateral massage with his hands, beginning at the seventh cervical vertebra, and rubbing downward and forward, rubbing also the [buttocks] and hips with the palm of his hands, repeating the movement from sixty to seventy times every morning after the fifth month."[16]

As a massage therapist supporting and touching a woman through the journey of pregnancy, you might remember her as a powerful creator and consider yourself to be the "touch midwife," not as one who helps deliver babies, but in the Old English meaning of the word as one who is simply "with woman," holding, massaging, and supporting her with a particular type of nurturance on her birthing journey. In this role as a somatic supporter, you can help women find comfort in and get "in touch" with their physical, emotional, and spiritual selves during pregnancy, birth, and postpartum to help them feel comfortable, safe, and empowered by their choices.

Though touch has long been used as a significant healing tool for women in their childbearing years, its use diminished in industrialized cultures during the intensification of allopathic obstetrical practices and growth of medical technologies. Now it is being revived again and hailed as an important supplemental support during pregnancy and birth at hospitals, birthing centers, and at the home. Recent research, discussed below, has helped to promote touch as a useful and powerful tool for the perinatal cycle by drawing attention to its benefits.

BENEFITS OF TOUCH DURING PREGNANCY

We know that touch has significant effects on our lives; it is critical to our survival and the survival and health of all mammals.[17-23] Touch is a form of communication, a language that has the potential both to support and nourish, as well as to hurt. Children in some orphanages in the late 1800s had a mortality rate of 100%, attributed in large part to a lack of touch.[17] For a childbearing woman, touch holds increased significance because skin stimulation, such as massage, may support the pituitary's mobilization of "mothering" hormones that influence breast development, enhance the critical function of the placenta, help the body stay pregnant and prepare for birth and mothering, and stimulate mother-infant nurturing.[24,25]

Tiffany Field, PhD, a leading researcher at the Touch Research Institute in Miami, has studied the impact of touch in premature infants and, more recently, the effects of touch and doula support for women in labor. These studies have shown that women who are touched compassionately in pregnancy and labor end up touching their children more regularly, effectively, and sensitively.[7,8] In one of Field's studies, women were given a 20-minute back massage, five times a week during their pregnancy. These women described less anxiety, had fewer stress hormones in their blood, and experienced increased deep sleep, improved moods, and fewer painful back and leg complaints. Ultimately, the result was a decrease in premature delivery and obstetrical complications.[26]

Chronic stress, a condition many people experience in developed nations, contributes to numerous health problems, including some conditions that often plague a woman in pregnancy, such as altered regulation of blood sugar levels, decreased immunity, and increased occurrences of hypertension, insomnia, depression, and pain. When a pregnant woman lives with chronic stress, her baby in utero is also affected by the constant flow of stress hormones circulating in the maternal blood stream. X-rays of hands reveal specific markings and lines on the bones of children whose mothers underwent significant emotional stress during their pregnancy.[27] Some studies indicate that there may be an increase in attention-deficit/hyperactivity disorder in children who experienced intrauterine stress.[28]

While it may be difficult to eliminate excessive stress from one's life, therapeutic massage, especially combined with breathing and visualization, can help to decrease its intensity and reduce the potential for the above conditions. Furthermore, the massage therapist must remember that every massage affects not only the fetus, physiologically and emotionally, but also the mother and how she will later relate to her child. The following list outlines the benefits of massage during pregnancy:

- Improved Physiological Function: Massage improves venous blood flow and oxygen perfusion[29] while assisting removal of cellular

waste by increasing lymphatic flow.[30-32] In pregnancy this helps decrease nonpathological edema, reduce blood pressure,[33,34] and relieve headaches.[35-37] With this improved circulation, especially through the large vessels of the inguinal region, the occurrence of edema and muscle spasms related to poor circulation can be reduced.

- Musculoskeletal Pain Reduction: Massage helps decrease strain on joints and muscles that are impacted by the extra weight gain of pregnancy, reducing muscle tension and back pain.[38,39]
- Improved Posture: Bodywork sessions are an opportunity to teach posture correction, relieving related musculoskeletal complaints such as low back pain, headaches, neck and shoulder pain, foot discomfort, and sciatica.[40]
- Enhanced Lactation and Increased Prolactin Production: Nurturing touch stimulates prolactin production, enhancing a mother's "nesting" instincts and abilities to nurture her infant.[24,25]
- Improved Emotional Wellbeing: Studies indicate that massage can decrease stress hormones, reduce depression and anxiety, and increase serotonin production, increasing one's sense of well-being.[5,26,41,42] All these benefits will also improve outcomes for the baby in-utero.[28,43]
- Increased Immunity and Decreased Intra-Uterine Stress: Touch enhances the immune system function by reducing stress.[44,45] Reduced maternal stress means a decrease in the possible detrimental effects of intrauterine stress on the baby.[28,43]
- Perineal Ease: Massage of the perineal area, before and during labor can help facilitate stretching of the tissues during birth.[46-48] Due to the intimate nature of this massage and limitation of scope of practice for massage, this massage technique is usually explained to the mother and performed by her partner, midwife, or a trained physical therapist, rather than actually practiced by the massage therapist. However, passing on the information as a massage technique to a client can be helpful, if that is within your scope of practice. By developing familiarity with the stretching sensations in that area, it may be possible to reduce a woman's resistance or fear when the sensations occur during birth, thereby reducing her risk of episiotomy and speeding tissue healing in postpartum. Many women have heard of this technique, and appreciate accurate information about how to do it.
- Improved Relaxation Skills and Self-Connection: Massage enhances a woman's body-awareness by bringing her attention to areas of muscular tension that can relax with bodywork and focused breath. Massage provides an opportunity for a woman to practice this relaxation and breath awareness in preparation for the birth process. Associating touch with relaxation *before* birth facilitates natural relaxation with touch *during* birth.[1,49]
- Increased Energy: Massage can reduce or relieve some of the common complaints of pregnancy including fatigue, stress, and insomnia — concerns that sap a woman's energy.[26,39,50-52]
- Increased Ability to Nurture Others: Massage provides an experience of nurturing, healing touch, which increases a woman's ability to touch her infant similarly. (This is particularly important for women with a history of sexual, physical, or emotional abuse.) As the mother experiences nurturing touch in pregnancy, she is reinforced with skills to touch her infant with nurturance; this in turn enables the infant to develop a positive experience of touch and caring and enter the world with more security, unlike infants who are not touched, who become withdrawn and aggressive, with more tendencies toward antisocial behaviors.[53-57]

Clearly, the massage therapist can provide an important service during a woman's pregnancy. Still, there are fears and issues that sometimes prevent pregnant women from taking advantage of the benefits of massage therapy. These are discussed below.

ISSUES WITH TOUCH DURING PREGNANCY

Considering the well-documented importance of touch, it ought to be a natural, common element in a woman's experience of pregnancy, birth, and postpartum. However, for a variety of social, medical, and legal issues, touch is often limited and restrained instead. Let us look at some of the situations and concerns that may decrease a woman's chances of getting touched during her pregnancy and how the massage therapist might take these issues into consideration.

Body Image

For some women, body image can become a source of concern that prevents them from seeking out massage. A healthy woman will typically gain at least 28 pounds during a normal pregnancy, some of which is naturally deposited in the thighs and buttocks. Without this extra weight, the baby would not thrive,

the mother would not be able to adequately nourish her fetus, and the mother's body would not withstand the stresses of pregnancy. However, some women feel ashamed, unattractive, and nonsexual due to their weight gain and stop visiting their massage therapist at this time to avoid being seen with their added weight. They sometimes will avoid touch from their intimate partners as well.

In other cases, the woman's partner may avoid intimacy due to the changes in the woman's body. Although the woman may revel in her growing size and have a new sense of confidence related to her fertility and creative energy, her partner may become distanced or be subconsciously intimidated by the changes in the woman's body. As a result, their intimacy may diminish and familiar touching may become less frequent between them.

Be aware of the potential for a possible shift in a pregnant woman's relationship with her massage therapist or with her partner as a result of changes in her body. She may have emotional releases during a massage related to the stress in her changing intimate relationship or due to her changing self-image. Take note that in many cultures, a pregnant woman was and still is acknowledged as a Goddess—one who creates and brings forth life, like the great Earth Mother herself. Images of large, strong, and solid women in their fullness and sublime feminine nature have been created by ancient cultures that honored them for this ability. If your client expresses concerns about her body image, you might offer positive reminders that the extra weight in pregnancy indicates health, strength, and the ability to nurture her young as well as reinforcement of the growing "goddess" image.

Fear of Miscarriage

Another major concern of expectant mothers and their partners is the fear that touch—by themselves or others—could lead to a miscarriage. This becomes especially important after a woman feels the baby moving inside her belly for the first time, announcing the reality of its existence. At this time, the mother and possibly her mate may become more excited and simultaneously more overprotective and nervous. The partner may view the mother as fragile and the whole pregnancy unstable and believe that if she is touched the "wrong" way or in the "wrong" place, the mother or fetus could be harmed. If either the woman or partner entertains these fears, they may lose much familiar touch between them simply because of the distance that respect or ignorance can sometimes breed.

Receiving massage from a knowledgeable therapist can help to ease some of these concerns as the woman feels how confidently she is touched, while being reassured that nurturing massage will in no way be harmful to her pregnancy or baby. As the massage therapist learns appropriate and safe ways to touch pregnant women throughout the childbearing cycle, she or he can educate women and partners about safe and nurturing touch during pregnancy that can help them improve their connection with one another.

Violation of Personal Boundaries

To create the most supportive atmosphere for the pregnant client and to avoid common actions or comments which may be disturbing to her, it is helpful to understand how the client's normal personal boundaries may be inadvertently violated during her pregnancy. Physical changes are rapid in pregnancy, and many women soon feel unfamiliar with their bodies and their bellies, which protrude into the world, bumping into things and sometimes getting in the way. As much as a pregnant woman may feel a stranger to the new sensations and image of her body, strangers themselves may be totally drawn to her in ways she has never experienced before. She finds that people commonly walk up to her, eye her belly with delight, and exclaim, "Oh, how wonderful, how far along are you?!" as they reach out and lay a hand on her bulging abdomen. This can be a frequent occurrence! The mother's belly has suddenly become public property, where strangers practice no restraint and normal boundaries and privacy have diminished. What would be inconceivable to do to a nonpregnant woman, suddenly becomes commonplace in pregnancy, causing some women to feel an aversion to touch, even from a massage therapist or others, apart from her family.

Along with this, many friends and strangers feel the need to relate their own birth stories to pregnant women, often telling stories of difficulty; of dismal, prolonged labors; or of terrible outcomes. A pregnant woman is like a sponge for energetic interchanges; the normal boundaries that may protect us from another person's issues are not as solid during pregnancy. Any negative birth stories that are told to a pregnant woman are likely to sink in immediately to her psyche and have an influence on how she approaches her own coming labor.

Create a sanctuary for the client who may feel overwhelmed in this way by offering a healing space where she can invite nurturing touch rather than ward off that which seems invasive. Avoid your own impulses to reach out and touch her belly immediately as she enters your office, looking much more pregnant than she was 2 weeks or 1 month before! Instead, greet her as an honored guest and client and welcome her into your sanctuary. Avoid offering your own advice and stories about birth, but instead help her to

envision the beautiful, easeful type of labor that she would most like to have.

Body Memories

Many women have been subjected to sexual, physical, and emotional abuse and live with the memories and experiences impressed in the cells of their body. For some women, as their body uncontrollably and undeniably changes during pregnancy and birth, emotional responses attached to difficult life experiences may be invoked. Sometimes this may occur during a massage; somato-emotional responses are not uncommon to experience during attentive bodywork. Rising emotions can sometimes overwhelm and take both client and therapist by surprise, and if the therapist is untrained in supporting a client during these types of experiences, the client may feel unsafe to return. Some women may find that when already uncomfortable with their loss of control over their body during pregnancy, massage during their pregnancy may seem too frightening and uncomfortable to consider. The therapist can only offer support and safety to the degree that she or he is experienced, trained, and comfortable; but understanding that difficult emotions are often triggered by pregnancy, labor, and mothering may encourage her or him to get further training in the field of somato-emotional release work.

Education for the Massage Therapists

A lack of knowledge among massage therapists about how to massage during pregnancy can be another issue that pregnant women encounter. Many women have found that *during* pregnancy their regular massage therapist suddenly becomes unwilling to see them, as she or he is uncertain how to address the needs of a pregnant client. Many therapists who have not been trained are concerned about doing something "wrong" or creating a problem for which they would be legally liable. While causing problems is unlikely, this concern is valid and there certainly are contraindications for massage during pregnancy and times when certain types of touch are inappropriate. Bodyworkers should be aware of these issues. (See Chapter 4 for details on precautions and contraindications.) Acquiring the appropriate skills and knowledge to address pregnant clients will ease women's and therapists concerns.

Education for the Doctors

Massage therapists are not the only ones who need to become better educated about massage during pregnancy. Even though pregnancy massage is becoming much more commonplace, more education is still needed within the medical system to help touch become fully integrated. Many obstetrical physicians have hesitated when first approached about referring their pregnant clients for massage therapy. Massage can be a wonderful adjunctive tool to help women cope with the common discomforts of pregnancy; it is a loss when women are not told that it is safe and possibly an excellent choice for them to explore during pregnancy. However, these same doctors, after witnessing the results of clients who received massage and were then pain-free and much happier with their growing bodies, have come to accept that massage can indeed have a highly beneficial impact on a woman's experience of pregnancy. To help expand the use of massage throughout pregnancy, massage therapists may choose to offer in-services and educational packets about the benefits of pregnancy massage to doctors and midwives who may not yet have recognized these benefits.

Education for the Mothers

Finally, the mother's own lack of knowledge about the safety and benefits of massage during pregnancy can be an obstacle. It is helpful for you to have a span of knowledge about the perinatal cycle to work confidently and reassuringly, especially when working with women who have concerns regarding the safety of massage. By educating yourself about potential risks and contraindications related to specific types of bodywork modalities and understanding appropriate ways of doing massage, positioning, and touching the belly, you will be able to extinguish concerns and educate your client about practices that are safe and worry-free. Many women become voracious readers during pregnancy, researching everything they can get their hands on regarding conception, childbirth, and mothering. They learn that there may be various dangers on the pregnancy path; yet without detailed information, they may begin to grow anxious and uncertain about what is really safe or unsafe for this unborn child. For some, massage might seem too rife with potential for injury. Some women have experienced more than one miscarriage, and massage might, in their mind, seem risky for stimulating another. Many women have heard that certain acupressure points are dangerous or that massage to the ankles is contraindicated during pregnancy. Some may feel more comfortable avoiding massage or will need to know they have found a well-trained, knowledgeable therapist if they decide to see one at all. If you are chosen as her knowledgeable therapist, you will be able to alleviate her fears, rather than compounding your own and hers based on your uncertainty about safe practices.

DISPELLING MYTHS:

The Dangers of Pregnancy Massage

It is not difficult to learn about the dangers of pregnancy massage. Anyone who would like to be convinced of its dangers merely needs to use the topic words—Dangerous pregnancy massage—in an online Internet search engine and then review some of the massage and pregnancy sites that emerge. Some of the dangers reported include the following: massage should be avoided in the first trimester due to the risk of miscarriage from toxic overload after massage; first trimester massage is too much stimulation for the mother; massage to the feet, lower legs, and abdomen could cause miscarriage; abdominal massage should be avoided due to the potential for causing serious problems; abdominal massage should be avoided because babies don't like it and start kicking; massage to the low back is contraindicated during pregnancy, with no reasons given.

A newly pregnant woman or an untrained massage therapist might read this information and believe that it is just too frightening to receive or give massage during pregnancy. However, these bits of advice are not substantiated with research or documented reports of problems. We can examine and dismantle each of these fears.

The first trimester is indeed a time of great changes on many levels; all the more reason for receiving nurturing touch to help a mother integrate the changes that are occurring. There is no research that indicates that massage has caused toxic overload in a pregnant person and thereby caused miscarriage. Therapists are aware that massage can stimulate circulation and help flush metabolic waste into the circulatory system. Acknowledging this effect, many therapists are trained to work less intensely on people who have never had a massage before, encourage clients to drink water after a massage, inform the client that mild soreness for a day after massage could occur, and recommend the client rest briefly before recommencing her day again after a massage. Pregnant women are no different in this regard. Women should always be encouraged to drink water after a massage. Massage in the first trimester should generally not be exceptionally deep and stimulating if it is the first massage a woman has ever received or if she is experiencing nausea at times. Massage should not be avoided due to nausea, however, as many studies indicate massage can help to *reduce* nausea.[58-60] Usually, massage during the first trimester can help decrease anxiety and help a woman relax, have focused time to process the fact that she is pregnant, and offer her a wonderful way to enter into her new pregnancy.

Miscarriage is extremely common during the first trimester, yet it occurs whether women are massaged or not. Massage has never been clearly implicated legally or scientifically as a cause of miscarriage. In the majority of cases, miscarriage occurs because the fetus is nonviable. Touch to the abdomen, unless it is intentionally harmful, does not hurt the baby or the mother. The uterus during the first trimester is low in the pelvis and is not palpable without deep abdominal pressure, which is generally contraindicated for massage therapists during pregnancy. Instead, nurturing touch to the abdomen can be extremely relaxing for the mother, and most women feel that the baby is responding in a positive manner if she or he wakes up and starts moving during a belly rub.

Massage to the legs, feet, and belly during the first trimester *does not* cause miscarriage. There are acupressure points in the lower legs and feet that are contraindicated for acupressure or acupuncture, but general massage to the acupressure points areas will not stimulate them similarly.

With increased education regarding massage during the perinatal cycle, the fears and myths about its dangers can be reduced. Therapists can learn with accuracy when caution or contraindications are truly called for, and help dispel myths and assuage unwarranted fears. Armed with knowledge and gifted with the ability to offer nurturing caring touch, the massage therapist can help more pregnant women reduce anxieties and discomforts, and increase their chances for a pleasurable experience of their pregnancy.

CHAPTER SUMMARY

Throughout the world, touch has been used to improve and enhance women's experiences of their pregnancies and births. Ongoing research has helped to support the claims of the many psychological and physiological benefits of massage in general and specifically during the perinatal cycle. The massage therapist, trained in the benefits, contraindications, concerns, and techniques of perinatal massage, can continue this important tradition of touch. By honoring the natural wisdom of women's bodies, respecting the issues that can develop around pregnancy in our industrialized world, and minimizing fears with education, reassurance and competence, the therapist can provide the optimum individualized care for each pregnant, laboring, and postpartum woman.

CHAPTER REVIEW QUESTIONS

1. Name four elements of bodywork with pregnant clients that are different from working with non-pregnant clients.
2. What are some of the social issues that might prevent a woman from getting massage during pregnancy?
3. Name two reasons how touch has been used in traditional cultures to benefit a pregnant, laboring, and postpartum woman.
4. Discuss ways that you might consider childbearing as a significant rite of passage.
5. Discuss four benefits of touch for a woman during pregnancy.
6. What are the potential impacts of maternal stress on a woman or fetus during pregnancy?
7. What are some of the myths about touch during pregnancy and why are they myths?
8. Discuss concerns, issues, or stereotypical prohibitions to touch during pregnancy and how these can be mediated by a massage therapist. Examine any fears or beliefs you, or those in your community, have had about pregnancy massage.
9. Describe what effects, if any, massage may have with regards to the risks of miscarriage.

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CHAPTER 2

PHYSIOLOGICAL AND EMOTIONAL CHANGES DURING PREGNANCY

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Describe basic embryonic and fetal development
- Describe the maternal physiological and emotional changes that occur during each trimester of pregnancy.
- Name the primary influential hormones of pregnancy and their effects on the mother's body.
- Discuss relevant bodywork considerations related to the changes of pregnancy.
- Describe specific physiological changes to the organ systems that are unique to pregnancy.
- Explain the rationale for common bodywork and massage precautions during pregnancy.

As a massage therapist, you may see a pregnant client from the conception of her baby all the way through her birth and postpartum period. Understanding the physiological and common emotional changes occurring during this time will influence your work and help you better support her, as with each visit she will be a different woman, with a different balance of hormones, different energy of the baby within her, and different needs for bodywork. In this chapter we will review the process of conception and fetal development through the trimesters, hormonal changes and the maternal experiences of these changes, and general considerations for bodywork appropriate to each trimester. We will also consider how the pregnant client's various organ systems adapt during pregnancy.

CONCEPTION

Each pregnant client has had the experience of hosting a microscopic and energetic dance between hormones, sperm, and an egg. Each month hormones are released from a woman's pituitary gland with the special duty of helping one egg to mature in the woman's ovary. Simultaneously, the ovary sends estrogen to prepare the womb to receive the egg, just as a garden is fertilized to prepare for planting so that the seed will be well-nourished. Once the egg is fully matured, it emerges from the ovary and is urged into the waving tentacle arms of the fallopian tube fimbriae. The egg (the largest cell in the human body) is caught by these arms and propelled down the fallopian tubes. Microscopically viewed, the fallopian tube can be seen repeatedly undulating as it gradually squeezes the egg toward the womb. Meanwhile, millions of sperm (30 times smaller than the egg, and the smallest cells in the male body) which have been ejaculated—or, often these days, artificially inseminated—into the vagina or uterus are swimming toward the fallopian tubes, drawn by chemical attractants released by the egg. Of these millions of sperm, only about 2000 will survive long enough to get close to the traveling egg, and when

they do, they begin to wiggle against her protective cell wall. Eventually, one sperm passes through the cell wall of the egg. The egg then secretes an impassable film around its walls, preventing other sperm from entering. Sometimes, two eggs are released during ovulation and make their way through the fallopian tubes. If each becomes fertilized, fraternal twins develop.

The sperm and egg—now a zygote—fuse their chromosomes and begin to divide repetitively for the next 3 to 7 days. On occasion, the zygote will split in two, and identical twins will develop. During this period, the zygote is being propelled through the fallopian tube to the uterus, dividing continuously until it is a clustered ball of cells called a blastocyst.

Meanwhile, the corpus luteum, a mass left in the ovary after the egg departed, produces hormones that continue to prepare the uterus for eventual implantation of the egg. The corpus luteum is a primary source of hormones for about 12 weeks, until the placenta is formed and fully functioning.

When the blastocyst enters the womb, it searches for the most desirable area of the uterine lining in which to implant itself, normally in the upper regions of the uterus. There it burrows into the endometrium and is nourished; the earliest development of a new life begins. A placenta begins to form from the trophoblastic cells on the outside of the blastocyst. This placenta will eventually take over the role of the corpus luteum, producing progesterone and estrogen and helping to nurture a healthy fetus.

All this has taken place in the span of 7 to 10 days *since ovulation*. Ovulation is assumed to be approximately 14 days after the last menstrual period, although that is merely an average. When calculating the length of a 40-week pregnancy, measurement usually begins from the last day of the woman's menstrual period, *not from ovulation and conception, even if the woman knows exactly when she conceived;* therefore, when we discuss a fetus at 3 weeks of *development*, the woman's dates of pregnancy may actually be measured at 5 weeks' *gestation*.

FETAL DEVELOPMENT AND MATERNAL SENSATIONS

What is a woman experiencing during this development of new life in her body? Pregnancy is divided into 3 time periods, each about 13 weeks long, called **trimesters**. We will now look at each trimester in more detail.

Traditional Birth Practices: Mysteries of Creation

Not all people believe our scientific stories describing the making of life as a journey of a microscopic egg and a sperm. Some tribal South Africans believe that conception occurs if a woman lies down in the rain, allowing the seeds inside her body to be germinated, just like those in the land.

A Nepalese way of understanding the creation of life is that the souls of those who have died in the past 40 days visit with couples who are making love, slipping into the woman's body during intercourse. It is the "buttermilk," or semen, that creates the baby's bones and the mother's menstrual blood that forms the baby's body.[1]

In Malaysia, it is believed that the fetal spirit is conceived in the father's brain and heart, where it learns first of the world through the father's perspective. The spirit then enters its mother in the father's semen during intercourse.[2]

The Trobriand Islanders of New Guinea, whose culture is entwined with the sea, believe that the souls of babies float in seaweed and attach themselves to women as they swim in the ocean. This soul, carried on a surge of the mother's blood rising to meet it, enters her womb and is nourished by the mother's menstrual blood.[2,3]

First Trimester: Weeks 1 to 13

The most critical development and growth for an embryo and fetus occurs in the first trimester and begins immediately on implantation of the blastocyst in the landscape of a woman's body. All of the mother's vital energies shift at once to support and nurture the growing embryo with increased blood, oxygen, and nutrients. The organs, brain, spine, and the fetal nervous system all begin to form early on. This early time period in the first trimester is developmentally critical, and a woman's well-being should be protected carefully (Figure 2.1). It is during the first trimester that a mother is urged to avoid extended immersion in hot water, drinking alcohol, and partaking in other activities that might disrupt healthy formation of this nervous system. The first trimester is also critical in that it is the most common time for **miscarriage** (delivery of the fetus before 20 weeks' gestation) to occur. Of women who know they are pregnant, 15% to 25% experience

miscarriage, while the rate is speculated to be as great as 60% to 70% when including in the statistics of the women who had not yet realized that they were pregnant before they miscarried.[4,5] *Eighty percent of these miscarriages occur within the first trimester*.[5] Some important bodywork restrictions, covered in detail in Chapter 4, are related to this risk of miscarriage in the first trimester.

While a tiny life is developing deep in a mother's womb, this newly pregnant woman may have a variety of experiences. Some women soar through the first trimester feeling strong and healthier than ever. Others experience fatigue, indigestion, nausea, and vomiting. For many, it is a time of great joy and excitement, while for some it may be a time of ambivalence, irritability, or anxiety, especially if the pregnancy is unplanned, unwanted, or particularly challenging. A massage therapist will want to know if her or his pregnant client is in the first trimester, respecting the client's possible vulnerability due to any of the above issues and while offering nurturing and supportive touch to this mother who is incubating new life. Massage can be extremely helpful at this time, as a woman comes to terms with the physical, emotional, and possibly spiritual changes and prepares to transition into a new role and identity.

See Table 2.1 to review embryonic development, maternal experiences, and bodywork considerations in the first 3 months of pregnancy.

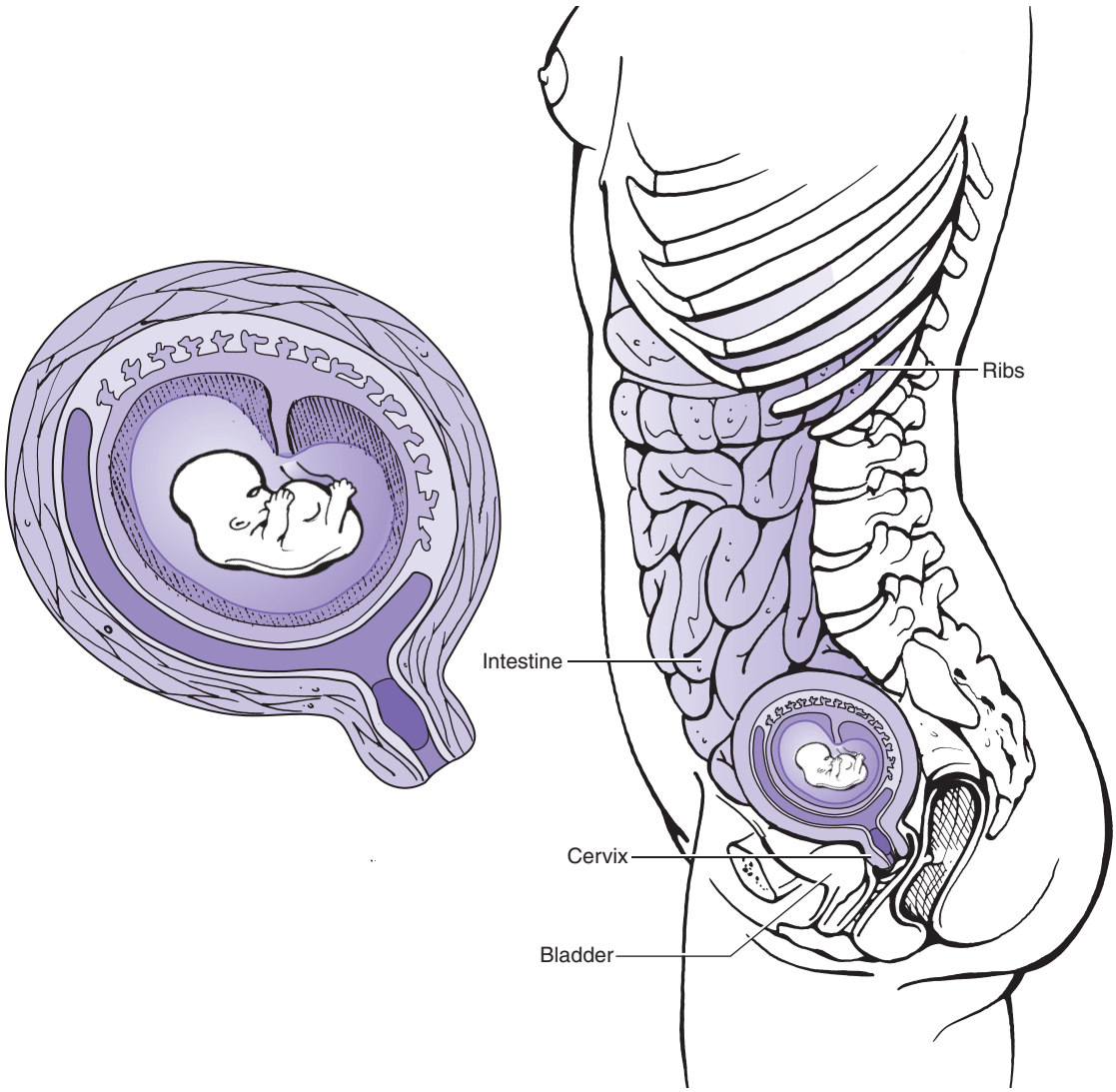

FIGURE 2.1 **First trimester, second month.**

The fetus is approximately 2 cm long and the nervous system is forming. The mother may be experiencing nausea, breast tenderness, and more frequent urination.

Table 2.1 First Trimester: Embryonic and Fetal Development, Maternal Experience, and Bodywork Considerations

Embryonic and Fetal Development	Possible Maternal Experience	Bodywork Considerations
First month of pregnancy		
Overall: • Lungs, brain, digestive tract, neural tube develop—the rudimentary nervous system. **1st week:** • Fertilized egg divides. • Corpus luteum produces progesterone and estrogen to prepare uterine lining. • Day 7–10, egg implants itself in uterine lining. **2nd week:** • Distinction of amniotic sac and yolk sac begins. • Pre-placenta cells produce human chorionic gonadotropin (HCG) and estrogen 10 days after fertilization. • HCG encourages the corpus luteum in the ovaries to produce high levels of estrogen and progesterone. **3rd–4th week:** • Embryo is the size of rice grain or smaller. • Embryo is attached to uterus. • Placental circulation is established. • Definitions of tiny head with rudimentary eyes, ears, nose, and tail with yolk sac. • Heart has begun a rhythmic beat.	• Many know instantly they are pregnant. • A woman may feel shifting, swirling energy in her core. • Food cravings are common. • Increased urination occurs. • Breast soreness develops. • Hormonal mood swings are common. • Some choose not to share with others about their pregnancy until after the first trimester when it is more secure. • Anxiety about miscarriage may be present.	• Avoid deep abdominal work. • Avoid scented oils that may trigger nausea. • If nausea present, may need to position in semi-reclining. • Study acupressure points that alleviate nausea. • Place pillow under ribs or position side-lying if breasts are sore in prone positioning. • Avoid deep, intensive work on sacral area, which can be stimulating to uterus. • Do thorough health intake especially assessing history of miscarriage or previous high-risk pregnancies. • Avoid electric heating pads on massage table in first trimester due to unknown effects of electromagnetic radiation on developing fetus. • Avoid contraindicated accupressure points.
Second Month of Pregnancy		
Overall: • Facial features, gonads, and brain development are foremost. **5th week:** • Rudimentary brain and spine form. • Embryo floats in oceanic amniotic fluid, attached to uterine wall and pre-placenta by tiny veins and arteries that will become umbilical cord. **6th week:** • Embryo is size of large raisin. • Clearly defined head with basic eyes, ears, and brain. • Brain grows rapidly. • Tiny buds of arms and legs appear. • Two-chambered, beating heart. • Defined bloodstream. • Digestive organs developing.	• There may be a growing excitement. • She may not have told others about pregnancy. • Breast soreness and size increase. • Nipples become more prominent. • Nausea or "morning sickness" may occur. • Urination frequency increases. • General fatigue occurs. • Increased vaginal discharge develops. • May only now become aware of pregnancy with missed menstrual cycle. • Anxiety about miscarriage may be present.	• Same as first month. • Avoid vigorous stimulating massage in the first trimester. • Check for diastasis recti if she has had previous pregnancies, and teach abdominal strengthening techniques.

Table 2.1 (Continued)

Embryonic and Fetal Development	Possible Maternal Experience	Bodywork Considerations
7th week: • More facial details: nostrils, lips, tongue, and teeth buds. • Spine and brain mostly formed. • Spine straightens. • Legs grow. • Heart develops two more chambers. **8th week:** • By 8–10 weeks, embryo is called a "fetus," from Latin meaning "young one" or "offspring." • Fetus is 2 cm long. • Ear becomes more fully defined. • Functioning 4-chambered heart pumps blood through vasculature.		
Third Month of Pregnancy		
• Fetus grows from size of small quarter to about 3 inches long, weighing about 1 ounce. • Eyes develop with eyelids covering but not yet opened. • Skin is translucent. • Elbows and knees develop. • Hands and legs start to move. • Fingers and toes webbed but developing with fingernails. • Genitalia become defined. • Fetal heart beats 160 180 beats per minute.	• Feeling more settled in security of pregnancy. • Constipation may begin. • Headaches may develop. • Dizziness may occur. • Anxiety about miscarriage may be present. • Mood swings are common. • Fatigue is common.	• Same as first two months. • Address chronic postural issues before advanced and problematic in pregnancy. • Suggest client empty bladder before massage.

Second Trimester: Weeks 14 to 27

Rapid changes continue in the second trimester, and by its end, the pregnancy will be much more obvious with an enlarged belly and fetal movements felt by the mother. By the time a woman reaches the second trimester, the majority of concerns for miscarriage are alleviated (though all risk is not gone).

At the beginning of the second trimester, the fetus is still only 6 to 9 inches long and the placenta—which has taken 3 months to form—is now ready to replace the corpus luteum in estrogen and progesterone production. The placenta also takes on the role of the still-developing fetal lungs, stomach, intestines, and kidneys by filtering blood and waste. Through her own circulatory system, a woman processes her baby's cellular wastes, yet the baby's blood does not ever actually make contact with its mother's; their circulatory systems are separated by the placental membrane, and thus they may have different blood types.

Fetal skeletal muscles become more functional. Maternal blood nourishes the baby. With every breath a mother takes, oxygen travels through the placenta and the umbilical cord, oxygenating the baby's blood. Encouraging full belly breathing during bodywork sessions helps "feed" the baby while the mother is relaxing and enjoying the benefits of increased oxygen to her cells.

A woman may grow especially excited around 5 months of pregnancy, as she feels the baby's tiny flutters or movements, called **quickening**. According to some theories, quickening indicates the baby's first consciousness of its physical form.[6] The signs of life inside are undeniable. The mother will feel and begin to look more pregnant this trimester and may have more energy than earlier. Her breasts grow larger, and hormonal changes cause new discomforts that she

MASSAGE THERAPIST TIP

Fatigue

Fatigue is a normal experience in the early stages of pregnancy. Many women fight fatigue, trying to keep up with the normal demands of their daily lives. They may complain about their exhaustion to their massage therapist. Gently remind your client that she is harboring and growing a human being in her body—no small task. Every body system and every cell in her body is adjusting itself in some way to support fetal development. It is no wonder that she is tired. In most creation stories, it is only a supernatural being who can do this, and usually even he or she had to rest after creating the world!

may be coping with, such as nasal congestion, nosebleeds, mild swelling in the legs, leg cramps, the appearance of varicose veins, and an increase in vaginal discharge. The massage therapist can be assured that these are common and generally normal experiences for some women during this time.

Now the uterus is the size of a cantaloupe, and the woman's center of gravity is shifting backward to accommodate the forward-growing weight. Without postural adjustments, she may begin to experience cramping of the legs and feet, low backache from increased lumbar lordosis, and overstretching of her abdominal muscles (Figure 2.2).

Your client will probably feel less nauseous and have less urgent needs for urination since the baby is higher and putting less pressure on the bladder. Energetically, a woman's sleep may be filled with more vivid dreams as her connection deepens with the kicking and pulsing life inside. Many women may now come to terms with any previous ambivalence and rest more comfortably in the reality of their emerging role as mother, with fewer mood swings. For those whose history precludes a happy resolve with this pregnancy, the ambivalence or resentments may continue or increase. This may be especially true for women with a history of abuse or with financial, emotional, or medical challenges associated with the pregnancy.

Table 2.2 reviews embryonic development, maternal experiences, and bodywork considerations in the second trimester of pregnancy.

Third Trimester: Weeks 28 to 40

The third trimester is the time of the most perceptible fetal growth as a woman's belly continues to grow large and fetal movements become palpable and noticeable by observers. By the early part of the third trimester, the average baby weighs about 2 to 3 pounds and has at least a 50% survival rate outside the womb. The lungs are not fully developed yet, and this will be a serious liability if the baby is born too early. The vital organs have been formed, and the baby is developing reserves of energy and thermoregulation abilities for outside the womb by growing "baby fat."

Some women feel better than ever now, and onlookers may comment on the woman's proverbial "rosy glow" of pregnancy. But it is not uncommon for the mother to have one or more complaints that interrupt her potential enjoyment of feeling the now-frequent baby movements. The top of the uterus is near her xiphoid process, and the baby may be pushing up into her diaphragm, causing her shortness of breath. She may have back pain, pelvic heaviness, ankle edema, and uterine ligament spasms. Her organs are compressed in the abdomen, and she may experience constipation, heartburn, indigestion, and leg cramps.

The mother may have an increase in hair and nail growth, sweating, and skin allergies, and the development of stretch marks, also called **striae gravidarum**. The etiology of stretch marks is still uncertain,[7] but there seems to be a genetic component that increases the effects of the rapid stretching of the abdominal skin and underlying collagen and elastin. Many women ask if massage can help with these marks. Moisturizer or oils can help nourish the skin, but there is very little research that indicates it will prevent these marks from developing, and none that proves a way to reduce them once they have developed.[8] Accepting their presence, some women choose to appreciate these lines as the permanent story of their child written on their body.

After 36 weeks, the baby drops down into the pelvis and maternal breathing difficulties are relieved—this drop is called **lightening** (Figure 2.3). She now has more pressure on her bladder and may need to urinate more frequently. Your client may be more anemic, as blood composition changes, increasing chances of her feeling dizzy or fatigued. She may be restless at night, awakening frequently to urinate, to process dreams or nightmares, or to try to find a

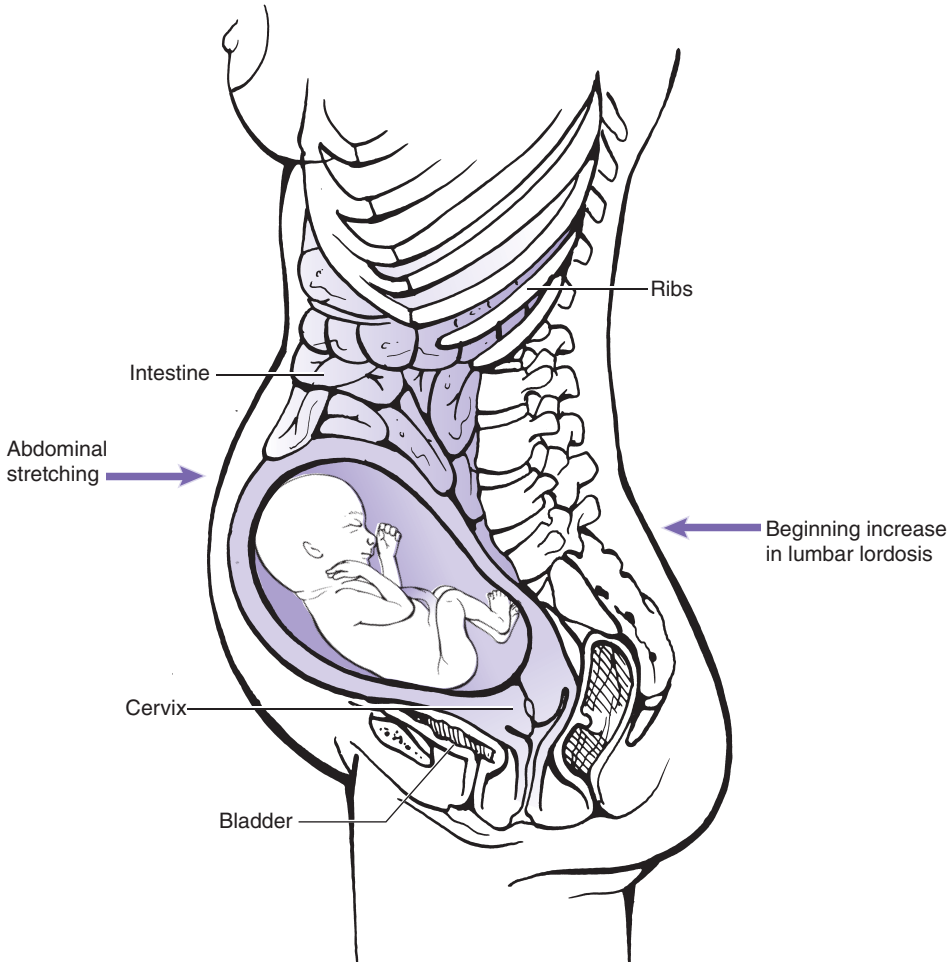

FIGURE 2.2 **Second trimester, sixth month.**
The fetus may be in any position. Her movements are felt regularly by the mother. Signs of pregnancy are quite obvious now, with changing posture and a visibly protruding belly.

comfortable position. Her joints begin to feel "wobbly," as the hormone **relaxin** loosens the pelvic joints in preparation for birth. She may be having irregular "practice contractions," called **Braxton-Hicks contractions**, as the uterus prepares for labor. These are mild and irregular contractions or uterine tightenings, and do not cause changes to the cervix, but are thought to help the uterus and pelvis prepare for labor. This uterine tightening is not to be mistaken for **preterm labor contractions**, which are contractions that occur before 37 weeks, are generally more consistent than Braxton-Hicks, and can cause cervical changes or delivery of a baby before fetal development is fully completed.

CAUTION: Your client should always be directed to her prenatal care provider if she is having contractions that have not been positively identified as Braxton-Hicks.

Reading about all these symptoms at once may make pregnancy sound like a horrendous experience. Yet, many women do not experience any discomforts, and others find these symptoms are mild or perhaps only one of them is experienced. Rarely, for those who are happy about being pregnant, do these symptoms override the overall sense of enjoyment of the pregnant experience during this trimester, until the very end of pregnancy, when many women feel tired of carrying the extra weight and are ready for labor to begin. Offering comfortable positioning and relaxation massage during this time will help ease some complaints. Considering all the potential problems associated with pregnancy, we can appreciate why it was listed as the twelfth most stressful event in a woman's life on the Social Readjustment Rating Scale—one of the first life event stress-measuring scales. On the more contemporary "Peri Life Events Scale," the birth of a first child rates as the sixth most stressful life event while pregnancy ranks 32 out of

Table 2.2 Second Trimester of Fetal Development and Maternal Experience

Embryonic and Fetal Development	Possible Maternal Experience	Bodywork Considerations
Fourth Month of Pregnancy		
• Fetus is 6–9 inches long, 5–6 ounces. • Body is completely formed, muscles contract. • There is an active sucking reflex. • Fine hair exists all over body called lanugo. • Tooth buds grow. • Eyes are large, eyelids still closed. • Lungs and organs are still developing. • Amniotic fluid is swallowed, producing meconium (the first feces) in intestines. • Fetus moves, kicks, making its presence known.	• There may be increased excitement as feeling baby movements and belly showing more. • Breast size increases and breasts may leak colostrum. • There may be darkening of linea alba, nipples, face. • Increasing forgetfulness may occur. • Body and self-image changes. • Energy and libido may increase. • There may be a sense of well-being or possibly an increase in anxiety. • There is increased vaginal discharge. • Increase in dreams or nightmares may occur. • There may be nasal congestion, nosebleeds, headaches related to vascular changes. • There is often less pressure on bladder with baby higher in abdomen. • Anemia-induced fatigue may occur. • There is an increase in lumbar lordosis/backache. • Varicosities and hemorrhoids may appear. • Mild edema of ankles and wrists may occur. • Carpal tunnel syndrome may occur. • There is stress to upper spine and pectoralis due to growing belly and breasts. • Uterine round ligament spasms may occur. • Stretch marks may develop. • Leg cramps can be common at night.	• Practice varicose vein and thrombosis precautions. • Avoid contraindicated acupressure points. • Avoid strong scents that may stimulate nausea. • Begin sidelying positioning. Generally avoid supine and prone positioning. • Encourage postural awareness. • Teach abdominal, perineal, and back strengthening exercises. • Belly rubs in late second trimester help mother connect with baby.
Fifth Month of Pregnancy		
• Fetus is 8–12 inches long, weighing about 1 to 1.5 pounds. • Placenta and umbilical cord are fully functioning. • Fingerprints form. • Fetus startles when stimulated with loud sound.		
Sixth Month of Pregnancy		
• Fetus is fully formed, 14 inches long and 1.5–2.5 pounds. • Eyes are open and have rapid movements. • Fetus sucks thumb, makes frequent gross body movements, cries, and practices breathing movements in water. • Brain is still developing. • Lungs are very immature, but baby may live, with assistance, if born at this time.		

102 events. Still, plenty of women experience pregnancy as the most nourishing time of their lives and are reluctant to let go of that experience when labor begins.

Table 2.3 reviews embryonic development and maternal experiences in the third trimester.

Past the Due Date

Even though the baby may not be technically "overdue," the passing of the expected due date, which was determined early in the pregnancy and based on the last menstrual period, may leave a woman feeling nervous, frustrated, or impatient as the baby grows larger and more confined. For many, this may be a great time for extra brisk activities or deeply relaxing full-body labor-preparation massages. Despite people's attachments to the due date, few births actually occur on that day, and it is not unusual to go up to 2 weeks past the due date. You might remind your client that forces beyond our understanding are at work that can delay or speed a labor. When the time is optimum for the baby, labor will commence.

Table 2.4 reviews embryonic development and maternal experiences when past the due date.

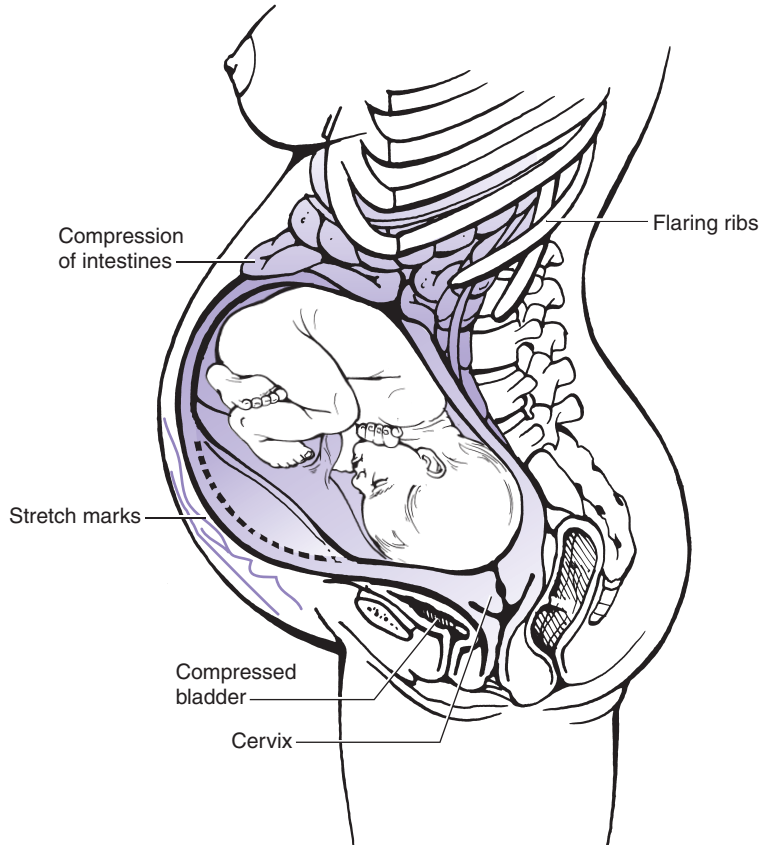

FIGURE 2.3 **Third trimester, ninth month.**
After lightening, the baby has dropped into the mother's pelvis, compressing her bladder but making maternal breathing easier. The baby will now be in vertex, or head-down, position 98% of the time.

HORMONAL CHANGES DURING PREGNANCY

We have looked at cellular, embryonic, and fetal development and maternal experiences of these changes. Now let us consider more specifically the effects of maternal hormonal changes and relevant bodywork concerns.

As soon as conception occurs, hormones begin to flood a woman's body. Progesterone, estrogen, relaxin, and prolactin are a few of the hormones that help prepare her body for nurturing new life. To supply the pregnant woman with extra hormones, some of the endocrine glands actually increase in size during the pregnancy, including the pancreas, thyroid gland, and the pituitary gland, which increases in size by 30% to 50%.[9,10]

Progesterone

"I hate being pregnant these days! I'm always constipated, I have hemorrhoids and a bladder infection, and my feet keep swelling." These complaints are not uncommon in the last months of pregnancy, and **progesterone** is the prime culprit behind them. The massage therapist will likely encounter some of the effects of progesterone during pregnancy massage.

The corpus luteum produces progesterone for the first 2 to 3 months of embryonic development. When the placenta is formed and fully functioning, it takes over production of this hormone. Progesterone helps prepare the uterus for the implanting of the egg by thickening the uterine lining and increasing the lining's secretory and nourishing qualities. Progesterone also aids breast development and relaxes the smooth muscle of the body, including the uterus, thereby preventing preterm labor contractions. This relaxation of the smooth muscle is vital for preventing uterine contractility, but progesterone affects more than the uterus—the primary organs such as the intestines, vasculature, and bladder are all composed of smooth muscle and are therefore all affected by progesterone.

What happens when these smooth muscles relax? The common complaints of pregnancy develop. Constipation occurs as a result of decreased

Table 2.3 Third Trimester of Fetal Development and Maternal Experience

Embryonic and Fetal Development	Possible Maternal Experience	Bodywork Considerations
Seventh Month of Pregnancy		
• Baby is 15 inches long, 2–3 pounds. • Vernix covers entire body. • Movements clearly visible through abdomen. • By 26 weeks, baby can recognize voices outside womb and respond with movement.	• There may be symphysis pubis separation; sacroiliac pain; sciatica. • Diastasis recti may develop. • Edema of extremities may develop. • There is often increased heartburn, constipation, hemorrhoids, varicose veins, indigestion. • There may be lower and upper backache, hip pain, pelvic ache, calf cramps, wobbly hips. • Uterine ligament pain may occur. • Carpal tunnel syndrome may occur. • There may be shortness of breath and sore ribs. • Baby typically drops in last weeks, easing shortness of breath, increasing urinary frequency. • Stretch marks may develop. • There may be increased dependence on others for help. • Baby movements are usually visible. • Breasts are sore and enlarged. • Braxton hicks "practice" contractions occur. • There may be insomnia or dreams about baby. • There may be bouts of general discomfort; sometimes frustration, irritability, impatience with process. • There is anticipation and excitement about pregnancy, birth process, and baby. • There is changing identity, especially if no longer working.	• Avoid contraindicated acupressure points until 38 weeks. • There should be no supine positioning for greater than 5 min. Use only if client is comfortable. • Do not use prone positioning. • Do not perform hip mobilizations with diastasis symphysis pubis. • Attend to hip pain, sciatica, low back pain. • Perform labor preparation massage. • Offer belly rubs in low-risk pregnancy. • Teach perineal massage methods. • Teach partner massage techniques for labor. • Use varicose vein and thrombosis precautions. • Provide postural awareness education. • Teach visualizations and breathing to help relax with current discomforts. • Massage all stressed muscle groups. • Perform frequent passive pelvic tilts, lengthening low back.
Eighth Month of Pregnancy		
• Baby is about 16–18 inches long, 4–5 pounds. • Body fat and lung surfactant are still developing. • By 7th or 8th month, baby is head-down in vertex position. • One quart of amniotic fluid surrounds baby, made up of albumin, urea, fat, fructose, lecithin, bilirubin, white blood cells.		
Ninth month of pregnancy		
• Baby is about 20 inches long and 6–7.5 pounds, and gaining 1/2 pound/week. • Rapid brain cell development occurs. • Lanugo starts to disappear. • Inner ear forms. • Lungs mature. • Ideally, baby has dropped further into pelvis. • By 9 months, heart circulates 300 gallons of blood daily.		

gastrointestinal motility and increased water reabsorption in the intestines. Swelling in the ankles and hands also increases due to the new permeability of the vascular system. Progesterone increases heartburn due to prolonged gastric emptying; bladder infections due to urinary stasis; and increased body temperature, perspiration, and varicose veins due to vasodilatation and distention of the veins.

The progesterone level rises steadily from the tenth day of conception until 36 weeks of pregnancy, at which point it begins to decline, bringing on the Braxton-Hicks contractions.

Following is an overview of progesterone effects:

- Carpal tunnel syndrome (due to increased edema involving peripheral nerves)
- Constipation
- Dyspnea (shortness of breath)
- Heartburn
- Epistaxis (nose bleeds)
- Edema from vasodilatation
- Nasal congestion
- Orthostatic hypotension
- Spider angioma, varicosities in legs or vagina, hemorrhoids (hereditary and due to increased pelvic pressure)
- Urinary tract infections

Following is an overview of bodywork considerations for progesterone effects:

- Use semi-reclining positioning for women with heartburn.
- Avoid prone position that increases nasal congestion.
- Ask client to sit up slowly and wait before standing after massage to avoid dizziness from orthostatic hypotension.

Table 2.4 Past the Due Date (After 40 Weeks)

Fetal Experiences	Possible Maternal Experience	Bodywork Considerations
• Baby activities continue but less room to move. • Lanugo—downy fetal body hair—decreases, and vernix—the creamy skin protector—is absorbed • Lines of hands and feet become more defined. • Placenta gradually deteriorates, losing best ability to nourish baby. • Amniotic fluid production may begin to diminish.	• Impatience increases for labor to begin. • Tension may develop impeding natural commencement of labor. • Friends and family may call often, questioning whether she is in labor, increasing pressure and anxiety. • Irritability increases. • Crying episodes and anxiety may occur. • All discomforts are magnified. • Insomnia may occur.	• Perform massage to hips, thighs, low back. • Perform full body massage for relaxation. • Perform acupressure and labor stimulating massage. • Teach visualizations and breathing for releasing tension, other fears, and obstacles to birth. • Offer belly rubs in low-risk pregnancy. • Provide nurturing supportive space for possible emotional release. • Teach resistance techniques with hip adductors to help relaxation of pelvic area. • Encourage long walks, hikes, and distracting activities. • Encourage meditation, observation of breath and thoughts, reminding mother that baby knows best when it's time to be born.

- Massage intercostals and diaphragm area to help relieve shortness of breath.
- Practice varicose vein and thrombosis precautions.
- Beware of low backache that could be related to urinary tract infection.
- Keep office cooler than normal if client is warm due to progesterone-related vasodilation.

Estrogen

"My breasts are sore and I am still throwing up several times a day." These are common estrogen symptoms in the first trimester. **Estrogen** is a hormone normally produced by the ovaries and adrenal cortex, but during early pregnancy its principal source is the corpus luteum, until the placenta takes over production. Along with the hormone relaxin, estrogen helps soften connective tissue, contributing to musculoskeletal aches and pains.

Estrogen helps build tissues in smooth muscles, preparing the endometrium for taking care of the fertilized egg, embryo, and fetus. Estrogen also affects the mammary glands by increasing breast size, vascularity, and the number and size of milk-producing ducts and lobes.

Estrogen and adrenocorticoid hormones contribute to the arrival of "spider veins" or **spider angioma**—tiny thin blood vessels near the surface of the skin. They also contribute to the darkening of the skin on the nipple areola and the **linea alba**—a fibrous band down the center of the abdomen where the abdominal muscles join. As the linea alba line darkens during pregnancy, it becomes known as the **linea negra** (black line). The skin of the face may also darken with a so-called "pregnancy mask," known as **chloasma**. These changes will disappear after pregnancy.

Estrogen contributes to extra blood flow to the nasal mucosa, causing swelling, stuffiness, and sometimes bloody noses. Estrogen decreases production of hydrochloric acid and pepsin, thereby contributing to heartburn already increased by the effects of progesterone. In late pregnancy as progesterone decreases, the relative increase in estrogen allows uterine contractions to begin.

Following is an overview of estrogen effects:

- Enlargement of uterus and breasts and lactation preparation
- Breast tenderness
- Palmar erythema (red palms)
- Softening of connective tissue; backache, flank pain, tenderness of symphysis pubis
- Decreased secretion of hydrochloric acid and pepsin causing nausea, indigestion, and heartburn
- Chloasma, linea negra, freckles, darkening of nipples
- Change in substernal angle from 68 to 103 degrees, expansion of intercostal spaces
- Increased blood, lymph, and nerve supply to uterus

Following is an overview of bodywork considerations for estrogen effects:

- Beware of possible nausea with horizontal positioning, passive range of motion, incense or scented oils.
- Beware of breast tenderness if positioning prone in first trimester.
- Exercise caution with hip mobilizations and potential for symphysis pubis pain.
- Massage in intercostal spaces to address spreading angle of ribs.

Relaxin

"I feel like I'm walking on water—-I'm so loose in my hips." The effects of the hormone relaxin are felt by every pregnant woman. Relaxin is produced by the ovaries beginning in the tenth week of pregnancy and increases 10-fold, peaking in the last weeks of pregnancy between 38 to 42 weeks of gestation. Its primary effect is to relax and loosen connective tissues and ligaments, including the cervix and the pelvic joints, to provide just the extra mobility needed for the baby's head to pass through the birth canal. Relaxation of the symphysis pubis and sacroiliac joints is considerable. The symphysis pubis may expand from its normal 0.5 mm to as much as 12 mm or more. A separation of 10 mm or greater is called a **diastasis symphysis pubis** and can cause severe pain in the pubic area. Relaxin can also cause hypermobility of the sacroiliac joint, causing anterior or posterior rotation of one or both ileum and sometimes causing sharp pain in the sacroiliac area and low back.

Just as relaxin *relaxes* the skeletal body, a woman's emotional-psychic body relaxes as well. Boundaries become less distinct between her and the world at large. She may feel like she is melding into a unity with an energy much greater than herself as she harbors within her body the processes of fetal development, which have a life of their own; the growing baby, who has her or his own personality; and the psychological and emotional shifts that occur through dreams, hormonal surges, and cellular changes. The therapist can help support the client during a relaxation massage through this sometimes overwhelming loss of distinct personal boundaries by encouraging slow, deep respirations and positive visualizations that the client has indicated help her feel supported and safe.

Following is an overview of relaxin effects:

- Increased joint mobility and instability of sacroiliac joint, sacral area, and hips
- Breast tenderness
- Increased skin elasticity
- Relaxation of the articulation between sacrum and coccyx allowing coccyx to move posteriorly at birth to increase pelvic outlet

Following is an overview of bodywork considerations for relaxin effects:

- Maintain awareness of hypermobility of joints if doing mobilizations and passive range of motion.
- Avoid passive movements or resistance on legs/hips with separated symphysis pubis.
- Be aware of possible anterior or posterior ileum rotations causing sacroiliac pain or sciatica.
- Be aware of client's relaxing boundaries psychically, physically, psychologically, emotionally; reinforce positive visualizations about self, pregnancy, birth.

Other Important Hormones in Pregnancy

You may hear mention of the following hormones as your pregnant clients share about their experiences. **Oxytocin** is released from the hypothalamus. It causes the uterus to rhythmically contract during labor and stimulates the milk "let down" or **milk ejection reflex**—the stimulation of contractions in the milk glands that squeeze breast milk toward the nipple during lactation. Its presence is also thought to support mothering behaviors and the feelings of "maternal love."[11]

Prolactin is a hormone released from the anterior pituitary gland. It stimulates milk production, reduces anxiety, and has such strong analgesic effects that it may be considered for use with opioid dependency treatment. [12,13]

ORGAN SYSTEM ADAPTATIONS DURING PREGNANCY

The changes in pregnancy are not limited to musculoskeletal and hormonal ones. All organ systems undergo changes, some of which can be quite dramatic. This section reviews specific changes in several systems along with relevant bodywork considerations.

Respiratory System

The massage therapist may notice some of the effects of pregnancy on the client's respiratory system by observing the rate and depth of her breathing or by the increase in trigger points as the intercostal spaces

widen. It is normal for pregnant women to breathe faster than when not pregnant, and after the twenty-fourth week of gestation, they also begin to breathe in the chest more than in the abdomen. As the baby presses up against a mother's diaphragm, the ribcage will actually expand laterally by 50%. Intercostal spaces become wider, ribcage circumference increases to 2 to 3 inches, and the substernal angle widens to 103 degrees, all helping to increase her respiratory ability. As these changes occur, the intercostals may develop trigger points and tight areas in response to the flaring ribs and shift in breathing.

The entire respiratory tract is affected by the extra blood volume of pregnancy. The trachea, larynx, Eustachian tubes, and nasal passages all become congested with blood, and a woman's tone of voice may actually change because of this. See the Massage Therapist Tip regarding bodywork considerations related to maternal respiratory changes.

Gastrointestinal System

Many women will experience an increase in or new development of constipation from uterine pressure against the intestines and from progesterone slowing intestinal motility. Heartburn and burping with reflux will increase due to the delay in gastric emptying time and relaxation of the sphincter at the junction of the esophagus and stomach. Nausea and vomiting increase, probably due to hormonal changes, but also due to the slowed motility, increased reflux, and general laxity of the GI system. See the Massage Therapist Tip for bodywork considerations related to heartburn.

Cardiovascular System

A pregnant woman is carrying, processing for, and feeding two people. Her heart must work harder and needs more blood. Total blood volume increases by 30% to 40% during pregnancy (nearly 2 to 3 *pounds* of extra blood!), and by mid-way through her pregnancy, her heart will be beating more rapidly and pumping nearly twice as much blood with each beat as when not pregnant. (By 6 weeks postpartum, the blood volume will have returned to normal.) This increased volume causes heart murmurs and new heart sounds in many pregnant women. According to one source, 93% of women develop nonpathological heart murmurs during their pregnancy.[14]

The heart literally grows larger in pregnancy—the heart weight increases and the cardiac chambers increase in size to compensate for the increase in volume. As the heart enlarges, it moves up in the chest to make room for the baby, perhaps even lying horizontally or rotated to the left. With extra blood and a whole new circulation flowing between the mother and the baby, your client may feel warmer than usual and sweat more. Fluctuations in blood pressure are normal. It is not uncommon for pregnant women to experience **orthostatic hypotension**—a sudden drop in blood pressure due to reduced peripheral resistance and pooling of blood. This may occur after lying down for a period of time and then standing.

CAUTION: Be aware that your client may feel sudden dizziness, nausea, blurred vision, headache, or fatigue when standing after a massage due to orthostatic hypotension. Instruct her to move slowly, and to sit for a moment before standing, allowing her body to adapt between position changes.

Your client also will have nearly twice as much **interstitial fluid** as a nonpregnant woman has, and some of this fluid may end up as edema in her ankles and hands. This interstitial fluid is made up of water and electrolytes and is similar to plasma, though with much fewer proteins.

The extra blood that the body produces during pregnancy is needed at birth to replace the blood and fluids that are lost during delivery, so that the mother does not go into hypovolemic shock. To help prevent serious blood loss, there is also an increase in the **fibrolytic activity** of the blood—the blood clots faster than normal. This is helpful in cases of hemorrhage, but it also means that *a woman has 5 to 6 times greater risk for developing dangerous blood clots during pregnancy.*[15-17] This risk is further increased because of decreased circulation in the iliac, femoral, and saphenous veins of the legs caused by increased pelvic pressure and relaxation of the vascular system (Figure 2.4). If a woman has a high-risk pregnancy and is limited to bedrest, the risk for clots rises even further.

Bodywork Considerations Related to the Cardiovascular System

Due to the increased blood volume and adaptations of the cardiovascular system during pregnancy, there are some special points to consider when performing bodywork:

- Always use care when your client sits up after a massage. Encourage her to sit for several moments before standing.
- Keep your massage office cooler than usual, or keep a fan blowing if your client desires, to compensate for her increased warmth.

MASSAGE THERAPIST TIP — Maternal Respiratory Changes

Shortness of breath or difficulty filling lungs to capacity are common complaints during late pregnancy due to the baby pressing up into the mother's diaphragm and ribs.

CAUTION: This is not related to more serious shortness of breath that may be manifested as wheezing, sweating, faintness, and increasing anxiety. Difficulties breathing of this nature need to be referred to a medical health care provider immediately.

Below are some ways to address respiratory complaints when performing bodywork:

- A fan blowing fresh air across client's face can provide comfort for stuffy sinuses.
- After the first trimester, avoid prone positioning, which increases nasal congestion and compresses ribs and abdomen.
- Massage the superior chest area, including the scalenes, pectoralis attachments, and intercostals superior to the breasts to assist respiration and reduce trigger points.
- Use stretches and strokes that lengthen, open, and expand the chest, countering the compressing forces of weight and gravity on the chest and increasing respiratory capacity.

- Follow the precautions for varicose veins and deep vein thrombosis indicated in Chapter 4.
- Be aware that your client may be encouraged to elevate her legs and rest several times a day on her left side to help improve circulation and reduce edema, circulatory-related leg cramps, and varicosities. (The left side is believed to be more efficient for blood circulation during pregnancy due to the slightly right-sided location of the inferior vena cava.)

CAUTION: With the excessive circulatory load in pregnancy, women who have a history of cardiac problems will be at increased risk in the third trimester when the cardiac load is greatest. Do a particularly thorough health intake interview for such women, and avoid performing excessively stimulating circulatory massage, especially in the third trimester.

MASSAGE THERAPIST TIP — Heartburn

It is not uncommon for pregnant women to complain of heartburn during their pregnancy. This can become uncomfortable for women during a massage. Below are several considerations when addressing gastrointestinal complaints during bodywork:

- A client with heartburn may be more comfortable in the semi-reclining position, with her head above her stomach.
- Encourage your clients to avoid heavy meals and foods that she knows cause her heartburn before massage her sessions.
- Be aware that if your client has found relief from her heartburn by using prescribed antacids and she begins to experience heartburn and reflux during your massage, she may ask to stop the session for a moment to take her antacid. If this is the case, she may find that she is more comfortable during the rest of the massage. It is not in the massage therapist's scope of practice, however, to suggest that a client use antacids.

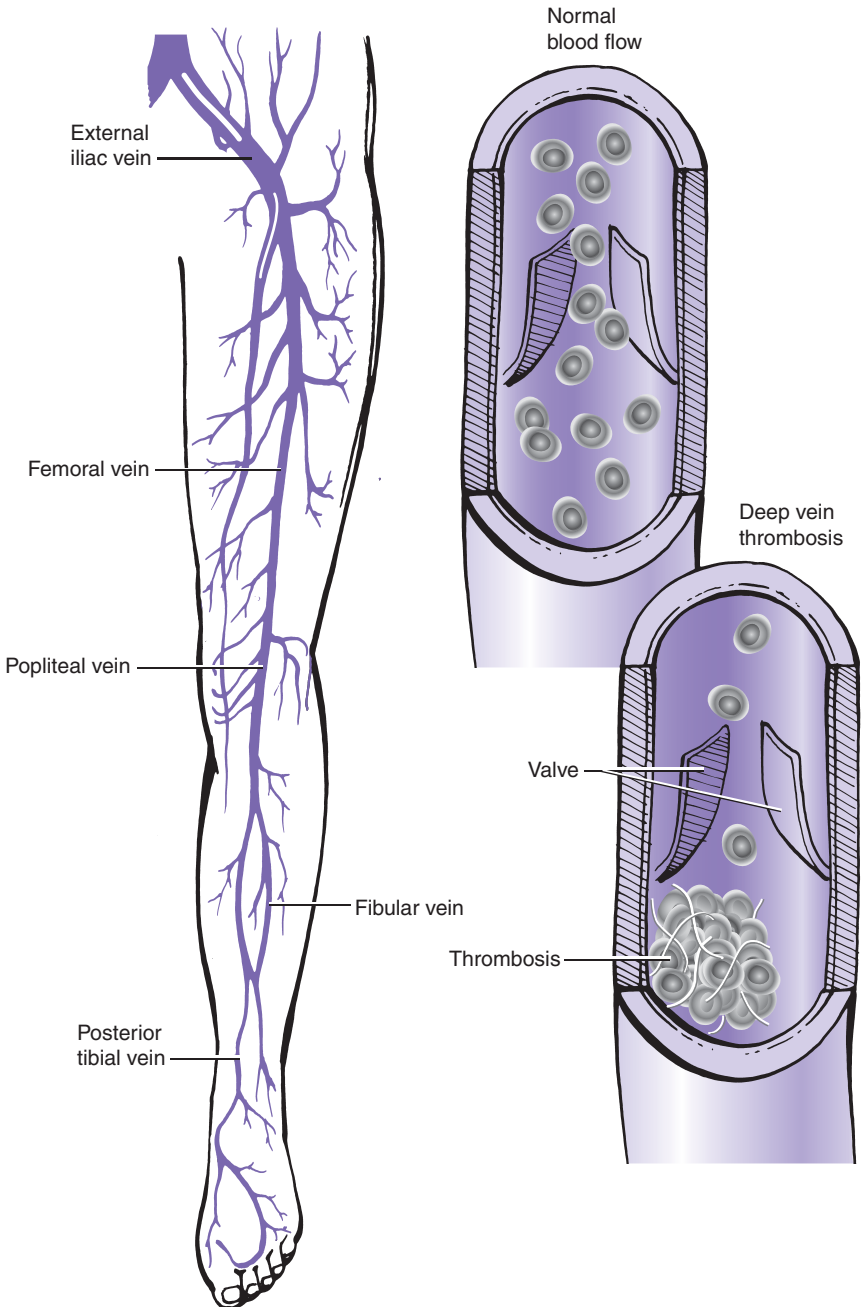

FIGURE 2.4 **Most common vasculature for occurrence of deep vein thrombosis.**
Great saphenous, femoral, and iliac veins of legs and groin. Clots are 5 to 6 times more likely to develop during pregnancy due to increased blood fibrinogen and decreased lower extremity circulation.

Excretory System: Kidneys, Bladder, and Skin

While the kidneys clear waste more efficiently during pregnancy, the risk of developing a urinary tract infection (UTI) increases significantly. Women with bladder infections have more risk for preterm contractions and kidney infections. Two physiological causes of UTIs are as follows:

1. Progesterone's effect of relaxing the entire urinary tract, including the ureters, causes urinary stasis in the bladder. As the bladder is emptied less completely or effectively, the risk for infection increases.

2. The angle at which the ureter enters the bladder shifts to perpendicular due to uterine pressure, resulting in a reflux of urine out of the bladder and back into the ureters.

With blood volume nearly doubled, there is an increase in blood flow through the kidneys. However, the blood flow and the rate of glomerular filtration (the kidneys' processing of fluids) actually *decrease* when a woman is standing or sitting since uterine pressure on the groin impedes the return flow of blood from the legs to the heart. When your client lies on her side, both kidney and cardiac functions and rates are increased and she produces more urine. This leads to the common frustrated comment, "It seems like I have to get up and use the bathroom every hour at night!" It also means that your client may need to use the restroom in the middle of a massage session.

CAUTION: Sharp, unrelenting back pain or a dull aching in the low back could indicate a bladder or kidney infection. Do not assume that all back pain is necessarily musculoskeletal.

Bodywork Considerations Related to the Excretory System

The therapist must remember that the client's excretory system undergoes certain stresses during pregnancy. Remember the following tips in relation to this system when doing pregnancy bodywork:

- Offer your client water after each session. Massage will increase cellular waste release into the bloodstream. To help maintain blood volume and maximize waste processing, it is recommended that pregnant woman drink at least 4 quarts of water per day.
- Have the client empty her bladder before massage, and ask if she needs to use the restroom before changing position during a massage.

CHAPTER SUMMARY

Each trimester of pregnancy presents significant physical and emotional changes and challenges that your pregnant client must adapt to. Some of these physiological changes are tremendous, including enlargement of endocrine glands and cardiac chambers, increase in blood volume and shift in position of the heart, and loosening of ligaments and expansion of the pelvic joints. Accompanying these changes are occasional discomforts, such as nasal congestion and orthostatic hypotension due to hormonal and cardiovascular adjustments, or feeling warmer than usual or having more urinary frequency. To accommodate some of these possible conditions, the massage therapist can offer simple modifications during a massage session to increase the pregnant client's comfort. A few practical and common ways to support your client are: having a fan available in a massage room if the client complains of stuffy sinuses or increased warmth, shifting her position to semi-reclining if she complains of heartburn, or offering the use of the restroom before shifting positions. In the following chapters, you will learn specific techniques of bodywork as well as contraindications during pregnancy so that your massage will be optimally oriented to the special needs of this population.

CHAPTER REVIEW QUESTIONS

1. Why might a mother experience an increase in urinary frequency and a decrease in shortness of breath sometime after 36 weeks' gestation?
2. Explain why some women may develop an increase in trigger points in their ribs during pregnancy.
3. What type of positioning might be most appropriate for a woman experiencing heartburn during pregnancy?
4. Describe four changes in the cardiovascular system during pregnancy and the risks and complaints that may develop because of these changes.
5. Name three office accommodations you might need to make specifically for your pregnant clients.
6. Explain why is it important to have your client sit for a moment on the edge of the table, before standing up to walk after a massage.
7. Compare the scientific view of conception and fetal development with some of the traditional views of conception and explore possible similarities in the beliefs. Consider whether a woman's spiritual view of her pregnancy would impact your work with her in how you approach her body and pregnant belly, or in the direction of your conversation.
8. What kinds of physical complaints might a mother have during the third trimester of pregnancy?
9. What effects caused by the hormone relaxin would be of concern to the bodyworker?

Case Study 2.1:
MAKING THE CLIENT COMFORTABLE

As was often necessary with her pregnant clients, Pearl made several accommodations during a massage to ensure that Tobin, who was 36 weeks pregnant, was comfortable and safe.

Tobin said that one of the things she was enjoying about being pregnant was that she was much warmer than normal for her. In bed at night she did not have cold feet anymore and did not need as many covers as usual. She said she often felt warm and was currently wearing a T-shirt, while Pearl needed a sweater when not doing massage. Tobin mentioned that the other new thing she was noticing was the development of a brown discoloration on her face which the doctor had said was not unusual and would go away. Pearl knew this was called chloasma and was a result of the extra estrogen in Tobin's system.

Tobin requested to have her feet uncovered during the massage and appreciated the fact that Pearl had aired out the room and decreased the temperature so that it was not stuffy. Tobin said that she at times felt congested nasally, and she liked to have air moving about her. The therapist offered to turn on the fan so that the air could blow lightly across the client's face, which she agreed to.

Pearl massaged Tobin in the left-sidelying position, and before repositioning on the right, asked if Tobin needed to use the restroom. Tobin said she needed to urinate frequently, and did need to do so now, as the baby was pushing down on her bladder often. Before Pearl could slow Tobin down, she had pushed herself up and gotten off the table. Suddenly Tobin leaned back against the table, saying she felt lightheaded. Pearl stood by her until she felt stable, a moment later. Pearl explained that it was not uncommon to experience orthostatic hypotension during pregnancy—a sudden drop in blood pressure when changing positions from lying or sitting to standing, and that she just needed to move more slowly when shifting from one position to another to give her body a chance to adapt. Tobin said that this happened to her now and then at home as well when she jumped out of bed or stood up from the couch too quickly.

Before getting off the table at the end of the massage, Pearl reminded Tobin to push herself up to a sitting position, and then to sit for a moment before standing up. She had no further episodes of lightheadedness. If she had continued to feel lightheaded, rather than being a momentary passing event, Pearl would have had Tobin lie down again on her side to improve blood flow to the head and avoid a fall, and then would have helped her to call her prenatal care provider if it seemed Tobin's symptoms were not going away.

10. Name three comfort measures a massage therapist might take for a client experiencing mild shortness of breath due to the pressure of the baby against her diaphragm.

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CHAPTER 3

POSTURAL AND MUSCULAR ADAPTATIONS RELATED TO PREGNANCY

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Describe the effects of weight gain, hormones, self-esteem, and pre-pregnancy muscle tone on posture.
- Describe postural and muscular stresses and adaptations during pregnancy and their relation to common complaints during pregnancy.
- How to assess posture and help a woman readjust her posture during pregnancy to decrease some of her strains and discomforts.
- Understand the need for teaching clients or partners tools for self-care as a way to address certain pregnancy discomforts.
- Describe symptoms of strained uterine ligaments and their similarity to other muscular complaints.
- Explain under what conditions a separation of the rectus muscle may occur during pregnancy, and describe the symptoms, assessment, and prevention or correction of a separation.

In this chapter, we will examine the effects of weight gain, hormones, self-esteem, and pre-pregnancy muscle tone on posture and the changes that develop during pregnancy relative to these effects. We will look at how postural adaptations and muscular stresses can cause back and neck pain, psoas and uterine ligament spasms, headaches, and leg cramps. Next, we explore ways to improve a woman's experience of pregnancy with postural assessment and adjustment, as well as with assessment of the rectus abdominus. You will learn about areas of the body that are especially stressed as well as teaching tools to share with your clients that can address muscular areas that need strengthening. By combining this knowledge with skilled bodywork, as discussed later in the book, along with client education, you will be able to effectively address specific pregnancy discomforts.

POSTURAL ASSESSMENTS AND CORRECTIONS DURING PREGNANCY

Within the 9-month gestational period, a woman normally gains between 20 to 35 pounds of extra weight. This weight is distributed among the placenta, baby, uterus, additional breast tissue, and extra fluids and blood (Box 3.1). While a mother may flourish with this extra blood flow, increased oxygen intake, hormonal boosts, and the energizing enjoyment of a secret world developing between herself and her growing child, her musculoskeletal structures are making adjustments to accommodate the extra load. As the muscles adjust, a woman's posture must shift as well, bringing with it new or unusual aches and pains.

These adjustments become more dramatic by the latter part of pregnancy, when a woman is gaining nearly 1 pound per week, most of it on the anterior side of her body. The muscles most affected by this

BOX 3.1 | Weight Gain in Pregnancy

In a normal 9-month pregnancy, the average weight gain of 20 to 35 pounds is made up of the following:

- 4 to 7 pounds of fat and muscle
- 2 to 5 pounds of cellular fluids
- 2 to 4 pounds of blood and plasma
- 2 to 4 pounds extra breast weight
- 6 to 9 pounds of baby
- 2 pounds of uterus
- 1.5 to 2 pounds of amniotic fluid
- 2 pounds of placenta

gain include those that support the weight of the abdomen anteriorly, posteriorly, laterally, and from below. These muscles include the abdominals, iliopsoas, paraspinals, spinal erectors, adductors, lateral hip rotators, and the pelvic floor group. The muscles supporting the increasing weight and size of the growing, and soon-to-be lactating breasts, are also affected, including the rhomboids, pectoralis, subscapularis, scalenes, and levator scapula.

In response to the extra weight and anterior expansion of the belly, a woman's posture must change. As the abdomen stretches, the spine naturally compensates by developing more curvature in the lumbar area. This can cause low back pain due to compression of the lumbar nerve roots and strain to the deep lumbar and paraspinal muscles. As the abdominals stretch, the connective tissues of the thorax, shoulders, and throat area are also affected, pulled caudally with gravity, and causing strain to the spine as it attempts to support an erect posture. Excessive lumbar lordosis and consequent low back pain increase drastically as each muscular area supporting the pelvis responds to the rapid structural changes. As the pelvis tilts anteriorly, a typical stressful pregnancy posture might develop to compensate.

If a woman has weak musculature and pays little attention to her posture, she may develop a variety of discomforts or dysfunctions, including low back, shoulder, neck, and upper back pain, brachial plexus syndrome, leg cramps, diastasis recti, sacroiliac joint dysfunction, headaches, and shortness of breath. The client can often avoid these conditions by increasing postural awareness and correcting her posture as needed, along with receiving therapeutic massage and taking part in regular exercise to help diminish stresses as they occur. Box 3.2 outlines muscular influences on lumbar lordosis.

Contributing Factors to Poor Posture

The following factors have the strongest effects on posture during pregnancy.

Gravity

Gravity and the continual growth of the uterus and baby cause the forward and downward pull of the growing uterus, increasing lumbar lordosis and stressing the abdominals. Improved self-awareness about posture will help to avert the constant influences of gravity.

Hormones

Posture is also influenced by the effects of relaxin on connective tissue and ligamentous structures (see

BOX 3.2 | Muscular Relationships to Lumbar Lordosis

- A shortened psoas pulls on the anterior lumbar spine.
- The quadratus lumborum (QL) and erector spinae complex pull the sacrum and iliac crests up toward the thoracic spine.
- Shortening of the lumbar intervertebral muscles, such as the multifidi, decreases the spaces between the vertebrae, pulling them tighter and increasing lordosis.
- Rectus and transverse abdominus, in a constant stretch from the growing abdomen, become weaker, unable to fulfill their role of pulling the pelvis posteriorly and supporting the abdominal contents and back.
- The gluteal muscles help stabilize the pelvis and extend and medially rotate the hip. If these are weak, lumbar lordosis and lateral hip rotation increases.
- The hip flexors iliacus, tensor fasciae latae, sartorius, rectus femoris, and quadriceps—shorten as the pelvis rolls forward toward them.
- The hamstrings are in constant stretch, weakening and decreasing their ability to stabilize the pelvis posteriorly at the ischial tuberosity.

Chapter 2). While ligaments are critical for helping humans to stand comfortably erect, during pregnancy, women cannot depend on their newly lax ligaments to adequately support them. Muscles take on a more prominent role in stabilizing joints and, unlike ligaments, become fatigued, possibly leading to strains and spasms. Elastic or cloth **abdominal support binders** that wrap around the belly and support its weight during the later stages of pregnancy may be effective in mediating some of these hormonal effects.[1] Figure 3.1 shows one example of an abdominal support available for pregnant women. See Appendix B, Resources for the Practitioner, for sources of maternity abdominal supports.

Muscle Tone

Poor muscle tone greatly affects a woman's ability to hold herself erect during pregnancy. Imagine trying to maintain your normal daily activities while carrying 28 pounds of solid weight on your belly with a thin, stretchy fabric for support. The cloth would stretch in front, the weight would bear down, and the strain in your back would increase as your muscles attempted to hold the weight closer to the center of your body. As a massage therapist, you might encourage your client to strengthen the muscle groups that help to support this weight. These especially include the perineals, abdominals, psoas, hip extensors (gluteals), QL, lateral shoulder rotators (teres minor and infraspinatous), rhomboids, and spine extensors (erector spinae).

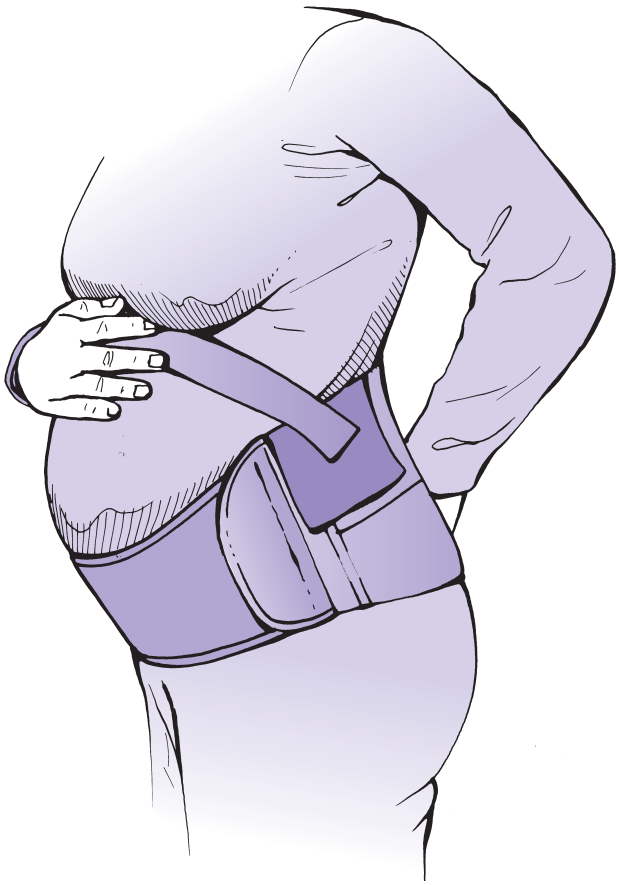

FIGURE 3.1 **Maternity abdominal support.**
These are often recommended for women with pendulous abdomens, or with complaints of sacroiliac, hip, and low back pain. There are numerous styles and sources for such supports.

Muscle Tension

Pain-producing posture can develop when weak primary muscles cannot support the structural changes of pregnancy; when this occurs, secondary muscle groups become shortened and strained in their effort to compensate for the lack of support from others. Pelvic stabilizing muscles that may need strengthening include the gluteals, hamstrings, and perineal groups, transverse abdominus, perineals, and the hip adductors. The QL, psoas, and lateral hip rotators are notoriously tight and often are a source of discomfort in pregnancy. A woman may develop a kyphotic-type posture in the upper back as the medial or internal shoulder rotators tighten, pulled forward by the anterior weight of the breasts. Stretching and lengthening these tight muscles can help to improve postural balance.

Size and Position of the Baby

Some babies rest close to the mother's spine, whereas others lie forward, making the mother's belly pendulous, with all the weight extended out in front of her. If the baby is exceptionally big, or if she is carrying multiple babies, the mother's belly may become quite large, necessitating subtle or dramatic shifts in her posture to find balance.

Self-Esteem

Esteem can be a strong or minimal influence, but a woman with low self-esteem may carry her new weight less efficiently than a woman who feels healthy and empowered. Providing massage visits that foster positive self-esteem will help your client more easily incorporate suggestions for improved posture.

Assessing Posture

Look at the photographs in Figure 3.2, which depict healthy posture (A) and posture that will inevitably cause discomfort (B). It is not uncommon to see various elements of Posture B in pregnancy, most often

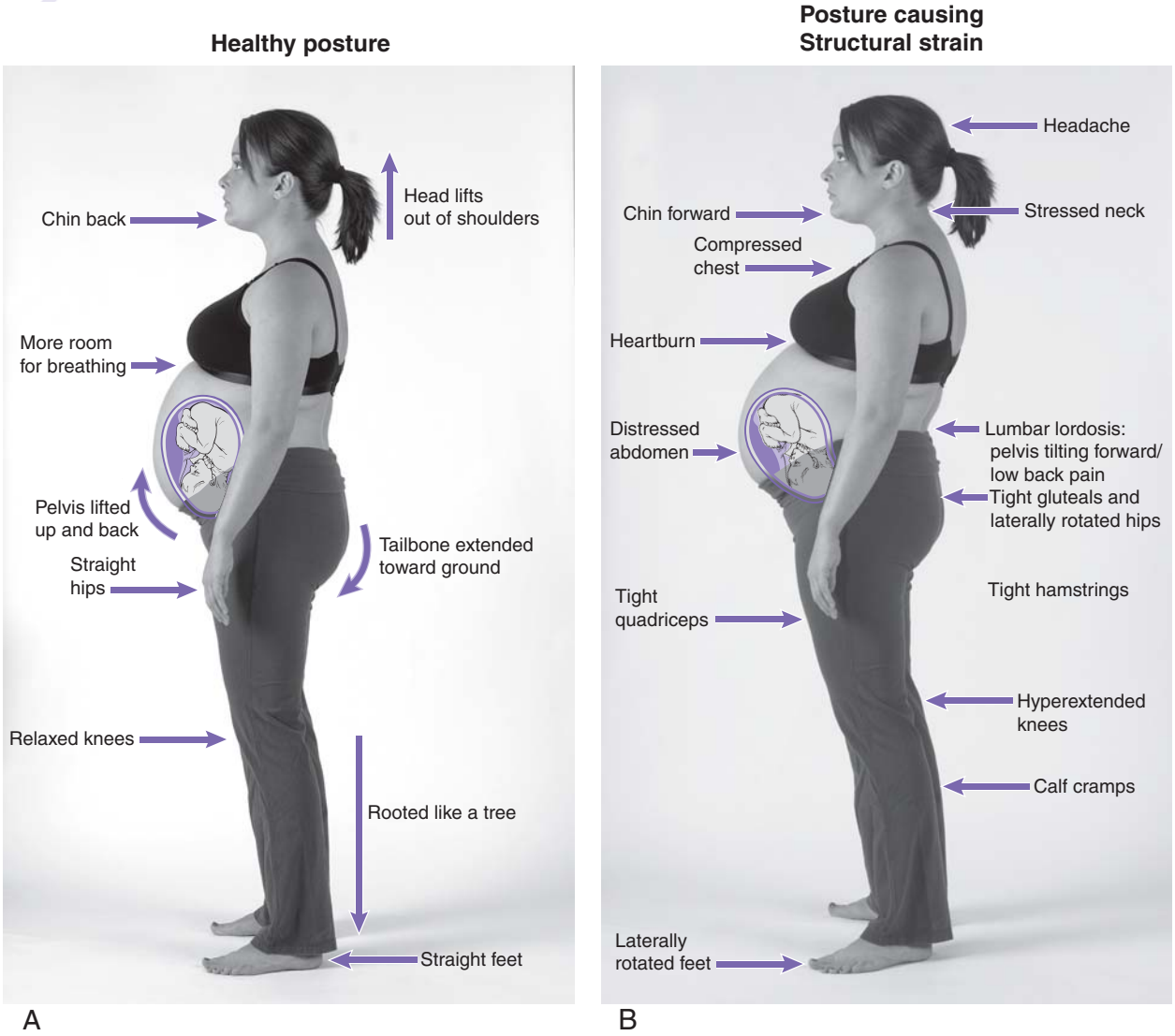

FIGURE 3.2 **Posture in pregnancy.**

(A) Healthy posture and (B) posture causing structural strain. Note in (B) slumped shoulders, jutting chin, hyper-extended knees, laterally rotated hips and feet, and compressed chest. Her symptoms may include the following: shortness of breath, heartburn, headache, neck strain, low back pain, and calf cramps.

due to the influence of gravity and lack of awareness regarding one's posture.

Helping your client to readjust her posture can improve her experience of pregnancy. It is easy to remind your client at each visit of the importance of standing tall. Here are some suggestions for assessing your client's stance:

1. Observe your client walking or standing: ask her to walk around the room, or just observe her as she walks into your office. Are her feet turned out, in the "pregnancy waddle"? Her lateral hip rotators are likely very tight. Are her shoulders hunched forward, pulled by the weight of the breasts? Is her back arched? Is she holding her belly up with her hands? Is her chin jutting forward in an effort to hold the head more erect? In what areas of the body do you think she will be feeling particularly stressed?
2. Try positioning yourself in her posture (or with the exaggerated Posture B in Figure 3.2) for 30 to 60 seconds, and note where you begin to feel discomfort. This will give you rapid evidence for where your client will be experiencing strain. Inevitably the hips, shoulders, neck, knees, and buttocks all begin to develop tension when the body is poorly positioned. In addition to the changes noted above, others occur. In response to extra lumbar lordosis, the knees hyperextend and lock,

compensating for the anterior pull of the belly and the posterior counter pull of the upper back. The psoas shortens and anteriorly tractions the lumbar spine. The tight erector spinae complex and QL pull up on the sacrum and iliac crests. The quadriceps and other hip flexors shorten, pulling down anteriorly on the pelvis. The minor stabilizing effect of the hamstrings and adductors decreases as they are stretched by the anterior pelvis. (Box 3.2).

Adjusting Posture

Keeping the pelvis in a neutral position and the low back lengthened requires conscious attention and exercise to maintain during pregnancy. Often, strengthening or stretching the muscles of support is necessary. The abdominal muscles must be strong enough to support the abdominal contents and keep the pelvis pulled up in front, and the psoas needs to be lengthened enough to prevent pulling down on the lumbar spine. Until this is achieved and can be maintained, help your client practice and develop the stance of solid, well-balanced posture in the following manner.

1. Show your client the illustration of optimal posture compared with that of stress-producing posture (Figure 3.2). Have her stand against a wall and flatten her low back against it. In this position, she can feel what it is like to have a straight back with her pelvis in posterior or neutral position.
2. Now have her stand away from the wall with her feet facing straight forward, hip-width apart. Ask her to relax her knees slightly out of a hyperextension and allow her sacrum and buttocks to drop slightly toward the ground. As she stands with feet apart and parallel, gently encourage her to envision her body naturally aligning itself.
3. Have her find a balance between her feet, by bringing her weight evenly between the heels and center of the sole of each foot.
4. Squeeze and hold the back of her heels, encouraging her to feel her feet grounded on the earth. Then run your hand from her sacrum up her spine to her head, suggesting that she imagine herself as a tree, rooted in the ground through her feet and reaching up to the sky through her spine, neck, and head. With this stroke up her body, ask her to inhale, as if she is bringing water up the tree trunk. Suggest that she loosen her knees, tuck her tailbone slightly to bring her pelvis more fully under her belly as support, lengthen her neck, drop her chin just slightly toward her chest, and relax her jaw, face, and shoulders. If she can imagine her pelvis as a basket holding her growing infant, she may be able to feel how to position herself, imagining that if the basket is tipped too far forward, the baby will fall out.
5. Place your thumb and forefingers under her occiput, holding the occipital ridge and steadying her head with your other hand on her forehead. Ask her to take in a deep breath and lengthen her spine as you lift slightly, applying a gentle traction under her head toward the sky (Figure 3.3). In yoga, this is

FIGURE 3.3 **Adjusting posture**
Lift from under the occiput, with another hand stabilizing on the forehead, encouraging the client to inhale deeply and allow her spine to lengthen.

similar to Mountain Pose, or Tadasana, which implies standing rooted and firm as a mountain and which brings clarity and fortitude to those who practice it.

6. Lift up from the occiput. Encourage her to lengthen her entire spine, rising from her hips and pelvis and again reminding her to lift toward the sky like a tree, or as if there were a cord extending from the earth up through her coccyx to the top of her head and pulling her upright. Encourage her shoulders to widen with a deep breath, allowing them to fall back as the chest expands and the breath flows into her chest and belly like an ocean tide. This practice will give her the sensate experience of length, strength, and ease. It will help her to realign herself, and to walk with this imagery impressed in her mind.
7. Continue holding and lifting under her occiput for several of her breaths as her spine extends from the sacrum to the neck. Allow her time to settle into this taller stance, noticing how that feels. She may be standing several inches taller than she was a moment ago. Of course, it is easy to be forgetful of one's posture and sink down again under the seductive lure of gravity! But with regular reminders of how to return to a tall and spacious posture, supported by massage that encourages opening and lengthening, a healthy posture can become a natural stance.

How the Partner Can Help

Postural Support

The client may ask the massage therapist to share postural awareness and adjustment methods with the client's partner, so that he or she can assist her in cultivating more habitual awareness of her posture. You may choose to invite the client's partner or support team to a session where you can teach them your way of observing, assessing, and correcting imbalanced stances. People who are often in proximity to the client will have frequent opportunities to observe how and when the client begins to alter her stance in ways that may cause her discomfort later. The support person benefits from this awareness as well, as it is not only during pregnancy that postural awareness is essential. Establishing a practice of assessing one's own posture at regular intervals each day can help him or her avoid personal injuries in times of stress, as well as in daily life.

Sitting Posture

Problems develop for pregnant women who work long hours sitting at a desk, as the flow of blood from

MASSAGE THERAPIST TIP

A Postural Checklist

The massage therapist can help adjust posture by using touch to bring the client's attention to her feet and up her spine, then tractioning cephalically under the occiput. The incorporation of visualizations and breath will assist this work. You might consider using some of the verbal cues included in this checklist to help the woman embody postural change.

- Leg alignment: Turn the feet straight forward, hip width apart, and relax the knees slightly.
- Grounding: Imagine tree roots extending and sinking into the earth from the tailbone and soles of the feet.
- Lengthening: Envision lengthening, like a tall tree, extending through the top and back of the head with branches reaching to the sky. Lengthen in the waist by allowing the upper torso to lift up from the hips.
- Breathing: Allow the breath to enter the chest like a rising ocean tide, deep and full, expanding the lower ribs and opening the sides and back of the thoracic cavity, then allowing the upper chest to fill with the final inflow of breath.
- Opening chest: Keep the shoulders broad, allowing them to fall naturally backward and relax downward.
- Lengthen the back of the neck: Lift the head up and away from the shoulders, feeling energy rise up from the earth-roots through the spine to the head, and envisioning the posture of one who feels strong, proud, or even regal.

the pelvis to the legs can be impeded. Positive posture can be practiced in the chair as well, remembering to lift the torso up out of the hips, and place the feet on a footrest so that the knees are at least at a 90-degree angle to the floor, and not dangling from the chair. This can help prevent the development of problems such as varicosities, pelvic congestion, hemorrhoids, edema, and leg cramps. Your client also may want to find a way to extend her legs frequently to relieve some of the congestion in her pelvic area.

MUSCULAR AREAS STRESSED BY PREGNANCY

As described earlier, specific muscle groups are particularly stressed during pregnancy. Minor muscular strains are not an uncommon experience during gestation. It may be useful to remind your client who is complaining of frequent muscular aches, that regular exercise can help decrease incidents of muscular discomfort, while having the additional benefits of cultivating a higher tolerance for pain during birth and generally improving birth outcomes.[2-5] Activities that are particularly beneficial during pregnancy for women beginning a new exercise regimen include low-impact or non–weight-bearing activities such as swimming, walking, biking, and yoga. Strengthening and stretching regularly also will help your client improve her posture.

Presented below are some of the most obvious muscles affected by pregnancy—including some at the core of postural support—and the consequences of the stress they endure: the uterus and its ligaments, perineals, abdominals, psoas, and QL. Most of these muscles can be addressed with massage during pregnancy, as well as with standard stretches and strengthening exercises.

Uterus

The uterine muscle undergoes perhaps the most dramatic adaptations to pregnancy, and its strained ligamentous support can sometimes cause a variety of discomforts. The uterus is a reproductive organ, but it is also the strongest muscle for its size in a woman's body. Before pregnancy, the uterus typically weighs about 2 ounces. By the end of a full-term pregnancy, the uterus alone, minus its contents, typically weighs about 2 pounds. It has increased its volume capacity by 1000 to 4000 times and is four to six times larger than it was before the pregnancy. The actual number of uterine muscle cells increases through the first trimester of pregnancy; then, the cells begin to enlarge and, eventually, in the second trimester, stretch until they are 10 times longer than their original size.

Uterine Ligaments

Six primary ligaments, along with the endopelvic fascia and other connective tissue, support and suspend the uterus. During pregnancy, any of these ligaments can spasm and refer pain to areas in the back, legs, or groin (Figure 3.4).

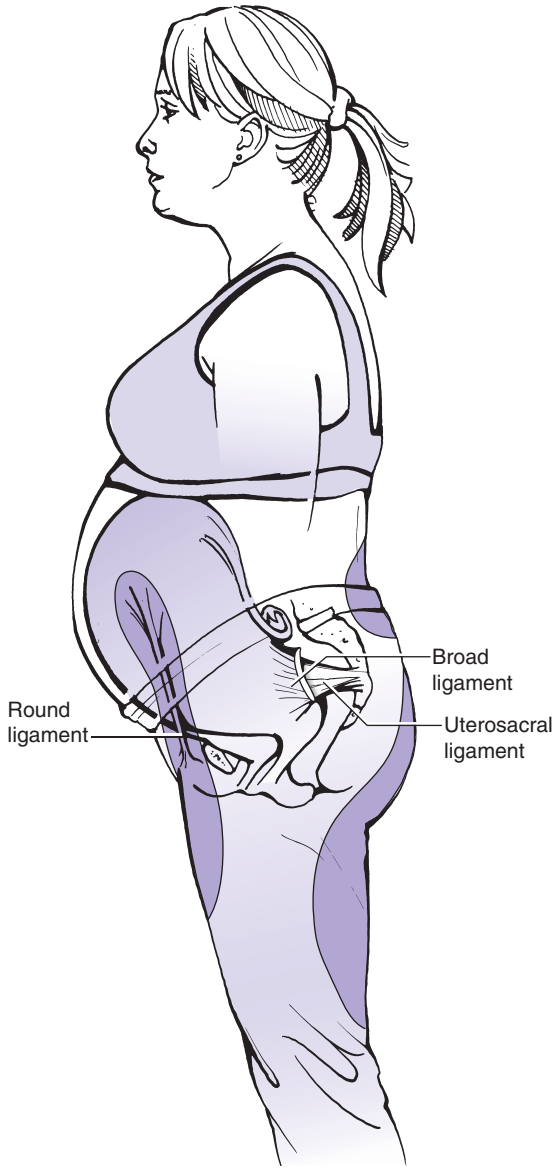

FIGURE 3.4 Uterine ligaments and areas of referred pain.

The round ligament spasm will pull in the pelvic area and can cause pain in the lower pelvis, anterior leg, or most commonly, sharp pain in the groin. The broad ligament attaches in the wide area of the pelvis and causes discomfort in the low back and buttocks when in spasm. The uterosacral ligament attaches from the posterior uterus to the sacrum and, when pulled, causes pain in the sacrum, sciatic-like pain down the back of the leg, sacroiliac joint pain, and diffuse low back pain.

The two **round ligaments** are mostly a continuation of the uterine smooth muscle and originate on the anterior surface of the uterus below the fallopian tubes. They traverse the broad ligament to the lateral abdominal wall. There they pass through the inguinal canal to attach to the inner aspect of the labia majora of the vagina.

The two **uterosacral ligaments** arise from the posterior uterus and cervix, just inferior to the uterocervical juncture. They attach to the periostium of the anterior mid-sacrum and near the sacroiliac joints.

The two **broad ligaments** spread out like a sheet from the lateral aspects of the uterus sinking into the fascia of the iliac fossa, the walls of the pelvic cavity, and into the connective tissue of the pelvic floor. Within the broad ligament are suspended the ovaries and round ligaments.

Bands of ligamentous tissue called the ligamentum transversalis colli, transverse cervical ligaments or **cardinal ligaments,** support the cervix and uterus. They arise from the lateral aspects of the cervix and traverse the broad ligament to insert into the anterior sacrum and lateral pelvic wall.

Referred Pain From Uterine Ligament Spasm

The uterine ligaments must stretch extensively during pregnancy, and it may be 6 months postdelivery before they, along with all the body's ligaments, return to their former nonpregnant state.[6,7] As they lengthen, these ligaments can spasm and cause discomfort that manifests as low back pain or pelvic discomfort. More severe ligament spasms may be misinterpreted as unrelated muscle spasm or as uterine contractions. Two of the most important actions a massage therapist can take to help prevent uterine ligament spasm are as follows:

1. Properly position a client on the massage table in a way that adequately supports the uterus.
2. Teach appropriate body mechanics for changing positions on the table, so that ligaments are not strained.

Uterine ligament spasms may be associated with the following types of discomfort (Figure 3.3):

- Round ligament spasm: Often experienced as pain in the lower pelvis, pain down the front of the leg, or sharp pain in the groin.
- Broad ligament spasm*:* Often experienced as discomfort in the low back and buttocks.
- Uterosacral ligament spasm*:* Experienced as pain in the sacrum, sciatic-like pain down the back of the leg, sacroiliac joint pain, or low back pain.

Bodywork Considerations Related to Uterine Ligaments

Below are some recommendations on how to alleviate pain from uterine ligament spasm in your clients:

- Educate your client to avoid sitting straight up from supine or lateral positions as instructed in Self Care Tip for the Mother: Preventing Abdominal and Uterine Ligament Strain (Figure 3.5).
- Support the client's growing belly with a small pillow or rolled towel when in the sidelying position to prevent strain on uterine ligaments (see "Positioning Techniques," Chapter 5).
- Suggest the use of an abdominal binder to help relieve backache caused by ligament pain (Figure 3.1).
- Teach your client to relieve round ligament pain by flexing the hip of the affected side and applying direct fingertip or palm pressure to the painful area near the groin.

Pelvic Floor

The **pelvic floor** or perineum refers to the muscles that hang like a hammock between the ischial tuberosity, the symphysis pubis, and the coccyx (Figure 3.6). These are generically and collectively known as the perineal muscles. The primary pelvic floor muscles include the group called the levator ani, the transverse perineal muscles, and the bulbospongiosus. They play a critical role in a woman's health, as they support the weight of the abdominal contents, including the organs and the baby-filled uterus. They also wrap like a figure eight around and control the three sphincters of the perineum: the urethra, the vagina, and the anus.

During birth, the perineal muscles must stretch and are sometimes cut or torn during delivery, weakening them. After this extreme stretching, or, as with any muscle, without exercise, the perineal muscles can lose their tone. Imagine a hammock, heavily loaded with weight, sagging toward the ground. The looser the hammock is woven and the heavier the load, the further it sags. Similarly, when the perineal muscles are untoned, the weight of the abdominal contents causes the muscles to sag. As many as one third to one half of all women in the United States experience problems caused by weak perineal muscles after age 55 and many of these pelvic floor dysfunctions develop after childbirth.[8,9] This includes symptoms of vague back and pelvic aches and heaviness, fatigue, vulvar varicosities and rectal hemorrhoids, urinary stress incontinence (urinating when coughing, sneezing, laughing, or straining) or

Self Care Tips FOR MOTHERS:

Preventing Abdominal and Uterine Ligament Strain

"Jackknifing" forward from a supine or sidelying position to a seated position causes strains and spasms to uterine ligaments and can contribute to diastasis of the rectus abdominus. Many women experience this discomfort, yet do not recognize this contributor to its occurrence.

Pregnant women on the massage table will need to reposition several times and possibly get up in the middle of session to use the restroom. It is particularly important for the mother to use care when moving from the lying to the sitting position. Whether on a massage table, in bed, or on a couch, she can use this method for sitting up without strain.

First remove any pillows between or under her legs. She should roll to her side first if she is not already lateral. Bending her legs, she will then use her arms to push her upper body up to a sitting position (Figure 3.5). Finally, she will swing her legs over the side of the table, keeping her knees together. This prevents straining of the abdominals when sitting up. She should always sit for a moment on the edge of the bed or couch for a moment before getting up, to avoid instability due to dizziness from postural hypotension.

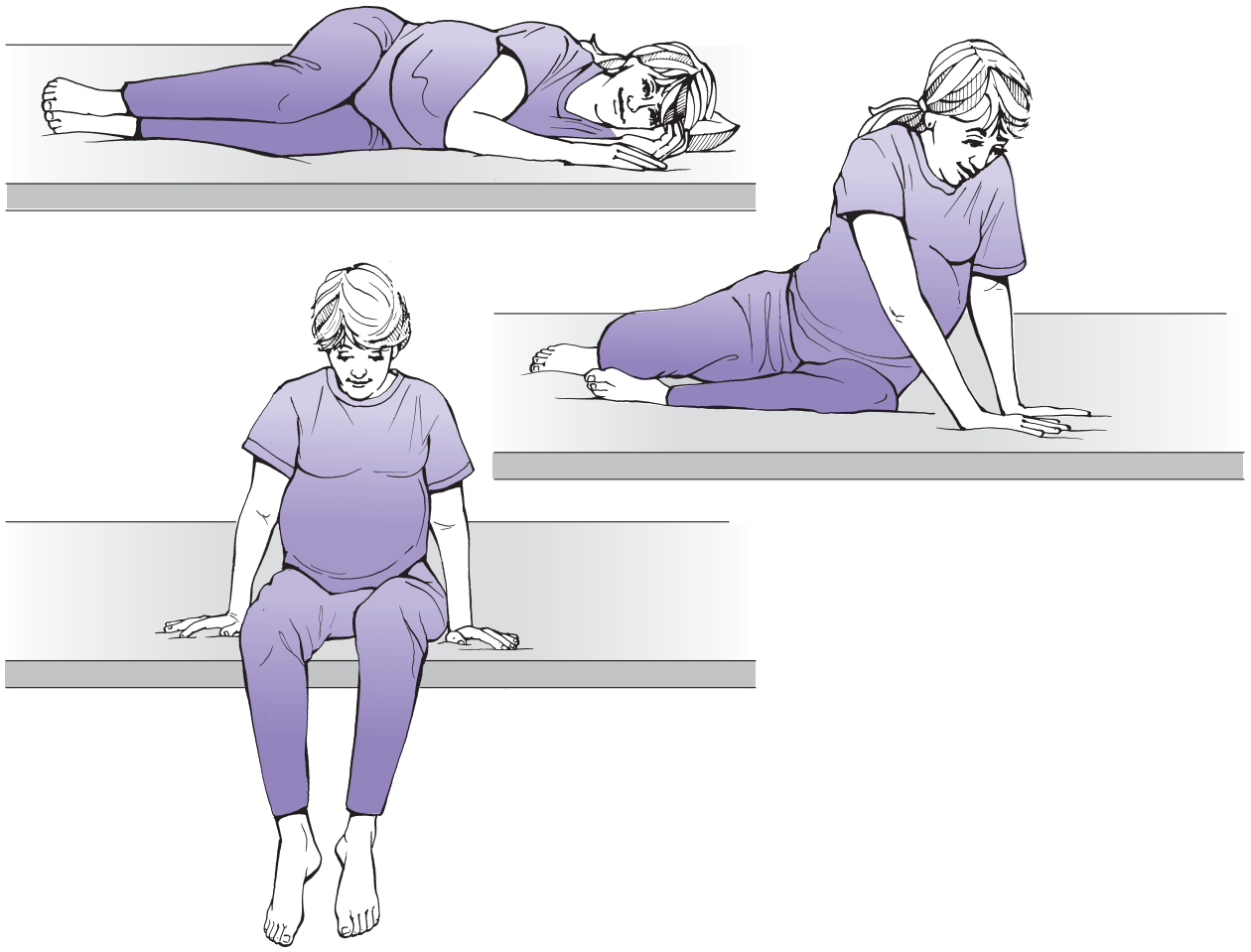

FIGURE 3.5 **Body mechanics of repositioning from lying down to sitting.**

To prevent strain to the abdominals and uterine ligaments, always remove the pillows first, then have the client roll to her side and push herself up using her arm and hand strength, rather than straining her abdominals. Have her sit on the edge of the table for several minutes if she feels dizzy.

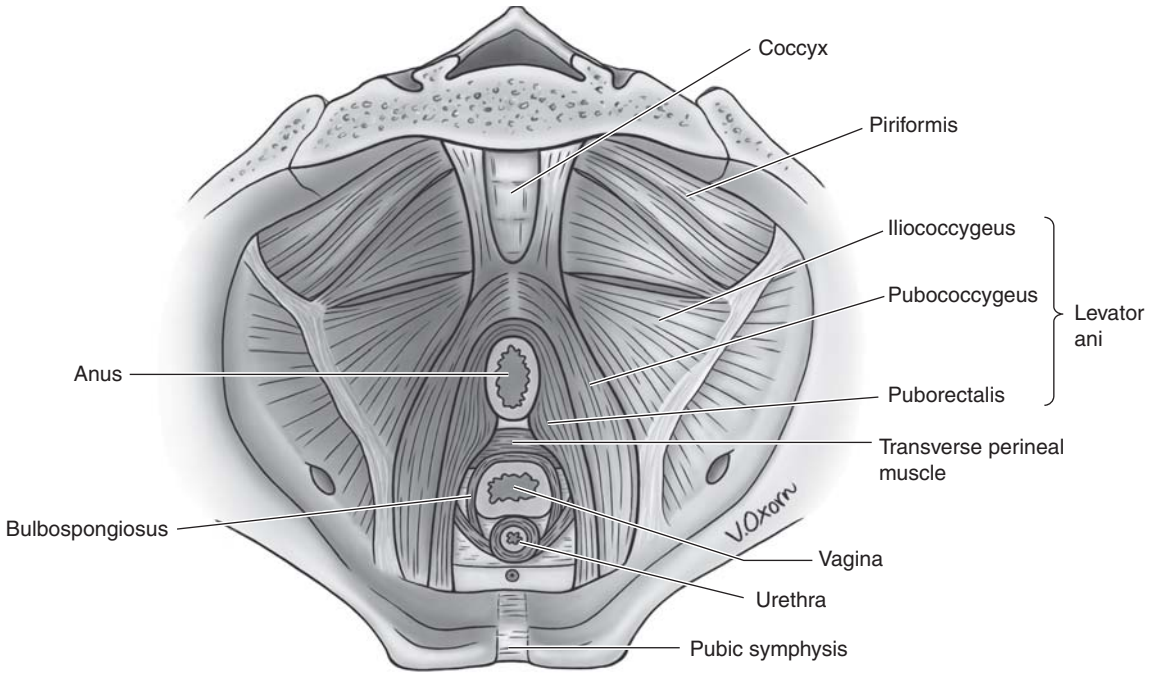

FIGURE 3.6 **Perineal musculature and pelvic bones.**

The primary pelvic floor muscles include the group called the levator ani, the transverse perineal muscles, and the bulbospongiosus. These hang like a hammock between the ischial tuberosity, the symphysis pubis, and the coccyx. (From Moore KL and Agur A. Essential Clinical Anatomy, 2nd Ed. Philadelphia: Lippincott Williams & Wilkins, 2002.)

continual leakage of urine, and uterine or bladder **prolapse** (when the organ slips down toward or literally drops out of the vagina). **Kegel exercises** are an effective method for helping prevent these complaints by toning the muscles and improving circulation. There are many benefits to practicing Kegel exercises regularly, as described in Box 3.3.

Weak perineals are another possible cause of the common complaints during pregnancy of dull, aching low back and pelvic discomfort. As a bodyworker helping a woman cope with her physical changes during the perinatal cycle, passing on information about the benefits of Kegel exercises could be a great service to her. Awareness of the perineal support to the torso can be increased by combining client-activated perineal muscle contractions along with muscle-release techniques in the low back, hip rotators and adductors. The perineal contraction and release can enhance the effectiveness of the other muscular release.

BOX 3.3 | Benefits of Kegel Exercises

Kegel exercises improve the following:

- Circulation and health of the perineal area
- Bowel elimination
- Sexual pleasure and responsiveness
- Elasticity of perineal tissue
- Perineal strength for pushing during birth
- Familiarity with the perineal area, potentially easing associated psychological discomforts during childbirth
- Postpartum tone of vaginal muscles
- Perineal healing in postpartum

Kegel exercises reduce the following:

- Hemorrhoids and vulvar varicosities
- Occurrence of urinary incontinence
- Episiotomy or perineal tearing at birth
- Organ prolapse and low backaches associated with partial prolapsed

The following instructions can be offered to your client, but learn to do the exercises yourself first, so that you can describe them effectively. There are no contraindications to Kegel exercises; they are useful prenatally, in postpartum, and throughout a woman's life. Men can do Kegels as well.

General Instruction for Kegels

For more comfort, always be sure to empty the bladder before doing these exercises. To have the most beneficial effect, one must do the exercises several times a day. Dr. Kegel, who developed a successful perineal exercise routine in the 1940s, prescribed three 20-minute sessions per day, but even 10 minutes per day will strengthen the muscles as opposed to doing nothing at all. There is no need to stop all other activities to do these exercises once you are familiar with them; they can be practiced during work, at the movie, or driving a car, and no one else will ever know!

If you are uncertain how to do a Kegel exercise, try stopping the flow of urine mid-stream when voiding. These are the same muscles used for a Kegel. Use this as a way to identify the muscles to be toned, but do not practice with the urine flow regularly, especially with a full or irritated bladder, as the bladder can become aggravated by the practice.

Beginning Kegels

Once you know which muscles to use, begin with the following:

1. Sit in a chair with feet flat on the floor. Inhale.
2. On the exhalation slowly press the knees and inner thighs together, contracting the vaginal muscles at the same time. Hold until exhalation is completed or 6 seconds.
3. Relax with an inhalation and repeat the tightening and relaxing practice for 5 to 20 minutes.

Intermediate Kegels

When the beginning exercise is easy, start practicing Intermediate Kegels:

1. Sit or lie in comfortable position. Close your eyes. Allow your breath to fill your pelvic area and imagine there is a small elevator full of people in your pelvis that will rise from the bottom of your perineum up to your navel.
2. As you exhale, squeeze the perineal muscles, bringing the "elevator" slowly up toward the navel or to the highest level it can to go. Hold there for at least 6 seconds and imagine all the people getting off! Breathe normally while holding the contraction.
3. Now, on another exhalation, slowly lower the elevator, one floor at a time, back to ground level.
4. Relax and repeat as many times as possible.
5. On some occasions, bring the "elevator" all the way to the "basement," pushing slightly downward and allowing the perineum to relax.

Abdominals

The abdominal muscles help maintain the position of the inner organs and uterus, stabilize the low back, and control the angle of pelvic tilt—all important jobs during pregnancy. They also assist with breathing and are activated with any trunk flexion, pulling, straining for bowel movement, coughing, laughing, and pushing a baby at delivery. They are lined and covered by connective tissue that joins together at the linea alba between the xyphoid process and the pubic symphysis.

Four layers of abdominal muscles cross the anterior torso, vertically, horizontally, and diagonally, and are often described as being like a corset, with the rectus abdominus as a front vertical panel, the transverse abdominus crossing horizontally and the external and internal obliques overlapping each other on the sides.

Diastasis Recti

By the end of pregnancy, the abdominal muscles have stretched considerably. If they are weak, the abdominals will not provide the necessary upward and interior support. As they stretch, the fascial linea alba where the rectus abdominus inserts, begins to thin and stretch as well, causing the abdominal muscles to spread apart from the linea alba. It is normal to have a slight separation during pregnancy: some diastasis develop in the second trimester while most occur in the third trimester or while pushing during labor. Statistically, most separations tend to occur at or above the umbilicus, but in personal practice, I have found most below the navel.

If the abdominals separate an inch, or 2 fingerwidths, the condition is known as a **diastasis recti** (Figure 3.7). With a 3- to 4-fingerwidths separation, low back pain increases as abdominal support decreases. A severe diastasis recti can impact a woman's pregnancy and birth and cause long-term back discomfort. Women who are more prone to a serious separation often have one or more conditions in which the abdominals become larger than normal.

MASSAGE THERAPIST TIP — More About Strengthening the Pelvic Floor

Below are some tips on helping your client understand and perform Kegel exercises:

- There are many ways to do Kegels. They can be done rapidly or slowly. A client can invent her own methods of practice. Use imagery to enhance the client's ability to sense the muscles, such as visualizing wringing out a sponge and then relaxing like the soft petals of a flower bud as it opens.
- Advanced Kegel exercises include focusing on squeezing each separate sphincter muscle individually—the anal, vaginal, and urethral sphincters.
- Kegels are most effective when the muscles at the upper-third and middle-third of the vagina are developed. Encourage your client to think "high." She may place one hand over her pubic bone or at her navel and envision that she can tighten the vagina to that level.
- Remind your client that quality is better than quantity for improving muscle tone.
- Remind your client to practice relaxing her breath while doing these exercises. There can be a tendency to hold the breath or clench the jaw when tightening the perineum.
- To prevent general strain on the perineal muscles, encourage your client to brace her abdominal muscles and do a Kegel squeeze before and during coughing, straining, or lifting.
- Some women may have very weak perineal tone and may be unable to hold a Kegel contraction at all or only for a very short time. With a regular practice regimen, the improvement will be rapid and obvious.
- Some women have a greater need for learning to relax the perineum, as opposed to strengthening. If she finds this is the case, she can practice releasing and relaxing the perineum by visualizing a softening of the pelvic floor, and pushing outward slightly as she exhales.

Traditional Birth Practices: Support for the Belly

In many parts of Latin America and South America, women in traditional cultures wrap a cloth shawl around their abdomen during the second part of pregnancy. This cloth usually wraps beneath the abdomen several times and ties in the back. It acts as a support for the stretched abdominal muscles, holding the weight of the uterus and relieving stress to the low back. With this type of anterior support, as well as its constant pressure against the low back, postural issues may not develop as intensely as they could for a woman who has a large belly, weak abdominals, and no external support.

Possible contributing factors to diastasis recti are listed in Box 3.4. Be aware of these risk factors as you work with your client, and teach her proper body mechanics for getting on and off your massage table to help avoid undue strain to the abdominals.

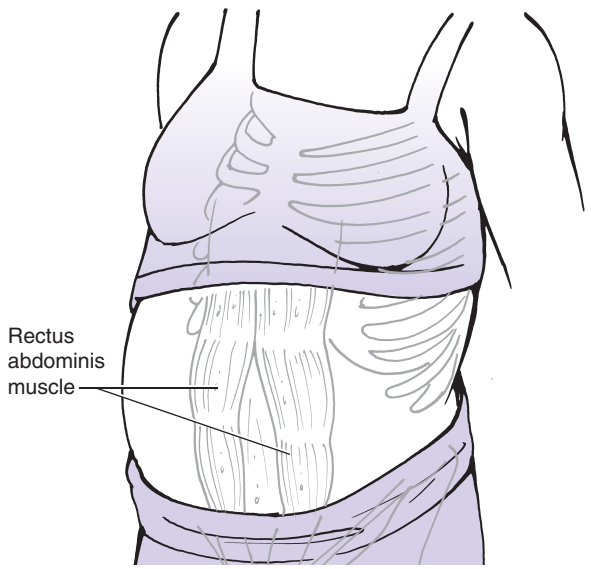

FIGURE 3.7 Abdominal muscles and diastasis recti
The abdominal muscles support the torso like a corset. With the stretching of the belly, the fascial linea alba thins and stretches, sometimes causing the rectus abdominus to separate in a diastasis recti.

BOX 3.4 | Conditions Contributing to Diastasis Recti

Pregnancy Risks

- Large baby for the mother's size
- Multiple pregnancy (twins or more)
- Excessive amniotic fluid (polyhydramnios)
- Multiple births without sufficient recovery time between
- Pushing hard at birth with weak muscles
- Relaxin and estrogen softening and weakening connective tissue

General Risks

- Obesity
- General weakness due to lack of exercise
- Straining due to constipation
- Previous hernias or diastasis recti
- Improper body mechanics when repositioning from lying to sitting or standing

When Diastasis Occurs

Many women do not know when or if their abdominals have separated. There is often no obvious sensation or sign when it occurs; it may happen over a period of time, and it is not generally painful to the abdominal muscles. However, a woman with a diastasis of 3 or more fingerwidths will lack the anterior support for carrying the weight of the baby. Without the normal abdominal support, the posterior spinal muscles compensate and become strained and taut as they attempt to maintain a woman's posture without anterior assistance. The woman may complain of nagging low backache and may notice a strange bulging somewhere along her linea alba when her belly is flexed, as the abdominal contents are pushed through the opening. In extreme cases of diastasis recti, the bulge of the baby may be seen protruding through the opening quite distinctly.

Bodywork Considerations for Diastasis Recti

Below are some things to consider when adapting bodywork for women with diastasis recti:

- Ask your client whether she has experienced diastasis recti in pregnancy and/or postpartum, and if so, suggest that she consult with a physical therapist about preventative and corrective exercises, or read Elizabeth Noble's book, *Essential Exercises for the Childbearing Year,* which describes in detail methods of preventing and repairing diastasis recti. (See Appendix B, Resources of the Practitioner.) Many women find that prenatal Pilates and yoga classes, which focus on developing this core abdominal strength, can be helpful.
- Offer proper support for the pregnant belly in the second and third trimesters when positioning the client sidelying. (See Positioning, Chapter 5.)
- Teach the client proper body mechanics for rising from lying to sitting. (See "Massage Therapist Tip" below.)
- Suggest the use of an abdominal support binder in late pregnancy for women with especially large abdomens.

When to Assess for Diastasis Recti

Assessment for diastasis recti should be done when beginning work with a client *in the first trimester* who has had previous births (and therefore may have a diastasis already) and who you expect to see throughout pregnancy, or when you have a postpartum client. This will help you ascertain risk for and cause of some back discomforts, and establish the need for corrective exercises. An assessment can be done anytime there is reason to think a separation may have occurred. Remember that if this is a woman's second or more baby, she may begin this pregnancy with a separation which developed in a previous pregnancy and of which she may be unaware.

In the late second and through the third trimester, when the abdomen is large, corrective exercises could possibly aggravate or worsen her condition if she already has a significant separation. An *assessment* can be done however, if needed, if she has predisposing factors toward separation or she is complaining of chronic backache. If a diastasis is found, she can discuss with her prenatal care provider about the benefits of using an abdominal support girdle and about possible referral to a physical therapist who might be able to assist her in preventing further separation of the rectus during the final stages of her pregnancy.

Case Study 3.1:
EXTREME DIASTASIS OF THE RECTUS ABDOMINUS

Caitlin had been in labor for several hours and was now pushing when her massage therapist, Ann, came in the room to support her. This was Caitlin's fourth child. The other three were ages 5, 3, and 2. Caitlin's abdominal muscles had had little time to recover between births, and she had complained for months during this pregnancy about hip and back pain.

As Ann helped Caitlin lean forward to push with the coming contraction, she saw a large bulging shape in Caitlin's abdomen. As she pushed, a pointed, moving form slid and pressed out through the abdominal wall, looking, as Ann said later, like an alien emerging from Caitlin's belly. Caitlin had an enormous diastasis recti, and the baby's arms, elbows, legs, or feet kept pushing forward through the abdomen as the mother strained with pushing.

Caitlin said she had noticed the baby poking through now and then over the past months, but had not been instructed after the prior pregnancy in ways of correcting the separation. She had not realized that it was contributing to her back pain.

Several weeks after delivery, Caitlin came to see Ann for a massage. Ann subsequently assessed her abdominal diastasis and found a separation the size of 4 fingerwidths. Having watched how the baby pushed through the abdomen when Caitlin was holding her breath and pushing, Ann realized why it is important to do corrective exercises on an exhalation. The increased abdominal pressure with breath-holding forced the abdominal contents through the rectus separation. She showed Caitlin simple curl-up exercises and had Caitlin push her abdominals together with her hands when she did the curl-up. She also passed on contact information for a local physical therapist who could help her with more in-depth muscle strengthening to correct the separation.

It took Caitlin many months to begin to notice the gap in her abdominals getting smaller. It was difficult for her to find time to focus on corrective exercises, but she did her best to continue the abdominal strengthening and other exercises prescribed by her physical therapist. After 6 months, according to her report to Ann, she was feeling stronger and more stable in her hips and low back.

How to Assess

Essentially, to activate the abdominals to assess for a diastasis, the client must do an abdominal crunch. The following is the method for a client in her first trimester:

1. Have client lie supine with knees bent.
2. Place your fingers just below and above her navel in the center of abdomen.
3. Have the client exhale while slowly raising her head off ground. This will activate her abdominals. In the first trimester, if the abdominals do not tighten well enough to palpate, ask her to lift her shoulders off the ground along with her head (Figure 3.8).

CAUTION: Ensure that the client exhales during the head lift muscle activation. Breath holding with exertion will increase intra-abdominal pressure and could increase the diastasis.

4. With her abdominals contracted, press lightly on the linea alba and slide your fingertips laterally until you reach the edge of the abdominals, which will feel rigid. If there is no gap, your fingers may not move at all before touching the muscular edge. If there is a gap, your fingertips may slide out to either side 1 or more inches. Measure in fingerwidths by extending your fingers together between the edges of the abdominal wall.

CAUTION: If you feel the need to check in the late second or in the third trimester, the separation may be visually apparent as a bulge. Do not press your fingers into the abdomen, but instead observe for this bulge just above or below the navel.

A slight gap of 1 to 2 fingers is considered normal. Three fingers or more indicates the need for corrective exercises. Even without a gap, preventative exercises, such as abdominal crunches and those taught by a physical therapist, practiced in prenatal Pilates classes, or learned from Noble's book mentioned above, should be started in the first trimester and continued through the pregnancy. The good news about diastasis recti is that minor separations of less than 2 fingerwidths tend to correct themselves in postpartum even without specific exercise, and larger ones are generally correctible with exercise.

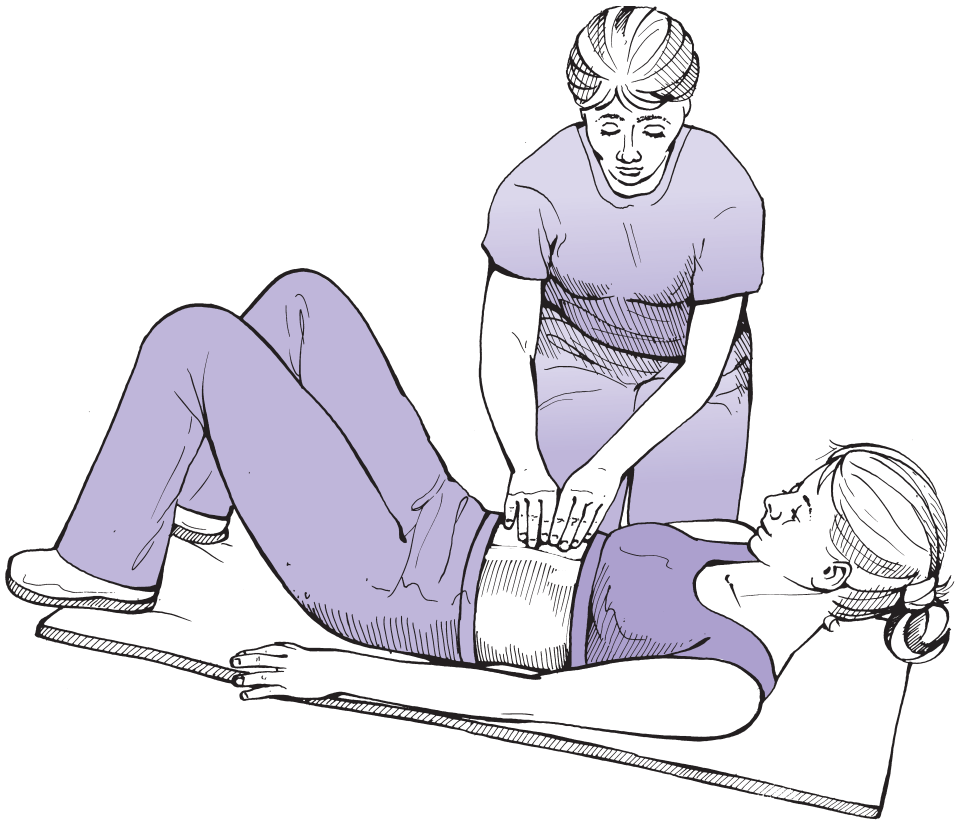

FIGURE 3.8 **Assessing diastasis recti.**
Have client lay supine and lift head while exhaling. Palpate above or below navel on linea alba for a gap between edges of rectus abdominus.

Psoas

The iliopsoas is a primary hip flexor that helps support the low back, the fetus, and the abdominal contents. It orients the tilt of the pelvis, helps hold the body upright, and stabilizes the spine and pelvis. In pregnancy, as the ligaments that normally stabilize the low back and pelvis are stretched and softened by relaxin and estrogen, they become less reliable and the psoas must work harder. When your client is standing, a tight psoas will pull down on the anterior lumbar vertebrae rather than flex the hip; this action will cause shortening of the lumbar spinal muscles and an increased anterior pelvic tilt (Figure 3.9).

A circular problem develops: when the psoas tightens, the anterior pelvic tilt increases; when the anterior pelvic tilt increases, the uterine weight shifts forward. With the weight fallen more forward, the abdominals stretch and lose tone, causing an even greater increase in pelvic rotation. In addition, if the psoas is tighter on one side than the other, pelvic alignment will shift, causing strain and discomfort on the entire side of the body that is trying to compensate for the imbalance. A tight or spasmed iliopsoas will often be experienced as low back pain, sacroiliac pain, anterior thigh pain, sciatica sensations, and sometimes as pain in the iliacus area. It may also cause concomitant dysfunctional adaptations with the hips, knees, upper back, lower back, neck, feet, and ankles.

To address this issue, the psoas must be stretched and toned to release tension on the lumbar spine and to allow the pelvis to support the spine most efficiently (see the section "Low Back Pain" in Chapter 5). Postural education is also a very important tool to assist the psoas in supporting a properly balanced pelvis.

CAUTION: The psoas should not be massaged with direct hand or finger pressure at any time during pregnancy. While the psoas can be accessed during the first trimester without touching the uterus, it is avoided, since deep abdominal massage is contraindicated during the first trimester due to the desire to avoid associations between bodywork and miscarriages that occur commonly in the first trimester. (This is discussed in more detail in Chapter 4.)

Case Study 3.2:
POSTURAL ASSESSMENT

Cindy saw her new pregnant client, Lynn, walking up the path to her office. Lynn was holding her back with one hand and appeared to be waddling slightly as she walked. She was 38 weeks pregnant in her fourth pregnancy, with three young children at home. Today was her first massage with Cindy. From her health intake form and through questions during the initial interview, Cindy learned that her client had been having generalized back pain for the past 4 weeks of her pregnancy, and had found little to relieve it. She said the pain was a general aching across her low back. She indicated the area by placing her hand just above her posterior ilium and along the QL. At times she felt twinges of pain down her left leg. She said she felt general tension in her neck and shoulders and was tired of being pregnant. Her doctor told her these were normal pains that she could expect from being pregnant. She otherwise had had no abnormal or high-risk conditions and no other discomforts, apart for some morning sickness in the first months. She stated that she was carrying an extra 25 pounds or so that she had gained during the last pregnancies and had not lost.

Cindy asked Lynn to stand in a relaxed posture for a moment so she could observe her stance. She noted that Lynn's hips, knees, and feet were laterally rotated. Lynn's tendency was to hold her low back with one hand, and arch her back to support the weight of her abdomen. Cindy also noted that Lynn's belly seemed larger than most clients' she had seen at this stage. She was aware that the size of the woman's belly at any particular stage of pregnancy was dependent on the size of the baby, the position the baby tended to favor, and the tone of the mother's abdominals. Lynn stated that this baby was bigger than her others, and that they expected it to be at least 8 or 9 pounds.

When asked about exercise, Lynn stated that she had never had an exercise routine. During the early part of this pregnancy, she had been so nauseous that she had stopped doing even the more basic activities that she had once participated in. She said she was busy enough as a mother of three and got exercise lifting and carrying the children.

Reassured that Lynn had presented her discomforts to her doctor and that no abnormalities had been found with Lynn's pregnancy, Cindy considered several factors that might be affecting Lynn's backache:

1. Mother of young children: Cindy knew this entailed frequent lifting, leaning over with the weight of a baby or child to put him or her in a car seat, and carrying children on one hip, shifting posture to the side to carry the child.
2. Fourth pregnancy: Cindy realized that the more pregnancies and deliveries a woman has had, the more risk she has for loss of abdominal tone, hypermobile ligaments, and diastasis recti.
3. Lack of exercise: Without regular strengthening exercise, Lynn was more at risk for developing stresses and strains during and after pregnancy.
4. Excess weight: With Lynn's extra weight gain on top of her pregnancy weight, she also increased her risk of diastasis recti and low back pain.
5. Poor posture: Lynn's poor posture, exacerbated by her weak muscle tone, also increased the strain on her muscles.
6. Large breasts: Lynn had large breasts, which influenced her posture as well, causing her to sink in her upper chest, resulting in upper back and neck pain.

Cindy helped Lynn notice how she was standing at the moment, and then suggested that she move her feet hip width apart, and turn her feet so they faced straight forward. Holding onto Lynn's heels, she encouraged her to sink her energy into the floor, feeling the soles of her feet grounded on the floor. Then she slid her hand up the back of Lynn's legs, sacrum, and spine to reach her cervical spine, where she pulled up under her occiput and encouraged Lynn to inhale deeply, expanding her ribs and chest. For several breaths, Cindy encouraged Lynn to imagine being 2 feet taller than she was, with that length rising up from her feet, all the way through her head. Lynn was shocked at how much more easily she could fill her lungs, and how much tension immediately left her low back. Postural awareness had not been something she had considered with regard to her pregnancy discomforts.

On the massage table, Cindy spent a moment assessing Lynn's abdominals in the supine position, asking her to exhale, and raise her head slowly. She immediately saw a bulging ridge in the middle of Lynn's abdomen and assumed she might have a diastasis of the rectus muscles. She explained what this was and all the factors that would contribute to this. Cindy suggested that Lynn have her doctor assess it further to confirm it, or have it reassessed after birth when she could begin strengthening exercise.

Cindy offered to work with Lynn on postural correction over the next weeks, and during postpartum, and showed her where to get information about corrective exercises.

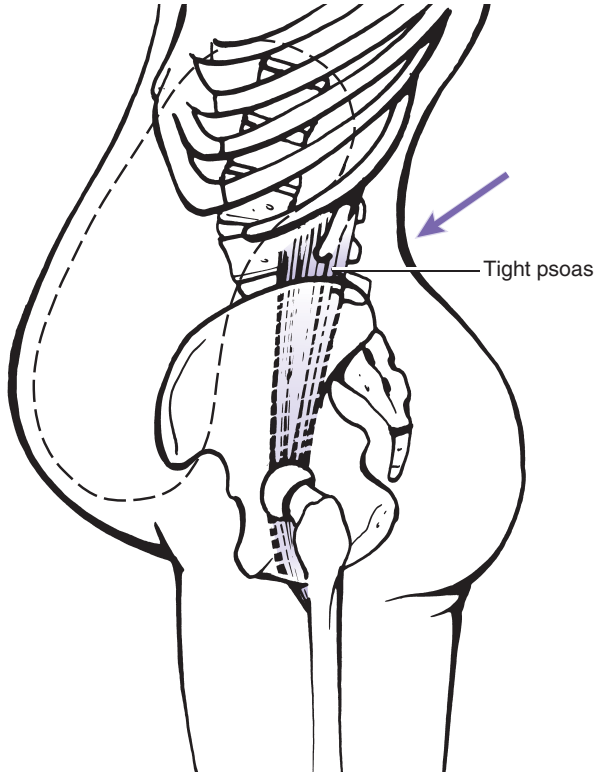

FIGURE 3.9 Effects of a tight psoas on posture.
When your client is standing, a tight psoas will pull down on the anterior lumbar vertebrae, rather than flexing the hip; this action will cause shortening of the lumbar spinal muscles and an increased anterior pelvic tilt.

Note: Despite the contraindication of abdominal massage during the first trimester, if useful and if agreeable to the client, gentle myofascial work just inside the iliac fossa without going deep into the abdomen, can be appropriate, even in the first trimester. Below are some bodywork considerations for the psoas.

- Encourage the client to explore comfortable ways of stretching the psoas herself, such as in the lunge position. (See Chapter 6)
- Assisted stretches while on the massage table will help alleviate problems associated with tight psoas.

Quadratus Lumborum

The QL is an important stabilizer of the low back that assists spinal extension when it bilaterally contracts, helps the trunk flex laterally, and fixes the twelfth rib during respiration. It extends from the posterior iliac crest to the lower border of the twelfth rib and attaches on the lumbar transverse processes. In pregnancy it becomes shortened due to anterior pelvic tilt and lumbar lordosis. Many women may experience soreness, spasm, or general aching in the QL during pregnancy, yet many others are unaware of its tension and relation to their low back discomfort until it is touched with massage. Due to a mother's increased hip and waist size, it can be difficult, yet still important, to access this muscle during pregnancy and help it release with massage and stretches.

Below are some bodywork considerations for the QL:

- See the section "Low Back Pain" in Chapter 5 for specific ways of working with the QL.
- Passively stretch the QL while the client is in the sidelying position, by using a wedge or pillow under her waist, extending her waist on her upper side. (See Figure 6.2A.)
- Encourage the client to explore comfortable ways of stretching the QL herself. (See Chapter 6.)

CHAPTER SUMMARY

Primary musculature is stressed by pregnancy due to normal weight gain and necessary adjustments in posture to support the anterior weight of a growing baby. The psoas, QL, pelvic floor muscles and the abdominals are core muscles that support and stabilize the pelvis during pregnancy. Using the information in this chapter, you can help a client have a sensory understanding of appropriate posture for her stage of pregnancy. By reviewing her posture at each massage session or least once each trimester, along with suggesting resources for learning to stretch and strengthen primary muscles, you will give your client some tools that aid her search for comfort and stability. In this chapter you learned the importance of muscular strengthening and stretching, and of postural and abdominal assessments. In later chapters you will learn bodywork and particular ways to address these core stabilizing muscles.

CHAPTER REVIEW QUESTIONS

1. Name three muscle groups especially affected by the weight gain and postural changes of pregnancy.
2. Stand in an exaggerated strained pregnancy posture. Which areas of your body feel particularly stressed after just a few moments? Describe how to help a client make adjustments to this posture.
3. Name three factors that have particularly strong influence on pregnancy posture. What postural changes are common to develop during pregnancy?
4. Explain why the iliopsoas is an influential muscle in a pregnant woman's posture.

5. Explain why proper positioning on the table and body mechanics for getting on and off the table are particularly important during pregnancy.
6. Describe what kind of symptoms a woman with uterosacral ligament spasms might experience.
7. Name three benefits of perineal exercises.
8. If a client with three young children came to see you during her fourth pregnancy at 34 weeks, with a pendulous belly and complaining of low back pain, what condition might you suspect could possibly be contributing to her back pain? What would you suggest or how would you treat her?
9. Describe two ways of helping a woman with a large abdomen decrease her risk of straining uterine ligaments. Describe how a client should move from sidelying to sitting position to prevent uterine ligament strain.
10. After the late second trimester, corrective exercises for a diastasis recti are generally not recommended to be started. Explain why this is so and when they can be started.

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CHAPTER 4

PRECAUTIONS AND CONTRAINDICATIONS FOR BODYWORK DURING PREGNANCY

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Discern when the use of a medical release prior to massage is indicated and when to refer a client to her prenatal care provider based on symptoms that might indicate pregnancy-related problems.
- Describe the most common bodywork-technique precautions for pregnancy and be able to determine in which situations they would apply.
- Describe the difference between sedating and potentially stimulating type bodywork and the precautions or contraindications associated with each.
- Describe high-risk obstetric conditions and their relevant bodywork precautions.
- Develop health intake and medical release forms that address specific bodywork concerns related to pregnant clients.
- Identify specific acupressure points that are contraindicated for use during pregnancy.
- Ask discerning questions to help identify pain as possibly a concerning condition of pregnancy or as purely musculoskeletal.
- Understand the importance of a thorough health intake at an initial visit and update at each subsequent visit.
- Describe three potential consequences of improper client positioning during pregnancy massage.
- Name the three most important safety concerns for a therapist working with a pregnant woman.

Most pregnant women in the United States will have a normal perinatal period without looming dangers to the safety and health of herself or her baby, and without need for medical interventions.[1,2] The majority of pregnant women who come for massage and bodywork sessions will also be healthy and will need few bodywork restrictions. However, while appreciating pregnancy as a normal physiological passage in many women's lives, all pregnancies do have associated risks, and some will become classified as "high risk." A bodyworker must be aware of precautions, contraindications, and various bodywork guidelines that are important to observe not only for the client with a normal pregnancy, but for those with minor or more serious risk factors. The massage therapist needs to be educated about what conditions are normal and what symptoms or conditions indicate that a client should be referred to her prenatal care provider (PCP) or perhaps to a more experienced pregnancy massage therapist. (See Box 4.1 for a list of these symptoms.)

This chapter begins by clarifying bodywork terminology that is used hereafter in the text, specifically what is meant by "Type I" and "Type II" touch. Then, information on health intake and assessment questions specifically relevant to working with pregnant clients is presented, including an explanation of obtaining a medical release. Next, we consider precautions that are needed for specific types of bodywork. General conditions considered by the American College of Obstetrics and Gynecology to increase risk during pregnancy, and which have a few particular

BOX 4.1 | Symptoms Requiring Referral to the Primary Care Provider

Refer a client to her primary care provider for the following symptoms:

- Abdominal Discomfort
  - Tender or painful abdomen or unexplained pain in abdomen
  - Right upper quadrant abdominal pain
- Leg pain
  - Pain or aching in the leg
  - Unidentified leg pain
  - Swelling, heat, tenderness in leg
- Uterine Cramping
  - Intermittent or regular uterine cramping before 36 weeks
  - More than four preterm contractions an hour for 2 hours
- Malaise
  - Increasing malaise, dizziness, visual changes, right-sided upper abdominal pain, and/or nausea
- Bleeding or leaking fluid
  - Unexplained vaginal bleeding
  - Sudden gush or slow leak of liquid from vagina (amniotic fluid should be clear, but could also be greenish, or port wine color)
- Pain
  - Any unexplained pain or discomfort that is severe, sudden, nagging, or worrisome

considerations for bodywork, are then defined. The intention of these descriptions is to help the therapist understand *why* the situation is considered an obstetrical risk, and how massage can be adapted to the particular situation.

Finally, high-risk obstetrical complications that the prenatal massage therapist may encounter are explored.

PRIMARY CONSIDERATIONS FOR PREGNANCY MASSAGE

Most of the massage students' and therapists' fears about working with pregnant women are not actual dangers. The three most significant real concerns for a pregnancy massage therapist are listed as follows:

1. Proper positioning: Improper positioning of a client during pregnancy can be a danger for both mother and baby by interfering with uterine blood flow and resulting in maternal hypotension, nausea, syncope (fainting) and ultimately shock, along with consequent effects on a baby. Ligament strain, sacro-iliac pain and misalignment, leg cramps, and brachial plexus compression can all be aggravated by inadequate support and improper positioning on the massage table. Methods of positioning will be discussed in detail in Chapter 5.
2. Blood Clots: During pregnancy, the *risk* for developing a blood clot or *thrombus* is greatly increased (see the section "Circulatory System" in Chapter 2). Because massage may have the capacity to stimulate circulation through the blood vessels and increase the risk for dislodging a clot, only gentle touch should be used on the legs of pregnant and postpartum clients, and at times, no touch at all. Massage is always contraindicated to legs with thrombophlebitis or deep vein thrombosis (DVT). Thankfully, despite the increased risk, the actual incidence of a clot becoming an embolism during pregnancy is low. This issue is discussed in greater depth later in this chapter.
3. High-Risk Pregnancies: Pregnancies that become categorized as high-risk hold the potential for serious complications to a mother and/or baby. In these situations, there are usually restrictions to the type or quality of bodywork given and a medical release is necessary before offering bodywork. When a mother has a high-risk condition, excessively stimulating or deep, full-body or abdominal massage could possibly increase risks in some situations. This is also discussed later in this chapter.

Consideration of these issues is of primary importance during each perinatal massage. Throughout this chapter, and throughout the book, these three topics are addressed where relevant, and recommendations for the massage therapist are provided. In addition to these areas of precaution, it is also important to remember that any standard massage contraindications and

Table 4.1 Review of Standard Massage Precautions for All Clients

Local Contraindications	Precautions for All Type I Bodywork (A medical release is required and possibly only Type II techniques may be permitted.)
Acute skin injuries/burns	Cancer
Acute arthritis	Severe hypertension
Acute bursitis	Circulatory and cardiac conditions
Communicable skin conditions, irritation, or discharge	Convulsive disorder
Varicose veins	Type I diabetes
Vertebral disk problem	Infectious disease
	Pitting edema due to heart/kidney problems
	Kidney disease or kidney stones
	Thrombophlebitis or blood clot

precautions—such as avoidance of inflamed or infected skin—that are applicable to nonpregnant clients, still apply in pregnancy. The massage therapist is responsible to know these standard massage precautions (see Table 4.1 for a list of these precautions).

As you read this chapter, keep in mind that it is most important to understand *why* particular precautions and contraindications exist. With that knowledge, you can make skilled and sound decisions about what kind of bodywork is appropriate in each individual case.

Note: Many massage therapists will never encounter a pregnant client with a dangerous high-risk complication. Once trained, others will intentionally choose to offer massage to a higher-risk population. This chapter is meant to be a useful resource for all practitioners. Refer here for information regarding conditions of which you are uncertain about the appropriateness of bodywork. Rather than immediately refusing to work on a client who says she has a "risk" condition, turn to this chapter to see if you can determine if the condition actually poses a *bodywork* risk or not. By reading this chapter you may learn standard types of precautions that can then be applied to other situations not listed here. Keep in mind, however, that safety is always primary, so w*hen in doubt, give a shout: ask for advice from someone more knowledgeable to ensure safety!* Always obtain advanced training in perinatal massage before working with high-risk pregnancies.

CLARIFICATION OF BODYWORK TERMINOLOGY: TYPE I, TYPE II

There are numerous schools of bodywork and modalities of touch. For purposes of clarification and simplification, this book divides bodywork into two categories: stimulating touch and gentle or subtle energy touch. When listing contraindications to massage, it can be too limiting and ill-defined to simply state that "massage is contraindicated." When touch is gentle and nurturing, it can be used in nearly every situation. When it is vigorous or deep tissue, it will have some limitations. The differentiation between these two types of touch is made by referring to Type I and Type II styles of touch.

Type I: Stimulating

Type I massage and touch is generally more intensive and may be stimulating to the circulatory and/or musculoskeletal system, with a tendency to increase the release of cellular waste products. In this category are at least some of the techniques from the following modalities: vigorous Swedish, Rolfing, deep tissue, trigger point, sports massage, lomi lomi, and Shiatsu. This is not a comprehensive list. In the text, I may refer to this Type I work, as "deep," "stimulating," or "circulatory" bodywork. While Type I full-body Swedish massage may be contraindicated, this does not necessarily contraindicate all touch. Often, localized work on the extremities—hands, feet, neck, shoulders, head—or Type II full-body touch will still be appropriate.

Type II: Gentle

The second type of touch is physically gentle, nonforceful or nonintrusive, and does not stimulate the physical body in the same way as the above techniques. It is therefore appropriate in nearly every situation, even if Type I work is contraindicated. Type II techniques include, but are not limited to, the following: Swedish massage to the extremities or in

localized areas, as well as light-touch, full-body Swedish massage, indirect myofascial release, gentle acupressure such as Jin Shin Jytsu, and subtle energy work such as Reiki, craniosacral therapy, or polarity therapy. I refer to these Type II bodywork modalities in the text as "gentle" or "energy-work." Except in the case of a communicable, contagious disease process, when contact with the infected person is contraindicated, *there is rarely a reason for Type II touch to be contraindicated.*

HEALTH INTAKE, ASSESSMENT QUESTIONS, AND MEDICAL RELEASE

Many massage practitioners use a standard health intake form with new clients. These forms generally do not address the specifics of pregnancy. Because a woman's pregnancy is constantly changing, with the possibility of developing risk conditions as the pregnancy progresses, it is important to have an intake form that addresses these special concerns of pregnancy. It is equally important to update your information *at each visit,* as a client may return with a new health condition that may indicate new precautions with bodywork. Obtaining and reviewing this information will not only give you perspective on the physical concerns your client may have, but can also enlighten you to emotional issues that she may be contending with and which may arise during bodywork sessions.

On review of the information received, you may, on rare occasions, need to cancel the session or resort to only Type II bodywork for the current session, asking her to return next time with a medical release indicating whether it is appropriate for her to have Type I bodywork. This will generally occur only if her symptoms have just recently developed and she has not yet been seen by her prenatal care provider. Some questions may be asked over the phone when an appointment is made to determine if a medical release seems appropriate prior to bodywork.

Figure 4.1 is an example of an acceptable health history intake form, which is devoted to pregnancy questions. The intake should include questions about how far along the client is in her pregnancy, what number pregnancy this is, and should identify potential risks or current complications. The form benefits the client as well as the therapist, as it indicates to her that you are aware of conditions of pregnancy. It also gives her a chance to review the health of her pregnancy relative to massage, and will bring to her mind the type of conditions that she should inform you of in the future, should her condition change. If the health intake is not done in writing, the therapist should at least ask the following questions:

1. *What number pregnancy is this? How many births has she had?*
   These are two different questions. A woman could have been pregnant five times but not have a child. She may have had miscarriages, abortions, or had a child die before or after birth. Her response to these questions will give you information to help evaluate risks during this pregnancy. If she has had three or more consecutive miscarriages, she will be considered higher risk for another miscarriage.[3] A woman who has had more than three full-term pregnancies, or has had two or more pregnancies following within a year of each other, will be more likely to experience varicose veins, diastasis recti, low back pain, and other back complaints. This information is useful to the massage therapist with regard to what type of bodywork precautions may be necessary, as well as to having an idea of the client's emotional state.
2. *How many weeks pregnant is she, which trimester is she in, or what is her due date?*
   Obtaining this information when an appointment is made will help you to determine ahead of time how to set up your massage table for her optimum comfort and safety and help you evaluate trimester-dependent precautions. It will also inform you if she is close to delivery time, which would allow you to use labor preparation techniques and prepare you for the possibility of her having early labor contractions during a session.
3. *Does she have a history of complications with this or other pregnancies?*
   Depending on what the previous complication or condition was, having formerly had a high-risk pregnancy may increase a woman's risk with this one, even if she is currently having no problems This would be particularly true with a history of preterm birth, placental abruption, or deep vein thrombosis, all of which have a risk of recurrence in a subsequent pregnancy.
4. *Is she currently having any high-risk conditions, complications, or physical concerns?*
   If she describes any conditions which indicate bodywork precautions, you will have to investigate further as to whether bodywork is appropriate at this visit, or whether you should obtain a medical release or have a discussion with her PCP before continuing.

CONFIDENTIAL HEALTH INTAKE FORM FOR PREGNANCY

Name _____ Date _____

Address _____

Phone _____

Emergency contact: Name _____ Phone _____

Prenatal Care Provider: Name _____ Phone _____

My due date is: _____

This is my _____ *(1st, 2nd, etc)* pregnancy and will be my _____ *(1st, 2nd, etc)* birth. I am ____ *(number)* weeks pregnant in my _____ *(1st, 2nd, 3rd trimester)*.

In order to provide you with the best care possible during your pregnancy, it helps me to know of any complications or conditions that may require particular bodywork precautions. Please inform me, at each of our visits, of any changes in your pregnancy.

Please check ( ) current problems; mark with (+) if you have had one of these problems in the past.

____ Sciatica
____ Nausea
____ Anemia
____ Edema/swelling
____ Headaches
____ Low back pain
____ Leg cramps
____ Insomnia
____ Carpal tunnel syndrome
____ Skin disorders/athlete's foot
____ Separation of the symphysis pubis
____ Diabetes (gestational or Type I)
____ Separation of the abdominal muscles
____ Bladder infection*
____ Uterine bleeding*
____ Chronic hypertension*
____ Blood clot or phlebitis*
____ High blood pressure*
____ Problems with placenta*
____ Preterm labor*
____ Abdominal cramping*
____ Preeclampsia*
____ More than 2 consecutive miscarriages*
____ Any other problems in current or past pregnancy *(provide details)*: _____

_____

I, _____, verify that I am experiencing a low risk / high risk *(circle one)* pregnancy according to my prenatal care provider. If I am currently having or develop complications (any conditions/symptoms listed above with *), I will discuss the condition with my massage therapist and wil have a medical release for bodywork signed by my prenatal care provider before continuing bodywork.

Signature _____

FIGURE 4.1 **Health history intake form.**
A health history should be obtained at the first prenatal massage visit, and updated at each subsequent visit.

5. *How is she feeling about this pregnancy?*
This can be a casual question. It need not be direct, and may be assessed based on how she has expressed herself during the health intake. Do not assume that all women are enthusiastic about their pregnancy. Some are ambivalent about their situation and need time to adjust to this new reality. Some did

not plan to be or want to be pregnant. Other women have tried unsuccessfully for years to become pregnant or to maintain a pregnancy, and have finally resorted to vitro fertilization or other new technologies for becoming pregnant. Assess her relationship to her pregnancy to avoid making assumptions or an embarrassing faux pas with a casual comment. Your role as massage therapist is to offer a safe environment for her to receive nurturing touch and support for however she happens to be feeling at that point.

6. *Is she doing any exercise during her pregnancy?* This may give you an indication of her general health and orientation toward exercise and desire for referrals to others in your community should she have particular muscular aches that may benefit from prenatal yoga, swimming, or another exercise program recommended by her PCP. It will also give you a clue about her interest in self-care strengthening or stretching instruction.

Assessing Symptoms of Discomfort

Before beginning work with any client, it is important to collect the above health information that may affect your work. If a client presents at your office with a *new* condition, or in the rare case of symptoms arising *during* a massage, a few discerning questions can help determine appropriate action and possibly identify whether symptoms indicate a problem of pregnancy. For instance, a symptom of mild abdominal pain could be a musculoskeletal concern, such as a tight or spasming psoas or uterine ligament, or could indicate a condition that needs medical attention, such as preterm contractions or urinary tract infection. Box 4.2 highlights common symptoms that may reflect both musculoskeletal and pregnancy-related conditions.

The client herself will often be aware of symptoms that should be assessed by her PCP, but the massage therapist should also be able to recognize a situation that requires bodywork precautions or is contraindicated for massage. As a massage therapist, you will never diagnose a condition of pregnancy, but do not hesitate to refer a client to her PCP for a*ny discomfort that has an unclear etiology, or which you or the client are concerned about.* If you encounter a concerning symptom, such as recent headaches and pitting edema (which will be explained later in the chapter) in the third trimester, first determine if the symptoms have been assessed recently by the client's PCP. If they have and it has been determined that the client is in no danger, your own worries can be alleviated. Avoid contemplating out loud all the possible ramifications of the symptoms. While at times they might indicate a

MASSAGE THERAPIST TIP

Addressing Client Health Information With Sensitivity

Pregnant women in the United States have plenty of concerns on their minds. They are often consumed with thoughts about maintaining optimum fetal health, examining how their life will change with a new family member, or anxious about how they will fare through labor. Women come to their massage therapist to find renewal, relaxation, and recovery from their stresses and strains of daily life. It is the last place they expect to find more things to worry about or to feel judged for their choices. If, as a massage practitioner, you begin doing automatic assessment tests for deep vein thrombosis on every client, (as some students are taught to do), or requiring a medical release even when she has a low-risk pregnancy (as some spas require), or questioning every complaint with a fearful discussion of all the possible risks it could indicate, you could add to her stress, not relieve it. Simple, discerning questions, as discussed in this chapter, can indicate if a client should contact her PCP without overly increasing anxiety.

Care and respect in your responses is also needed when reviewing the personal information you receive during a health intake or while massaging your client. Everyone has personal opinions about sexuality, pregnancy, and birth choices. Common "hot" topics that may come up during a massage or intake process include abortion, in vitro fertilization, single parenting by choice, homosexual parenting, or birth control choices. Practice cultivating a safe environment by keeping your opinions to yourself, and letting your hands share their caring touch.

In accordance with creating a safe, nurturing space for your clients, remember that all your health-intake information and whatever your client discusses during her sessions is confidential and must remain within your office walls between the two of you. Letting your client know this ahead of time helps create that safe space.

BOX 4.2 | Common Symptoms That Could Indicate Problems of Pregnancy

Massage therapists may encounter pregnant clients asking for relief of the following symptoms. Some of these common complaints may indicate a more serious problem. Most musculoskeletal problems will get at least some relief from massage, whereas a medical problem will not improve with massage.

Mid to High Back Pain

1. Kidney stones or infection
2. Musculoskeletal

- Assess whether pain is sharp, shooting, or localized in kidney area, and unrelieved by massage.
- Kidney pain usually has more sudden onset.
- Musculoskeletal pain is likely relieved by massage.

Low Back Pain

1. Preterm labor.
2. Urinary Tract Infection (UTI)
3. Contractions
4. Musculoskeletal

- Musculoskeletal low back pain is common during pregnancy.
- Preterm labor may feel like backache, groin pressure, low abdominal ache, without sensation of contractions. May be irregular or constant.
- UTI symptoms include any or none of the following: low back pain, burning or frequent urination, low-grade fever, low abdominal pain. May be irregular or constant.
- Full-term contractions may be experienced in the low back, rather than abdomen.

Groin Pain and Pressure

1. Preterm labor
2. Urinary tract infection
3. Contractions
4. Separated symphysis pubis
5. Pulled round ligament

- Preterm labor may be experienced as groin pressure. May be irregular or constant.
- UTI may be experienced as low abdominal pain or pressure.
- Separated symphysis pubis is often painful with walking, and with abduction of hips. May feel tender to the touch in pubic area.
- Round ligament pain may feel like low abdominal or groin pain; often sharp and sudden like muscle cramp. May be relieved with flexion of hip.

Headache/Heartburn/ Edema/ Severe Persistent Back Pain/Nausea

1. Preeclampsia, gestational hypertension, HELLP syndrome
2. Normal aches and pains of pregnancy

- Headaches, heartburn, edema, back pain, and nausea are all common and nonpathological complaints during pregnancy, but above symptoms also can indicate preeclampsia.
- Client should see health provider if above symptoms have not been assessed and are experienced as a new group of symptoms, or if headache is unrelieved by Tylenol or massage, if client is seeing spots or visual changes, or has pitting edema.

Pain in Leg or Calf

1. Possible blood clot
2. Leg cramps common in pregnancy,

- Sharp pain or aching pain in calf or leg should be assessed for recent musculoskeletal injury or activity, new shoes, poor posture.
- Assess for redness, swelling, streaking, or inflammation in area indicating especially at night possible clot.
- Refer client to care provider for unexplained leg or calf pain.

problem, they can also be very normal conditions of pregnancy, with no concern for the mother's or the baby's safety.

If symptoms are new and the client is concerned enough about them to want to call her PCP, she should be immediately supported to do so. *Always listen to intuitive or "gut" feelings if they are urging caution*. Even if all other signs indicate there is not a problem, our intuitive mind often picks up on cues that we miss with our rational mind.

If the symptoms have not been assessed by the PCP, ask further appropriate, discerning questions that define the discomfort as specifically as possible, as discussed below. If you are uncertain about the condition, suggest that she call her PCP to verify if she should be seen right away, or if there are any restrictions for bodywork in relation to this condition. By asking questions, the massage practitioner may avoid assuming that all sensations are dangerous and pregnancy-related, or that all sensations are musculoskeletally-based.

1. *Has this been assessed by her primary care provider recently? Has the discomfort increased since that visit?* If symptoms have increased and she was told to report changes, she should call her PCP before beginning bodywork.
2. *Where exactly does she feel it?* To help clarify, have her point to the area of discomfort. Some describe a "belly ache" and point to the pubic bone, while others will point to the liver area. Knowing where it is located can help define it. Any sensations in the abdomen that are not easily identifiable, or sensations elsewhere that are not clearly musculoskeletal should be referred to the PCP for further assessment. Keep in mind that uterine sensations, such as contractions, may be felt in the legs, pelvis, and groin, as well as the abdomen.
3. *What is the quality of the discomfort?* Massage therapists generally learn to assess nerve, ligament, and muscular pain, such as sharp, shooting, and burning sensations that are often related to nerve pain or ligament spasm. Dullness and aching may be related to muscle soreness, uterine cramping, or possibly organ dysfunction of some sort.
4. *Is the sensation intermittent or is it constant? Does it refer elsewhere in the body?* Contractions are typically intermittent. Muscular spasms may be intermittent sharp pain that can radiate and may include a constant, localized aching. Constant unchanging or increasing pain in the abdomen may reflect developing problems with the uterus, placenta, or baby, or a condition such as a urinary tract or kidney infection, and the client should call her PCP right away.

   A note about contractions: Most women experience mild, intermittent tightening of the uterus in the latter part of pregnancy (or sooner for women who have had more than one birth). These have been commonly called Braxton-Hicks contractions, or "practice" contractions. They are irregular, nonrhythmic, sensations of the uterus that do not increase in amplitude and do not change the cervix. It is important not to ignore the potential for preterm labor by *assuming* that any mild uterine sensations are merely these types of normal tightenings. However, it is equally important not to be nervous each time a woman's uterus tightens. One contraction does not mean labor or preterm labor has begun. A general guideline is that if a woman is having *regular* or frequent tightenings of her uterus (more than four per hour for a period of 2 hours) her PCP should be called.
5. *Does repositioning or touch help relieve the pain? Does she know what relieves it and what makes it worse?* Generally musculoskeletal pain will increase with movement, and lessen with positional or postural changes that alleviate muscle tension or spasm. Massage will often help relieve muscular pain.
6. *Is it tender if palpated? Is it inflamed with redness, swelling, or heat?* Tenderness upon palpation might give more indication of muscular discomfort if you can touch a specific muscle where it hurts. Inflammation should be reported to the PCP.

   A tender abdomen is not normal and the client should be referred immediately to her PCP if she feels pain on touching her abdomen. Sharp or aching pain in the leg, or unidentified leg pain, especially with redness, edema of the extremity, or localized swelling or heat associated with it, should also be referred to the PCP for evaluation of a possible blood clot.

Having the client describe the discomfort will give you some information to start with. You also might explore more about the discomfort in relation to her pregnancy. These questions would include the following:

1. *How long has she had the pain?* If it just started when she got on the table, perhaps she pulled a ligament or muscle while positioning herself. If she has had the discomfort for weeks,

she may have visited her PCP already and been given some idea of what is causing the discomfort. If her discomfort has increased since her last prenatal visit, she should call her PCP.

2. *When is her next appointment with her prenatal care provider?* If she has experienced the pain for days, but has not seen her provider recently, find out when her next visit is. She may want to call her PCP to determine if she needs to be seen sooner.
3. *What does she think is the cause of the discomfort? Has she experienced it before?* Many women will know or have a sense of what has caused the discomfort or it may feel familiar from a previous pregnancy.
4. *How far along in her pregnancy is she?* This should already have been discussed in your general intake process and be in your mind as you review her symptoms. Headache and nausea during the first trimester can be normal and would more likely be related to hormonal issues or dehydration, while in the third trimester, complications of pregnancy such as preeclampsia or HELLP syndrome might be considered. This will be discussed later in this chapter.

Medical Release

A written **medical release** is a form signed by your client's prenatal care provider which indicates approval, from an obstetrical viewpoint, for massage at this point during her pregnancy, and which can indicate restrictions or concerns applicable to massage. When working with women with a high-risk condition, obtaining a release may be valuable for several reasons:

- Clarification of limits and risks: While the client will normally have been told what types of restrictions her condition requires, a release from the PCP can clarify limitations, restrictions, or risks of which you must be aware of with bodywork. After obtaining this information you can decide whether you are comfortable working with a client with this condition. Your nurturing touch will never adversely affect the pregnancy, but if you have insecurities for any reason, your uncertain energy will be transmitted to the client through your tactile and verbal contact, and will not provide her with optimum comfort. The medical release may help to alleviate your worries.
- Liability: Some hope that a medical release form could reduce legal liabilities should a lawsuit regarding the woman and baby's care arise. This is a concern that is especially pertinent in the litigious-prone United States, where 76% of obstetricians have reported to the American College of Obstetrics and Gynecology that they have been sued at least once, with an average of 2.6 times in their careers.[4]
- Building a referral base: Obtaining a medical release could help you to establish a relationship with the midwife or doctor by making the provider aware that the client is receiving or wants to receive massage. It will help you to become familiar with local medical providers and give you an opportunity to share with them the benefits of touch for pregnancy and ensure that you are included, at least peripherally, as part of a circle of support working to help a woman have the best pregnancy and birth experience possible. By sharing in this process, medical providers may also come to view you as a resource and may refer clients to you or allow you to display our business cards in their office.

Some practitioners choose to obtain a medical release before working with any pregnant client. This is due to perceptions of pregnancy as a dangerous condition, or concerns that the pregnant woman will not inform the therapist of relevant risk factors. If it is your policy to have a medical release for all your clients, then obtaining one for your pregnant clients would be consistent. However, *a release for massage is not necessary for clients with a normal, low-risk pregnancy,* unless the client (or therapist) would feel more at ease having a form signed by her PCP confirming in writing that massage is safe for her.

The most appropriate time to use a medical release form is if a new client presents to you with a high-risk condition or if a current client develops a condition of which you are uncertain about bodywork restrictions. See Box 4.3 for a list of conditions for which a medical release is most highly indicated and recommended. If you choose not to use a release, but have questions about a particular condition, do research, or call her PCP's office and ask what kinds of risks are associated with that condition. You will not be given information specific to your client, due to privacy issues, but you may be able to obtain general risk information or resources for obtaining more information about the type of condition she has.

You can develop your own release form that suits your practice and clientele. The form should include a list of contraindications, and/or of acceptable bodywork techniques that the PCP can check if pertinent to

BOX 4.3 | Conditions for Which to Obtain a Medical Release for Bodywork

- Hypertensive disorders including:
  - Preeclampsia
  - HELLP syndrome (Type II as well as Type I bodywork may be contraindicated, depending on the severity of the client's condition.)
  - Severe chronic hypertension
  - Moderate to severe gestational hypertension
- Placental dysfunctions including
  - Placenta previa
  - History of partial placenta abruption in this pregnancy
  - History of placenta abruption in former pregnancy
  - Symptoms of bleeding
- Miscarriage or premature labor or birth
  - Preterm labor in this pregnancy
  - History of more than one preterm birth
  - High risk for repeat miscarriage, such as three or more consecutive miscarriages prior to this pregnancy
- Polyhydramnios
- Blood clots: Thrombophlebitis, DVT, history of DVT or embolism
- Any client restricted to bed rest or modified activity
- Any client with a condition being managed in the hospital
- Any time the client requests to have a release from her doctor or midwife

this client. Your client can bring the form to her PCP, along with information or a brochure about the type of bodywork you do. Once the provider signs the form, the client brings or mails it back to you for review. Many times doctors or midwives do not know what concerns a massage practitioner could have, therefore it is still your responsibility to know prenatal bodywork contraindications and follow those guidelines, even if a doctor signs a form approving all massage with no restriction. For instance, if you know that a client has large varicose veins, has a history of clots, or is on bedrest and at higher risk for deep vein clots, you would still not massage her legs, despite the doctor's lack of written restriction. A sample medical release form is provided in Figure 4.2. The release may need to be updated or revised as the pregnancy progresses and the client's condition changes.

BODYWORK PRACTICES REQUIRING PRECAUTIONS IN PREGNANCY

Certain types of bodywork require special precautions when performed on pregnant clients. Below are some considerations to take into account when using specific methodologies, techniques, or tools with your client.

Abdominal Bodywork

Abdominal bodywork is contraindicated in a few situations. Because the majority of miscarriages occur during the first trimester,[3,5] avoid *deep* abdominal massage at this time. The primary reason for this recommendation is to prevent any questioning or association of massage with miscarriage in your own mind and in the mind of the client, should this pregnancy result in miscarriage.

Note: Be aware that Type II, slow effleurage or energy techniques on the abdomen will not cause harm, and some advanced practitioners may still choose to use these techniques on the abdomen at this time, with the client's informed consent or request.

Along with first trimester contraindications, Type I abdominal massage is also contraindicated at any time during pregnancy that there are concerns or risks with the health of the uterus or placenta, as well as when the mother is having preterm labor risks, or if the baby is demonstrating signs of stress, as indicated by irregularities of the heartbeat. These are situations for which the client would be medically managed. You might see her in a hospital or at home with restricted activity or on bed rest. In this situation, it is highly recommended to obtain a release from your client's PCP that assures you and your client that gentle touch to the belly poses no risks to her condition.

Understanding *why* abdominal work is avoided can help you make the appropriate choices and communicate effectively with your client about touching her abdomen.

In the second trimester, once the pregnant belly has grown larger, abdominal bodywork can be offered if five other criteria are met first:

1. The client is not experiencing abdominal or pelvic pain, cramping, or bleeding.
2. The client is not considered at high risk for preterm labor.

RELEASE FOR THERAPEUTIC BODYWORK DURING PREGNANCY

Dear _____ Date_____

Your patient is interested in receiving therapeutic massage, which has numerous benefits, and few, if any risks during pregnancy.

The following describes the types of bodywork I may use, some of which may be contraindicated with certain types of conditions:

- **Nurturing therapeutic massage** uses long strokes, squeezing, kneading, and pressure on tight muscles, and is generally beneficial and appropriate for all pregnant clients.
- **Abdominal massage** can at times stimulate a few *Braxton-Hicks contractions* and is contraindicated with *placenta previa, risk of abruption, severe hypertension, or preterm labor.*
- **Deep tissue and circulatory stimulating work** can trigger a release of cellular waste into the circulatory system. Occasionally, some clients may experience mildly achy muscles for 24 hours after a session. This work may be contraindicated with clients who have a high risk of preterm labor or uterine irritability.
- **Deep leg massage** might stimulate circulation through the legs and may increase the risk of *dislodging a blood clot.* If your client is at high risk for blood clots and thrombophlebitis, leg massage, or possibly even full body circulatory massage, may be contraindicated depending on the severity of her risk and condition.
- **Range of Motion** and **Resisted Stretching** are not recommended when a client has an extreme *hypermobility of the joints.* As well, it is contraindicated to do hip mobilizations with *diastasis symphysis pubis.*

Please help me to work safely with your client by indicating what types of bodywork restrictions might be necessary.

This signed release confirms that I, *_(Doctor or midwife name)_*, verify that my pregnant patient, *___(patient name)__*, would benefit from massage therapy during her pregnancy. I consider her pregnancy at this time to be *(circle one)*:

Low Risk / Moderate Risk / High Risk

The following checked techniques ARE appropriate for my client at this time of her pregnancy:

____ General relaxing massage (rare need for restrictions)
____ Abdominal massage/belly rub (on occasion, mild Braxton-Hicks contractions may be stimulated)
____ Stimulating or deep tissue massage (may stimulate blood circulation, causing the release of cellular waste products)
____ Leg massage (not appropriate if client has problems with blood clots/phlebitis)
____ Range of Motion, resisted stretching (not appropriate with extreme joint laxity and hypermobility)
____ Client may only be positioned on left side
____ Client is restricted to full bed rest and may not get out of bed onto massage table. (Session can be done with client on the bed)

Specific precautions and activity restrictions are as follows:

_____

_____

____ Contact my office for clarification or review of these precautions for massage at the following number: _____.

Signature _____ Date _____

Printed Name_____

FIGURE 4.2 **Sample medical release form.**

Sample of the type of information you might ask on a medical release for pregnancy massage. Use this as an example, but create your own that applies to your own type of bodywork — acupressure, lomi lomi, cranial sacral, etc. — and its risks if different from those that appear here. Enclose with your release a brochure or fill in a description on your release that informs the PCP of the type of work you do.

MASSAGE THERAPIST TIP

Is a Medical Release Necessary?

Unless it is your policy to obtain a medical release for all clients, a release is generally not necessary for a low-risk normal pregnancy. Some women, however, who have concerns about what kind of activities are appropriate during their normal pregnancy, may feel safer if they bring a release to their prenatal health provider.

Once familiar with the providers in your area, you may find that some doctors and midwives state that massage is beneficial in all situations, as long as the pregnant woman wants massage, and nothing vigorous or stimulating to the abdomen is done. They may feel that when a massage therapist requires a medical release, it heightens fears for women who are likely already carrying various anxieties about the health of their pregnancy. If she did not need a medical release *before* she was pregnant, why should she need one now? Pregnancy is a normal, healthy condition of a woman's life, and generally is not dangerous.

For high-risk pregnancies, many bodywork practitioners determine that a medical release will help them offer the safest and most appropriate care to their clientele. Others will choose not to use medical release forms even for high-risk pregnant clients because they are familiar with local providers, are very knowledgeable about the conditions and contraindications of pregnancy, and are confident in their work with pregnant women. By using a medical release for a high-risk pregnancy, however, you assure and inform both the client and the PCP that you understand that this particular situation has more concerns than normal, that you will be observing any necessary special precautions, and that you are seeking the PCP's advice as to further precautions based on this woman's condition.

Considering the benefits of using a medical release, many practitioners will find its use logical and practical for high-risk pregnancies. In the context of this book, I will elucidate the times when a release is highly recommended.

3. You have asked permission first before touching the client's belly.
4. You always ask your client for feedback regarding your use of pressure and her comfort level.
5. You use firm (but not forceful) effleurage as opposed to very light touch on the pregnant abdomen, which can feel ticklish and uncomfortable, unless the client directs you otherwise.

Acupressure

The use of a few specific acupressure points is contraindicated during pregnancy. These points are based on the "forbidden" points of acu*puncture*. Not all of the prohibited acu*puncture* points are prohibited for acu*pressure*; however, many of the points are contraindicated for applying needles only, not for using finger pressure.

Since many massage therapists study a basic course of acupressure, or at least hear about acupressure points that are contraindicated in pregnancy, they are included here for reference and clarification. Be aware that contraindications for acupressure are sometimes misconstrued into contraindications for massage in general. These are different techniques that do not affect the body similarly; therefore, contraindicated acupressure points are *only* contraindicated for acupressure treatment. This is lucky for women, for if it were true that the regions of contraindicated acupuncture or acupressure points could not be massaged, then the shoulders, hands, abdomen, inner calves, and ankles would all have to be avoided for massage as well.

Generally, acupressure applied to points that specifically stimulate the uterus, ovaries, and downward flow of energy should be avoided or limited, as these points, used in combination with other practices, can be used to help initiate contractions when labor is imminent and desirable. This means that focused and sustained pressure and attention to these exact points, with the intention of inducing energy flow is contraindicated. It *does not* mean that you cannot touch that area of the body at all.

The two primary prohibited acupoints until 38 weeks' gestation are Spleen 6 (SP 6), located on the lower medial leg, and Large Intestine 4 (LI 4), located in the webbing between the thumb and first finger on each hand (Figure 4.3). These are two of the most effective points for helping to stimulate effective uterine contractions.[6-12]

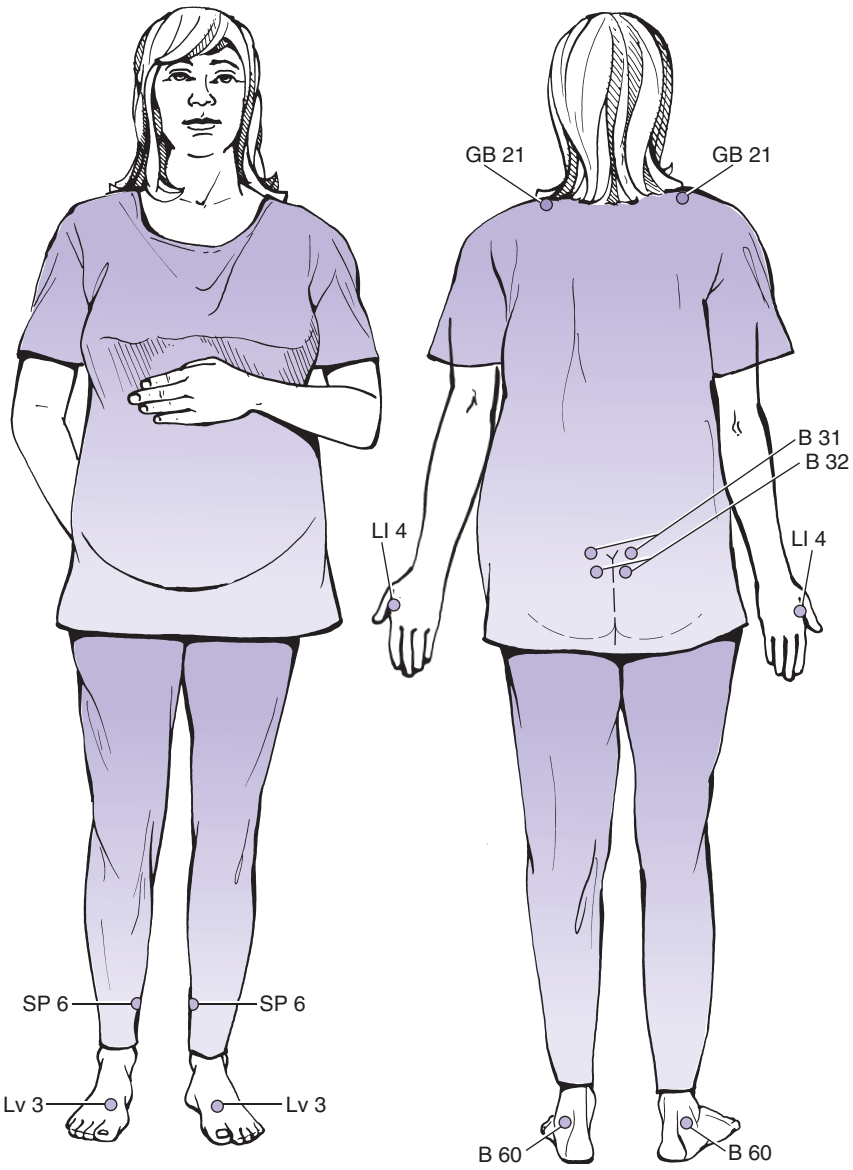

FIGURE 4.3 **Locations of prohibited acupressure points.**

Until the last 2 weeks of pregnancy, stimulation with acupressure of acupoints Large Intestine 4 (LI 4) and Spleen 6 (Sp 6) are contraindicated. Bladder 60 (B 60) and Liver 3 (Lv 3) are contraindicated by some sources, but others use those points during pregnancy. In the first trimester, use caution and avoid deep stimulation to Gall Bladder 21 (GB 21) and Bladder (B) 31, 32, in the sacral foramen.

Other points to consider (seen in Figure 4.3) are Gall Bladder 21 (GB 21), Bladder 31(B31), Bladder 32 (B32), and Bladder 60 (B 60): During the first trimester, some sources suggest using caution and avoiding deep stimulation to GB 21 on top of the shoulder.[6,13] Some sources also mention B 31 and B 32 in the sacral foramen, as potentially stimulating to the uterus when used in conjunction with other points.[6] B 60, lateral to the malleolus,[12] and Liver 3 on the dorsum of the foot are also sometimes contraindicated, mostly when used in combination with other points,[9] (D. Betts, Personal Communication, December 2006), though other sources do not mention them as contraindicated.[6,14,15]

One perinatal massage book warns against other points on the leg and feet, including Kidney 5, Bladder 61, Spleen 10, and Kidney 1;[16] but these points are not prohibited for finger pressure in most Traditional Chinese Medicine resources or prenatal acupressure books, nor by acupuncturists and acupressurists consulted for this text.

Be aware that there are not hard and fast rules, even within the practices of acupuncture and

acupressure, about what points should definitively be avoided.[6,17,18] The most important rules to adhere to when doing acupressure with any client is to work gently with care and respect. The *method* of application of pressure, more than the acupressure point itself, is of primary importance. For instance, some contraindicated points can be used with special tonifying contact, whereas they would remain contraindicated when touched with a sedating type energy (K Ethier, L Ac, personal communication, May 20, 2007). Hence, we can list standard "forbidden" points, but there are times when the skilled and experienced practitioner may find their use appropriate. That is beyond the scope of this book. If you deepen your studies of a particular form of acupressure, you will learn which points are contraindicated for your type of practice.

See Figure 4.3 for location and a list of commonly prohibited points, and read the box, "Dispelling Myths: Massage of the Ankles," for more details about stimulating points around the ankles.

Aromatherapy

Many practitioners use scents in their office or add essential oils to their massage oils. A pregnant woman is likely to be more sensitive to aromas, especially in the first trimester when nausea or vomiting is common. Before using strong scents, have your client do a "sniff-test" to see if she responds agreeably to the odor. Avoid burning incense, which can permeate a room and be uncomfortable for some. Always have unscented oil or lotion available for use.

Many essential oils are contraindicated for use during pregnancy and postpartum. Until you have studied a full course in aromatherapy, it is advisable to assume all essential oils to be contraindicated in the *first trimester,* unless you have specific instruction for their use. In the second and third trimesters, some scents can be quite useful, while others are still contraindicated until labor begins. As a warning, the following essential oils have specific dilutions or restrictions for use in pregnancy, yet are commonly found in scented massage oils: lavender, rose, rosemary, geranium, chamomile. There are numerous useful aromatherapy resources written specifically about pregnancy. Refer to these if you plan to incorporate aromatherapy in your practice. See Suggested Readings in Appendix B for further information.

Breast Massage

Breast massage can be appropriate during a normal, low-risk pregnancy to help relieve aching of enlarging breasts; however, it is contraindicated in any high-risk pregnancy or preterm labor situation due to possible uterine-stimulating effects. Nipple stimulation promotes the release of the labor-inducing hormone, oxytocin, and is sometimes used by clients to help support or initiate labor. While the nipples are not touched during professional breast massage, there could be a minor risk of hormonal release due to generalized tactile stimulation of the breasts. Avoiding breast massage during a high-risk pregnancy eliminates this risk.

Massage to the Adductors and Inner Thigh

Varicose veins in the legs often emerge for the first time during pregnancy (Figure 4.5). Adhere to standard massage contraindications and avoid massaging over varicosities, and on legs with known phlebitis, and blood clots. Severe varicosities can indicate that clots are present in deeper veins. Obtain a medical release before beginning any bodywork for clients who are currently being treated for a blood clot.

Not all clots are obvious and symptomatic. Small ones often go unnoticed and eventually are broken down by the body. You will know when your client has a *symptomatic* clot, as she will be medically treated. Severe pain and swelling in the leg are likely to have come on suddenly, with an 80% to 90% chance that it occurred in her left leg or in the left iliofemoral vein.[19-21] If a woman has been medically managed for her clot, all massage to the legs will be contraindicated to avoid possibly dislodging the clot into the circulation.

You will not know if your client has a nonsymptomatic, but potentially dangerous clot, however; therefore, always practice safety. Because massage does have the capacity to release a clot with serious consequences,[22] a general recommendation during pregnancy and postpartum, is to use only gentle touch to the legs, especially in the hip adductor region. Discussions with several midwives, obstetrical doctors, and pregnancy massage specialists have indicated that the risk from nonsymptomatic clots is so low that there need not be this type of restriction on bodywork, however, a nonsymptomatic clot can still dislodge and become a pulmonary embolism. Therefore, some therapists choose to adhere to the following standard: throughout pregnancy and for at least 6 weeks postpartum, avoid tapotement, deep vibration, cross-fiber friction, petrissage, deep effleurage, and pressure in the hip adductor region of the leg between the knee and groin, and any work that involves tissue compression which can slow or block the blood flow momentarily, including firm acupressure. (This precaution could be for longer if she has not yet been released, for medical reasons,

DISPELLING MYTHS:

Massage of the Ankles

Many massage students learn: "Don't massage a pregnant woman's ankles." However, the idea that it is dangerous to massage a healthy pregnant client's feet or ankles is simply not true. The term "massage" is not specifically defined in that generic statement, but one would assume it refers to effleurage or other types of stroking or "Swedish" massage manipulations. There is no evidence that gentle stroking to the ankles is dangerous, and initiating effective uterine contractions during pregnancy is not that simple. As several obstetricians and midwives have stated in personal interviews, if labor could be started merely by massaging a woman's ankles, the use of medical interventions to induce labor would be stopped! *Effleurage to the feet and ankle area does not stimulate labor.*

The reasoning behind the prohibition of ankle massage during pregnancy has developed for two reasons. Under the medial and lateral malleolus are reflexology areas related to the uterus and ovaries (Figure 4.4). In a similar region are several acupressure points that can be used to support labor (Bladder 60 and Kidney 3). While reflexology and acupressure are different touch techniques from massage, some people still have had concerns that by massaging near these areas, they might stimulate miscarriage or preterm labor. I have found no documented evidence of this ever happening, and interviews with midwives, obstetricians, massage therapists, acupressurists, and reflexologists, have confirmed that there is no reason to avoid massaging the ankles.

Effleurage and general massage are very different techniques from reflexology. The uterus and ovary reflexology zones are very specific spots which massage does not stimulate in the same way. Additionally, reflexology itself, when applied to these spots, does not trigger miscarriage or contractions (D. Byers, Director of International Institute of Reflexology, personal communication, Dec 2006). According to Christopher Shirley, Director of the Pacific Institute of Reflexology, the beneficial results of reflexology to the ankles may actually help *reduce* the occurrence of miscarriage as it helps nurture a healthy maternal environment to support the developing fetus (C. Shirley, personal communication, January 2007).

As for stimulating acupressure points with massage, gentle effleurage in the ankle region with intention of relief of discomfort will not affect those acupoints in a negative way or induce contractions. To influence acupressure points, strong and continuous pressure, repeated over a period of hours or days, is necessary to have any hope of possibly stimulating a uterine contraction. Gentle *massage* can therefore be done without fear in the areas of points prohibited for acupressure.

Suzanne Yates, bodyworker, antenatal educator and author of *Shiatsu for Midwives*, states that she often gently massages around the ankles with light pressure as she connects with the mother's womb. "I have done this kind of work for 18 years now and not had any problems. Indeed I feel it is of benefit. In the first trimester it is calming and supporting the flow of the Jing, an important energy which nurtures the baby" (S. Yates, personal communication, December 2006).

The outcome is that a massage therapist can feel assured that gentle nurturing touch will not harm a pregnant client, and accidentally stimulating the acupressure points around the ankle with massage will not cause uterine contractions to suddenly begin.

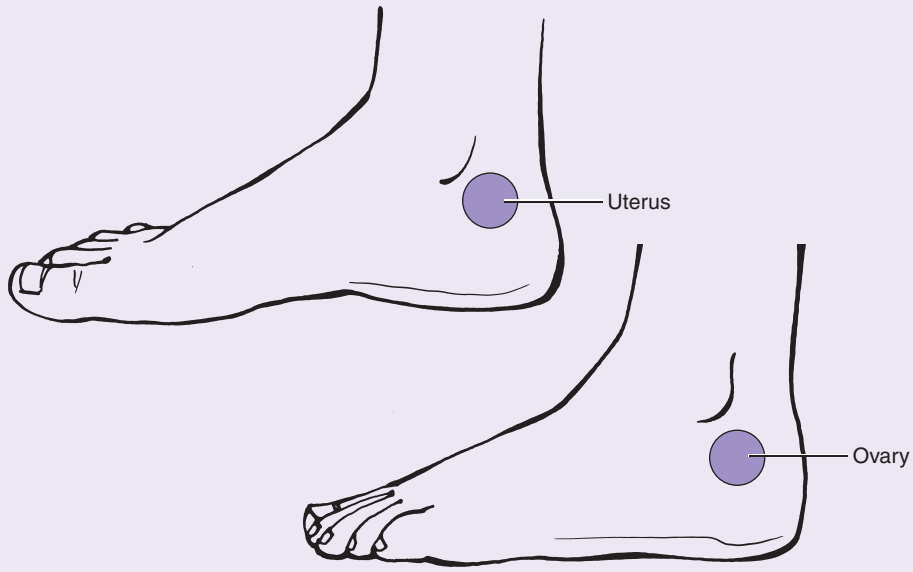

FIGURE 4.4 **Reflexology zones of uterus and ovaries.**
Small specific zones are stimulated with Reflexology to support and nourish the uterus and ovaries and do not stimulate contractions during pregnancy.

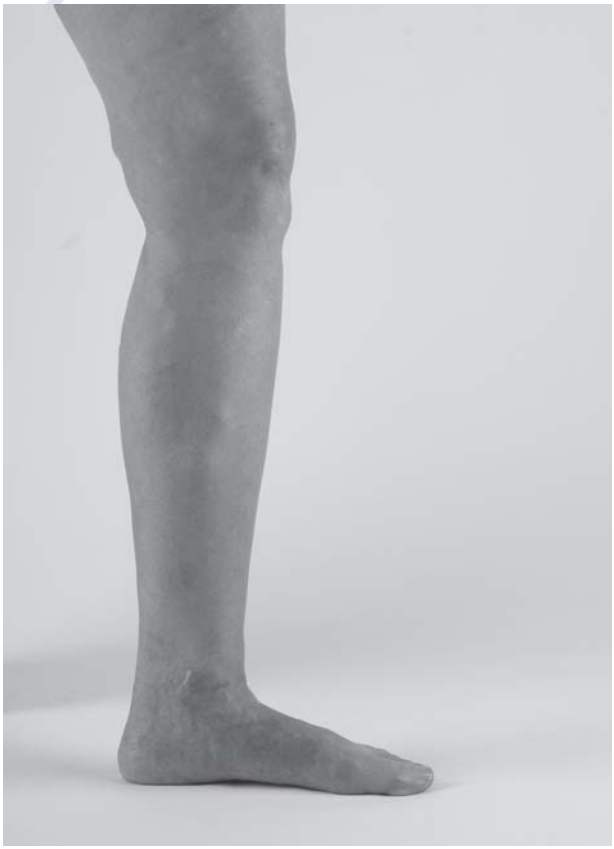

FIGURE 4.5 Varicose veins.
Varicose veins often develop during pregnancy and can be prominent and visibly bulging. Legs with numerous varicose veins have a slightly increased risk of developing DVT.

from her PCP's care.) This is especially true for women with a history of deep vein thrombosis, those on restricted bed rest due to a high-risk condition, and those who have had recent major surgery—such as a cesarean section, as their risk for developing clots is increased even more with their lack of mobility.[20,23] See Box 4.4 and read more about blood clots in the next section.

Note: Direct pressure on the boney adductor attachments, which avoids compression of the blood vessels, can be used when there are no known clots.

Electromagnetic Fields: Electric Blankets and Heating Pads

There have been studies indicating negative effects from extended exposure to electromagnetic fields or EMF's[24-27]—the electrical force which surrounds electrical devices or wires. While the verdict is not final on the effects of EMF during pregnancy, electromagnetic radiation could theoretically have the capacity to affect the well-being of the fetus in subtle ways, including increasing risk for miscarriage.[25,28] Since there is no confirmed assurance of what level of EMF exposure is totally safe, it may be prudent to avoid the use of electric blankets and heating pads with pregnant clients. Instead, use moist, nonelectric warmth at 101°F or less if desiring the therapeutic benefits of heat on muscle tissue.

Passive Range of Motion

For women who have been experiencing nausea during pregnancy, the rocking or rotations of range of motion stretches, or Trager bodywork, could increase nausea, especially in the first trimester when morning sickness is more common. Avoid these techniques if a client has complaints of nausea.

Do not do hip mobilizations if there is a separation of the symphysis pubis (see Chapter 2). Avoid overstretching joints that are already hypermobile due to the effects of relaxin by maintaining active communication and feedback with the client when stretching. Generally, when facilitating isometric stretches with a patient, it is safer to suggest that your

BOX 4.4 | Risk Factors for Blood Clots and Symptoms

Risk Factors for Blood Clots	Symptoms of Blood Clot
Cesarean section or other recent hip, pelvic, or knee surgery	Pain in area of clot
Bedrest and immobility	Swelling
Leg injury	Redness
History of previous deep vein thrombosis	Heat in area of clot
Smoking	Decreased circulation to extremity
Age greater than 40 years	Tender to palpation
Obesity	No symptoms—Not all blood clots are symptomatic
Family history	

Case Study 4.1:
BLOOD CLOTS DURING PREGNANCY I

When Mary, a 25-year-old woman with her first pregnancy, came for her first massage, she marked on her health intake form that she had a blood clot. The massage therapist queried Mary further and learned that she had recently experienced pain, swelling, and heat in her left inner thigh and edema of her lower leg, and had been told she had a blood clot. She was placed on anticoagulants to prevent further clotting potential. Mary did not have a history of circulatory problems but had been told this was a condition that sometimes occurs in pregnancy. She did not express worry or concern over her condition but did state that she was having a lot of discomfort in her legs and hoped that the therapist could do deep work to her legs to help relieve it.

The therapist was alarmed at the request and at the client's apparent lack of knowledge about the risks involved with a blood clot, namely the potential for the clot to be dislodged with potentially life-threatening consequences. The therapist informed her client that she was unable to work on her legs at any time during the pregnancy because of this clot. She also told the client that until she had a medical release from the client's doctor approving Type I massage for the rest of her body, the therapist would only use Type II, non-pressure, energetic techniques during today's massage, along with deeper work to her shoulders, neck, arms.

The client stated that everything was fine, since she was on anti-coagulants and the doctor had not specified that she should avoid massage. She did not understand the therapist's concerns and was perturbed that she would not do deep work during the session. Mary did not reschedule a massage.

client position her muscle in the stretch, rather than you positioning for her.

Foot Massage and Reflexology

There are two considerations regarding foot massage during pregnancy. The first is that many pregnant women experience calf cramps. These are due to a variety of possible causes, such as overactivity, underactivity, changes in posture, and other influences. Plantar flexion of the foot during a foot massage, (pointing the toes), can stimulate calf cramps. Avoid this action and ensure that the foot is well supported when the client is in the sidelying position to avoid drooping of the foot in a plantar-type flexion.

The second issue concerns safe touch when working with edema, a common development in the feet and hands during the latter part of pregnancy. Normal nonpitting edema, as well as sometimes **pitting edema** of the extremities can be normal. Pitting edema is evaluated by pressing a finger pad into the skin for 5 seconds and then lifting the finger up. If an indentation is formed by the finger pressure and remains for more than a brief moment, it is considered to be pitting. It can vary from mild to extreme (Figure 4.6).

Deep work on pitting edema can cause tissue damage, and so Type I deep techniques should be avoided. Only light touch, such as lymphatic and energy work should be used directly on pitting edema.

CAUTION: Pitting edema can be normal, but it is also associated with pregnancy complications like preeclampsia, which will be discussed later in this chapter. If pitting edema has just developed since the last prenatal visit and has not been evaluated yet, the client should be instructed to call her PCP to determine if she needs to be seen sooner than planned.

Supine Positioning

Avoid supine positioning after about 22 weeks' gestation or any time a woman's pregnant belly is visibly obvious and she is uncomfortable lying supine for more than a few moments. When the client is supine, the weight of the baby and other uterine contents can press directly onto the large blood vessels (the aorta and inferior vena cava) along the mother's back (Figure 4.7). If it does, the blood flow will decrease, affecting both the mother and the baby. The baby's heart rate will decelerate, its oxygen saturation levels will drop,[29] and the mother may feel dizzy, nauseated, or generally uncomfortable or uneasy. If this should happen, the optimal treatment is to have her turn immediately onto her left side to relieve the pressure on the blood vessels and resume full blood flow. Encourage her to breathe deeply to increase oxygenation.

Despite this restriction of supine positioning, some women are comfortable lying supine. This is because of the baby's ever-changing position. If the baby is positioned such that its weight will not compress onto the mother's spine when supine, short periods of bodywork (3 to 7 minutes) may be allowable in this position. Sometimes this is convenient for

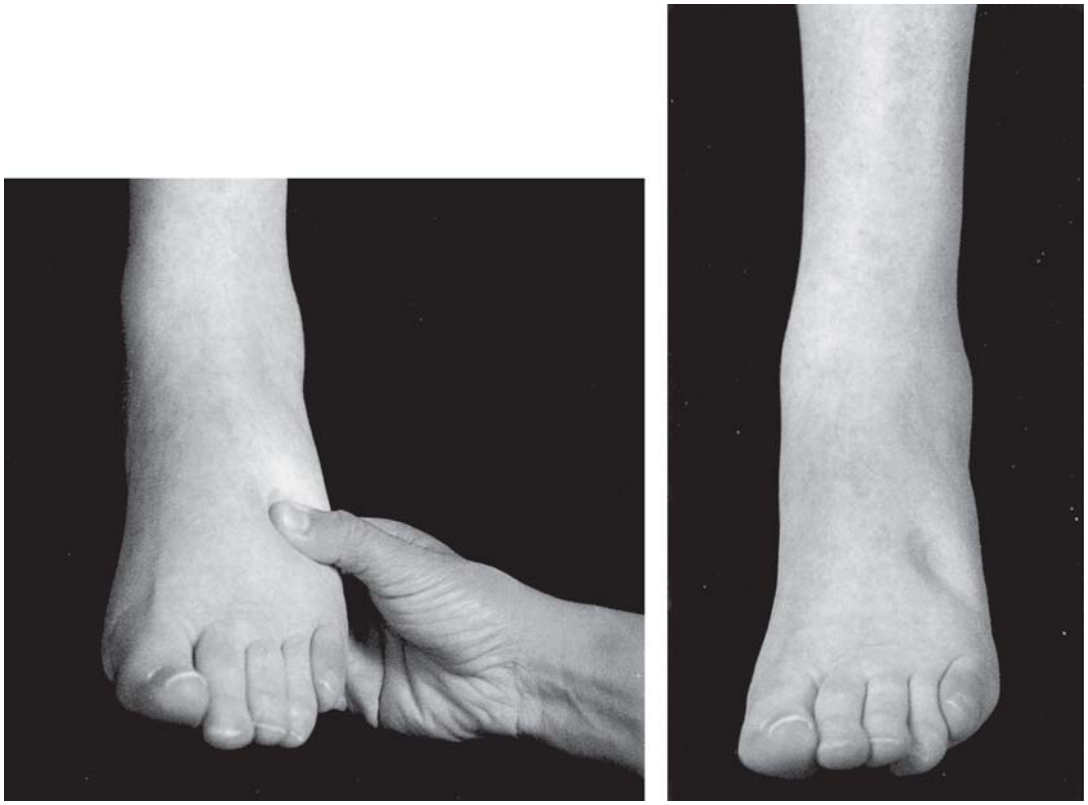

FIGURE 4.6 **Pitting edema assessment.**
Pitting edema can be normal in pregnancy, and can also be associated with preeclampsia. Assessment is done by pressing finger into swelling for 5 seconds, and looking for indentation after removing finger. Deep tissue work should not be done on pitting edema. (From Bickley LS and Szilagyi P. Bates' Guide to Physical Examination and History Taking. 8th Ed. Philadelphia: Lippincott Williams & Wilkins, 2003.)

a final neck traction or massage of the shoulders and face. Certain assisted stretches are also done with the client in the supine position. In either of these situations, it is imperative to maintain good verbal communication with the client about how she is feeling, and instruct her to roll over to her side if she feels the least bit uncomfortable.

CAUTION: Any woman in the supine position who complains of nausea, dizziness, or uneasy feelings, however mild, should be repositioned immediately to her left side, which typically provides the most optimum blood perfusion to the baby and mother.[29-33]

As a general rule, when the position of baby is not definitive, always position your second or third trimester client in the sidelying or semi-reclining position for extended bodywork. An optional position is to place a foam wedge under the client's right hip; this tilts and displaces the weight of the uterus to the left, preventing compression of the large blood vessels situated to the right of the spine.

Saunas and Hot Tubs

Practitioners who work in spas or other settings where saunas and hot tubs are available should take special care to ensure that temperatures are kept at a safe level for their clients. Hot tub water temperatures are best kept to 101˚F or less, and immersions into heat kept to 5 to 10 minutes. Immersions in hotter water can be done as long as it is for less than 10 minutes, which avoids the risk of raising core body temperatures over 102˚F.[34] Core body temperatures over 102.6˚F *in the first trimester* may be associated with some neurological birth defects and may possibly increase risk of miscarriage, although study results are conflicting about this. [34-36] The issues of neural tube defects decline after the first trimester, since this primary development occurs very early in the fetal life.

Later in pregnancy, mothers tend to become dizzy or unable to tolerate heat for more than short periods

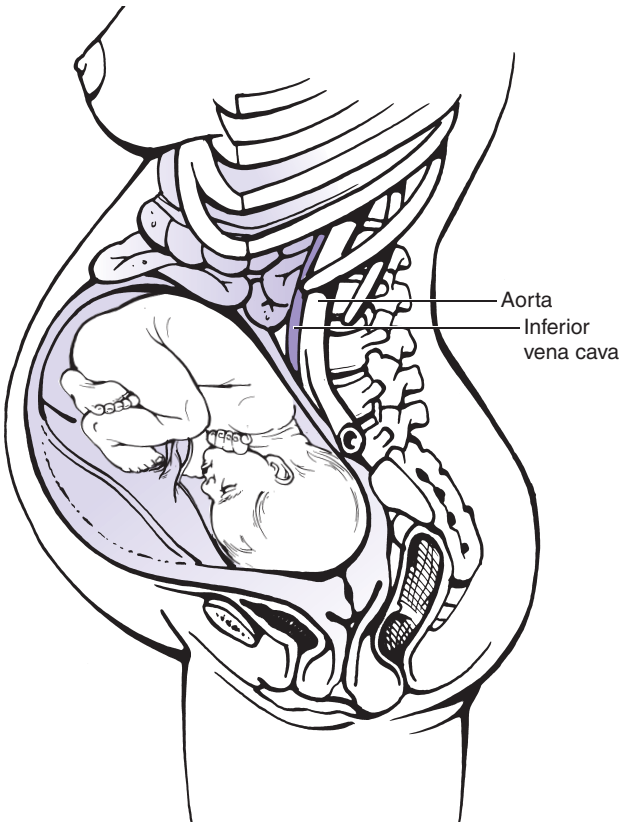

FIGURE 4.7 Supine positioning and pressure on inferior vena cava and aorta.

When the pregnant mother is positioned supine, risk exists for the weight of the gravid uterus to press onto the large blood vessels running along the spine. This compression will decrease oxygen flow to both the mother and child.

of time, thus self-regulating with regard to heat immersion. Interspersing short dips in hot water with immersion in cold can help prevent the development of hyperthermia.

HEALTH FACTORS THAT INCREASE RISK DURING PREGNANCY

Some pregnancies begin with or develop risk factors indicating minor or major concerns for the mother and/or the baby. These risks may lead to serious complications. Pre-existing risk factors include maternal age, obesity, history of repeat miscarriage, or asthma, while risks that can develop during pregnancy itself include conditions such as preterm labor and gestational hypertension. If the client has a condition that increases her risk for complications, massage restrictions are not always necessary unless problems actually develop during the current pregnancy. Some of these conditions are discussed below, beginning with those that have a few extra bodywork considerations.

This is followed by a discussion of complications that can develop during pregnancy and that pose serious risk to the life and health of the mother and/or the infant. These conditions contraindicate Type I massage or require increased precautions for bodywork. Remember, however, as you read the following section that the majority of women you see will be having a normal, healthy pregnancy and can be supported fully with your nurturing touch.

Conditions Requiring Special Bodywork Precautions

The following conditions classify a woman's pregnancy as having some potential for problems. They are explained here to give you an understanding of why they are considered risks and to help inform you if you encounter or hear about the condition. Bodywork considerations are dependent on the history of the problem and the current level of severity, and they generally emphasize observance of precautions related to positioning, abdominal work, or use of Type I bodywork.

Complementary Modalities:

Applications of Heat During Pregnancy

Most pregnant clients in their second and third trimesters will feel warmer than when they are not pregnant. This is due to hormonal effects and increased blood volume. While some may enjoy short immersions in hot water, your client in advanced pregnancy may not appreciate a heating pad or blanket on your massage table.

If she is experiencing muscle tension in a particular area, however, and you feel that the application of heat will enhance your work and the ability of her muscles to relax, use localized nonelectric warm packs. Hydroculator packs; heated flax seed bags; hot water bottles; or moist, hot towels, can be used to warm an area of tension. Avoid heat applications greater than 101°F for more than 10 minutes directly over the abdomen or low back where the heat may affect the developing fetus, particularly in the first trimester.

Traditional Birth Practices: Keeping the Mother and Baby Safe

Cultural practices to keep both the mother and baby safe during pregnancy often include taboos against activities or foods that could cause baby to "stick" inside, bring on illness or weakness, cause problems to the placenta, or cause labor to not progress effectively. Traditional Yup'ik Eskimo practices from Western Alaska have included turning their pillows over prior to sleeping to encourage the baby to stay mobile, rather than stuck, inside the womb, and walking quickly through door ways to encourage a quick delivery. Women were sometimes instructed not to sleep on their backs to prevent baby from rising up in the womb, and to lean forward for several minutes each day to keep baby smaller and thus have an easy delivery. It was encouraged that eating only freshly made foods could help prevent fetal deformities, while no burnt food should be eaten, as this could cause the placenta to become stuck and not release after birth. Many practices around the world, including some of our own, involve maintaining positive thoughts and avoiding emotionally stressful situations, such as funerals.

Maternal Asthma

When a pregnant woman has severe asthma, her fetus is at risk due to the mother's use of medications and the decreased oxygen availability to the fetus during asthma attacks.

BODYWORK PRECAUTIONS: Ask whether the client's asthma is affected by certain scents, and avoid the use of essential oils, scented oils, candles, and other scents that you or she suspects may trigger an attack.

Obesity

Obesity is defined as having greater than 20% of the expected weight for a woman's size and age. Beginning pregnancy with obesity increases the risks for gestational diabetes, a large baby, and hypertension.

BODYWORK PRECAUTIONS: It is worthwhile to consider using the sidelying or semi-reclining position during the first trimester if it is more comfortable for your client. The supine and prone positions can increase breathing difficulties for extremely obese people. Semi-reclining position may be more comfortable than sidelying for some women as pregnancy progresses.

Tobacco/Drug/Alcohol Use

With any type of maternal addiction to drugs, alcohol, and tobacco, risks increase for fetal complications, lower fetal birth weight, preterm delivery, deep vein thrombosis, labor complications, placental abruption and previa, and miscarriage.

BODYWORK PRECAUTIONS: For clientele for whom drug, tobacco, and alcohol use is common, the recommendation of a medical release is based on the severity of the client's drug use, the likelihood of her developing any of the above risks, your uncertainty of the client's veracity, or, if working in a clinic or environment with clientele for whom drug use is not uncommon, the clinic's standard protocol.

Chronic Hypertension

High blood pressure that develops before pregnancy and has been treated medically over a period of time, is considered to be chronic, as opposed to hypertension which develops during pregnancy and is called gestational hypertension. Chronic hypertension can lead to increased risks for preterm labor, placental abruption, and decreased fetal growth.[37-39]

BODYWORK PRECAUTIONS: For a client with severe hypertension, a medical release is recommended to determine the level of risk your client's PCP considers her to be, and to determine if Type I full body techniques are appropriate. Abdominal massage is contraindicated with severe hypertension.

Thromboembolic Disorders

By the third trimester, many women have at least small, asymptomatic clots in their legs, most commonly in the deep vessels of the inner thighs in the area of the saphenous, iliac, and femoral veins. The development of blood clots that partially or totally block a leg vein is called **deep vein thrombosis (DVT)** (see Figure 4.8). It occurs, as its name implies, in the deep blood vessels of the legs, most commonly in the left iliofemoral vein. **Superficial thrombophlebitis**—a condition of venous inflammation in

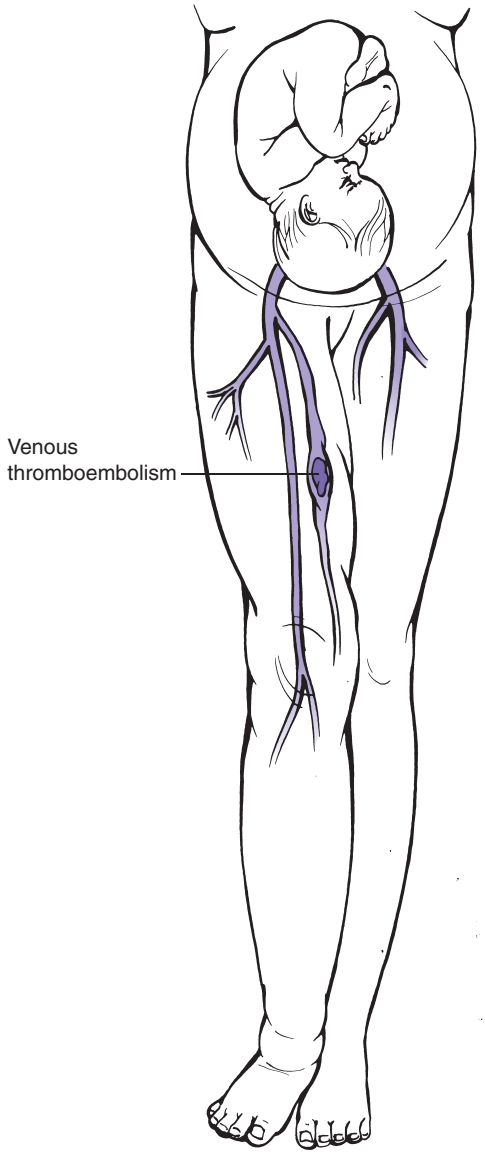

FIGURE 4.8 **Deep vein thrombosis.**
Risk for the development of clots increases during pregnancy due to impeded circulation to the legs and increased clotting factors in the blood, and during postpartum if postcesarean and having decreased mobility.

the superficial veins caused by a clot—occurs more often in the calf.[19]

The concern surrounding a blood clot is the possibility that it could become dislodged into the circulation, as an **embolus,** and become lodged in the lungs, causing difficulty breathing, chest pain, and possibly death. This is known as a **pulmonary embolism.** DVTs have a higher likelihood of causing a pulmonary embolism than superficial clots.[19]

During pregnancy, the risk of developing a clot increases by five or six times, as compared to nonpregnant women.[19,40] The higher risk for clots occurs because of changes in the perinatal circulatory system, including expanded blood volume, increased clotting factors in the blood, and impeded blood flow to the extremities (see Chapter 3). Risk factors include smoking, being over age 35, being overweight, having had a previous DVT or embolism or having varicose veins, high blood pressure, preeclampsia, or being on bed rest or very inactive.[41]

DVT occurs in an average of one out of every 1000 to 1800 pregnancies[19,20,23,42,43] and can develop in any trimester of pregnancy.[20,21,44,45] During the postpartum period or after a cesarean section the occurrence of DVT may increase to about 1 in 700 women,[23] though the incidence of embolism is low. Out of 268,525 deliveries reviewed in one study, 165 women developed known clots in their veins, and 38 of those experienced a pulmonary embolism.[20]

BODYWORK PRECAUTIONS: *Standard protocol is as follows:* If the client is complaining of leg pain that is unexplained by new activity or strain, or if you notice redness, swelling, and heat in an area of the leg, instruct her to call her PCP immediately for further assessment.

Follow standard clot precautions on the legs of all pregnant and postpartum clients.

Some perinatal massage sources recommend that a practitioner assess a client before each massage for signs of DVT.[16] The assessment recommended is the Homan's test, which involves abruptly dorsiflexing the client's foot and assumes that if the client feels sharp pain in the popliteal area or calf, the test is positive. However, the more accurate positive sign is a resistance of movement to the dorsiflexion action.[46]

I do not recommend this test for several reasons:

1. The use of the Homan's sign is generally no longer recommended as a diagnostic tool.[47,48] Ultrasound and venography along with visual assessments, such as localized swelling, heat, and redness are the primary diagnostic tools used by medical professionals.
2. The Homan's test has been demonstrated to be inaccurate, and is not useful for determining the presence of a clot.[49-51] Even when done correctly, its accuracy can be as low as 8%.[49] Whether the result is positive or negative, there is no assurance regarding the absence or presence of a clot.
3. Other physical issues can cause a positive result, including leg cramps, edema, cellulitis, and a change in shoes from high heels to low heels.[46]

A massage therapist who regularly tests for a positive Homan's sign can stimulate client anxiety about her safety. A pregnant woman has plenty of worries to occupy her mind. When she comes for a massage, she does not need to add to these by thinking about the remote chance that she may have a problematic blood clot. Instead, make it standard to practice gentle touch to the legs, and always visually assess for redness, pain, swelling, and inflammation, referring to the PCP if found.

Multiple Gestation (Twins or More)

While it can be exciting for the mother to be having more than one baby at a time, risks increase for the development of preterm labor. All other common complaints of pregnancy are further exacerbated due to the increased size and weight gain and hormonal influences (Figure 4.9).

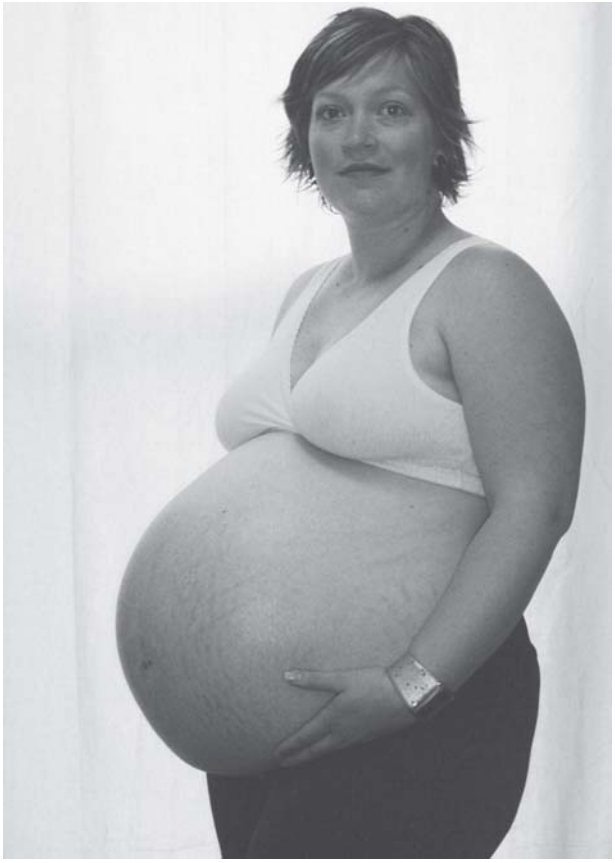

FIGURE 4.9 Large abdomen: mother of twins.
When a mother has a particularly large abdomen, as with multiple pregnancy, obesity, or extra large baby with smaller mother, extra care is needed to ensure adequate body mechanics instruction is given for getting on and off massage table and for repositioning. Extra abdominal support may be needed on the table as well.

BODYWORK PRECAUTIONS: In the third trimester, if the abdomen is exceptionally large, extra care in teaching the client proper methods of sitting up from sidelying, as well as possibly using a foam wedge or rolled towel on the table to support under the belly is important. (See "Positioning" in Chapter 5.) The client with a large belly has an increased risk for diastasis recti, and for straining of the uterine ligaments. Help her to rest comfortably and well-supported on the table, and minimize her need for repositioning. Use only gentle abdominal massage for short durations to avoid stimulating contractions. Avoid excessively stimulating Type I work throughout the pregnancy until the last weeks. A medical release is recommended if premature labor has occurred with this pregnancy.

History of Repeat Miscarriage

Miscarriage is birth that occurs before 20 weeks' gestation. Miscarriage occurs in about 15% of pregnancies each year,[3,52] with the vast majority occurring in the first trimester before 12 to 13 weeks' gestation. According to the Centers for Disease Control and Prevention, of the 6.28 million pregnancies *reported* in the U.S. in 1999, miscarriage occurred in 1 million of those.[53] Since so many miscarriages happen too early to have even been reported as a pregnancy, we can conclude that there are many more than this that occur each year.[54]

The vast majority of miscarriages result from a healthy response to the early abnormal development of an embryo, but other known associations with miscarriage include maternal issues, such as problems with the cervix or uterus or conditions such as diabetes, infection, or virus. Miscarriage is also associated with increased *paternal* age[55,56] as well as maternal drug use, including tobacco.[57-59]

Women who have three consecutive miscarriages in the first trimester have a 35% chance of having another miscarriage.[60] Women with this experience will often have a significant level of anxiety during consequent pregnancies if the fear of losing the baby again overrides their ability to relax and enjoy the current pregnancy. Massage can be very helpful, by encouraging relaxation and self-care.

BODYWORK PRECAUTIONS: If a client has had two or more consecutive miscarriages, avoid abdominal massage until 1 to 2 months past the date of the previous miscarriages, unless the client asks for belly massage and feels that this

touch will help to allay anxieties. The contraindication is simply to avoid association between your touch and another miscarriage, should that unfortunately occur. With this in mind, if the client has a history of multiple miscarriages, has a high level of anxiety related to it, has had preterm contractions in this pregnancy, or is, for additional reasons, at higher risk for repeat miscarriage, avoid any stimulating touch, such as vigorous Type I bodywork that could alarm a client who already has concerns about receiving massage. A medical release is recommended for clients with three or more consecutive miscarriages to help ascertain risks and precautions.

Previous Premature Birth

A **premature birth** is one that occurs between gestational weeks 20 and 37. Each time a woman has a premature delivery, her risks increase for having another. If her first and only pregnancy resulted in the delivery of a baby less than 3 pounds, her chances of it occurring in the next pregnancy are 50%.[60]

BODYWORK PRECAUTIONS: practice caution with clients who have a history of a premature delivery in their last pregnancy and for those who have a current condition that was associated with the first preterm birth. Wait to offer abdominal massage until 1 to 2 months past the time of the previous premature labor, or until the mother's anxiety has diminished about preterm labor occurring again. Avoid Type I techniques until the mother has been told her risk for preterm labor in this pregnancy has decreased. A medical release is suggested prior to commencing work if she has had more than one pregnancy with issues of preterm birth or preterm labor, to help determine what level of risk she is at currently.

DISPELLING MYTHS:

Massage and Miscarriage

One of the greatest fears bodyworkers have about working with a pregnant woman is unintentionally doing something that could cause her to miscarry or experience preterm labor. Miscarriages occur in hundreds of thousands of pregnancies each year due to causes utterly unrelated to massage. The fears abound however, and if a miscarriage should occur after a massage, both client and therapist may harbor fears that the massage caused it to happen. This is a common misconception about prenatal massage. Other fears are also expressed about the potential dangers of prenatal massage. Here are some examples of erroneous beliefs collected from general public and from students in pregnancy massage classes:

"Massage releases toxins that poison and kill the baby, or cause a miscarriage."

"Overstimulation to the abdomen may shrink the uterus and negatively affect the baby, or even cause miscarriage."

"Avoid prenatal massages until the late second trimester. The massage moves fluid which the baby can feel is an attack, and it can cause miscarriage. Using the wrong pressure points with reflexology can also cause miscarriage."

"Don't press hard on the left side of the low back or sacrum, as that is where the baby attaches and you might hurt it."

None of the above statements are true. *Therapeutic massage does not cause miscarriage.* There are, however, two caveats to identify:

1. If one has a strong intention toward *causing* a miscarriage and does very deep, intensive, and invasive manipulations to the abdomen, especially in the first trimester, there is a possibility that problems could occur. Healing bodywork is not of that intensity, however, nor does it have nor should it have, that intention.
2. If someone is at high risk for miscarriage and is already on the verge of one, then circulatory and vigorous Type I full body massage or abdominal massage might possibly support and encourage the body to do what it was already beginning to do. This can actually be helpful during what is often a difficult experience for women and often their partners. While massage and bodywork can be supportive during a miscarriage that is already underway, nurturing touch will not cause a healthy pregnancy to miscarry. The general precaution during the first trimester, when most miscarriages occur, is to use respectful, gentle, and superficial touch to the belly or avoid the abdomen altogether. This way, if a miscarriage occurs soon after a massage, both the mother and massage therapist can avoid harboring any concerns that the massage was somehow the cause of this miscarriage. This is the primary reason for abdominal bodywork precautions in the first trimester of pregnancy—to simply avoid an association between bodywork and a potential miscarriage, for which any woman is initially at risk.

Note: If the client with a history of preterm labor in previous births has not been having preterm contractions with *this* pregnancy, gentle touch to the abdomen can be done for the client who requests it and feels it will help her cope better emotionally with her pregnancy.

Fetal Genetic Disorders, Intrauterine Growth Restriction, Oligohydramnios

Nowadays, with numerous blood tests, ultrasounds, amniocentesis, and chorionic villi sampling, women know a great deal about the health of their unborn baby. Knowing ahead that her baby may have abnormalities can cause increased emotional stress for the mother.

Intrauterine growth restriction means the fetus is small for its estimated gestational age, as indicated by measurements and ultrasound. This condition may indicate it has fetal anomalies or other problems.

In **oligohydramnios**, too little amniotic fluid is produced. It is associated with placental dysfunctions, fetal anomalies, or fetal death.

BODYWORK PRECAUTIONS: Precautions are dependent on the history of the problem and the current level of severity. A woman may have increased fears or anxieties about her pregnancy. Abdominal massage may be contraindicated to avoid association of massage with potential problems with the baby. This contraindication will be based on the woman's anxiety level and her desire to receive or avoid abdominal massage. Some women may want gentle touch and energy work to the abdomen to ease anxiety and help them to deepen their connection with the baby. The massage itself will not affect the condition of the baby, but in some instances, a woman's uterus may be more irritable and contractile, increasing the risk for preterm labor or premature rupture of the membranes or amniotic sac and making abdominal massage, and sometimes Type I massage, a contraindication.

Fifth or Subsequent Pregnancy

With each pregnancy, a woman's musculoskeletal system is again stressed. Risks increase for diastasis recti, varicose veins, ineffective uterine contractions in labor, and postpartum hemorrhage.

BODYWORK PRECAUTIONS: A woman in her fifth or subsequent pregnancy will tend to have more low back pain and need extra abdominal support. She should be encouraged to do abdominal strengthening from the start of her pregnancy (or sooner) and should be assessed for diastasis recti as a cause of low back pain. Abdominal support binders can be helpful as well. (See Appendix B, Resources for the Practitioner.)

Prolonged Infertility or Hormone Treatment

Any woman who has had difficulty becoming pregnant will have increased emotional concerns and anxiety over the health of her pregnancy. If she has taken fertility hormones, she is at a much higher risk for multiple conception and has increased risks in general.

BODYWORK PRECAUTIONS: In this situation, a woman's need for comfort and reassurance will be high. Abdominal massage and vigorous Type I massage may be contraindicated throughout pregnancy until the last few weeks before delivery, depending on the history of attempted pregnancy or miscarriages and the client's anxiety level. Discuss her expectations of bodywork so your work can support her needs. A medical release may be recommended if the client has a history of repeat miscarriage or if she has a great deal of anxiety about this current pregnancy and would feel more relaxed having a medical release.

Gestational Diabetes

Gestational diabetes (GD) occurs in about 4% of all pregnancies.[62] It is different from the common Type I or Type II diabetes, as it only occurs during pregnancy, and is a condition that usually resolves after delivery. Excess maternal blood sugar will cause the baby to grow larger, thereby causing size-related difficulties at delivery. To prevent this, many women with GD are induced into labor with **Pitocin—**a synthetic form of the hormone oxytocin—earlier than their due date, before the baby has grown too large. A woman also has a greater chance of developing infection, preterm labor, gestational hypertension, or fetal abnormalities when she has GD.[61]

BODYWORK PRECAUTIONS: A woman with GD may have an extra-large abdomen and be especially prone to low back pain, leg pain, and pelvic congestion. Proper abdominal support under the belly on the massage table is, as

always, essential (see Figure 5.1). An abdominal support binder may be recommended.

Urinary Tract Infection

A **urinary tract infection** (UTI) increases the risks of preterm labor, kidney infection, and premature rupture of the membranes. Symptoms of a UTI may be mild, in which case the client may not perceive many discomforts, or the symptoms may be moderate with urinary urgency and frequency, low back pain, uterine contractions, pelvic pain, and fever.

BODYWORK PRECAUTIONS: If your client has a UTI, ensure that she has been treated for this condition and is not having acute symptoms of pain, fever or chills, or preterm contractions during massage. It would be unlikely for you to see a client in this condition, unless the symptoms have only just begun to increase prior to the massage session. Avoid massage to the abdomen until a UTI is fully resolved.

High-Risk Complications of Pregnancy

Five percent of pregnancies develop complications that have the potential to seriously endanger the mother and/or baby during pregnancy, birth, or postpartum.[62] These complications occur only during pregnancy. They may contraindicate Type I massage or require specific and particular precautions. In most cases, a woman with these complications will be on a modified rest regimen, which might involve partial or total bed rest and the therapist will be making a house call. These conditions must be assessed for their severity to determine the type of precautions to be implemented. A medical release that describes necessary precautions or discussion with the client's PCP is important and strongly recommended before working with clients with high-risk conditions.

- Uterine and placental abnormalities
- Polyhydramnios
- Moderate to severe gestational hypertension
- Preeclampsia or HELLP syndrome
- Preterm labor

Women with these conditions should only be treated by massage therapists who have had significant practice in massage in the sidelying positioning and have confidence working with pregnant women. The risks of each condition should be fully understood and massage done in compliance with any medically indicated restrictions as described by the PCP.

Placental Abruption (Marginal or Partial)

Placental abruption is a condition in which the placenta begins to separate from the wall of the uterus before the delivery of the baby. It occurs in an average of 1 out of 150 to 200 pregnancies.[63] The placenta may separate partially, or there may be a complete abruption, in which case the placenta detaches entirely, leaving the maternal blood vessels open and bleeding at the site of placental attachment. Symptoms may include light or heavy bleeding, a hard, rigid abdomen with abdominal pain, or massive hemorrhage. Chronic high blood pressure is a primary risk factor for abruption, along with tobacco or cocaine use, premature rupture of membranes, and having had an abruption in a previous pregnancy.[33, 63-65] A full abruption is a medical emergency in which an immediate cesarean delivery is necessary.

With a partial or marginal abruption without heavy bleeding (determined by ultrasound), the mother may be restricted to bed rest until the bleeding resolves.

BODYWORK PRECAUTIONS:

- *After recovery* from a partial abruption, once the mother is able to resume some of her daily activities (although they will likely be quite modified), massage can be done with gentle Type II work. *Avoid all abdominal massage and Type I stimulating massage.* Obtain a medical release prior to beginning bodywork to be certain the PCP approves of massage, and to alleviate concerns for the mother and yourself, as well as to ascertain other risks.
- Call 911 emergency services immediately if your client should develop symptoms of severe abdominal pain or sudden heavy vaginal bleeding during a session, as this could indicate another abruption.

Placenta Previa

When the placenta has implanted itself partially or completely over the opening of the cervix, it is called a **placenta previa** (Figure 4.10). This happens more frequently in women who have uterine fibroids or scarring from previous surgeries, as well as in smokers, women over 35 years old, and those who have had multiple pregnancies.[33] If the placenta is positioned low early in the pregnancy, it may still migrate upward and out of danger as the pregnancy progresses. If it does not, a cesarean section will be necessary at delivery, as the placenta will impede the vaginal delivery of the baby. There may be no symptoms

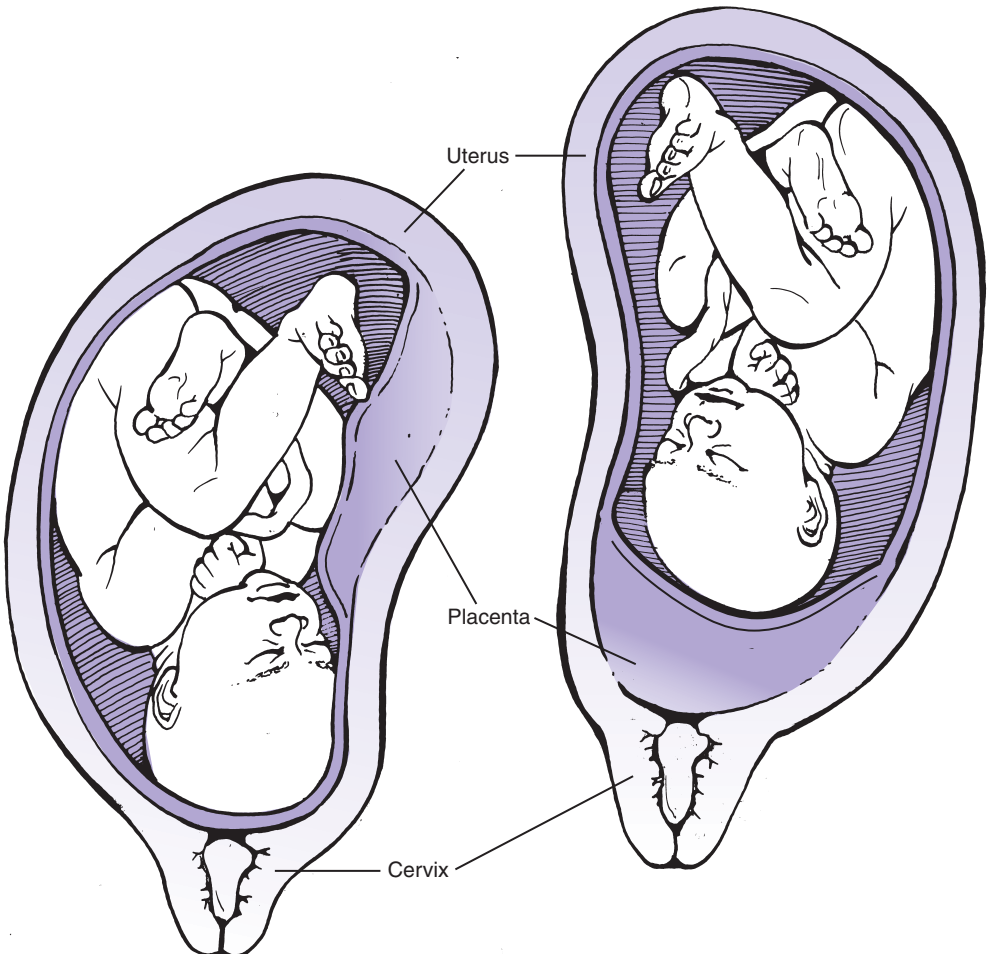

FIGURE 4.10 **Placenta previa and normal placenta.**

Normally the placenta is positioned in the upper area of the uterus. With a previa the placenta is positioned over or very near the os, or opening, of the cervix. There is increased risk of bleeding with this condition and delivery must be by cesarean section. (LifeART image copyright 2009 Lippincott Williams & Wilkins. All rights reserved.)

manifested with a previa, and it may only be found by ultrasound. In other situations, there may be a small or large amount of bleeding as the uterus enlarges and pulls on the placental attachments. The danger of hemorrhage is extreme if the cervix dilates, pulling away from the placenta.

With a known complete previa, a woman is usually instructed to avoid heavy lifting, aerobic activity, and sexual stimulation and intercourse, which can stimulate the abdomen, cervix, and uterus.

BODYWORK PRECAUTIONS: Gentle massage can be done, and will benefit a woman, but avoid abdominal massage. All Type I full-body stimulating massage is also contraindicated if the client has had any bleeding. A medical release is highly recommended to be certain the PCP approves of massage, alleviate concerns for the mother and massage therapist, and to ascertain other risks.

Polyhydramnios

Polyhydramnios is a condition in which excessive amniotic fluid is produced in the uterus. It is associated with maternal shortness of breath, diabetes, preterm labor, and fetal anomalies.[38] With the increased fluid, there is an increased intrauterine pressure and impaired perfusion of blood between the uterus and placenta. This can lead to dangerous effects, such as sudden rupture of the uterus or placental abruption, irritable uterine contractions,

preterm labor, or premature rupture of the amniotic sac. A woman may be treated with modified activity or restriction to lateral bed rest. Type II bodywork is beneficial.

BODYWORK PRECAUTIONS: Precautions for this condition depend on the history of the problem and the current level of severity. Obtain a medical release to determine the need to restrict Type I massage or additional necessary bodywork restrictions. No abdominal massage should be performed.

Preterm Labor

Preterm labor, also known as premature labor, is defined as the onset of contractions *with changes to the cervix* (dilation, shortening, and effacing) before 37 weeks' gestation and with risk of the baby being born early. Preterm contractions do not always lead to preterm *labor*. A woman may have contractions that do not cause cervical change. She may also have cervical change without being aware of any contractions. Early contractions can be caused by simple things, such as dehydration or urinary tract infection—either of which can be easily treated. More serious preterm labor can be caused by other problems, such as issues with the health of the baby, a shift in hormones, rupture of the amniotic sac, or infection. Most often, the cause is unknown.

A woman with this condition may be restricted to lateral bed rest and may take medications to help prevent or decrease preterm contractions.

BODYWORK PRECAUTIONS: Full body Type I massage is contraindicated for a client relegated to bed rest or restricted activity due to preterm labor, but localized Type I or general Type II massage can still be done. Obtain a medical release prior to beginning bodywork. Offer her a drink of water and encourage her to drink more than normal after receiving massage to minimize the effects of a massage-stimulated release of cellular waste into the circulatory system, which could potentially further irritate an already irritable uterus.

Gestational Hypertension, Preeclampsia, and HELLP Syndrome

Gestational Hypertension (GH) refers to high blood pressure that develops during pregnancy, usually beginning sometime between 20 weeks' gestation and 1 week postpartum. Mild gestational hypertension is not necessarily dangerous, but up to 50% of women with GH are likely to progress into a condition called **preeclampsia,**[66] in which changes begin to develop in the organ systems, blood chemistry is altered, and blood pressure continues to rise. A woman might be relegated to bed rest to reduce stress and blood pressure, but as long as her blood pressure stays consistently below 140/90, there may be no restrictions, other than to have her blood pressure monitored weekly throughout the rest of her pregnancy.

The etiology of preeclampsia is unclear, but it occurs in 3% to 7% of pregnancies and occurs most commonly in first time pregnancies.[60,65,67] As it progresses, it can lead to premature births and increased risk of placental abruption. In 25% of pregnancies, preeclampsia first becomes evident in the postpartum period and her blood pressure can stay elevated for up to 6 weeks postpartum.[60]

Symptoms of preeclampsia may include sudden rapid weight gain, visual disturbances, such as spots before the eyes, epigastric pain similar to heartburn, increased blood pressure, nausea and vomiting, unrelenting headache, pitting edema of the extremities and face, along with abnormal lab tests. A woman with severe preeclampsia will be in the hospital on bed rest.

HELLP is an acronym for **H**emolysis, **E**levated **L**iver enzymes, and **L**ow **P**latelets. It is insidious and considered by some to be a variation of advanced preeclampsia. It is characterized by pain in the epigastric area or right upper quadrant of the abdomen, often accompanied by general malaise, nausea, vomiting, and headache.[65] Though rare, occurring in less than 1% of pregnancies,[68] it is easily confused with other conditions that cause malaise, and yet HELLP can be extremely dangerous. It more typically develops in the third trimester of pregnancy, but can occur in the second as well.[68]

BODYWORK PRECAUTIONS: If your client has GH or preeclampsia with no activity restrictions, then no bodywork restrictions may be necessary. If the client has progressed into preeclampsia with modified activity, Type I techniques should be limited and a medical release is highly recommended. Many women are restricted to the left-sidelying position, which can provide increased blood and oxygen perfusion to the fetus and uterus. This must continue during a massage, with sessions performed with the client solely in the left lateral position.

Women with HELLP will be in the hospital for medical management of the condition. Type II bodywork may be supportive, but all Type I bodywork will be contraindicated.

CAUTIONS: Be aware of insidious symptoms of HELLP, which can develop relatively quickly. If your client in the late second or third trimester has not been seen yet by her PCP for a recent development of headache, nausea, right upper abdominal pain, or general malaise, have her call her PCP before deciding to continue with a massage.

Eclampsia

If left untreated, GH and preeclampsia are precursors to a more serious condition that develops when preeclampsia is not controlled, called **eclampsia**. This can lead to convulsions and even death. Preeclampsia and eclampsia are the third leading cause of pregnancy-related deaths in the United States.[69,71]

BODYWORK PRECAUTIONS: Eclampsia and HELLP are life-threatening conditions and the woman will be in the hospital. In this case, all Type I bodywork is contraindicated. Type II

Case Study 4.2:
BLOOD CLOTS DURING PREGNANCY, II

Joan was a 34-year-old client at 35 weeks' gestation who came for a massage complaining of a mild headache, along with pain and cramping in her left calf that developed earlier that day. Joan also stated she was experiencing an increase in bilateral swelling of her feet and ankles since her last massage 2 weeks ago. The pain was moderate and increased when the left foot was dorsi-flexed with walking. It did not refer elsewhere. The therapist assessed the leg and found no signs of swelling, heat, or redness in the area of discomfort, but did note the edema of the foot. There was no obvious bruising, but the calf was painful with moderate palpation of the gastrocnemius. Joan had not done any recent physical exertion, nor changed to new shoes recently, but she had been having an increase in leg cramps at night.

The therapist asked about Joan's headache. Joan stated it had been low-grade, but constant, and that she had last seen her doctor 8 days ago, though her next appointment was scheduled in 2 days.

The massage therapist had several concerns. Noting the increase in edema, though minor and nonpitting, and the complaint of persistent headache, the therapist considered the possibility of early preeclampsia. Joan stated that her blood pressure had been normal until her last prenatal visit, when it had been slightly elevated, though her doctor had stated that there was nothing to worry about. The massage therapist was also concerned about the calf pain and swelling and the potential for blood clot, since she was unable to discern clearly whether the client's pain was only musculoskeletal. Because it was *bilateral* swelling, she thought it was unlikely to be a clot, but she had enough uncertainty that she felt it important that Joan be evaluated by her PCP.

Due to this uncertainty, the therapist informed Joan that she would be unable to do her standard massage at this visit but suggested that she call her prenatal clinic from the massage office and query whether she should be seen right away. Joan did this, and made an appointment for later that afternoon. Knowing Joan would be seen soon, the therapist then offered to do a Type II energy session with a head and neck massage to help her relax, if it did not interfere with the timing of Joan's appointment. She also gave Joan a medical release form to bring to her PCP to be signed before her next massage, after her condition was evaluated.

Joan returned to the massage therapist the following week with the medical release and explanation that no clot was found in her leg. The doctor had suggested that her discomfort might be residual from her frequent leg cramps, of which she had several the night before her last massage visit. Her headaches resolved with Tylenol, and she was told she would be monitored twice weekly for blood pressure changes, since her pressure had increased slightly again, yet was still not of significant concern requiring activity restrictions.

The therapist then felt comfortable massaging Joan's legs to help relieve tension from muscle cramping. Each subsequent visit she asked for an update on her client's blood pressure and any other medical concerns so that she would know if she would need to enact any restrictions to general massage.

MASSAGE THERAPIST TIP

Working Within Your Scope of Comfort, Knowledge, and Skill

Beginning massage therapists and those who have little experience working with pregnant clients, or who have nervousness or uncertainty about positioning, precautions, and symptoms indicating problems, should steer clear of working with clients with high-risk complications, referring them to more experienced pregnancy massage therapists. This is simply to alleviate fears for either the therapist or the mother about the safety of the treatment. As you become more comfortable with your work and more knowledgeable about conditions of pregnancy, you may choose to expand your work to women who have high-risk conditions.

If you have any uncertainty about precautions or lack confidence, do not hesitate to refer a client to a more experienced prenatal massage therapist, or to contact her prenatal office for more information about her type of condition. Use your knowledge, reason, common sense, and intuition and only work within the scope of your comfort and skill level. If your client has a condition with which you are unfamiliar or for which you are uncertain of the risks and benefits of touch, discuss it with your client, research it, read about it, talk with a doctor or midwife about it, and speak with other bodyworkers who are skilled in the field of childbirth about it.

Having said this, remember that gentle Type II touch will never cause harm, but instead, often reduces anxiety and decreases the production of stress hormones which contribute to problems in pregnancy. In almost all situations, energy work and gentle, soothing touch can be appropriate even when other forms of bodywork, such as vigorous Swedish or deep tissue work is contraindicated.

bodywork for women with severe conditions requires a medical release.

Client Restricted to Bed Rest

For women with high-risk pregnancies, confinement to bed may be one of her prescribed treatments. Her prescription may vary from total bed rest, with use of a bedpan or bedside commode, to bed rest with 2- to 4-hour breaks during which she may be upright and move about the house minimally. These types of restrictions can lead to numerous complaints, including general muscle stiffness, aches, weakness, and atrophy; structural and postural changes that cause back pain; increased constipation due to immobility; emotional stress due to boredom, guilt, or anxiety about her condition; increased heartburn from horizontal positioning; and an increased risk of blood clots. Massage can be a life saver. If she works on a laptop computer in bed, she may have further problems related to poor posture and positioning, such as carpal tunnel syndrome and brachial plexus syndrome.

Bodywork Precautions

Working with bed-bound women necessitates communication with her PCP. Obtain a medical release for massage prior to beginning your work with your client. Requesting enough information about her condition to feel secure about what type of bodywork is appropriate. For most conditions, Type I work is contraindicated for the full body, though it is useful in local areas such as the shoulders, neck, and arms. Your client is in bed to avoid excessive stimulation that might cause her either to lose her baby—such as in cases of preterm labor—or increase her risk of bleeding—such as with placenta previa or partial abruption. Therefore, abdominal massage will often be totally contraindicated. She may also be on bed rest to avoid increasing severe high blood pressure.

If uncertain what is appropriate, always err on the side of gentle, calming energy work, and decreasing stimulation. Incorporate calming visualizations and breathing practices in your work. Typically there are no restrictions to working on the head, neck, shoulders, arms, and upper back. You can have a huge effect merely by offering emotional support and gentle hands-on holding, if that is all you are able to do.

CAUTIONS: A woman's risk for blood clots increases greatly when her activity level has been restricted. Maintain all precautions for blood clots with your client on bedrest, as described under "Massage to Adductors and Inner Thigh" earlier in the chapter.

Health Intake for Client on Bed Rest

A thorough health intake is mandatory for clients relegated to bed rest. In addition to the standard health questionnaire and intake, ask the following questions

Self Care Tips FOR MOTHERS:

Stress Relief for the Client Restricted to Bed Rest

For the client who is on bed rest, simple stretches and activities are recommended by PCPs to maintain muscular tone and blood and lymphatic circulation, reduce the risk of blood clots, improve mood and energy level, decrease muscular aches, relieve boredom, give a woman a way to engage in her care, and stimulate inspiration and respiration. Some of these stress-relieving methods are included here. The massage therapist might remind the client of these tools to diminish tension between massages.

Conscious breathing is a known stress reliever and can help minimize anxiety that develops for women on restricted activity.[72-74] When engaging in the following activities, attention to the inhalations and exhalations will help increase a woman's relaxation response. Breath-holding should be avoided, as it increases pressure and strain to the abdomen. If you or the client has any uncertainty about the appropriateness of these activities for her condition, she should contact her PCP. Practices 1 to 6 can be done with the client in any position. The others are best done in the semi-reclining position.

1. Deep abdominal breathing: Slowly allow the abdomen to expand as the breath slips in through the nostrils. After the belly fills, let the chest continue to fill, expanding the ribs out laterally. Pause for a moment before exhaling slowly through the mouth, allowing all the breath to be released. Pause between the exhalations and inhalations.
2. Arm stretch: Reach each arm out to the side, and over the head as far as possible, while inhaling deeply with each stretch. Exhale returning the arms to the side. Reach forward on an exhalation with fingers extended. Make a fist and inhale as the arms are drawn back toward the torso, imagining bringing in healthy energy with the inhalation. Repeat several times. Try reversing the breath, inhaling as the arms reach out, exhaling when drawing into the body.
3. Shoulder shrugging and shoulder rolls: Inhale as the shoulders are shrugged up to the ears. Exhale as the shoulders relax. Raise the shoulders to the ears with an inhale and rotate them backwards and down on an exhale. Repeat, rotating the shoulders forward.
4. Hand stretches: Alternate between making fists and stretching open fingers. One hand can pull back on the fingers of the other hand to increase stretching.
5. Foot circles: Stretch the toes back and rotate the feet in circles in either direction.
6. Kegel exercises: On an exhalation, squeeze the perineal muscles. On an inhalation, relax them. (See "Kegel Exercises" in Chapter 3.)
7. Neck rolls: Allow the chin to fall to the chest on an exhale. Lift the head and allow it to fall back with an inhale. Roll the head from one side to the other.
8. Chest opener: Place hands behind the head, retract the scapula, pulling the elbows posteriorly on the inhale. Exhale and return the elbows to neutral or forward.
9. Leg press: On an inhalation, plantar flex the feet, pulling the toes back, tighten the buttocks, perineum and lengthen the back of the legs, pressing the knees toward the bed. Exhale and relax the legs.
10. Leg Roll: Roll the legs in and out, bringing the knees together and apart.

of your bed-bound client or her care provider before beginning bodywork. The information gathered will help you offer the type of touch most appropriate for each individual.

1. What is her diagnosis and what are her risks?
2. Has she had this experience with previous pregnancies or earlier in this pregnancy? What was the outcome?
3. What are her limitations with regard to positioning and being up out of bed? Can she get out of bed and onto a massage table?
4. Has she had any bodywork while on bed rest?
5. What limitations would the care provider recommend with regards to bodywork?

CHAPTER SUMMARY

Most women who receive massage will have a healthy, low-risk pregnancy. However, occasionally complications develop. The massage therapist who is educated about these conditions will be able to offer with confidence, the safest bodywork for her or his clientele. Most bodywork precautions for women with a risk condition during pregnancy involve using safe and proper positioning, avoiding excessive full body stimulation or abdominal massage, using gentle touch to the legs and avoiding all work on legs with multiple, severe varicose veins or known blood clots. By being aware of the necessary precautions, and

empowered with the ability to ask appropriate and discerning questions, the therapist can determine when extra caution may be appropriate, and when a medical release or discussion directly with a client's PCP or office nurse is highly recommended. To enhance your understanding of particular pregnancy conditions, you may be able to access support and information through doctors' or midwives' offices, by attending midwifery conferences, using research libraries, or by contacting other pregnancy massage specialists. As you become more educated, your confidence will increase, and your clients will be able to relax more in the security of your hands.

CHAPTER REVIEW QUESTIONS

1. Name three dangers of improper positioning during pregnancy massage.
2. Describe the difference between Type I and Type II forms of bodywork according to this text, and in what situations their use would be inappropriate.
3. Name three health-related questions specific to pregnancy that should be included on a health intake.
4. What concerns would you have with a client at 14 weeks' gestation, who states that she has had three consecutive miscarriages just prior to this pregnancy? What kind of adjustments might you make to your bodywork with her, if any?
5. Name three bodywork techniques or modalities that are contraindicated during pregnancy and explain why they are contraindicated.
6. Give two reasons why the use of certain essential oils or scents would be contraindicated during pregnancy.
7. Explain why pregnant and postpartum women have a higher risk for DVTs than nonpregnant women.
8. Name two health-related circumstances where a medical release would be highly recommended before working with a pregnant client.
9. Describe two situations that demonstrate why a thorough health intake is important.
10. Name a triad of common symptoms that could indicate a dangerous condition that only occurs during pregnancy.

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CHAPTER 5

GENERAL MASSAGE FOR PREGNANCY

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Describe common bodywork needs of pregnant clients.
- Arrange a massage office space to meet the special needs of pregnant clients.
- Describe the specific concerns of each trimester and relevant bodywork precautions.
- Explain how to position clients for optimum comfort and safety for both client and practitioner.
- Utilize appropriate draping for the sidelying position.
- Implement bodywork techniques useful for a general pregnancy massage.
- Describe positioning methods appropriate to a client's trimester and size.

Certain themes apply to nearly every massage during pregnancy. For instance, a woman will generally have an increased need for nurturance. She will benefit from stretching and muscular work that elongates the areas that are shortening and compressing as pregnancy progresses. For optimum well-being, she will also benefit from attendance to postural adaptations to her changing weight, as discussed in Chapter 3. She will expect her massage therapist to be educated and vigilant about precautions and contraindications throughout pregnancy, to create an environment safe for herself and her unborn child. And she will most commonly expect that receiving bodywork will diminish discomforts and help her feel more grounded and at ease in her body.

While a treatment-oriented, technical medical massage model is appropriate for a variety of clients, during pregnancy the need for a distinctly nurturing touch often becomes greater. This need mirrors the growing nurturing energy that is often arising within women as the time draws nearer to nurture a new baby. Receiving compassionate touch does more than help a growing mother feel good; studies have shown that women who receive this caring touch during pregnancy have a greater capacity to attend to their infants with an increased devotion of nurturing energy.[1]

In addition to the increasing need for *nurturance*, once a woman has reached the late second and third trimester, she will benefit the most from a touch that helps to create *length* and *space* in her body, defying the forces of gravity that may be causing a collapse in her chest, tension in her neck, constriction in her groin area, and tightness in her low back. During a massage, think about the ways you can help your client relax, release, and find renewal as she discovers space and freedom in areas of her body that have been compressed. Whatever type of touch you use, ask your client to help facilitate easier releases by breathing fully into the tight areas, imagining her breath helping to expand and open the spaces that are being freed by your touch.

Since a woman's posture changes drastically throughout pregnancy, the bodywork practitioner should be sure to take time before a session to observe

the client's posture, help bring her awareness to the ways she can make adjustments to it, and then address the related muscular stresses with bodywork. This postural attention is an important link in addressing a pregnant woman's complaints.

Pregnancy poses a variety of massage concerns, as there are risks and considerations that are not encountered with the standard nonpregnant massage client. This is true regarding the general office set-up and massage practice for pregnant women as well; for instance, lateral positioning is necessary through at least half of a woman's pregnancy, and the therapist needs to learn how to work competently in this position. Different questions are asked on a health intake and different practicalities are taken into consideration when setting up your office.

This chapter will look at these issues, as well as considerations based especially on the stage of a woman's pregnancy. First, we will consider how to set up your office to meet the needs of pregnant clients, including what equipment you will need. Then, we will review treatment guidelines and precaution reminders for each trimester of pregnancy. Positioning for bodywork is addressed next, with a look at sidelying, semi-reclining, prone, and supine positions and how each position can be adapted for work with a pregnant client. Finally, bodywork techniques adapted specifically for pregnant clients are presented, including techniques for the whole body and for each body region.

Before we begin, however, let us review some of the basic practical aspects that are a part of any massage. These include the following:

- *Safe Environment:* Create a workspace that encourages clear communication and feedback channels between the client and the therapist.
- *Relaxing Touch:* Use slow, even, and consistent strokes that encourage relaxation.
- *Proper Body Mechanics:* Use proper body mechanics and client positioning to ensure that neither the giver nor the receiver experiences muscular strain during the bodywork.
- *Breath:* Use breath attunement to facilitate deeper relaxation. (The cultivation of an association between breath and relaxation during pregnancy will become a powerful ally during birth.)
- *Hydration:* Offer a large glass of water after every massage to help flush cellular waste released during massage, thereby avoiding dehydration. This is especially important in pregnancy, as dehydration can lead to premature uterine irritability and contractions.
- *Avoid Heartburn:* Encourage your client to wait at least 2 hours after eating a meal before getting a massage. Heartburn is a common complaint during late pregnancy.
- *Avoid Boney Pressure:* Avoid pressure directly on bones, except in the case of the sacrum, where direct pressure can be beneficial during late pregnancy.

PREPARING FOR MASSAGE

As with any type of massage, it is essential to make proper preparations before actually beginning your work. You must make sure that your office is arranged to meet the needs of pregnant clients, as well as conduct a thorough health intake with each client, as discussed in Chapter 4, to understand her unique needs or restrictions.

Office Considerations

Certain aspects of office setup and practice are different when working with pregnant women. Below is a list of these considerations.

- *Baby activity:* The baby may become very active during massage, making it more difficult for the mother to relax. Be prepared to help the client change position to the other side if necessary to try to settle the baby.
- *Music:* Suggest that your client bring her own music CDs to the massage sessions if she plans to use music during labor. As she associates touch and relaxation with particular music, she may find herself automatically relaxing when she hears it during labor.
- *Body fluids:* Pregnant, laboring, and postpartum women may leak body fluids such as amniotic fluid, breast milk, or blood. Have gloves available to practice universal precautions if you do encounter these fluids on your sheets.
- *Fan:* Many pregnant women suffer from sinus congestion due to increased blood volume and dilated blood vessels. Try using a fan to blow fresh air across her face during a massage, temporarily alleviating sensations of stuffiness.
- *Restroom:* A restroom should be easily accessible and offered to the client before, in the middle, and after a massage. Pressure from the baby on the bladder increases urgency, incontinence, and frequency.
- *Scents:* Pregnant women are often sensitive to smells. Do not use heavily scented oils, aromatherapies, or incense without having the

client determine first that she can tolerate the scent.
- *Temperature:* Pregnant women are generally warm due to changes in hormones, body weight, and blood volume. Consider lowering the office temperature slightly if you tend to keep it warmer for other clients. Some women may also prefer to have their feet exposed from under sheets.
- *Time:* Allow extra time in your scheduled sessions for pregnant women to undress, get positioned, use the bathroom, and address health concerns.

Additionally, accessories as described in the following list, are necessary for optimum comfort for pregnancy sidelying positioning:

- *Sheets:* A full- or queen-size flat sheet is necessary. A single flat sheet will usually *not* be adequate.
- *Breast drape:* A small towel or pillowcase can be used as a breast drape for belly rubs or if offering breast massage.
- *Pillows:* At least five to seven pillows are necessary, as follows: one head pillow, one arm pillow, one belly pillow (a small rolled towel, wedge, or thin pillow), and two to three firm, flat, long bolsters or pillows for supporting the leg. Alternatively, use a long body pillow or the Body-Support Systems, Inc., four-piece contoured bodyCushion. This will provide support under the belly, back, head, and leg and eliminate the need for extra cushions, and is especially versatile during pregnancy.
- *Oil:* Use unscented oils unless you are trained in aromatherapy and are aware of the prohibited essential oils during pregnancy, labor, postpartum.
- *Stepstool:* A stepstool will be necessary to help a mother get onto the raised table, and to help the practitioner access parts of her body that are higher than normal.

TRIMESTER CONSIDERATIONS

Each trimester of pregnancy poses different experiences for a mother and new opportunities for the therapist to offer comfort and healing. Knowing what part of pregnancy your client is in will help guide you in choosing techniques, noting precautions, and providing optimum positioning. The following are basic suggestions and precautions to be aware of during each trimester.

Suggested Guidelines and Precaution Reminders for Each Trimester

The pregnancy massage therapist has several angles from which to approach a session with a pregnant client, depending on her needs, and also depending on the stage of her pregnancy. Each trimester implies guidelines and presents precautions specific to that stage. The following precautions have been addressed at various points through the previous chapters. They are discussed briefly again here as a reminder and listed in Table 5.1.

Throughout pregnancy, regardless of trimester, the following reminders apply:

- Do a thorough health intake prior to the first massage with a client, and update the information at each session.
- Observe and use precautions for varicose veins and deep vein thrombosis.
- Avoid contraindicated acupressure points until 38 weeks, and take note of precautionary points, which are contraindicated with those at high risk for miscarriage or preterm labor as discussed in Chapter 4.
- Teach the client early the proper body mechanics for pushing up from supine positioning while avoiding abdominal strain and help establish this method of sitting up as the pregnancy progresses (see Figure 3.5).

First Trimester

In the first trimester, when the embryo is becoming a fetus and developing its core neurological system, gentle, nurturing bodywork is often more appropriate than deep manipulations. Risk of miscarriage is highest in this trimester, so avoid deep abdominal massage and do a thorough health intake at each visit. Generally the client can be positioned prone and supine if comfortable, otherwise, consider the sidelying or semi-reclining position, especially when she has tender breasts or nausea.

Remind the client, if she complains of feeling fatigued, that resting regularly is quite appropriate, and allows her body to devote its energy to the primary task at hand: creating life. For many women, generating life and giving birth will be the most powerful and creative experience of their lives.

Second Trimester

In the second trimester, the belly becomes more apparent with the growth of the baby. The highest risk of miscarriage has passed and women who

DISPELLING MYTHS:

Avoiding Massage in the First Trimester

Some massage therapists are taught to avoid massaging the pregnant client during the first trimester because it is believed to be dangerous. There are thoughts that massage could be disruptive to the baby's development, concerns that it could harm the placenta, or that women experiencing fatigue, nausea, or ambivalence about their pregnancy will find massage uncomfortable in some way. Many are concerned about causing or being associated with a miscarriage that might occur, since the first trimester is known to be the time of greatest risk for miscarriage. All of these concerns are unfounded.

The first trimester is a time when a woman often experiences enormous fatigue, confusing emotions, and a flood of new sensations as her body surges with hormones. Massage can actually be a wonderful tool to help your client feel more unified and grounded in her experience of pregnancy. Acupressure points, energy work, and massage can help decrease a woman's nausea and increase her sense of grounding and vitality. Massage can support the woman's physiology, improving hormonal function and supporting the healthy development of placenta and baby. Bodywork is not a cause of placental dysfunctions or fetal anomalies.

While miscarriages do occur frequently in the first trimester, it is rarely a reason to avoid massage. As discussed previously in this text, it is appropriate to use precautions if a mother has a history of three or more consecutive miscarriages in the first trimester or is currently having miscarriage risks. In this case, while a full-body Type I massage might be contraindicated, nurturing energy work and soothing, gentle Type II massage can still be beneficial. A medical release is highly recommended for clients with this type of history.

First trimester bodywork has some other considerations to keep in mind. A health history is always important to obtain. Deep abdominal work is contraindicated. But for the majority of women, nurturing touch and manual therapy during the first trimester can offer wonderful musculoskeletal and circulatory benefits as well as comfort, reassurance, and relaxation that should not be missed!

previously experienced miscarriage in the first trimester, now breathe a sigh of relief. Avoid supine positioning if the client becomes uncomfortable. After 22 weeks, use it only for short duration for specific techniques and only if the client tolerates it well. Begin using sidelying positioning after 22 weeks, when the belly is visibly protruding, or anytime the mother is more comfortable that way.

Traditional Birth Practices:

Uterine Massage

In many cultures, midwives massage the pregnant uterus through the abdomen, starting in the second trimester. With their hands, they can feel the baby's position and activity, reposition as needed, and have a good sense of its health. Rosita Arvigo is a Napropath (a specialist in evaluation and treatment of musculoskeletal conditions related to connective tissue, using manipulations and mobilizations) who has learned uterine massage techniques from Mayan midwives. She teaches abdominal massage to align the uterus before, during, and after pregnancy. While not within the scope of this book, Arvigo's uterine massage work is well worth investigating further if you wish to specialize in pregnancy massage (see Appendix B).

Third Trimester

In the third trimester, mothers often feel vibrant and enthusiastic initially, but as delivery becomes imminent, some begin to experience, perhaps for the first time, some common complaints. This is an excellent time to receive massage; many women come for their first massage in this trimester.

Positioning will only be in the sidelying, semi-reclining, or left-tilt positions. Supine positioning can be used only for very short durations of 3 to 8 minutes for specific therapeutic techniques, and only if client is comfortable. Focus on creating length and space in the woman's body. Short belly rubs in the third trimester can help the client attune with the baby, feel comfortable with abdominal sensations, and relax when touched on her abdomen, a touch which may be useful in alleviating some types of contraction pain during birth. Offer labor supportive techniques in the last 1 to 2 weeks of pregnancy, as discussed in Chapter 7.

Table 5.1 Bodywork Considerations by Trimester

Treatment Guidelines for First Trimester

Teaching
- Develop skills for decreasing varicose veins, heartburn, leg cramps, low back pain, hemorrhoids.
- Instruct in abdominal strengthening techniques.
- Encourage prenatal exercise.
- Suggest client empty bladder before beginning massage.
- Suggest beginning Kegel exercises.

Assessment
- Assess for increased risk of nausea and position accordingly.
- Assess for diastasis recti if had previous births.
- Assess for increased miscarriage risks.
- Collect health update and intake information at each visit to assess for increased pregnancy-related risks.

Bodywork
- Use nurturing touch that supports the growth and development of embryo and fetus.
- Use standard massage work in prone and supine positioning usually through all of first trimester.
- Encourage relaxation and renewal.

Precautions
- Limit sauna, hot tubs to 5–10 minutes if over 102°F.
- Avoid hot packs longer than 5 minutes over 100°F to abdomen or low back.
- Avoid electric heating pads on massage table.
- Use blood clot and varicose vein precautions.
- Avoid acupressure on contraindicated and precautionary points.
- Avoid scents, passive range of motion, rocking if client has nausea.
- Avoid deep abdominal massage.

Treatment Guidelines for Second Trimester

Teaching
- Use methods for decreasing varicose veins, heartburn, leg cramps, low back pain, hemorrhoids.
- Make postural adjustments and awareness as needed.
- Suggest client empty bladder before beginning massage.
- Instruct in abdominal strengthening techniques.
- Suggest beginning Kegel exercises.
- Teach proper methods for sitting up and repositioning on table.

Assessment
- Assess for diastasis recti if client had previous pregnancy, or has large baby in this pregnancy.
- Assess and address postural changes and maladaptations.
- Collect health update and intake information at each visit to assess for increased pregnancy-related risks.

Bodywork
- Use massage and stretches to create length and space in client's body.
- Focus on areas of primary stress based on client info and postural assessment.

Precautions
- Use diastasis symphysis pubis precautions.
- Avoid prone and supine positions if client uncomfortable, breasts too sore, nausea, or visible belly.
- Use blood clot and varicose vein precautions.
- Avoid acupressure on contraindicated points.
- Avoid prone positioning and limit supine positioning once belly is showing or after 22 weeks' gestation.

Treatment Guidelines for Third Trimester

Teaching
- Use methods for decreasing varicose veins, heartburn, leg cramps, low back pain, hemorrhoids.
- Make postural adjustments and awareness as needed.
- Suggest client empty bladder before beginning massage.
- Give perineal massage instructions in last 6 weeks of pregnancy.
- Encourage continuation of Kegel exercises.
- Teach proper methods for sitting up and repositioning on table.

Assessment
- Assess and address postural changes and mal-adaptations.
- Assess for increased risk of heartburn and position accordingly.
- Collect health update and intake information at each visit to assess for increased pregnancy-related risks.

Bodywork
- Use massage and stretches to create length and space in client's body.
- Focus on areas of primary stress based on client info and postural assessment.
- After 38th week, offer labor preparation techniques, including possible use of previously contraindicated acupressure points.
- Offer belly rubs for relaxation and connection to the baby.

Precautions
- Use blood clot and varicose vein precautions.
- Avoid acupressure on contraindicated points until 38th week.
- Avoid prone positioning and limit supine positioning to 3–8 minutes.

POSITIONING TECHNIQUES

In the first trimester, prone and supine positioning can be used as long as it is comfortable for the client. During the second trimester, sidelying is generally used. Semi-reclining is also an option and a comfortable position to use when sidelying is not optimal.

Sidelying Positioning

Sidelying positioning is used for two important reasons:

1. To prevent pressure on the abdomen and breasts, as occurs with prone positioning.
2. To prevent pressure on the large blood vessels in the abdomen, as occurs with supine positioning.

Sidelying is a very restful position that allows access to one side of the body at a time and enables the practitioner to provide full shoulder and hip mobilizations. Varied pillows and bolsters are necessary for optimum comfort and are used to support the body under the neck, hip, belly, and the superior leg and foot.

When to Use the Sidelying Position

During pregnancy, the sidelying position is most frequently used after 22 weeks' gestation, when the baby is about 1.5 to 2 pounds, or when the abdomen is visibly protruding, with the top of the uterus at or above the navel. It may also be used at any time during pregnancy if it is more comfortable for a client for any reason. Some situations indicating the need to position sidelying include the following:

- Hypotension when in supine position
- Obesity
- Difficulty breathing when prone or supine
- Breast tenderness causing discomfort when prone
- When good verbal communication is more important than prone positioning
- Extreme nasal congestion, which becomes worse with prone positioning
- Back pain aggravated by prone or supine positioning

Table Height

To work effectively with good body mechanics from *behind* sidelying clients, as opposed to *over* them, as with supine or prone positioning, the therapist must raise the massage table higher than normal. An easy way to assess the proper table height is to stand next to the table and have the table top reach the level of your anterior superior iliac spine or the level of your wrist when your arms are relaxed and extended straight down. Play with the table height until you find the best level for your body. On average, it may be 2 to 4 pegs higher than normal.

Alternatively, some people prefer to keep the table low. In this case, the practitioner may sit in a chair when working on the client's back. When standing, the practitioner will have access to the hip and leg without need for a stepstool as described for when the table is higher. Find the table height for which you can most easily utilize proper body mechanics and avoid strain. This book describes most work with a higher table height.

Client Positioning in Sidelying

Note on terminology: Here I use the term "superior" to refer to the client's side that is *up* and accessible. The side *on* the table I refer to as the "inferior" side.

Proper positioning in sidelying involves supporting every arch and space to prevent strain on musculature or ligaments (Figure 5.1). All muscles should be

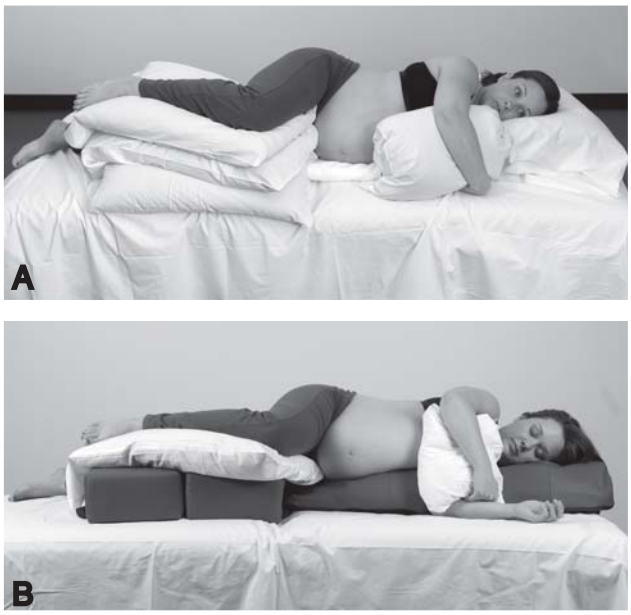

FIGURE 5.1 **Supportive sidelying positioning.**
(A) All body arches are supported with pillows. Spine is 2 to 4 inches away from and parallel with edge of table. Extremities are supported on pillows and parallel to tabletop, with muscles in neutral position. Protruding belly is supported with small wedge, rolled towel, or thin pillow. (B) A bodyCushion offers optimal support in sidelying. Notice the angling support under the torso, which prevents compression in shoulder joint.

in a relaxed and supported position, unless a stretch is intentional. There should be no pressure from bone on any other part of the body; therefore, one pillow should be placed under the arm and two to three pillows should support the superior leg and foot.

All body parts should be horizontal and parallel to the table—pillows should be placed such that the superior leg is flexed with the knee and thigh horizontal and supported and parallel to the tabletop. The lateral hip rotators should be in a relaxed position. The lower leg should be extended straight. Some women find it more comfortable and natural to have both legs flexed with pillows in between. This arrangement is acceptable if necessary; however, the position can make it more difficult to work on both the superior and inferior leg and can cause some restriction to venous blood flow in lower leg.

The neck pillow should support the crook of the neck. Avoid having her inferior shoulder rest on the pillow, as this will cause compression in the shoulder and neck. Keep the cervical spine horizontal—parallel with the table.

The superior arm should be supported by a pillow, with the humerus nearly horizontal and the rhomboids and upper back musculature relaxed; this helps to avoid breast compression from the weight of the arm.

The spine should be straight and aligned with the edge of the table, rather than angled across the table or rolled forward or back. Once the belly is visibly protruding, a soft wedge, rolled towel, or small pillow can be placed under the belly to prevent gravitational, downward pull on the uterus, causing strain to uterine ligaments. If desired, a small rolled cloth can be placed behind the client under her inferior hip and waist. This can give her added posterior support and security, although there can be a tendency for this roll to slide out when rocking or doing joint mobilizations.

Draping in the Sidelying Position

It is a good idea to practice sidelying draping several times before using new draping for the first time with a client. Though simple, there is a skill to draping smoothly, securely, and effectively for a client in the sidelying position. Sheets do not "stay put" as naturally as they do with prone and supine clients, and draping the upper leg without exposing the belly and lower leg often requires a little extra time before some practitioners are comfortable. It may be helpful to use a bath towel to help hold the sheets in place after exposing the back or upper leg and gluteals, or to use a clothespin or hairclip to hold them bunched together. The use of the towel can be seen in Figure 5.2 and Figure 5.3.

Case Study 5.1:

PAIN RELIEVED BY POSITIONING

At 38 weeks' gestation, Tawny came to her massage therapist, Trina, with complaints of shoulder and neck aches that developed 1 month earlier. It hurt worse in the morning and improved with activity during the day, but the discomfort returned again every morning. Her doctor said it was muscular strain, probably due to the size of her growing breasts. She pointed to her rhomboid area as the site of primary discomfort. The therapist asked how she was positioned when sleeping, and Tawny stated she slept on her side, with one pillow between her knees. Trina noted that Tawny has some collapsing of her upper chest as her shoulders internally rotated.

Trina gave Tawny a massage, and included some pectoralis and subscapularis stretches. Afterwards, Tawny said that she had never slept with a pillow under her arm before, and noted that as she lay on her side on the massage table, the pain in her shoulder was relieved. Her superior arm had been well supported with a thick pillow, and she determined to try that now at home in bed. She also stated that the stretches felt good, and was surprised to find that her pectorals were sore, as she had only been aware of her upper back. Trina described how the weight of the superior arm falls forward when unsupported by a pillow, and not only compresses the breasts, but puts the rhomboids in a stretch position and shortens the pectoralis and subscapularis all night long. Trina suggested Tawny explore strengthening exercises for the rhomboids, and external shoulder rotators, and stretches for the internal rotators.

Tawny returned a week later excited that her shoulder pain was now almost totally relieved by using a pillow under her arm in bed. Trina suggested she also work with her posture. She helped Tawny become aware of how she sank inward in her chest and how that, too, would contribute to upper back pain. Trina also suggested that Tawny get help to find a well-fitting, supportive bra that she could use for nursing as well. Since her breasts would get even larger once her milk came in, that too would affect her posture and increase back pain.

During pregnancy, a full- or queen-size sheet is necessary for adequate draping of the lower leg and foot, abdomen, and breasts. This is due to the number of supportive pillows used, and the size of the abdomen in later pregnancy, both of which require extra coverage with the sheet.

FIGURE 5.2 **Draping the back.**
The arm pillow is on top of sheet to prevent the sheet from falling forward and exposing the breasts. Angle sheet so superior hip is partly exposed, but maintaining coverage of gluteal cleft. Tuck sheet under inferior hip. A bath towel over her superior hip adds extra security if desired.

Draping the Back (Figure 5.2)

Note: Before exposing the back, ensure that the arm pillow is on top of the sheet, as it will help prevent the sheet from falling forward and exposing the breasts.

1. Standing behind the client, pull the side of the sheet up from the tabletop and over the edge of her superior waist and scapula, laying the sheet along her superior side.
2. While holding the sheet securely against the superior hip near the trochanter, pull the lower edge of the sheet slightly cephalically, exposing the superior hip, while covering the gluteal cleft.
3. Tuck the sheet in under the inferior waist. The sheet should now be at an angle with the lowest corner at the superior trochanter, and the upper corner at the inferior waist.
4. Lay a heavy bath towel, if desired, on the sheet over her superior hip for extra security.

Draping to Expose the Gluteals and Superior Leg

1. Stand on the client's anterior side at the foot of the table holding that corner of the sheet.
2. With that corner in hand, pull the sheet up behind the thigh of the client's superior leg, just proximal to the knee.
3. Tuck the corner you are holding beneath the posterior side of the superior leg's thigh, toward the client's belly (Figure 5.3A). Pull it several inches out on the anterior side, just above the knee from posterior to anterior. There will be slack and bunching of excess sheet at the posterior leg. *Do not* pull it all the way through, as if doing a "diaper" drape (Figure 5.3A).
4. Pull some extra sheet from the abdomen area and toward the anterior side of the superior leg's thigh with one hand and, with the other hand, pull the excess sheet up along the posterior thigh toward the trochanter. Essentially, your hands are both holding the sheet and sliding up the client's leg on either side of her superior thigh at once (Figure 5.3B).
5. Slide over the trochanter and continue until the entire superior gluteals are exposed. Tuck the abdomen side of the sheet under the mid or lower anterior thigh (Figure 5.3C).
6. Roll the sheet up tightly over the back of the gluteals to keep it in place.
7. For extra security, if desired, place a bath towel over the rolled up section of sheet at the gluteals, either tucking it in with the rolled sheet or laying it across the rolled sheet.

Draping to Expose the Inferior Leg When ready to work on the inferior leg, slide the sheet from the edge of the table over the inferior leg.

Draping to Expose the Belly

1. For easy access to the abdomen in the sidelying position, remove the belly support first.
2. Lay a drape, such as a long pillowcase or thin folded towel, across the client's breasts on top of the sheet and secure it under her superior arm.
3. Ask her to hold the breast drape while you pull the sheet out from under it, exposing the belly.
4. Push the sheet down below her belly, and secure it at her back, under her inferior hip. (See draping used in Figure 5.17.)

Common Comfort Problems in Sidelying

Sidelying can be a very satisfying and extremely comfortable position, but without adequate cushioning or good adherence to positioning details, some discomforts can arise.

Sore Hips Without having the option to change positions to supine or prone during the second and third trimesters, women's hips may become sore from sleeping and lying on their side when at rest. For optimum comfort on a massage table, use a foam mattress pad or a thick sheepskin cover for extra cushioning.

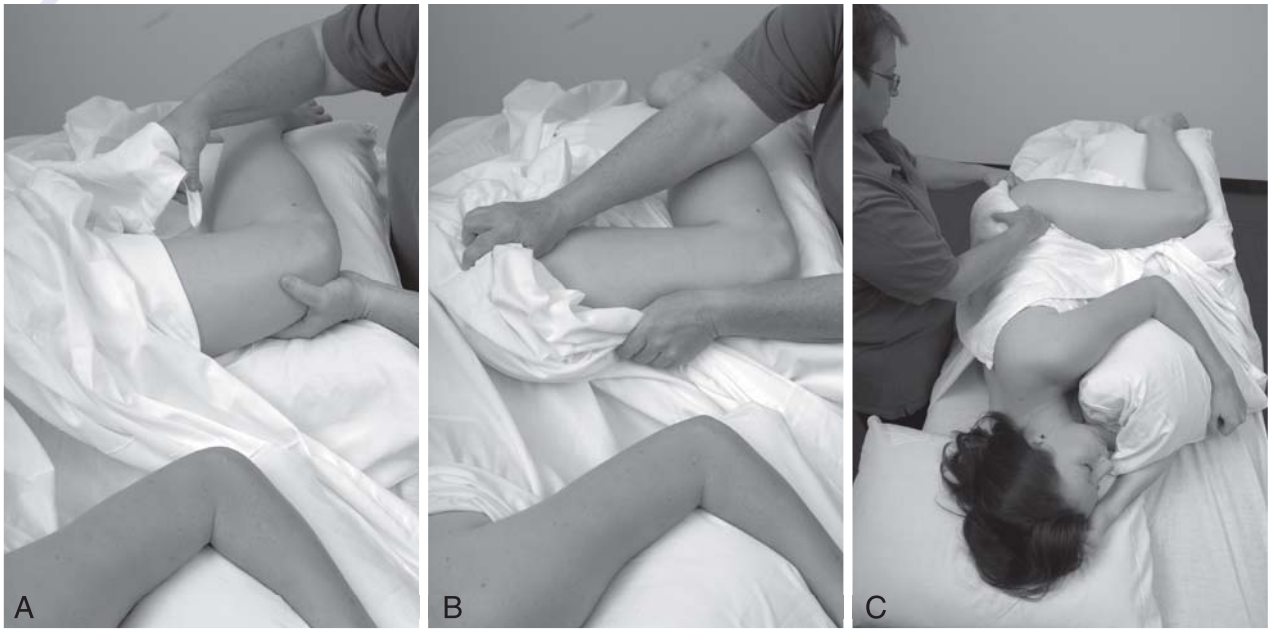

FIGURE 5.3 Draping to expose the gluteals and superior leg.

(A) Step 1: Stand on client's anterior side holding the foot-end corner of the sheet. With smooth movement slide sheet up behind client's superior thigh, tucking corner under posterior thigh. (B) Step 2: Pull extra sheet from abdomen area toward thigh while pushing up excess sheet along posterior thigh toward the trochanter. (C) Step 3. Tuck the abdomen side of sheet under mid or lower anterior thigh. Roll sheet up tightly to keep it in place. A bath towel over her superior hip adds extra security if desired.

Shoulder Compression During a sidelying massage, some women will experience compression in the shoulder joint or brachial plexus, developing numbness or discomfort in the arm and hand. Extra padding on the table can help to avoid this. Also, ensure that her inferior shoulder is pulled slightly forward out from under her, as opposed to having her rolled over the top of her shoulder.

A foam triangular wedge placed under the client's hip and ribs, tapering from about 4 inches at the shoulder to 1/2 inch at the hips gives a space for the shoulder and alleviates compression. The Body-Support Systems, Inc., four-piece contoured bodyCushion offers ideal support, holding under both the waist and abdomen, alleviating compression on the shoulder joint, giving a soft cushion for the hips, and eliminating a few extra pillows. It is an excellent choice for practitioners with regular pregnant clients or who work often with clients in the sidelying position.

Instability Throughout the massage, ensure that the client stays positioned directly on her hip and side and that her limbs are horizontal to the tabletop. Her back should be parallel to the tabletop. The superior trochanter should be stacked directly over the inferior, so a vertical line could be drawn between them. Avoid having her rotate forward, twisting her spine or being pushed forward into the table when you apply pressure to her back. If she does fall forward frequently when you work on her posterior side, she probably needs to adjust her inferior hip more anteriorly. The inferior shoulder should be pulled forward slightly to help maintain her position. The top leg pillow should be angled slightly across the table and between the client's legs, as this will allow for more stability, as opposed to having every pillow parallel with the edge of the table. This can be seen in Figure 5.1.

Practitioner Comfort Until you are accustomed to the sidelying position, you may find yourself straining as you work from different angles and with different leverage. If this is the case, investigate the following to help improve your body mechanics:

- Ensure that the table is the appropriate height and that the client's back is aligned with and positioned close to the working edge. You can help her position well by placing your hands on the edge of the table and having her inch back until her back is close to your arms or until her hips and head are within 2 to 4 inches of the edge of the table.

- Good therapist body mechanics are critical to avoid strain. Rather than working above a client with downward pressure, as with someone in supine position, you will be working from a horizontal gliding position and moving your hips often. Keep your body moving as you work, swaying from one bent knee or lunge position to the other and initiating the effort from your belly, not from your hands or arms.

Changing Sides After working on the mother's superior side, you will want to access her other side. Women with large bellies will have more difficulty moving from side to side. Remove all pillows first, except the head pillow, and ask the client if she needs to use the bathroom before repositioning. Pregnant women frequently have pressure on the bladder and may need to use the restroom in the middle of a session.

If she is ready to roll over, she may find it easier to sit up, using proper body mechanics as described in Chapter 3, or she may choose to get on her hands and knees to switch sides. Whichever is easier for her is fine, however, in the hands and knees position, be aware that her breasts will be more exposed in the front. The therapist should therefore stand closer to her hips to hold the sheet.

For client safety, position yourself on the side of the table her back will be facing, making certain that she does not lie down too close to the edge of the table. Once she is positioned, replace all the pillows, including the wedge for her belly.

Semi-Reclining Positioning (Figure 5.4)

Semi-reclining is an excellent position for certain situations and is sometimes preferred by clients who are having difficulty finding comfort in sidelying due to hip problems, nausea, or heartburn, or who just want an alternative to sidelying. Bodywork in this position is similar to standard supine massage for nonpregnant clients, but a step stool may be necessary to access behind the client's head and back more easily.

When to Use the Semi-Reclining Position

The semi-reclining position is useful in a variety of situations:

- When the client is uncomfortable in sidelying.
- When a client is close to her due date and would like to receive bodywork in a position she expects to deliver in. (Many women in hospitals deliver in a semi-reclining position.)
- When a client experiences excessive heartburn, nausea, or nasal congestion when in a lateral position.

MASSAGE THERAPIST TIP

Making Your Table Comfortable for Pregnancy

It can be difficult for a pregnant women to find a position where she can rest comfortably. If she is able to find comfort on the massage table, it will provide at least one arena where she can rest deeply. She will appreciate a foam pad to soften the pressure of her hips on the table. Firm pillows supporting the legs will be less likely to collapse under the weight of her knee and will create more stability. Having a variety of pillow sizes and shapes will offer more flexibility for positioning each individual client. Using an angled foam wedge under the torso can help to prevent shoulder compression. A belly wedge using a rolled towel or thin, soft, small pillow can feel supportive for some women.

Even after you have acquired various pillows, bolsters, and cushions, you may still be unsure of how comfortable your table will be. Get on the table yourself with the supports you will be using, and rest there for 10 minutes or so. Better yet, get a massage from a peer who can use your table and pillows. Notice how your body is aligned. Notice how your hips are pressing on the table. Notice the compression of your shoulder.

Within 10 to 15 minutes, if changes need to be made, you will begin to become aware of areas that do not feel as comfortable as they could. You will also get an indication as to whether you will have problems with your pillows being too full and therefore unstable after some time, or too fluffy and sinking down after the weight of your leg compresses them. If you start to feel shoulder compression, your pregnant client will also; reposition yourself, try a wedge under the upper torso, obtain a body cushion, or put a thicker foam pad on your table. Along with getting feedback from your clients, lying on the table yourself will help you discover how to create optimum comfort.

- When the therapist chooses to do a belly rub, in which easy access to the entire belly at once is needed.
- When the therapist desires full access to both sides at once of the head, neck, and shoulders.
- When the therapist desires to work more directly on the legs and quadriceps and perform passive stretching of the hip adductors.

Table Height

When doing the entire massage with the client in the semi-reclining position, the table height will need to be lower than for sidelying and possibly lower than for regular massage. Determine the proper height by considering first which body areas you expect to work on longest and at what height you will have easiest access to those areas with the least stress to your body. Have a stepstool available for reaching behind the client's head, neck, and back if needed.

Note: If you are only using semi-reclining position for a belly rub at the end of a sidelying massage, the table height need not be adjusted, but you will likely need to use a stepstool for easier access to her belly and back.

How to Position Comfortably in Semi-Reclining

To position the client, use a triangular wedge or an arrangement of firm pillows that allows the client's back to rest at a 45-degree angle or greater to the table, as seen in Figure 5.4. Ensure that her low back is well supported with pillows and is not curving onto the table. Her knees and hips should be flexed using a firm knee bolster. Her neck should be well supported to prevent hyperextension.

FIGURE 5.4 Semi-reclining positioning.
Semi-reclining position is useful in special situations. Use a triangular wedge or an arrangement of firm pillows that allows the client's back to rest at a 45-degree angle or greater. Ensure that low back is well supported with pillows. Knees and hips should be flexed using a firm bolster. Her neck should be well supported to prevent hyperextension.

Supine Positioning

Supine positioning is inappropriate after the middle of the second trimester, anytime the belly is visibly enlarged with the top of the uterus at or above the navel, or anytime a mother is uncomfortable in the position. As discussed in Chapter 4, supine positioning causes the weight of the baby, uterus, placenta, and amniotic fluid to fall directly onto the large maternal blood vessels along the anterior spine, depending on the position of the baby. This compression reduces blood and oxygen flow to both the baby and the mother and can cause initial "uneasy" feelings, followed by maternal dizziness, shortness of breath, fainting, and eventually, when unresolved, can lead to unconsciousness, along with a reduction in the fetal heartbeat. No extended work should be done in the supine positioning after the middle of the second trimester.

Brief periods of 3 to 8 minutes can sometimes be appropriate, dependent on the baby's positioning and a mother's comfort. If the baby does not lay in such a way as to put pressure on the inferior vena cava, the mother can be comfortable in the supine position. As long as you are both observing for signs of unease or dizziness, specific work such as passive stretches of the psoas and hip rotators or assessment of diastasis recti can be done without problem. A pregnant woman is able to discern when she needs to roll off her back, but always maintain good communication during this type of work to ensure no client discomfort is developing.

Left Tilt Positioning

In some situations you may wish to work more in-depth on the neck, do traction of the spine, or do cranial-sacral type work in the supine position. A left tilt position can be used, if comfortable for the client. Place a pillow or foam wedge behind the client's right hip, tilting her toward the left slightly. This shifts the weight of the uterus and prevents compression of the large blood vessels along the spine. This position can be used occasionally, but be aware that it is generally not ideal for more than 15 minutes, as the spine is slightly twisted, which can lead to compensatory tightening in other areas of the body.

BODYWORK TECHNIQUES

While Chapter 6 describes specific techniques for some of the common complaints of pregnancy, this section describes basic general relaxation techniques in sidelying positioning. These are useful during a

DISPELLING MYTHS:

The Safety of Prone Positioning

Pregnancy massage "tables" and "pregnancy cushions" are sold with cut-outs designed for pregnant bellies and large breasts, so that women can lie, presumably safely, in the prone position. Some practitioners have found these beneficial as it enables them to work with their clients in the prone position throughout pregnancy, rather than sidelying. Some women have found this a wonderful relief from their otherwise regular sidelying positioning at home. Other women report that they enjoyed the position initially, and yet within 5 to 10 minutes they developed an uneasy feeling about being positioned face-down and essentially lying on their baby.

While these tables might be comfortable and safe for resting in for short periods of time, there are several valid reasons why prone positioning is *not appropriate* for longer than several minutes when receiving massage in the third trimester.

- Size: Cut-out holes in tables are one size. A smaller woman will be supported differently than a larger woman. Some women's hips essentially sink through the hole or are minimally supported, increasing lumbar stress and ligamentous strain.
- Lumbar lordosis: Applying repetitive pressure downward on the back during a massage, when a mother is in the prone position, exacerbates lumbar lordosis, a condition already exaggerated during pregnancy.
- Breast compression: Prone positioning, along with added pressure from the massage therapist, compresses the breast tissue, which is often sore, sensitive, and developing glandularly during pregnancy.
- Uterine ligament strain: It is possible that after an extended period of prone positioning, the uterosacral ligament will spasm or be strained as it tries to support the weight of the forward-dangling uterus.
- Intrauterine pressure: Applying pressure downward on a prone client increases pressure in the uterus. A small percentage of women have undetected problems with the placenta; if this were the case, it is possible that this increased pressure could unintentionally cause harm to the placenta or the baby.
  Note: There is no documentation of this having occurred during massage, but since it is a risk, prudence would dictate avoidance.
- Congestion: Nasal congestion is a common complaint during pregnancy due to vascular and hormonal changes. Positioning prone aggravates this condition.
- Client education: Positioning prone sidesteps the opportunity to help a woman learn how to help herself find comfort in the sidelying position at home. Many women have been thrilled to discover at their massage session that the use of a few more pillows and cushioning creates comfort in the sidelying position, which heretofore had been causing distress.
- Communication issues: Many clients are uncomfortable telling their practitioner that something does not feel right. In these situations, basic body cues, such as facial grimacing, help make the therapist aware of a client's discomfort. When the client is prone, communication pathways are decreased and these cues may be lost. If a mother is experiencing uncomfortable sensations, her ability to share verbally or nonverbally will be more limited. In addition, general feedback about pressure, desired changes, or arising emotions are not easily conveyed by the client when face-down.

If a client with a low-risk pregnancy requests prone positioning, it can occasionally be acceptable for short periods up to 5 to 10 minutes at a time as a "treat," but only if you have a pregnancy table or cushion manufactured for this purpose. For the majority of situations, and for optimum comfort and safety, sidelying or semi-reclining positioning should be used throughout the latter half of pregnancy, leaving prone positioning behind until postpartum, or for a rare, occasional 5-minute treat, if a mother requests and enjoys it.

full-body relaxation massage or as a prelude to more focused therapeutic work.

Note: For simplicity of instruction only, all of the following techniques start with the client lying on her right side, unless otherwise described. All sidelying techniques can, and usually should, be done on both sides.

Breathing and Connecting

Massage during pregnancy is an excellent time for a mother to focus on herself and to devote attention to deepening her connection with her baby. Conscious and intentional breathing practices are a way to facilitate this focus by helping her relax physically and

MASSAGE THERAPIST TIP

Positioning for a Client With Hip Pain

In general, if your client has hip pain or discomfort when lying on one side, begin the massage with her positioned with the painful hip up. If she cannot be repositioned to the opposite side, the massage can be modified to do all massage from one side. Alternatively, position her in the semi-reclining position.

ease emotional tension. Each breath she takes nourishes the baby inside with increased oxygen flow through the placenta. Each breath can reinforce an association between relaxation, nurturing touch, and pain relief. Begin each massage by encouraging the client to take slow, full breaths into her belly.

Visualizations of inspiring imagery can facilitate even greater relaxation. During labor, visualization combined with breathing is an excellent tool to ease and help carry a mother through her discomforts or fears during birth— but she must be familiar and comfortable with them before labor begins!

There are numerous ways to incorporate visualization and conscious breathing techniques to help build this familiarity and comfort. Visualization techniques are discussed in more detail in Chapter 7. Two ideas are described here.

Belly Breathing

According to Suzanne Yates, author of *Shiatsu for Midwives*, the kidneys send energy to the uterus.[2] Help encourage this flow by standing behind the sidelying client's back and placing one hand gently on her belly, over the sheet. Place a second hand on her back at one kidney area. Encourage her to inhale through her nose into her belly. Allow the abdominals to move outward with the inhalation, lifting the baby away from her body. Help her to visualize each breath as full of oxygen, nourishing her baby. On the exhalation, encourage her to tighten the abdominals lightly, pulling the baby back to the center of her body, hugging the baby with her belly muscles. You might help her imagine herself to be like the ocean, gently floating her baby on the receding and advancing, rising and falling waves. As she inhales, she lifts the baby up and away on a small wave, and as she exhales, the baby sinks back into union again with the ocean.

Light Breath

Place one hand on her sacrum and the other as support between her scapulas. Direct the client to draw a slow breath down her spine to your hand at her sacrum, imagining the breath as a column of light filling her whole body and circulating around the bowl of her belly. This light brings health, vitality, and love to the mother's baby and increases her body's capacity to nurture life. Encourage the exhalation to be full and relaxed.

General Full-Body Relaxation: Sacral Compression and Unwinding

Benefits: Opening a massage with a full-body relaxation technique can help to set the mode and pace for the massage to come. It allows the mother's body to more readily receive your touch and encourages the breath to become full and natural. It also brings a client's attention to the sensations throughout her body.

One effective technique to use with your pregnant client for full-body relaxation is sacral compression and unwinding. This unwinding helps lengthen her spine, release the sacrum, and balance and soothe the nervous system.

Position: Sidelying. Stand facing the client's back,

Technique

1. *Note:* Work without oil and over the sheet. Place your left hand flat on her sacrum, fingers pointing caudally (toward her toes). Place your right hand under her occiput using a C-clamp position, with your thumb on one side and the other fingers on the other side of her vertebrae.
2. Apply slight traction with the occipital hand and ask the client to inhale deeply.
3. On her exhale, very slowly and gently begin tractioning between your two hands, leaning into the sacrum. Ninety percent of the pressure is on the sacrum. The sacral hand directs energy slightly anteriorly, but is primarily focused caudally. Brace the elbow of the sacral arm against your body above the anterior superior iliac spine, and lean your body weight into it to increase pressure. Do not push the client forward; she should not need to resist your force but should be able to relax as her spine lengthens (Figure 5.5). If she does roll forward easily, she may be positioned too far forward in general. Ask her to reposition her hip more directly beneath her or slightly

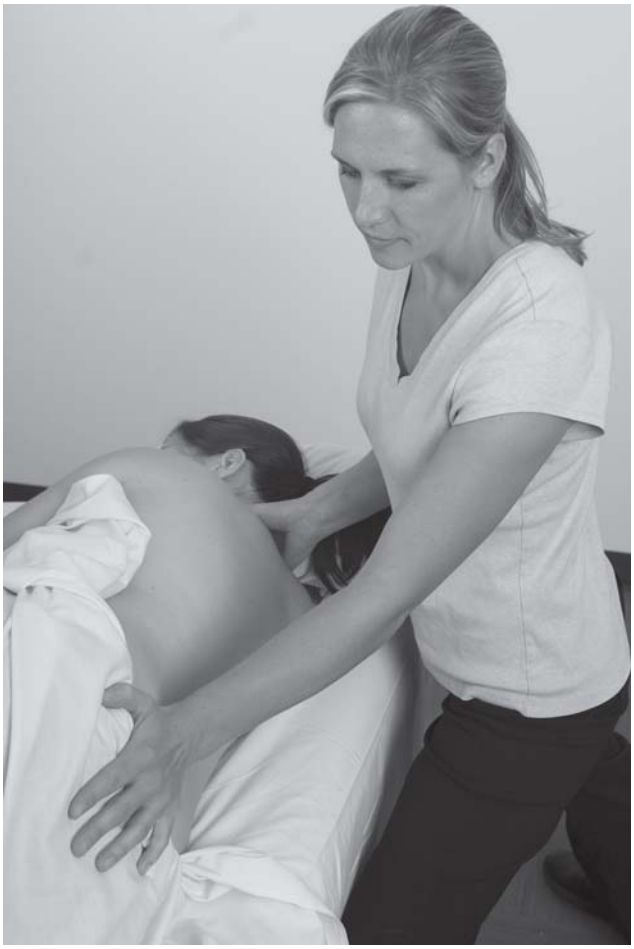

FIGURE 5.5 **Sacral compression and unwinding.**
Brace elbow of sacral hand against your body and increase pressure by leaning into it. Right hand under occiput applies only gentle traction with light fingers. Focus pressure in direction of client's toes, lengthening the spine, rather than pushing forward.

anterior. The occipital hand traction is very gentle, more than actually pressing. Imagine stretching her tailbone to her heels.

CAUTION: Your hand placement must be exactly aligned on the sacrum to avoid pushing a hypermobile sacrum out of alignment.

4. While performing the traction, suggest that your client envision her breath flowing from her head down to her coccyx, noticing the connection between her head and her sacrum as her spine lengthens.
5. Increase sacral pressure gradually, holding until you feel an unwinding and release in sacrum (usually at least 1 to 2 minutes). Release sacral pressure very gradually. Do not repeat.

How the Partner Can Help

Sacral Compression and Unwinding

Sometimes clients or partners and support people ask about simple techniques that they can do to beneficially touch the pregnant woman. The sacral compression and unwinding technique is one that falls into this category. It can often bring immediate relief to back pain, offer a sense of nurturing care, and encourage the woman to breathe deep and lengthen her spine. For the giver, it is easy to learn, does not demand a great deal of dexterity in the hands, and can be done on a bed or couch if both parties can find comfortable positions. Help the partner use appropriate body mechanics to avoid strain to her or his own body, while encouraging sensitivity in the hands to feel for the release and unwinding of the pelvis, spine, and neck. Even if the subtle energy too difficult to sense, as long as a firm sacral pressure in a caudal, anterior direction is used, and the client is reminded to breathe slowly and deeply, the effect will still be one of relieving pressure on the sacrum, and encouraging relaxation.

Head and Neck

Benefits: Relaxation of the head and neck will help relieve headaches, improve insomnia, and help a client become more aware of her postural stresses. Below are several techniques effective for the head and neck.

Position: Sidelying.

Techniques: Petrissage, Slide-Compression, and Palming

1. Stand at the client's back facing her head. Warm the oil in your hands first, then wrap your left hand around her shoulder anteriorly. Traction slightly caudally.
2. Place the right hand palm at the base of the occiput and push slightly cephalically, increasing the traction of the neck.
3. Use palmar compressing pressure down the neck from occiput to shoulder.
4. With the right forearm or hand on the neck just above the left hand, (which is still wrapped around the shoulder and tractioning down), slide up the neck and rest your hand at the base of the head, providing slight gradual traction to head with the heel or palm of your hand and creating a stretch for the

FIGURE 5.6 Alternating traction and sliding compression on neck.
Holding traction with one hand on shoulder, other hand slides up neck to occiput, creating slight traction with heel of hand or forearm.

FIGURE 5.7 Occipital traction.
Standing at the head of the table, place one hand under client's occiput in a "C-clamp" position-fingers and thumb encircling under the occipital ridge. Place your other hand on forehead, fingers spread across eyebrows. Cervical spine should be parallel to the table and slightly flexed. Apply slight traction to the head and neck.

neck between the two tractioning hands (Figure 5.6).

5. Slide down the neck with compression to replace the left hand on the shoulder with the right, while the left hand slides up and over the right hand to traction gently at the occiput.
6. Repeat as a continuous movement, hand-over-hand, the left sliding up to apply occipital pressure, while the right tractions at the shoulder, and then the right sliding up as the left comes down to traction. As the right hand slides up, use the right thumb to stroke along the levator and trapezius muscles to their attachments at the base of the occiput and press into the attachments under the occiput.

Occipital Traction

1. Standing at the head of the table, place your left hand under the client's occiput in a C-clamp position, with your fingers and thumb encircling under the occipital ridge.
2. Place your right hand on the forehead, fingers spread across the eyebrows. Be sure the cervical spine is positioned parallel to the table and slightly flexed (Figure 5.7).
3. On the client's exhalation, apply slight traction to the head and neck.
4. Hold for several moments and slowly release.

Occiput and Eyebrow Points

1. After the occipital traction above, continue standing at the head of the table. Press your left fingertips into the muscular attachments under the occipital ridge, starting from the spine and moving laterally toward the mastoid process.
2. Simultaneously, with your right hand fingertips, press up into and hold points just under the eyebrow ridge, starting from the bridge of

FIGURE 5.8 Occiput and eyebrow points.
Press fingertips into muscular attachments under occipital ridge, starting from spine and moving laterally toward mastoid process. Simultaneously, press up into and hold points just under eyebrow ridge, starting from bridge of the nose and moving toward ear.

the nose and moving toward the ear. Press one point per breath (Figure 5.8).

3. As you reach the lateral edge of the eyebrow with one hand and the end of occiput with the other hand, slide the two hands together at the jaw to apply gentle circular effleurage to the masseter region.

Shoulders and Chest

Benefits: With the extra weight of the growing breasts and postural changes, the chest often collapses inwardly, stressing the rhomboids as the pectoralis and subscapularis shorten. Massage helps to stretch the muscles that are pulling anteriorly, release trigger points, and improve posture and breathing. Effleurage, petrissage, and traction are three strokes that are effective for working in this area.

Position: Sidelying. Stand behind the client facing her back.

Technique:

1. Perform general effleurage and petrissage to the shoulder. Use deep tissue work on the trapezius, levator scapula, and supraspinatus.
2. Drag the fingertips, hand-over-hand, across the shoulder and down the back to the hips.
3. Place the client's arm straight on her side or draped over your left arm. Place both of your hands on top of the shoulder and traction down gently toward her feet, while mobilizing, stretching, rocking, and rotating the shoulder (Figure 5.9A).
4. Place the client's arm, with palm out, behind her hip. Mobilize the shoulder while you apply friction to tight points behind the scapula, at the rhomboid attachments (Figure 5.9 B).

Back

Benefits: The erector spinae work hard to maintain a mother's erect posture during pregnancy while a heavy anterior load pulls her forward. Back massage will help to alleviate this general stress. Holding pressure on either side of the spinal vertebrae brings a mother's awareness to her spine, helps you locate areas of particular tension, and releases tension with the relaxing touch and compression on areas of restriction. These points are also the location of acupressure points on the Bladder meridian.

Below is a description of applying massage to the back in the sidelying position. A second technique is described in the box, "Complementary Modality: Acupressure for Back Release."

Position: Sidelying. Stand Behind the client.

Technique: Effleurage and Petrissage to the Back

1. Apply oil to the back and shoulders. Stroke down either side of the spine, across the trapezius to the sacrum.
2. Make small circles with your thumbs, working firmly down either side of the spine, moving caudally. Direct pressure toward the toes rather than anteriorly, so as not to push the client forward.
3. Stroke from the head toward the tailbone, rather than up her spine to the head, which increases lumbar lordosis.
4. Standing on the client's anterior side and using a stepstool, reach over her superior side and petrissage more deeply into the erector spinae of the superior back (Figure 5.11).

Lateral Hip Rotators and Gluteals

Benefits: As relaxin loosens all the body ligaments, the hips and sacroiliac joint often become misaligned and sore. The lateral hip rotators are often tightened as a mother's hips externally rotate and her stance widens to better support the additional weight. Massage to the area can help relieve hip aching and improve posture. Fanning, compression, and thumb pressure are useful techniques here.

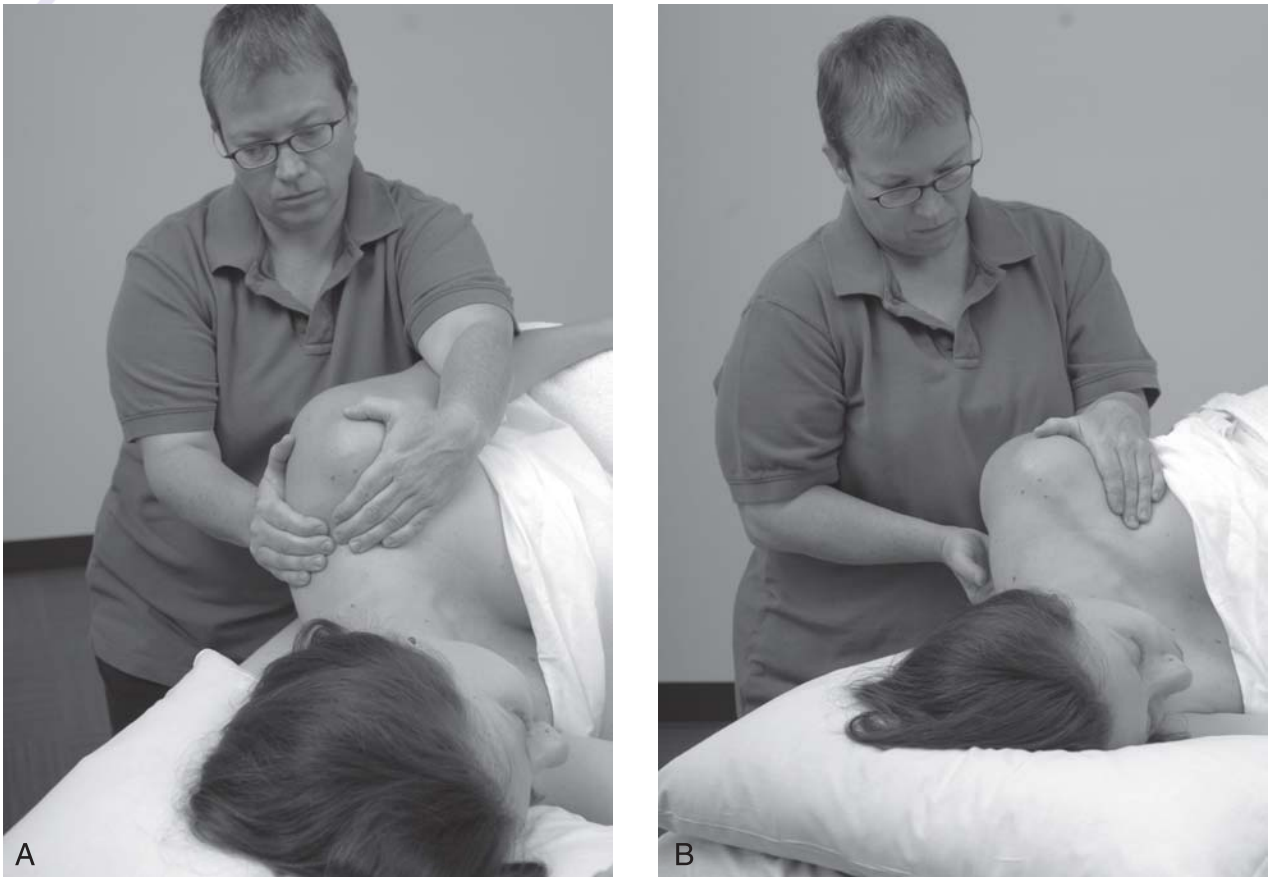

FIGURE 5.9 Opening the chest.
(A) Place client's arm straight on her side or draped over your left arm. Place both your hands on top of shoulder and traction caudally while mobilizing, stretching, rocking, and rotating the shoulder. (B) Place client's arm, with palm out, behind her hip. Mobilize shoulder while applying friction to rhomboid attachments.

Position: Sidelying.

Technique:

1. Drape to expose the superior leg.
2. Fan with the thumbs toward or away from the trochanter attachments of the gluteals and lateral hip rotators (Figure 5.12). Use your fingers, forearm, or a gentle elbow, depending on the depth needed, to compress entirely around the trochanter.
3. With the heel of your hand, press and slide from the iliac crest toward the trochanter. Slide and compress back toward the sacrum.
4. Make small circles with your thumbs along the sacroiliac joint and just below the crest of the ileum.
5. In the third trimester, press gently and directly into the sacral foramen and just lateral to the foramen.

CAUTION: Do not use deep stimulating pressure directly into the sacral foramen when there are high risks for miscarriage or preterm labor. Acupressure points Bladder 31 and Bladder 32 in the sacral foramen have potentially stimulating effects to the pelvis and uterus. As well, strong stimulation of the sacral nerves, which pass through the foramen, could theoretically also be stimulating to an already irritable uterus. General effleurage and broad compression to the sacrum are different techniques which are *not* contraindicated.

Arms and Hands

Benefits: During the mid to latter part of pregnancy, many women experience edema of the wrists and hands and sometimes temporary carpal tunnel syndrome.

Complementary Modalities:

Acupressure for Back Release

According to the acupressure system, each Bladder point along the spine correlates with a specific organ system. Bringing energy to each of these points can help to renew the entire body. Use the following method for stimulating the Bladder meridian as you work down the back.

1. Standing behind the client, feel for the space between the transverse processes of the vertebrae around T-1.
2. Using your thumbs, press into this space on either side of the spine while the client exhales (Figure 5.10).
3. As she inhales, release pressure and move to the next space, moving toward the sacrum. Repeat down the spine to the sacrum.

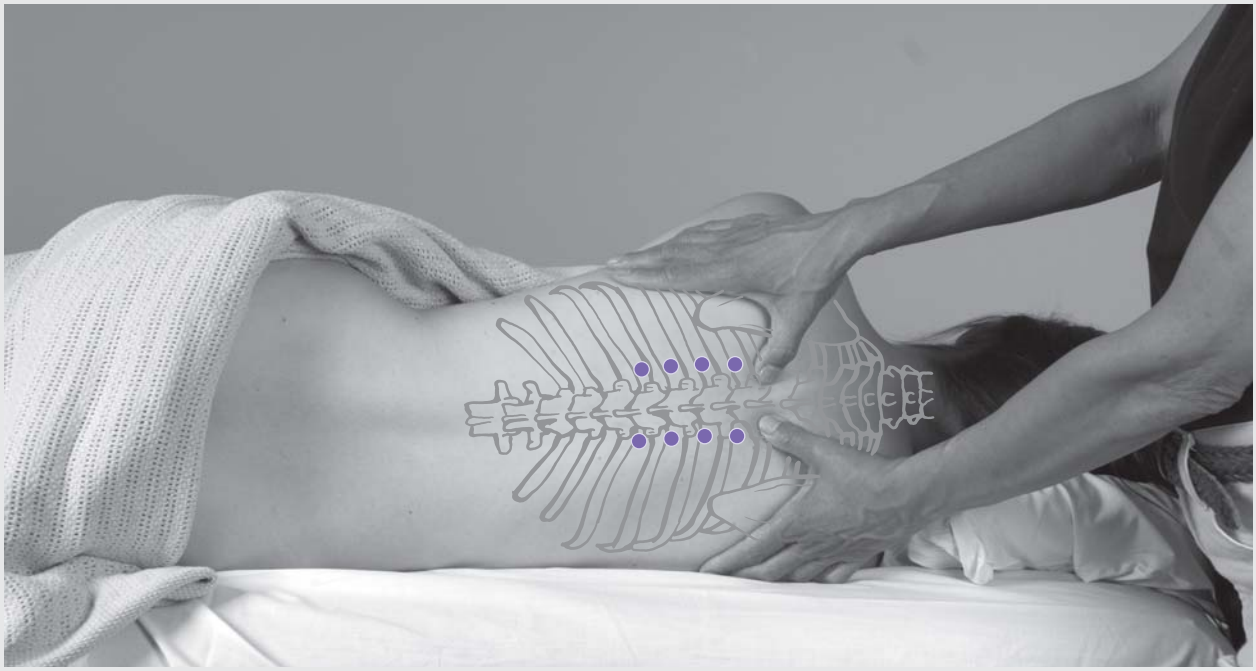

FIGURE 5.10 **Erector spinae/bladder meridian acupressure points.**
Standing behind client, feel for the space between the transverse processes of the vertebrae around T-1. Using your thumbs, press into this space on either side of the spine while client exhales. As she inhales, release pressure and move to the next space moving toward the sacrum. Repeat down the spine to the sacrum.

Massage to the hands and arms, along with arm stretches that open the upper chest shoulder area, can help alleviate general discomfort. Hand edema techniques are addressed more specifically in Chapter 6.

All general massage techniques to the hand are beneficial.

Position: Any position with access to the hands.

Technique:

1. Spread open the client's palm with your thumbs, sliding and compressing across the palm.
2. Manipulate the wrist with circular range of motion, flexion, and extension.
3. Fan the wrist on the ventral and dorsal sides.
4. Squeeze the fingers from the fingertips toward the hand with incremental movements.
5. Using the flat of your thumb, strip the arm extensors and flexors from the wrist toward the humerus.
6. Apply general petrissage to the deltoid, biceps, and triceps.

CAUTION: Avoid directed, intentional acupressure into the acupoint Large Intestine 4,

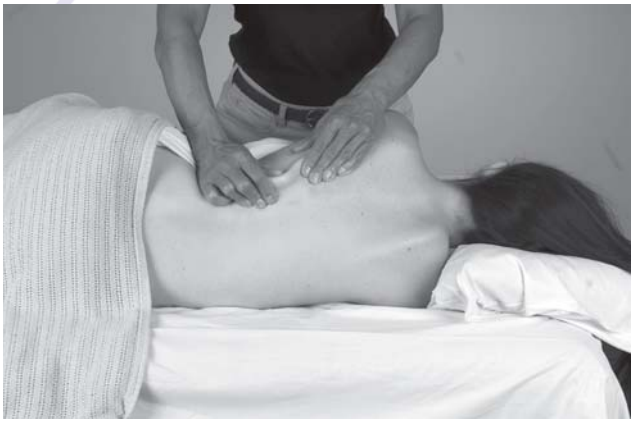

FIGURE 5.11 Petrissage to back from client's anterior side.
Stand on step stool on anterior side of client's body. Reach over her to access superior side of her spine with petrissage.

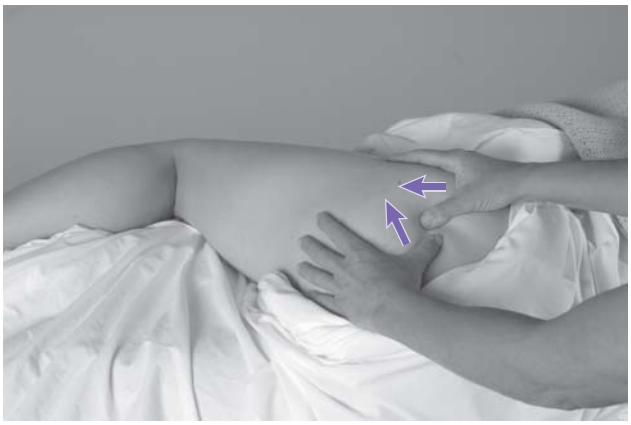

FIGURE 5.12 Fanning trochanter attachments.
Fan with the thumbs toward or away from the trochanter attachments of the gluteals and lateral hip rotators.

(Figure 4.3), which is contraindicated during pregnancy. General effleurage and petrissage are different techniques and are not contraindicated.

Legs

Benefits: Women's legs often feel achy from carrying the weight of pregnancy. Calf cramps are not uncommon, and both the quadriceps and hamstrings may be tight as they help balance the weight of the belly. Massage can help reduce the occurrence of cramps and relieve general discomfort.

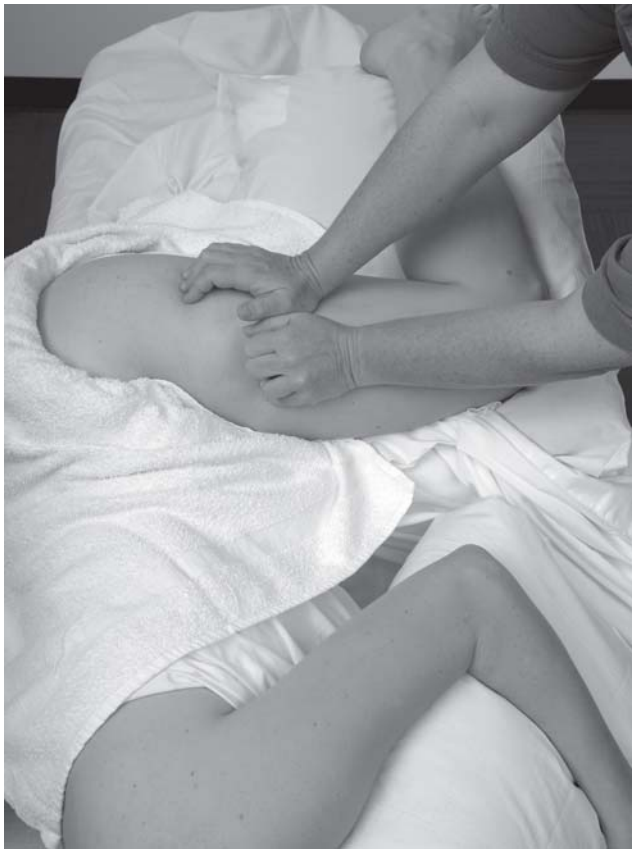

FIGURE 5.13 Kneading thigh.
Begin close to trochanter, and knead tissue, pushing cephalically. Gradually slide down leg, always kneading toward hip, but working incrementally toward the knee.

Position: Sidelying

Techniques:

CAUTION: Avoid deep work on the inner thighs, where deep vein thrombi are more likely to occur. Avoid direct work on varicose veins.

Kneading the Thigh

1. Stand on a stepstool so that you are above the client and working on the flexed superior leg from the client's anterior side.
2. Use your palm and the heel of your hands to compress and slide up the quadriceps and hamstrings, beginning close to the gluteals at the upper lateral thigh. Knead the tissue in the direction of the heart, while working the hands down toward the knee. Alternate the hands, as if kneading bread, squeezing upward, then sliding down a palm-length and repeating (Figure 5.13).

3. Perform general massage to the iliotibial (IT) band, hamstrings, and quadriceps.

Compression of Thighs and Iliotibial Band

1. Stand on the stepstool so that you are above client and working on the flexed superior leg. Press with the back of the extended fingers against the IT band.
2. Compress into the IT band and slide around the leg (Figure 5.14A).
3. Squeeze and slide from under leg, back up to IT band again. Move toward the knee with each new compression (Figure 5.14B).
4. Fan on the IT band and quadriceps tendons just superior to the knee.

Calf

1. Stand on the client's anterior side. Reach over the leg and grasp the gastrocnemius and soleus with both hands. Squeeze and slide the hands, sliding the cephalic hand toward the feet and the caudal hand toward the head and then back again. Slide up and down the calf with a squeezing, kneading and compressing motion. Use a hip motion in your body to aide your hands, so that the force comes from your full body movement, as opposed to entirely from arm and hand effort.

Inferior Leg

1. While the client is in the sidelying position, you can work lightly with gentle effleurage on the inferior leg if there are no known or visible varicose veins.

Feet

1. Dorsiflex and rotate the feet.

CAUTION: *Do not* plantarflex the feet. This can stimulate calf cramping.

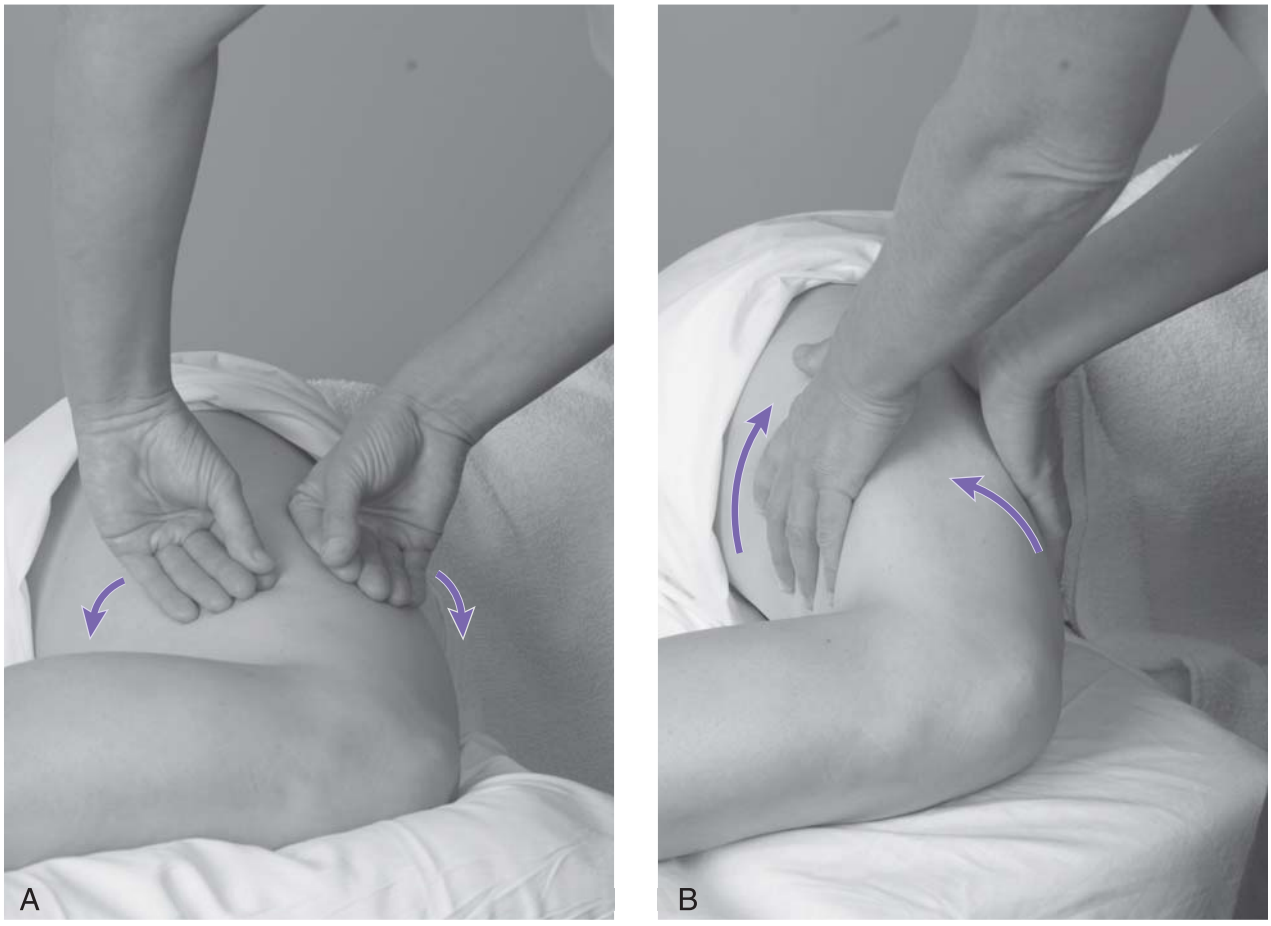

FIGURE 5.14 Compressing thigh and iliotibial band.

Stand on stepstool to allow for vertical compression onto iliotibial band with flat backs of fingers. Press down slowly onto lateral thigh, compressing around thigh, (A) then switching fingers to slide back up, squeezing leg between open fingers and palms (B).

2. Fan the dorsal and plantar sides of the feet with firm pressure.
3. Squeeze the points between the toes, where the toes meet the main body of the foot at the metatarsal-phalangeal joint.

Belly Rubs (Second and Third Trimesters Only)

Benefits: Belly rubs offer time for the client and therapist to connect with the baby. They can be wonderfully relaxing and nurturing and help a mother feel more united in her body, as both the belly and back can be massaged simultaneously. Both sidelying and semi-reclining positioning are excellent for giving and receiving belly rubs. Be aware of a few basic conventions regarding belly rubs in pregnancy:

- Treat the belly as if you are approaching sacred ground—with respect and care. Always ask permission before touching the abdomen. After permission is obtained, slowly and gently place the palms on the belly. Attune with and say hello to baby before you begin to rub. Remember, you are massaging two people!
- In general, your pressure should be firm, with a solid palmar touch, rather than feather-light. Very light touch is irritating to many women. Ask for feedback about the pressure. Most practitioners are fearful of pressing too hard, consequently working much too lightly to be satisfying to the mother.
- Do not do belly rubs for more than 5 minutes, unless intentionally attempting to support contractions for labor. The client may experience mild uterine contractions or tightening and releasing of the uterus during abdominal massage. This can be normal in the third trimester and does not necessarily indicate she is going into labor! However, if labor is not due and more than 1 to 2 contractions are felt during the belly rub, stop. Five to ten minutes of belly massage will not cause a woman to begin labor, even if a couple contractions are felt. However, if the uterus is particularly contractile under your touch, it would be inappropriate to continue stimulating the abdomen if labor is not due.

Position: Sidelying or Semi-Reclining

Techniques:

Honoring Honor the belly and help your client relax by telling her exactly what you are about to do. Place your hands gently, palm down on her belly and breathe together with her for at least 3 to 4 breaths, or until her belly softens under your touch. As she begins to trust your touch in this vulnerable area, she will relax more.

Always work slowly and with respect for emotions which are often held firmly in the belly and which sometimes come to the surface when touched in a caring way. If the client is reluctant to have touch directly on her skin, she may welcome touch through her clothes or sheet.

Below are two belly rubbing procedures, one for the sidelying position and one for the semi-reclining position.

Sidelying Belly Rub

1. Stand at the mother's back, facing her back.
2. After honoring the belly, as described above, apply oil to your hands and spread the oil in a very slow, firm circle around the entire globe of her belly.
3. From behind her, reach over her belly to the underside and slide back up and over the belly, making hand-over-hand raking strokes toward the upper side of her belly (Figure 5.15).

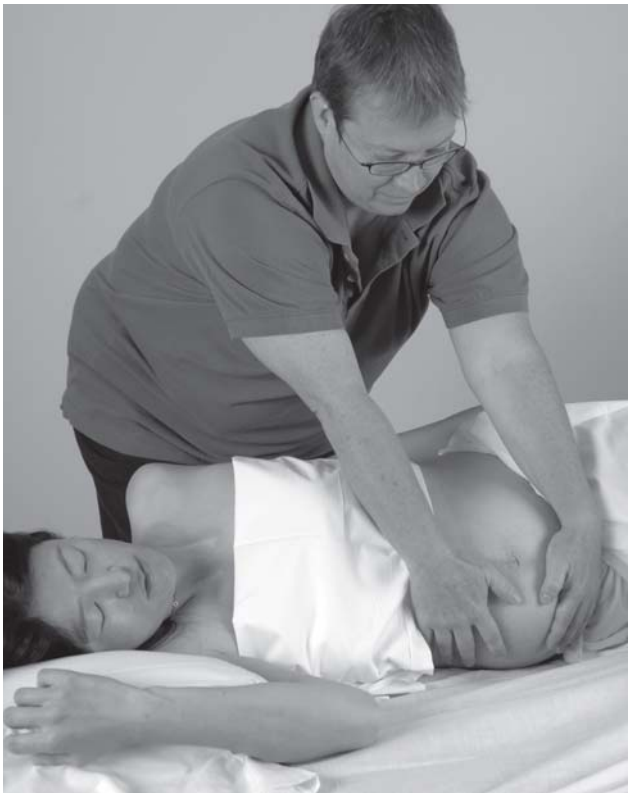

FIGURE 5.15 **Raking over the belly.**
From behind client, reach over to underside of belly and slide back up and over, making hand-over-hand raking strokes toward the superior side of her belly.

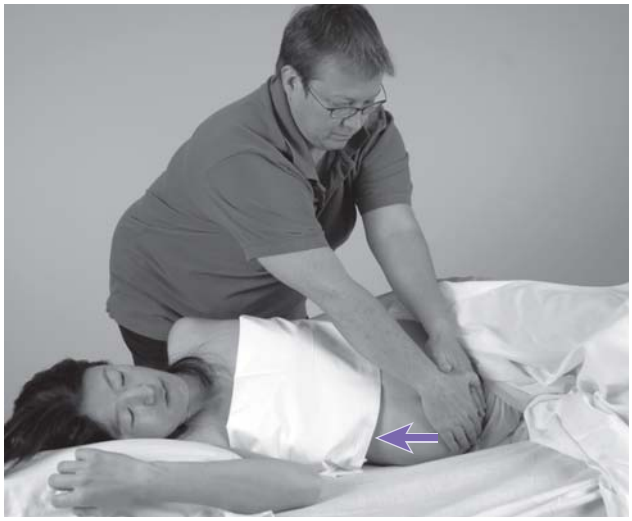

FIGURE 5.16 **Lifting from groin.**
Make lifting strokes from the groin area toward the navel, hand-over-hand, imagining lifting the weight of the belly and relieving pressure on the groin.

4. Make lifting strokes from the groin area toward the navel, hand-over-hand, imagining lifting the weight of the belly and relieving pressure on the groin. (Figure 5.16)
5. Position yourself in a lunge position, facing the client's feet.
6. If she is on her right side, place your right hand on her belly and your left on her back. Mirror your hand-motions as you make circles on her belly while applying strong pressure on her low back/sacrum simultaneously (Figure 5.17A). When both the hands meet at the superior hip area, smoothly rotate on your heels to change the position of your feet so that you are facing her head and your hands so that your right hand is on her back and your left hand is on her belly.
7. Continue circling, this time circling high on her belly while mirroring circling pressure on the mid-back (Figure 5.17B).
8. Change your direction every circle or two.

FIGURE 5.17 **Mirroring on belly and back.**
(A) Position yourself facing client's feet. Place cephalad hand on her belly, and caudal hand on her back. Mirror your hand-motions as you make circles on her belly and applying strong pressure on her low back/sacrum simultaneously. When both hands meet at the superior hip area, change your position so that you are facing her head. (B) Continue circling, this time high on her belly while mirroring circling pressure on the mid-back.

Semi-Reclining Belly Rub

Note: You may need to use a stepstool to reach adequately around the client's back from her anterior side.

1. Position the client semi-reclining, drape the breasts, and expose the belly in standard fashion. Proceed with honoring the belly first, as described above.
2. Warm the oil in the hands and spread it slowly in large full circles around the belly.
3. Spiral out slowly from the navel until the circling includes the waist area.
4. Make smooth raking strokes from one side to the center, reaching across the belly with hand-over-hand motions. Repeat on the opposite side.

MASSAGE THERAPIST TIP

Choosing the Position for a Belly Rub

A wonderful belly rub can be done in either sidelying or semi-reclining positions. Both have advantages and disadvantages. In general, do a belly rub in sidelying position when you do not want to disturb your client with repositioning, or when you have a client who might feel overwhelmed with the therapist proximity during a semi-reclining belly rub, or who needs limited repositioning due to hip and back complaints. Also use it with someone who is much larger than you. Generally semi-reclining belly rubs are used more during the third trimester, and are useful with clients who are more comfortable in semi-reclining, or when you or the client wants to be more engaged with talking or sharing about the baby, or visualizing the belly and baby.

Sidelying Advantages

- Relaxing: If a full massage has been done in the sidelying position, a belly rub in sidelying allows the woman to continue relaxing without having to change position again.
- Back Access: In sidelying, it is easier to massage both the back and belly at once, creating more unity in the client's body.

Sidelying Disadvantages

- Disturbs Final Relaxation: If the client is deep in a quiet internal space at the end of a massage; making the effort to move her body and wait for you to reposition all the pillows can disturb that reflective space.
- One-sided: As with the rest of the massage in sidelying, you can only access one side of the body. While most of the work is done anteriorly and posteriorly with a belly rub, the lift from the side can only occur on the one side at a time. Usually a belly rub in sidelying is only done from one position; the client is not asked to roll over to have the belly rub repeated on the other side.

Semi-reclining Advantages

- Belly Access: In this position, you can see the belly and visualize more clearly the baby's position, body parts, and movements. You have access to the entire belly and back and the massage will feel more evenly dispersed across the belly.
- Client engagement: When upright in the semi-reclining position, the client may be more alert after a massage and might share more about the baby and her experiences of getting to know him or her through kicks and responses to external stimuli. The client can watch how you do the belly rub, and be more easily engaged in giving feedback about what kind of pressure or touch feels good.
- Repositioning: Moving out of the sidelying position will be a relief for a client who is getting uncomfortable on her side. She may be able to breathe more deeply and enjoy the belly rub more.

Semi-reclining Disadvantages

- Physical Proximity: In semi-reclining position, you may have closer contact with the client than she feels comfortable with. To reach the back of a woman who has a large belly or who is much larger than you, you must nearly embrace her belly. This may feel awkward or invasive for some women.
- Repositioning: It takes time and energy to reposition a client. If you are short on time, or don't want to disturb her, don't reposition.

DISPELLING MYTHS:

Touching the Pregnant Belly

Massage therapists have sometimes been taught to avoid any touch to a woman's belly throughout pregnancy. This is generally based on uncertainty about what is appropriate or not, as well as on fear that pregnancy is a fragile condition, and additionally on a legitimate desire to avoid causing harm. However, it is a broad-based rule that fails to define the actual risks and when and how to avoid them while still offering gentle and nurturing abdominal work. Of course, deep abdominal work to the psoas or internal organs is contraindicated throughout pregnancy. However, belly rubs for comfort and baby-connection are beneficial and desirable, especially during the third trimester.

In the first trimester, the risk for a miscarriage is high; it is therefore standard practice to advise massage therapists to avoid touching the abdomen to avoid association in anyone's mind between massage and a possible miscarriage. After the first trimester, however, and assuming the therapist does a thorough health intake and ascertains that there are no further obvious or known risks for preterm labor or miscarriage, belly rubs are a wonderful way to share with a growing mother and her child. Belly rubs do have the capacity occasionally to stimulate temporary contractions; to avoid this, restrict belly rubs to a duration of no longer than 5 minutes until the last couple weeks of pregnancy, when longer rubs may be desirable to support labor.

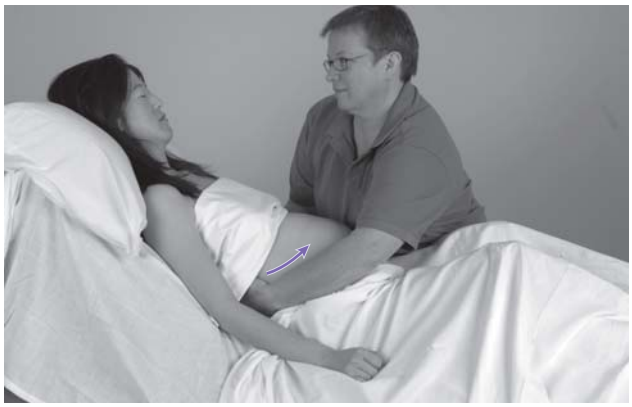

FIGURE 5.18 **Semi-reclining belly rub.**
Use stepstool if necessary to reach around client's back and pull up into erector spinae before sliding around to front again. Be aware of client's comfort level as it may feel invasive to some.

5. Make smooth strokes with the fingers, lifting up from the area toward the navel.
6. Stand facing the client's face. You may need to stand on a stepstool.
7. Start with both hands at the navel, and slide around to the belly and waist to reach to the spine. Press into the erector spinae, pulling toward you slightly as you slide again to the belly (Figure 5.18).
8. Repeat, reaching to different areas along the spine, rubbing there momentarily before sliding back to the belly and circling again.

CHAPTER SUMMARY

To safely and optimally provide pregnant clients with bodywork, the massage therapist must attend to the specific needs of the population. This includes preparing the office setting with a comfortable table, pillows and supports, using appropriate-sized sheets that will drape her securely, moderating the climate for clients who may be warmer than nonpregnant clients, and having a step stool and unscented oils or lotions available. Additionally, the massage therapist must be skilled at positioning methods appropriate to the client's trimester and size, knowledgeable enough to do a thorough health intake, and adhere to relevant precautions and contraindications. Following these steps, combined with conscientious draping and caring touch, the massage therapist will have met the client's most essential needs during a massage for safety, respect and nurturing.

CHAPTER REVIEW QUESTIONS

1. Name two reasons why you might choose to schedule longer sessions with your pregnant clients.
2. Name three extra items you might have available in your office set-up to provide optimum comfort for yourself and/or your client.
3. Describe how you would set up your massage table specifically for pregnant clients in the side-lying position. Name three alterations to your standard set up.

4. Explain how you would position a client who is 15 weeks pregnant and complains of breast tenderness and nausea and why you would choose that position.
5. If a client complains of numbness or tingling of her hand on the side she is lying on, describe changes you might implement to improve her comfort.
6. Describe three adjustments you might try to improve your body mechanics if you are feeling strain in your back while working with a client in the sidelying position.
7. Describe how you would direct a client to change positions from one side to the other on the massage table.
8. Explain what you would do if a client became uncomfortable in sidelying positioning after starting a massage. What other position might be tried? What other positioning techniques?
9. Discuss the pros and cons of prone positioning after 22 weeks' gestation. Describe the dangers of supine positioning after 22 weeks.
10. Your new client of 32 weeks agrees to a belly rub. Describe what positions you could do this in, and what considerations would help you choose.

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CHAPTER 6

COMMON COMPLAINTS DURING PREGNANCY

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Describe 10 common complaints of pregnancy and their common causes.
- Identify simple massage techniques to address common complaints of pregnancy.
- Describe the use of facilitated stretching to help address specific musculoskeletal discomforts.
- Identify the benefits, concerns, and contraindications of breast massage during pregnancy.
- Identify the need for self-care client education to help prevent or alleviate discomforts.
- Understand the limitations of massage to address common pregnancy complaints.

Many women sail through their pregnant months feeling healthier and happier than ever before. Others are plagued with one to a number of discomforts. Doctors and friends may minimize these complaints with common comments such as, "You're pregnant, what do you expect?" or "Don't worry, it will go away after you have the baby." Because of this, women often find themselves suffering needlessly through a pregnancy with annoying or sometimes painful conditions which bodywork techniques may relieve.

This chapter addresses common complaints and describes massage techniques along with self-care tips for your client that may aid in alleviating her discomforts.

CAUTION: Before you address any of the following complaints, be certain to study the precautions and contraindications for pregnancy massage in Chapter 4.

Note: For simplicity of instruction only, all of the following techniques start with the client lying on her right side, unless otherwise described. All sidelying techniques can, and usually should, be done on both sides. I use the term "superior" to refer to the client's side that is *up* and accessible. The side *on* the table I refer to as the "inferior" side.

BACK PAIN: LOW

By the end of pregnancy, a woman is making many adjustments to compensate for the increased weight of the pregnant uterus, baby, amniotic fluid, placenta, and breasts. It has been estimated that two thirds or more of pregnant women experience back pain, most frequently in the low back. It most commonly begins by the sixth month of pregnancy and can last for up to 6 months after delivery.[1-4] The pregnant woman who is particularly at risk for musculoskeletal low back pain (LBP) is one who:

- has history of chronic back pain or back injury prior to this pregnancy

- is now pregnant with her second or subsequent child
- has had back pain in previous pregnancies
- works in a job that involves physical exertion or strain.

Cause

There are a variety of causes of LBP in pregnancy, some of which can be addressed with massage. The most common causes include poor posture, hormonally induced ligament laxity, and diastasis recti. Other causes of aching or pain in the low back may include constipation, uterine contractions, and occasionally, with more severe pain, kidney infection. Each of these are addressed briefly below:

- *Posture*: Postural changes are a very common cause of LBP in pregnancy due to the extra anterior weight of the breasts and enlarged uterus, the anterior rotation of the pelvis, increased lumbar lordosis, and contraction of the lateral hip rotators, quadratus lumborum (QL), and iliopsoas muscle.
- *Hormones*: The hormone relaxin causes the ligaments in the hip, symphysis pubis, and sacroiliac joints to become more flexible. Sometimes these hypermobile joints can become misaligned, causing discomfort that may be felt in the low back or across the buttock, or which may manifest as sciatica.
- *Diastasis recti*: Weak and untoned abdominal muscles can cause the abdominal contents and uterus to fall forward, putting undue strain on the lumbar vertebrae, spinal muscles, and abdominal wall. If the abdominal muscles separate, in a diastasis of the recti, the lack of abdominal support will increase back pain further (see Chapter 3).
- *Constipation*: A dull, low ache in the back may be due to the displacement of the intestines and resultant constipation.
- *Contractions*: For some women, uterine contractions may be felt as LBP rather than as tightening in the abdomen.

CAUTION: If your client is in her 37th week of gestation or less and has recently begun to experience intermittent aching in her low back, be sure to ask if she has seen her prenatal care provider to ensure that preterm contractions are not the cause of the back discomfort.

- *Kidney infection*: Sharp back pain on one side below the ribs could indicate a kidney infection, which is not an uncommon occurrence in pregnancy. Once an infection develops, it is often accompanied with fever and nausea or vomiting. A client who complains of increasing, constant or sudden sharp pain in the kidney area should be referred to her prenatal care provider.

General Treatment

Stretches and general massage are effective as general treatment for musculoskeletal LBP.

- Stretches: For LBP related to postural and structural stress, encourage your client to practice self-care with muscular strengthening and stretches to help adjust her posture and enable her to relieve her own discomforts. Pelvic tilts, abdominal strengthening, hip rotator and QL stretches are a few that can ease LBP.
- General massage: Perform massage on the QL, spinal muscles, multifidi, gluteals, and quadriceps. Include effleurage and petrissage to the erector spinae, and apply deep warming strokes toward the sacrum and radiating out across the waist and lumbar area.

Specific Bodywork Techniques

Below are a few bodywork techniques that address low back pain caused by a tight QL and psoas, or by sacral tension. Before beginning this deeper focused work, warm up the back with effleurage and petrissage.

Quadratus Lumborum Compression Points

Benefits: Helps release a tight QL that has become shortened and strained due to attempts to stabilize the pelvis and support the ever-increasing abdominal weight.

Position: Sidelying.

Technique

1. Stand at your client's back facing her head.
2. Warm up the QL area by using your palm or forearm for effleurage, sliding from the iliac crest to the lower border of the ribs.
3. After the QL has been warmed, wrap the hand closest to your client's hips around her iliac crest and traction the hip caudally. With the thumb or fingers of the opposite hand, slowly apply static, ischemic pressure onto the lateral edge of the QL, just lateral to the erector spinae (Figure 6.1). Move up from the

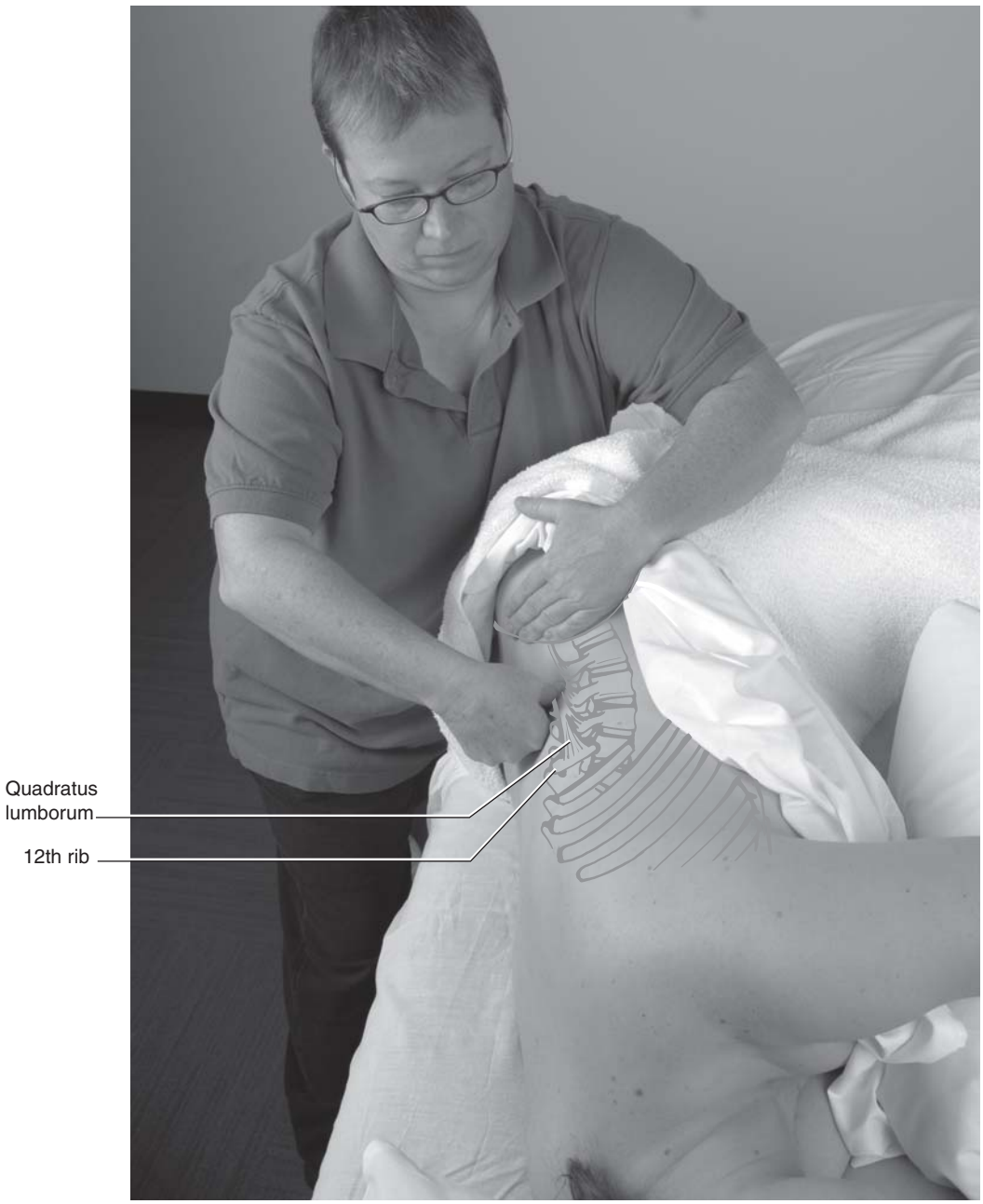

FIGURE 6.1 **Quadratus lumborum compression points.**
Tractioning the hip caudally from the iliac crest while slowly applying static pressure onto the lateral edge of the QL.

iliac crest incrementally, holding each point for at least 2 to 4 of the client's breaths as the tissues release. When you feel a particularly tight spot or trigger point, press carefully into that point, using a pain-rating scale with your client. Ask her to rate discomfort on a scale of 0 to 10 (0 is painless, 10 is excruciating, and 6 is the maximum tolerable discomfort while still being able to relax with focused breathing). Hold at a level of 6, if that is comfortable for her, for at least 15 to 20 seconds or 4 to 5 client breaths.

4. Encourage the client to inhale into the area, envisioning a softening and stretching as she breathes. Maintain pressure, feeling the tension release under your thumb. When the client says the pressure feels like a 3 or 4 or less, increase the pressure until it is again at a

6 and repeat if necessary, or move to the next tight spot.

CAUTION: The QL can be very sensitive. Work slowly and ask for feedback to ensure an appropriate level of pressure.

Quadratus Lumborum Release

Benefits: Same as for the Quadratus Lumborum Compression Points above.

Position: Sidelying, with the client's upper arm extended over her head. To increase this stretch, if necessary, ask the client to extend and drop her top leg behind her bottom leg. She may need to bend her bottom leg to stabilize balance. For greater QL stretch, place a rolled pillow or foam wedge beneath her waist on the table to arch her superior side more laterally as demonstrated later in Figure 6.2A.

Technique

1. Stand on the client's posterior side, facing her back. Cross your hands and place one palm on your client's posterior iliac crest and the other on the superior lateral edge of the QL, on or just inferior to the lowest ribs. Ask her to inhale as you press in opposite directions with both hands, lengthening the QL between the hip and ribcage. Hold for several relaxing breaths as the fascia unwinds. Slowly release pressure as the client exhales and relaxes (Figure 6.2A).
2. Move the leg pillows out of the way. Ask the client to flex her bottom knee slightly to support her body. Have her drop her top leg behind her bottom leg, and even off the side of the table if comfortable. From here, as she exhales, press on the lateral calf of the dropped leg and have her push vertically up against the resistance of your hand with 1/4 of her effort, activating the QL from a slightly stretched position (Figure 6.2B). Hold for 8 seconds. Have the client inhale and relax, and then repeat 1 to 2 times.

Quadratus Lumborum Extension

Benefits: Activates and stretches the QL; lengthens the compressed space in the waist.

Position: Sidelying, with the client's top arm extended over her head.

Technique

1. Stand at the client's feet. Have her extend her top leg. Hold this leg above her ankle with two hands and lean back gently to apply traction to her hip, lengthening her side and the QL. Hold for 10 seconds, then ask her to dorsiflex her foot, pressing her heel down while hoisting her hip up toward her head, activating the QL from a slightly stretched position (Figure 6.3).

Full Body Stretch

Benefits: Creates length and space in the compressed waist area.

Position: Sidelying.

Technique

1. Stand at the client's head and bring her left arm up over her head into full extension, with her arm hooked over yours at her elbow.

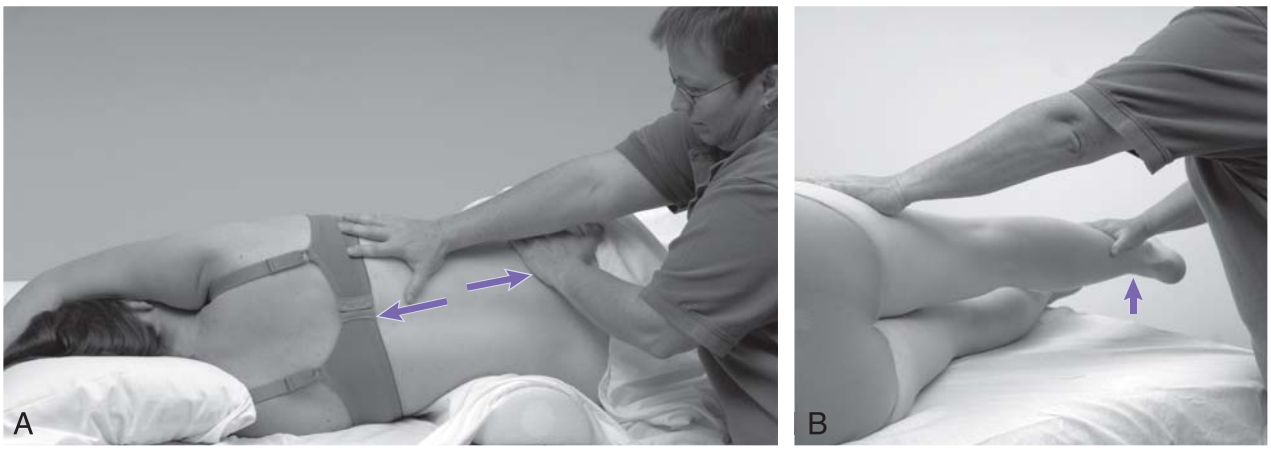

FIGURE 6.2 **Quadratus lumborum release.**
(A) Lengthening the QL between the hip and ribcage. (B) Pressing on the lateral calf of the dropped leg as the client resists isometrically.

FIGURE 6.3 Quadratus lumborum extension.
Gently applying traction to the hip while the client dorsiflexes her foot and presses into her heel.

2. Place your left hand on her iliac crest and push caudally, maintaining traction of her arm as in Figure 6.4. Instruct the client to breathe deeply to extend the stretch.

Sacral Rub

Benefits: Increases circulation and brings warmth to the sacrum and pelvis; relieves sacral and low back discomfort.

Position: Sidelying.

Technique

1. In the late second or third trimester, stimulate the sacral fascia, sacral multifidi, and attachments of the gluteus maximus with brisk fingertip friction, cross-fiber friction, and skin rolling for up to 1 to 2 minutes or more, bringing heat to the area.

FIGURE 6.4 Full body stretch.
Extending the arm and pushing caudally on the iliac crest to stretch the torso.

2. Press into the sacral foramen gently.

Assisted Psoas Stretch

Benefits: Releases tight psoas; helps alleviate low back pain.

Position: For this stretch, the client lies supine with the ischial tuberosities near the table edge. The leg with the tight psoas is extended and hanging relaxed. The other leg is flexed and held toward the belly. The low back is flat on the table. Do this with the client dressed, after the massage.

Technique

1. Before assuming the above position, first assess psoas tightness and the need for this stretch, by having the client start several inches further up on the table than described above, so that her hamstrings are *on* the table. Assess whether the hamstrings of the extended leg touch the table or are held in the air. With a tight psoas, the extended leg will not lie flat on the table. If one or both sides are tight, do the following stretch on the tight side(s) after repositioning as described in "Position" above.
2. Ask the client to push the heel of the extended leg toward the floor, to lengthen the psoas.
3. Place your hand on the extended leg, just superior to the knee and ask the client to push her knee up isometrically against the resistance of your hand with one quarter of her effort as she exhales (Figure 6.5). Maintain clear communication and remind her to stop immediately if she feels discomfort.
4. Hold for 8 seconds. Release. Press down *slightly* on the leg to extend the stretch. Release slowly and *help her* bring her extended leg back into flexion.
5. Repeat on the other side if necessary.
6. To get up from this position, help the client to either roll to her side and stand from the end of the table, or have her pull both heels in close to her buttocks, to rest on the table edge and push herself with her heels further up on the table. She can then roll to the side to push up with her hands.

CAUTION: Do not do psoas stretch with pubic diastasis.

BACK PAIN: MID AND UPPER

While LBP is quite common during pregnancy, mid-back and upper back pain can also cause complaints.

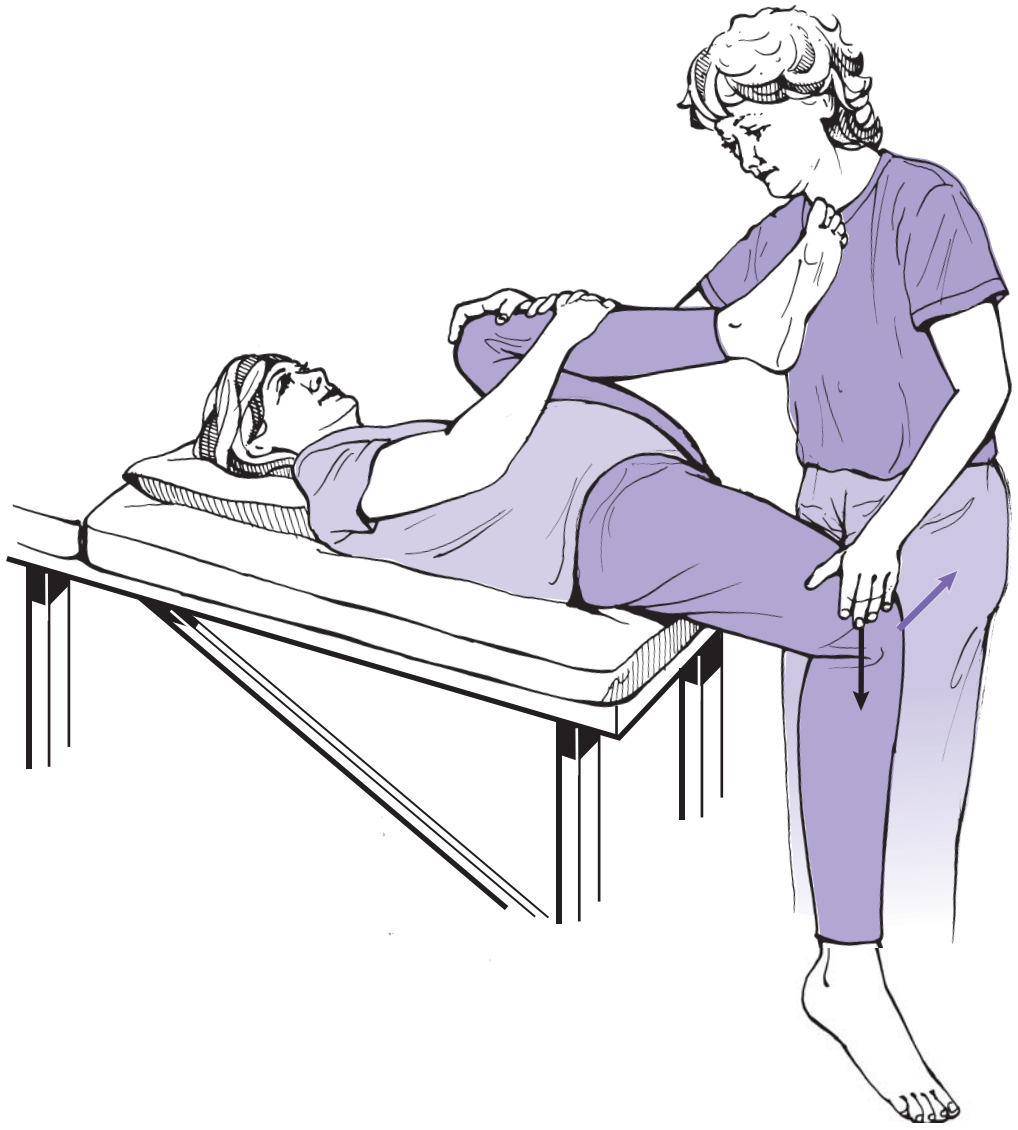

FIGURE 6.5 **Assisted psoas stretch.**
With the therapist's hand on the client's extended leg, the client pushes isometrically against the hand with the knee.

This discomfort can often be managed with a properly fitted, supportive bra; postural awareness; supported positioning when sidelying in bed or on the massage table, as well as with stretches and massage to alleviate tension and trigger points.

Cause

Upper back pain is often caused by improper posture while adjusting to changes in balance. The weight of the enlarged breasts pulls the upper torso forward, causing the muscles that internally rotate the shoulder to become shortened. Pain then develops in the upper midback, in the chronically stretched rhomboids, and in the posterior neck musculature.

General Treatment

You can work on the area where the client may feel discomfort, such as the rhomboids. However, to help relieve the cause of the discomfort, you will generally need to perform stretches and petrissage, compression, friction, and cross-fiber friction on the anterior-pulling, internally rotating muscles, such as teres major, subscapularis, latissumus dorsi, and pectoralis major.

Specific Bodywork Techniques

Below are bodywork techniques to address midback and upper back pain in specific muscles or regions.

Self Care Tips FOR MOTHERS:

Decreasing Low Back Pain

Remind your client of the following suggestions to help relieve low back pain (LBP):

- Sleep on the side, with knees bent and the top leg supported on a pillow.
- When standing, have a stepstool or block to rest one foot higher than the other.
- Keep the knees flexed and higher than the hips when seated for long periods.
- Learn and practice postural awareness.
- A pregnancy abdominal binder helps support the weight of the pregnant belly, reducing LBP.
- Low heeled, comfortable shoes prevent LBP that occurs with higher heels.
- All practices that strengthen the abdominals, stretch the psoas, lengthen the low back, and stretch the hip rotators can be helpful.

The following stretches and strengtheners can be taught beginning in early pregnancy to relieve LBP and continued after delivery to help regain appropriate non-pregnancy posture.

Quadratus Lumborum Stretch

Stand with the left side next to a wall, one arm width away. Extend the right arm to the side and place the hand on the wall. Cross the left leg close behind the right leg. Raise the left arm over the head, pushing the left hip laterally away from the wall and arching toward the wall with the head and left arm. Hold and breathe, feeling the stretch in the left QL area (Figure 6.6). Repeat with the right leg crossed behind the left leg, stretching different fibers on the QL. Turn around and repeat on the opposite side. This can also be done from a kneeling position if there is concern for losing balance (Figure 6.6).

Psoas Stretch

A weakened, short psoas is common in pregnancy and can be a direct cause of LBP. From the hands and knees position, bring the right knee forward and place the foot flat on the floor, directly below the knee. Extend the left leg further back, sinking into the extended left hip and stretching the groin and psoas. Bring the torso upright to increase the stretch. Repeat on the other side.

During the third trimester, you may lunge while sitting in a chair. Sit with the right hip in the chair, right leg forward. Stretch the left leg behind, for a modified lunge. Sink into the left hip, extending the leg back to extend the stretch.

Pelvic Tilt

Pelvic tilts help to lengthen the low back. Some tilts can strengthen the abdominal muscles, lengthen the psoas, and soften the QL. There are several positions in which to practice pelvic tilts, depending on how far along the pregnancy is.

Lie supine, with both knees flexed, feet flat on the floor. Adjust the low back by lifting the buttocks slightly and curling the tailbone between the legs, then lying down flat again—this lengthens and flattens the back before beginning. Contract the abdominal muscles, as if pulling the navel down through the belly toward the floor and flatten the low back against the floor. Hold for 3 to 10 seconds, breathing steadily and relaxing the body. Do not lift the buttocks off the floor, and as much as possible, attempt to use the abdominal muscles and the iliopsoas, rather than the leg or gluteal muscles, to flatten the back.

This can be practiced standing by pressing the low back against a wall. Once familiar with the action, it can also be done when standing freely, sitting, sidelying, or on hands and knees. A larger pelvic tilt can be done by intentionally lifting the buttocks off the floor into the air and arching the back.

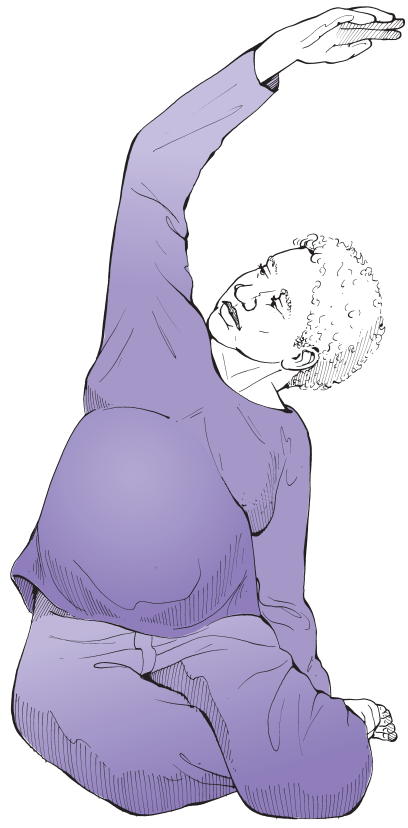

FIGURE 6.6 Kneeling Quadratus lumborum stretch.

MASSAGE THERAPIST TIP **Postural Awareness**

If your client is complaining of midback to upper back pain, encourage her to practice postural awareness. In the third trimester, remind her of the benefits of wearing a properly fitting, supportive bra and an abdominal support wrap; encourage wearing low-heeled shoes if she wears shoes with high heels. Simple measures such as these can dramatically improve her comfort.

Chest Opening

Benefits: Helps the client expand the chest against the gravitational pull of heavy breasts and poor posture; stretches the pectoralis.

Position: Sidelying with the client's arm extended with the palm out, behind the hip.

Technique

1. Stand on the client's posterior side, facing her head. Place your left hand on her anterior shoulder over the head of the humerus and the acromion process. Place the other hand on her scapula.
2. On the client's exhalation, have her envision her chest opening and expanding as she allows her shoulder to drop backward toward table with the gentle encouragement of your hands.
3. Apply slight pressure to the shoulder with the left hand to assist expansion as she widens her upper ribs with her breath.
4. Stroke laterally from the sternum toward the head of the humerus with firm fingertip pressure along the subclavius and the superior border of the pectoralis to encourage release and opening, still supporting behind or under the scapula.

CAUTION: Avoid rotating her shoulder to such a degree that her low back begins to twist or strain.

Pectoralis Stretch and Resistance

Benefits: Stretches the muscle that internally rotates the humerus.

Position: Sidelying.

Technique

1. Stand behind the client. Grasp the humerus just proximal to the elbow, bring her arm straight up toward the ceiling. While supporting it, allow it to drop posteriorly with the elbow slightly bent. Allow the chest to roll slightly posterior also. To avoid positioning in a way that overstretches or strains, ask the client herself to place her arm in a position that stretches the upper fibers of the pectoralis muscle (Figure 6.7).
2. Place your left hand on the hip/gluteals at the same time to stabilize the back and to increase expansion and rotation.
3. Do resistance stretches, asking the client to push forward isometrically against the resistance of your arm with one quarter of her effort

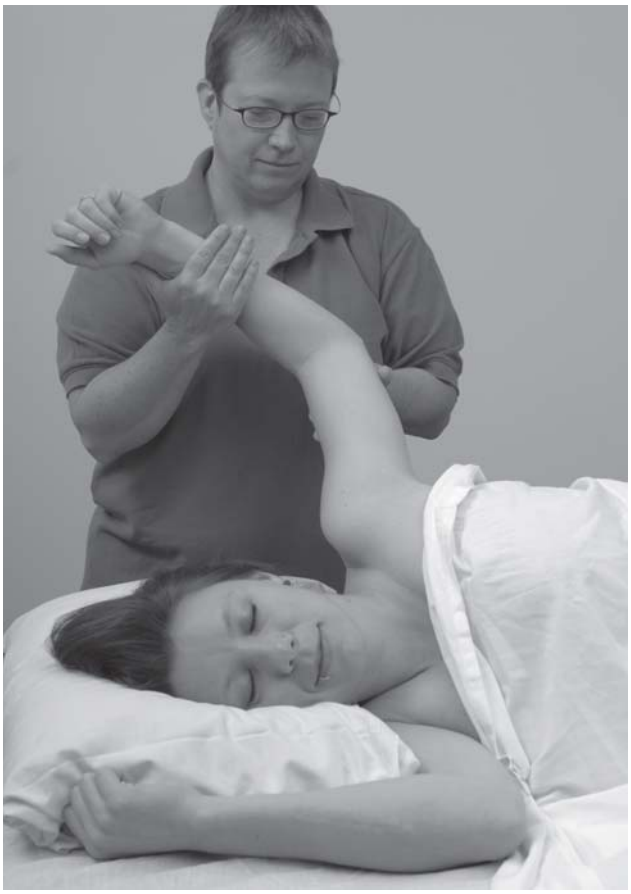

FIGURE 6.7 **Pectoralis stretch and resistance.**
The client pushes anteriorly isometrically against the therapist's arm to stretch the pectoralis.

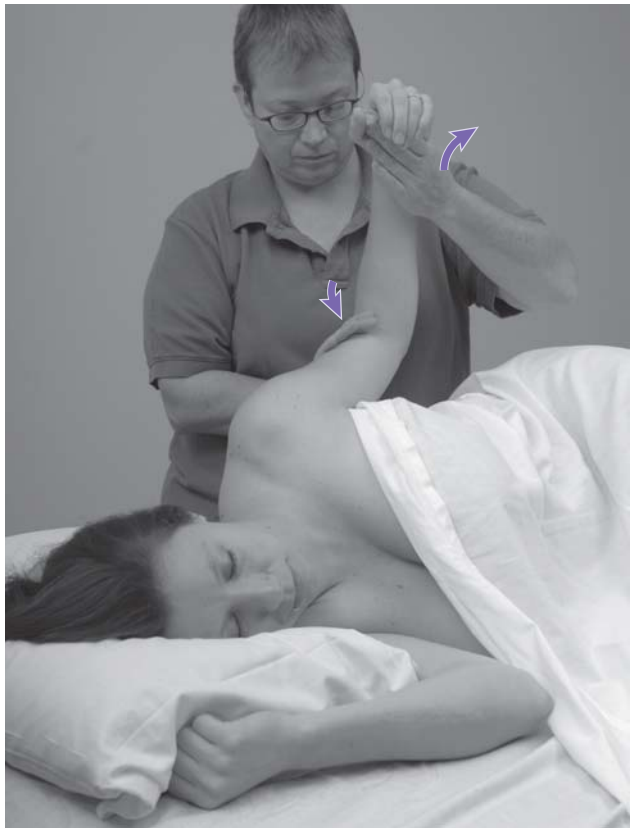

FIGURE 6.8 Subscapularis stretch.
As she exhales, the client isometrically pushes her forearm medially against the therapist's hand.

for 8 seconds during exhalation (Figure 6.8). Repeat, increasing the stretch slightly. Relax.

Subscapularis Stretch

Benefits: Stretches the muscle that medially rotates the shoulder.

Position: Sidelying with the upper arm extended straight down on her side.

Technique

1. With her arm extended down to her side, have the client flex her elbow to 90 degrees, palm facing anteriorly.
2. Stabilize her elbow and bring it slightly anterior with one hand, and with the other hand bring her forearm posteriorly, pushing carefully at her wrist.
3. Holding the elbow anteriorly, ask her to slowly push her hand and forearm anteriorly against your upper hand isometrically, using one quarter of her effort and holding pressure for 8 seconds.
4. Relax the resistance, and increase the stretch. Repeat the resistance as above. Relax.

BREAST TENDERNESS

As soon as a woman conceives, her breasts, nurtured by an increase in production of estrogen and progesterone, begin to enlarge and prepare for mothering. Estrogen enlarges the ducts that transport milk, and progesterone stimulates the development of the glandular tissues. Breast massage can help reduce discomfort associated with the development of lactating breasts, and can help women feel more at ease with the new sensations.

Cause

Breasts are often tender early in pregnancy due to hormonal influences and swelling glands, along with a 30% to 40% increase in blood supply. A woman may feel tenderness and sore nipples in the first trimester and initially become aware of her new pregnancy based on breast changes. Later, a woman may experience aching or discomfort as the breasts enlarge.

General Treatment

In the first trimester, avoid prone positioning if your client complains of breast tenderness or place a pillow under her ribs just below her breasts, to avoid compression of the tender tissue. In the sidelying position, be sure to place a pillow between her superior arm and breasts to prevent arm compression on the breast tissue.

Specific Bodywork Techniques

Below are bodywork techniques to address specific muscles or regions related to breast tenderness.

Breast Massage

Benefits: Breast massage can mobilize lymph, help a mother connect more fully with her changing body, and relieve breast aching.

Contraindications
There are several contraindications for breast massage. These are explained below.

1. State law: Whereas in Europe breast massage is considered a normal and expected part of a therapist's training and practice, in the United States, each state massage board has particular legislation regarding the practice and legality of breast massage. Research the laws governing massage in your own place of practice. If it is illegal in your state, or if your client is uncomfortable with receiving breast massage, you can teach her the benefits and

methods of massaging the breasts herself, if she is interested.

2. Infection: If a woman has a breast infection, direct massage to the affected area is contraindicated.
3. Other physical reasons: If there is any undiagnosed lump(s) or abscess or problems with implants, breast massage is contraindicated.
4. Lack of good rapport or consent: If you do not have good communication or rapport with your client, or if she does not wish to receive breast massage, it is contraindicated.
5. Nipple contact: Touch to the nipples is contraindicated during a professional massage. In addition to being inappropriate and prohibited by state massage legislation, it is important to realize that nipple stimulation during pregnancy causes the release of oxytocin, the hormone that causes uterine contractions. This hormonal release is triggered specifically by nipple stimulation, such as when a baby is nursing. However, if a client has a particular risk for preterm labor or miscarriage, *all breast massage* will be contraindicated due to the slight chance that a hormonal increase could occur due to general breast stimulation.
6. Deep tissue, heavy pressure, or kneading: Small Cooper's ligaments that support the breast can be damaged by deep pressure. Breast tissue is not muscle; the breasts lie on top of muscles, which can be accessed around and under the breast tissue. Breast massage is primarily concerned with lymphatic drainage, increased circulation, and for a nursing mother, promoting lactation.

Position: Sidelying, at times with her superior arm extended over her head. This can also be adapted for semi-reclining position.

Technique

1. Stand behind the client's back. Use a breast drape if desired. Undrape one breast at a time. With unscented lotion or oil, place your flat fingertips at the lateral superior edge of the sternum just under the clavicle, and slide laterally above the breast tissue, toward the axilla. Repeat several times.
2. Make small circles medially back to the sternum and then down the sternum.
3. Place the heel of one hand inferior to the breast, and the other low and lateral to the breast. Use a scooping motion with the heels of the hands toward the breast. Work your way, hand-over-hand toward the sternum, scooping toward the center of the breast. You may need to cup the breast tissue at the sternum in one hand as you slide with the other (Figure 6.9).

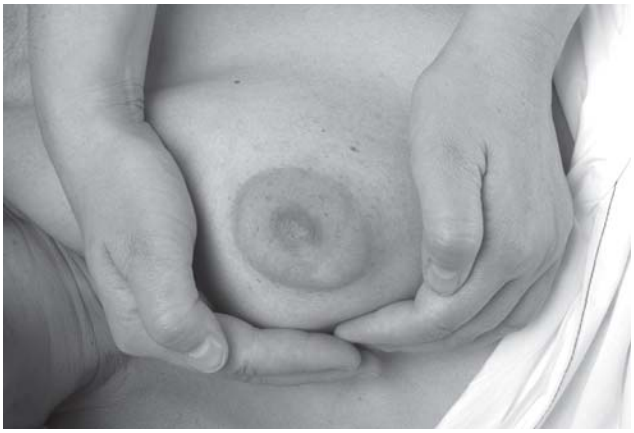

FIGURE 6.9 Scooping under the breast.
Place the heel of one hand inferior to the breast, and the other low and lateral to the breast. Use a scooping motion with the heels of the hands sliding into the breast tissue toward the nipple (but don't go to the nipple). Always scooping hand-over-hand toward the center of the breast, gradually work your way from the lower border of the breast toward the sternum.

4. Place flat fingertips at the lateral edge of the sternum, just inferior to the clavicle. Scoop or press with very light pressure, as if stroking a baby's lips or eyelid, moving all strokes toward the client's head. Incrementally move the hand lower into the breast tissue. Gradually move laterally toward the axilla as well, and then repeat down the lateral edges of the breast stroking toward the axilla (Figure 6.10).
5. Place one palm above the breast, just lateral to the sternum. Place the other palm inferior to the breast. Slide the sternum hand toward the axilla and the inferior hand toward the lower sternum. The hands will cross each other above and below the breast. Repeat several times.

Lymph Pump

Benefits: Mobilizing the lymph can help relieve some of the tenderness due to general swelling and restriction of circulation.

Position: Sidelying

Technique

Standing behind the client, hold her humerus just proximal to the elbow and lift the arm straight toward

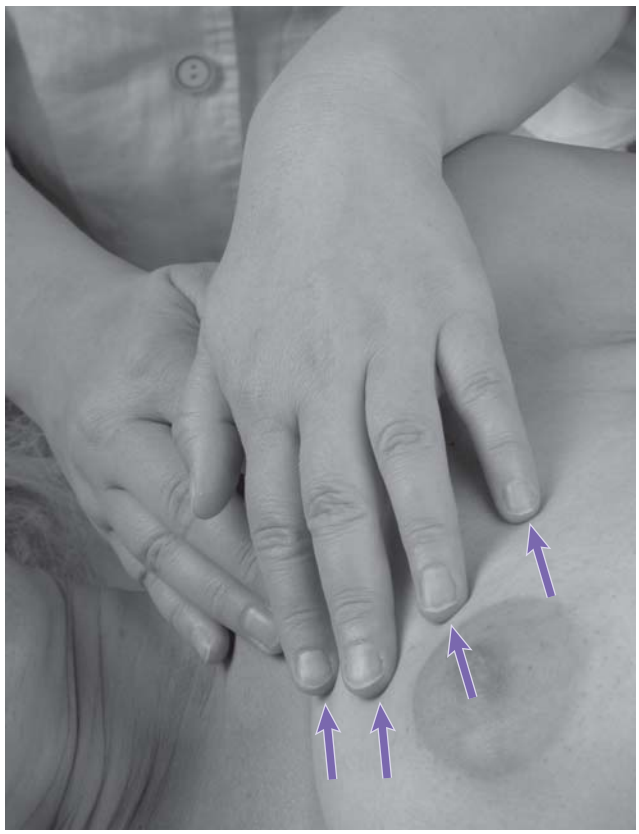

FIGURE 6.10 Light stroking from the breast toward the axilla.

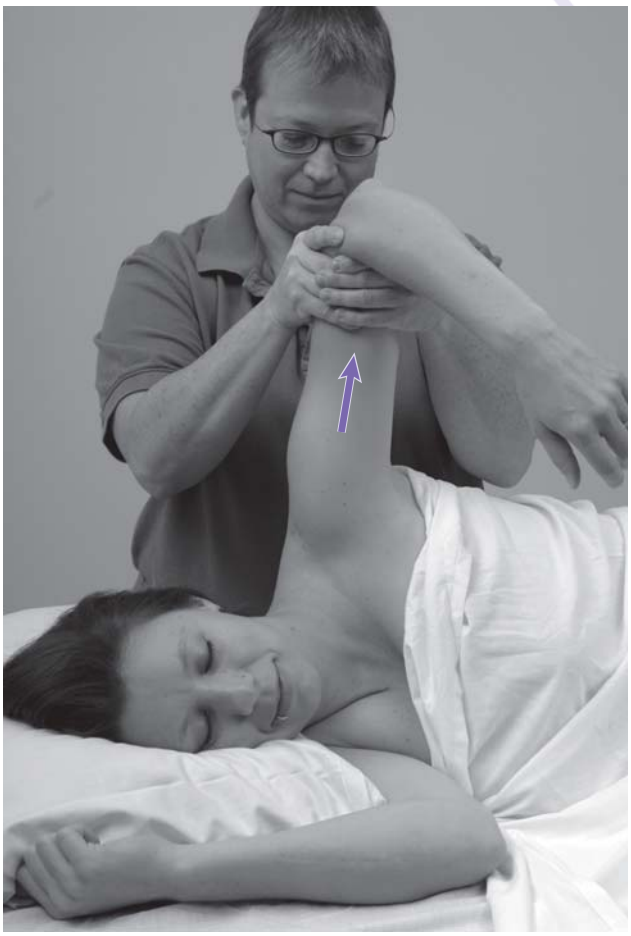

FIGURE 6.11 The therapist raises and lowers the client's arm to stimulate axillary lymph flow.

the ceiling. Raise the arm up and down, as if pumping water with a hand pump (Figure 6.11).

BREECH BABY

The most common and optimum position for a baby to be in for birth, is with its head down in the mother's pelvis. This is known as a **vertex** presentation. When the baby is positioned with the head up and the feet or buttocks down in the mother's pelvis, it is considered a **breech** presentation. This is shown in Figure 9.1C. This occurs in 3% to 4% of full-term pregnancies in the United States.[5] Frequently babies are breech earlier in pregnancy, but most turn to vertex before labor begins. If the baby is still breech at the time of labor, it can sometimes pose a more difficult or dangerous delivery. Many doctors choose to deliver breech babies by cesarean section because of this concern.

Cause

There is no known specific *cause* for a baby to position breech. Possibly breech and posterior positions (when the baby's face is toward the mother's abdomen) are more comfortable for babies whose mothers sit frequently in chairs, such as in office jobs. There seems to be a lower incidence of breech births in cultures where women frequently squat, rather than sit in chairs. However, in many of these cultures, midwives also massage the pregnant woman's abdomen throughout pregnancy to ensure a vertex positioning.

General Treatment

Massage therapists are likely to encounter clients whose babies are breech. Abdominal massage, when used in conjunction with other practices, can encourage the baby to move. However, abdominal massage toward this outcome should only be done with the support and guidance of a client's prenatal care provider. Several traditional birth practices are also commonly used to help move a baby.

Traditional Birth Practices:

Breech Baby

In many cultures, traditional midwives massage a pregnant woman's belly beginning in the second trimester to prevent the baby from positioning breech. If the baby is found to be breech in the third trimester, there are some practices that may help the baby move into a more optimal position for vaginal birth. Midwives will often teach a mother to lie upside down on a board leaned against a couch for 10 minutes at a time, while massaging her belly and talking to the baby.

Some women put a soft ice pack on the top of the belly and apply a warm compress to the lower belly several times a day while envisioning the baby moving. This may encourage the baby to turn its head away from the cold and reposition itself.

According to herbalist and Naprapath, Dr. Rosita Arvigo, in Belize midwives washed a baby duck and put it on the pregnant woman's solar plexus. The duck walking over the belly helped the baby to turn.[5]

Acupressure point Bladder 67, located on the lateral side of the little toenail, is very frequently used to help encourage a baby to move from breech position. Acupuncturists stimulate the point with a needle or use moxibustion, a technique of burning dried mugwort plant on or close to the skin to stimulate a particular point. In one Chinese study, 130 women of 33 weeks' gestation with breech presentation were given 7 days of daily moxibustion treatment, followed by 7 more days of treatment if the baby had not moved yet to vertex. By the end of the 2-week period, 75% of the babies in the treated group had shifted to the head-down position, as compared with 47% of the 130 women who did not receive treatment.[6]

EDEMA

Edema is the accumulation of fluids in the interstitial spaces, and often develops in the hands and feet during late pregnancy.

Cause

Some swelling of the hands and feet is normal during pregnancy due to the rise of estrogen and progesterone, the relaxation and dilation of the blood vessels, and the general increase in blood volume. Pelvic pressure from the weight of the uterus also compresses major blood vessels as they pass through the groin, decreasing circulation in the lower extremities and forcing the slowed blood to release fluids into the tissues faster than they can be removed.

Mild nonpitting edema increases as pregnancy advances and is most prevalent in the third trimester and in hot weather, especially for women who stand for many hours. Massage can help stimulate resorption of excess fluids.

CAUTION: Any edema that persists for more than 1 day or is pitting (i.e., after pressing a finger firmly into the swelling for 5 seconds, an indentation remains) (see Figure 4.6), should be reported to the client's PCP. A recent development of pitting edema, unrelated to hot weather or to restriction in the inguinal region, is one symptom associated with preeclampsia. Listen for reports of other preeclamptic symptoms as well: gaining more than 2 pounds per week, edema unrelieved after having legs elevated for 45 minutes, headaches, epigastric pain, blurring vision, or spots before the eyes. If your client reports any of these symptoms, be certain she has been evaluated by her PCP.

General Treatment

Lymphatic drainage, mobilization of the pelvis and hips, and abdominal binders that lift the weight of the uterus off the groin are helpful treatments for edema. Cool hydrotherapy to the areas of swelling can also ease discomfort. Women who exercise regularly generally have fewer problems with edema.

The left sidelying position helps relieve pressure, aids the body in resorption of fluids, and can be used exclusively if edema is excessive or annoying.

According to Traditional Chinese Medicine, edema during pregnancy can be caused by dietary factors, overwork, and worry, which all can lead to stagnation of the vital life force or qi.[7] This is not uncommon during the latter part of pregnancy when the body is becoming exhausted from supplying energy for two people and coping with daily stresses. Women who are pregnant in their late 30s or in their 40s may have a greater tendency toward edema and general qi depletion.

Specific Bodywork Techniques

Below are specific bodywork techniques to address edema.

Edema Reduction

Benefits: Massage can help improve circulation, thereby supporting the body's ability to process excess fluids and wastes.

CAUTION: When working with edema, all massage techniques should move toward the heart. Do not use any techniques deeper than lymphatic massage on pitting edema, as tissue may be damaged with deep pressure.

Position: Semi-Reclining or Sidelying Position

Technique

For legs, begin at the proximal thigh; for arms, in the deltoid region. This description is for legs, but can be applied to arms and hands as well.

1. Beginning at the proximal end of the thigh, do light and medium pressure effleurage and petrissage toward the trochanter, working your way toward the knee using upward moving strokes.
2. Make long sliding compression strokes with the palms all the way from the knee toward the groin, trochanter, and ischial tuberosity. This helps improve circulation in distal areas before working closer to edematous areas.
3. Open the lower leg: Effleurage and petrissage the lower leg. Begin just inferior to the knee, with strokes working toward the heart, gradually moving toward the feet, so that the proximal areas are opened first. Use light effleurage strokes on the ankles and feet, still stroking toward the knee. Alternate thumbs crossing over thumbs to help move excess fluid.
4. Apply light effleurage to edematous areas at the ankles.
5. Facing the feet, use the flats of the fingers to make light, scooping, alternating strokes from the proximal area of edema up toward the knee (Figure 6.12). Advance toward the ankles and feet, always stroking up. Imagine that you are moving the fluid up the leg and back into the primary circulation a little at a time. You have to move the proximal fluid before you can move the distal!
6. When you have worked one small area with numerous short, light strokes, complete and connect the strokes by making a C-clamp with your hand around the lower leg and compressing and sliding up toward the knee, and even into the thigh.

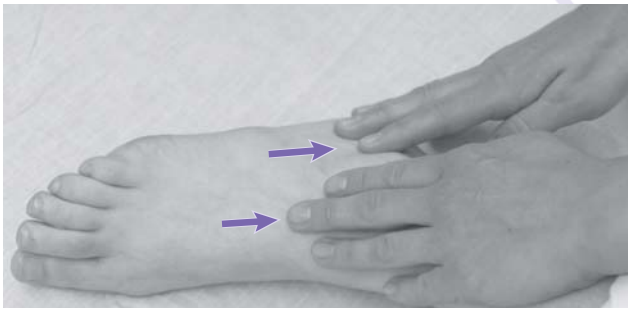

FIGURE 6.12 Edema reduction.
The therapist makes light, scooping, alternating strokes from the proximal area of edema toward the ankle, advancing incrementally into the edema, and always stroking toward the torso.

7. Rotate the ankles and feet in slow circles.
8. Repeat all the above techniques on the arms and hands if necessary, always pushing fluid up and out of the extremity and into the main circulation.

Myofascial Hip Opening

Benefits: A gentle fascial release that helps create space for improved blood circulation.

Position: Sidelying. Stand at the client's back, by her hip. The top leg may be extended for extra opening, but the therapist should lean into the client's body to prevent her from rolling backward with the therapist's hand pressure. This technique may also be done in a low semi-reclining position.

Technique

1. Standing behind the client, cross your arms, place your left hand on the client's hip bone or anterior superior iliac spine (ASIS). Place your right hand firmly on the rectus femoris and vastus lateralis just distal to their origins.
2. Press securely onto the ASIS while applying a gradual melting traction to the quadriceps, slowly opening the inguinal area for increased blood flow (Figure 6.13).

GROIN PAIN AND ROUND LIGAMENT PAIN

The round ligament is a primary uterine ligament that supports the uterus anteriorly, attaching into the pubic and vaginal areas (see Chapter 3). Pain from round ligament spasm is often experienced as sharp, sudden pain in the groin area and most commonly occurs in the last months of pregnancy.

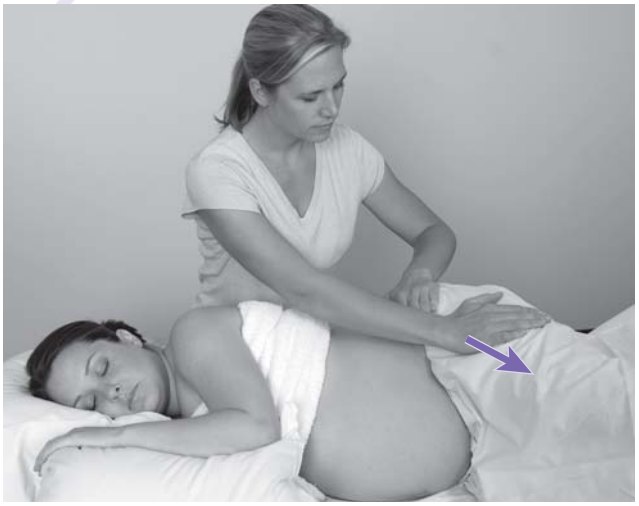

FIGURE 6.13 Myofascial hip opening.
The therapist applies a gradual melting traction to the quadriceps, slowly opening the inguinal area for increased blood flow.

The discomfort can persist for moments or days. Many women are surprised by the intensity of the discomfort and often are not certain of its origin, until assessed by their PCP.

Cause

Groin pain is often caused by spasms of the uterine round ligament as it stretches. Sometimes spasms occur due to improper body mechanics when lifting and carrying, or commonly by "jackknifing" up to a sitting position from horizontal. Labor contractions, as well as vaso-congestion in the pelvic area, can also create aching in the groin. Rather than assuming it is ligament pain, a client should have any undiagnosed pain evaluated first by her PCP.

General Treatment

Proper support for the laterally positioned client is an important element in preventing ligament stress. When positioned in sidelying, be sure to put a small pillow or foam wedge under a large belly to prevent the belly from sagging over to one side and pulling on the ligaments. Most importantly, teach your client proper ways of sitting up from lying down, encourage good body mechanics when moving and lifting, and demonstrate ways to relieve the discomfort when it occurs, as instructed in Chapter 3. Applying moist warm compresses to the affected area can also bring some relief.

Specific Bodywork Techniques

Below are specific bodywork techniques to address groin and round ligament pain. See the myofascial hip opening technique under "Edema" above for an additional treatment for this complaint.

Lifting Effleurage

Benefits: Helps alleviate tension and discomfort related to groin pressure and ligament pain.

Position: Semi-Reclining or Sidelying.

Technique

1. Use hand-over-hand strokes to gently lift up and away from the groin toward the belly. Imagine lifting the pain away (Figure 5.17).
2. Make light, slow, small circles along the groin.

Compression and Cross-Fiber Friction

Benefits: It is possible to help release a pulling or spasmed ligament by working on muscular attachments on and near the pubic bone.

Self Care Tips FOR MOTHERS:

Improving Circulation and Reducing Edema

The following tips can be shared with your client as ways to improve circulation and reduce edema.

- Walk at least 1 mile every day.
- Elevate legs regularly through the day.
- Lie in left sidelying position for at least 30 minutes twice a day to improve circulation.
- Wear loose fitting clothing, without restriction in the groin, legs, abdomen, or arms.
- Rotate the ankles in circles to the left and right. Extend the legs and dorsiflex the feet. Use varying hamstrings stretches to increase circulation in the feet.
- Resting on the hands and knees, with forearms to the floor and buttocks up in the air, helps relieve pressure from sitting on the buttocks and decreases pooling of blood in the pelvis.

Complementary Modalities:

Essential Oils for Third Trimester Edema

Certain essential oils stimulate and tonify the circulatory and lymphatic systems, relieving edema. This includes all citrus oils and geranium.

CAUTION: Some people have skin sensitivities to citrus. Test the diluted oil on a patch of skin and wait 24 hours, watching for rash, before applying to the whole body.

Aromatherapy is an in-depth study and science. If you choose to make your own mixture, undertake a course of study that will guide you in appropriate mixtures for pregnancy. However, the following is a specific blend of essential oils that is safe to use during *the last trimester* of a low-risk pregnancy only in this dilution (or in a lesser dilution). To help reduce edema while doing your massage of the extremities, add 4 drops each of geranium (Pelargonium graveolens//odorantissimum) and lavender oil (Lavandula officinalis; L. angustifolia) to 2 tablespoons of unscented massage oil. Shake well, and use this for massage.

Even without massage, immersing the extremities in cool water can be helpful; the pressure of the water can help the body to reabsorb some of the interstitial fluids. Four drops of either rosemary (*Rosmarinus officinalis*) or lemon (*Citrus limonum*) can be added to a footbath to help reduce edema. Mix the oils in the water well before immersing the feet, by splashing the surface of the water with your hand.

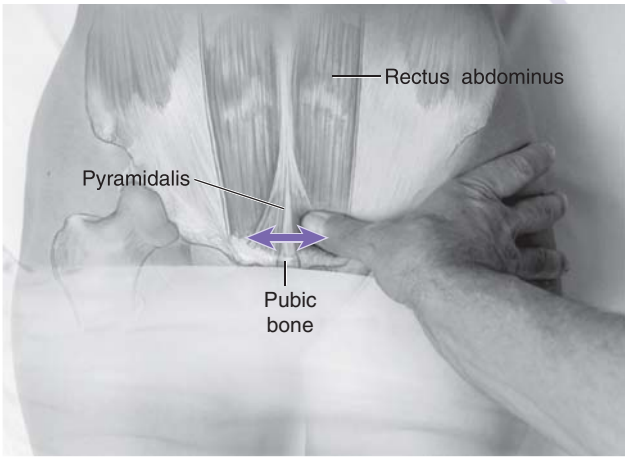

FIGURE 6.14 Compression and cross-fiber friction.
The therapist presses onto the superior edge of the pubic bone and the abdominal and pyramidalis attachments. She then moves across the bone laterally, with firm fingertip or thumb compression and cross-fiber friction until the tissue releases. (From Clay JH, Pounds DM. Basic Clinical Massage Therapy, 2nd Ed. Philadelphia: Lippincott Williams & Wilkins, 2008.)

Position: Semi-Reclining. This work can be done through the sheet, or clothing, to help maintain a sense of privacy and diminish ticklish feelings experienced by some women.

Technique

1. Communicate with the client first to ensure she is comfortable with touch in the area of the pubic bone and inguinal area. Ask the client to place her fingers on her pubic bone to indicate its location, and then place your own there. Press onto the superior edge of the pubic bone, holding fingertip or thumb pressure on the abdominal and pyramidalis attachments.
2. Move across the bone laterally, with firm static fingertip pressure and cross-fiber friction until you feel a release of tissue. Continue laterally until just before entering the inguinal area of veins, arteries, and nerves. Encourage feedback from the client regarding your pressure in this area, as it can be very sensitive and vulnerable (Figure 6.14).
3. Use light circling effleurage to soothe the area after focused work.

CAUTION: Avoid pressure on the external iliac and femoral veins in the groin where you feel strong pulsing.

LEG CRAMPS

Many pregnant women get cramps in the gastrocnemius and soleus of the calf, often in the middle of the night. Women quickly learn methods to cope with them, as they are very painful and disturbing to the sleep.

Cause

Cramping may be the body's way of saying it has had a long day of poor circulation or overzealous exertion, with fatigue to the calf muscle, compression of the nerves, and a build-up of lactic acid in the muscle tissue. It may also be related to an imbalance of

Self Care Tips FOR MOTHERS:

Relieving Groin Spasm

For immediate relief of groin spasm, instruct your client and/or help her to do the following:

1. Bring the affected leg up toward the abdomen and hold, breathing slowly into the abdomen.
2. Bend at the waist toward the affected side.
3. Apply slow, direct pressure with the fingertips onto the painful area, usually in the inguinal area or on the pubic bone.
4. Use slow, focused breathing during a spasm.

Other practices can help prevent or reduce the occurrence of spasms. Remind the client to do the following stretches or practices:

- Psoas stretch (see Self-Care Tips for Mothers: Decreasing Low Back Pain)
- Pelvic tilt (see Self-Care Tips for Mothers: Decreasing Low Back Pain)
- Use care when getting up from lying down: roll to the side and push up with the arms and hands
- Change positions slowly to allow ligaments time to stretch
- Avoid long periods of standing or sitting
- Wear an abdominal support wrap

phosphorus, calcium, or magnesium. Unsupportive shoes, high heels, or poor posture can also become a cause of calf cramping during pregnancy.

General Treatment

Preventative massage treatment should include general effleurage and petrissage to the calves, improving circulation through the groin area, instruction in proper posture, and stretch-resistance work on the gastrocnemius, soleus, pronators, and supinators.

The most common treatment if a cramp occurs during a massage, is to slowly push or pull client's foot of the affected leg into a dorsiflexed position, pulling the toes and sole of the foot up toward the head. Hold this position, until the cramp releases. It is more effective to do this to the client as a passive stretch, rather than having her activate her own leg muscles to move the foot. When the cramp has passed, gently shake or rock the calf muscles.

CAUTION: Do not plantarflex the foot during massage, as this can activate cramping. Support the feet well on the massage table to prevent dangling, which can also lead to leg cramps. Do not petrissage a calf that is currently or just recently spasmed, as this may worsen or restimulate the cramping.

Specific Bodywork Techniques

Below are specific bodywork techniques to address leg cramps.

Circulatory Massage

Benefits: Circulatory massage to the legs will increase blood flow, reducing lactic acid and interstitial fluid buildup in the lower legs, and work out muscle tension developed from poor posture or unsupportive shoes.

Position: Sidelying

Technique

1. Any effleurage, petrissage, compression, stripping, or friction at muscular attachments, trigger point erasure, or myofascial and lymphatic work to the legs as performed in any standard massage will be helpful.

Inversion, Eversion, and Dorsiflexion Stretch-Resistance

Benefits: Stretches muscles of the lower leg.

Position: Semi-Reclining or Sidelying

Technique

1. Dorsiflex the client's foot.
2. Ask her to plantarflex her foot against your hand with about one quarter of her effort.

Self Care Tips FOR MOTHERS:

Preventing Leg Cramps

A mother can explore the following options for helping to reduce tension in the gastrocnemius/soleus muscles and decreasing the occurrence of leg cramps related to muscular stress.

- Do foot rotations and dorsiflexions on a daily basis, especially when standing or sitting for long periods. Stretch the toes up toward the head, spreading them apart. Stand up on the toes. Shift weight regularly.
- Do a runner's stretch of the calf by standing and leaning forward against a wall with one leg stretched back. Attempt to bring that heel toward the floor.
- Walk 1 mile every day.
- Improve posture to help increase lower extremity circulation.
- Elevate legs frequently through the day above the heart.
- Wear low-heeled shoes.

3. Hold 8 seconds, then ask her to relax her pushing, while maintaining the flexion. Then repeat step #2, dorsiflexing further.
4. Repeat on the other foot.
5. Invert the client's foot, turning the sole of her foot medially. Press against the lateral side of her foot and ask her to evert her foot, pushing it outward against your hand. Resist her effort initially for 8 seconds, allowing for a stretched isometric contraction. Then allow her effort to move your hand away, in an isotonic contraction.
6. Repeat with the client's foot everted, and ask her to invert her foot against your pressure on the medial edge of her foot.
7. Relax. Repeat two more times. She can do this herself holding a towel or strap over her foot as she explores different stretching, movement, and resistance with her feet.

SCIATICA AND SACROILIAC PAIN

The sciatic nerve, the largest nerve in the body, is a combination of nerves from the lumbar region and the sacral spine that connect to become one nerve in the buttocks and then travel down the back of each leg, dividing into two nerves in the lower leg. **Sciatica** is pain caused by compression of this nerve. Sciatic-like pain can also be caused by broad ligament spasms, or by misalignment of the sacroiliac (SI) joints. This may be accompanied with other discomforts such as sharp pain in the SI joint area, aching in the hip or low back, pain in the pubic symphysis area, or a general sense of being "out of alignment" in the hip. These discomforts are fairly common during pregnancy.

Cause

Sciatica may occur as the lateral hip rotators tighten with advancing pregnancy. The piriformis muscle can sometimes compress the sciatic nerve if the nerve passes between its fibers. The majority of "sciatica" during pregnancy is rarely true nerve compression, but more often a referred pain from psoas tightness and uterine ligament pain. However, the sensations of sharp shooting pain, vague numbness, or dull aching discomfort down the back, front, or sides of the leg or in the buttocks feel similar to sciatica.

The SI joints are held together by ligaments that soften under the influence of the pregnancy hormone relaxin. Because of this laxity, combined with the increased pressure of the baby's head against the pelvis and poor posture, the SI joint is at high risk for becoming misaligned. Sometimes one ileum may rotate forward or back, causing sharp pain in one joint. In addition, the sacrum itself can twist, causing dysfunction and pain in the SI joint. The associated pain may radiate down to the knee or calf, like sciatica.

General Treatment

Stretching the hamstrings, low back, gluteals, lateral hip rotators, and psoas, as well as *strengthening* the psoas, abdominals, and hip adductors can help relieve or prevent sciatica. For acute pain, applying ice to the lateral hip rotators can help numb nerve transmissions. Specific stretches are useful to

encourage the SI joint to find its natural alignment. Chiropractic attention from one specialized in working with pregnant women can also be useful.

CAUTION: If any exercise or massage increases pain, stop at once. Do not do deep compression, vibration, or tapotement to the hip adductors where potential clots may be located.

Specific Bodywork Techniques

The following five techniques are also helpful for low back pain, and descriptions can be found in the low back pain section.

- sacral rub
- QL compression points
- QL release
- assisted psoas stretch
- QL extension

Hamstring and Lateral Hip Rotator Releases

Benefits: Stretching the hamstrings and lateral hip rotators helps re-align the sacrum and pelvis and relieve sciatic nerve compression.

Position: Supine or low semi-reclining position, with the knee of the non-painful side flexed toward the chest.

Technique

CAUTION: This technique requires the client to lie supine for 5 to 8 minutes. Maintain good communication throughout the technique to ensure she is comfortable. Discontinue if the client complains of dizziness, uneasy feeling, nausea, or general discomfort *Do not do the following techniques with known separation of the symphysis pubis or if the client complains of pain in that area when doing the resistance.*

1. Flex the knee and hip of the nonpainful side up toward the same side of her belly to a comfortable flexion. Hold for 10 seconds. This will be considered the active leg.
2. Place your superior hand on her shoulder of the same side as the flexed leg, stabilizing the upper body. Place your inferior hand on the lateral aspect of her raised knee. Push her knee across her torso, above or below her belly (depending on the size of the belly and on her comfort), but try to keep the hip flexed at least 90 degrees, as opposed to more extended. Ask the client to push laterally very slightly with her knee against the resistance of your hand. Hold for 8 seconds while she exhales slowly, then increase the stretch slightly across her body and hold again. If the client complains of groin discomfort, reposition the knee higher or lower being certain to stabilize her shoulder on the side of the leg being stretched, or discontinue the stretch.
3. With the knee midway across her body, place one hand on the lateral ankle of the flexed leg and one hand on the lateral knee. Externally rotate the hip, bringing the knee caudally. Slowly push the foot toward her head. Ask her to tell you when she feels a stretch in her hip rotators, and hold there as she breathes for relaxation. You may need to bring the knee more to midline of the torso for her to feel the stretch.
4. Extend the active leg and shake it loose.
5. Flex the hip of the active leg to at least 90 degrees with the knee flexed as well. Rest the lower leg on your shoulder.
6. Wrap one hand around the quadriceps of the active leg. Holding there, have the client extend the knee of the active leg as much as possible while contracting the quadriceps and iliopsoas. Place your other hand just proximal to her active ankle, to support the leg and assist with the stretch. Ask her to dorsiflex her foot, extending into her heel to stretch the hamstrings. Hold the stretch for 10 seconds.
7. Ask the client to exhale as she pushes against your ankle-hand with the active leg just slightly as if flexing the knee, activating the hamstrings.
8. Rest the leg on your shoulder again. With your fists, push into her biceps femoris, and semitendinosus (avoiding pressure on the semimembranosis closer to the medial thigh). Ask her to push into your pressure with her leg, while extending her knee and into her heel to increase the hamstring stretch. Work with your fists from just proximal of the back of the knee toward the muscle attachments at the ischial tuberosity.
9. Repeat the whole sequence on the painful side.
10. Apply ice to the lateral hip rotators after the work, and encourage the client to ice the affected area for 20 minutes every hour, if the pain is acute.

Self Care Tips FOR MOTHERS:

Reducing Sacroiliac Joint Pain

When a client experiences SI joint pain, suggest the following self-care tips:

1. If she is able, she can lie down immediately in supine position, with knees bent and feet flat on the floor. As she breathes slowly for 5 minutes and envisions her whole body relaxing, her ilium may more easily realign. Sometimes the support of a hard surface can help the hip to rotate back to alignment.
2. Do lateral hip rotator stretches.
3. Perform a psoas stretch (see Self-Care Tips for Mothers: Decreasing Low Back Pain).

Lateral Hip Rotator Attachments

Benefits: Helps release spasms and constriction of the sciatic nerve.

Position: Sidelying

Technique

1. Standing at her back, press firmly to support under the ischial tuberosity with the inferior hand, ensuring that you do not pull the gluteals apart or uncomfortably spread the client's gluteal cleft. Simultaneously, use melting compression and slide inferiorly and laterally with the superior hand from the iliac crest to the hip rotator attachments at the trochanter.
2. Slide around the trochanter in circles with the heel of the hand to touch on all the muscular insertions on the trochanter.
3. Perform cross-fiber friction on the attachments of the hip rotator muscles.
4. Perform effleurage and petrissage on the QL, gluteal muscles, hip rotators, hamstrings, and quadriceps.

Trochanter and SI Joint Traction

Benefits: Helps realign the SI juncture and release compression in the SI joint.

Position: Sidelying

Technique

1. Stand on the client's posterior side and place the palm of your right hand against the lateral aspect of the trochanter. (You can feel this if you slide the heel of your hand across her buttocks from the sacrum toward her trochanter. You will feel a lump or rise when you come across the trochanter.)
2. Place the other hand on the sacrum, and slide laterally with fingertips or thumb to press into the superior end of the SI joint, medial to the posterior superior iliac spine.
3. Gently push away with slow traction on the trochanter as you push into the SI joint, subtly tractioning the hip away from the SI joint (Figure 6.15). Focus on the SI joint and imagine the space opening, as you apply the traction to the trochanter. Hold for at least 30 seconds. This is a subtle movement, which should not push the client anteriorly.
4. Release slowly and reposition your SI joint thumb, moving slightly inferiorly in the joint and repeat the traction.
5. Repeat, sequentially moving distally along the SI joint.

Sacroiliac and Pelvic Rebalancing

Benefits: Provides potential immediate relief of SI joint pain; helps to realign hip bones, stretch and relax hip abductors/adductors, and realign the pelvis. If one hip has rotated slightly forward or back, resistance exercises can help it to realign.

Position: Supine with both knees bent and feet flat on the table spaced 2 to 4 inches apart. If the client cannot lie on her back at all, these techniques can be done one leg at a time in the sidelying position. In the semi-reclining position, the hips may not realign as easily, but the adductors will relax with this exercise.

Technique

This is a three-step process, involving isometric contractions in flexion, abduction, and adduction of the hip.

CAUTION: Do not do the following techniques with known separation of the symphysis pubis

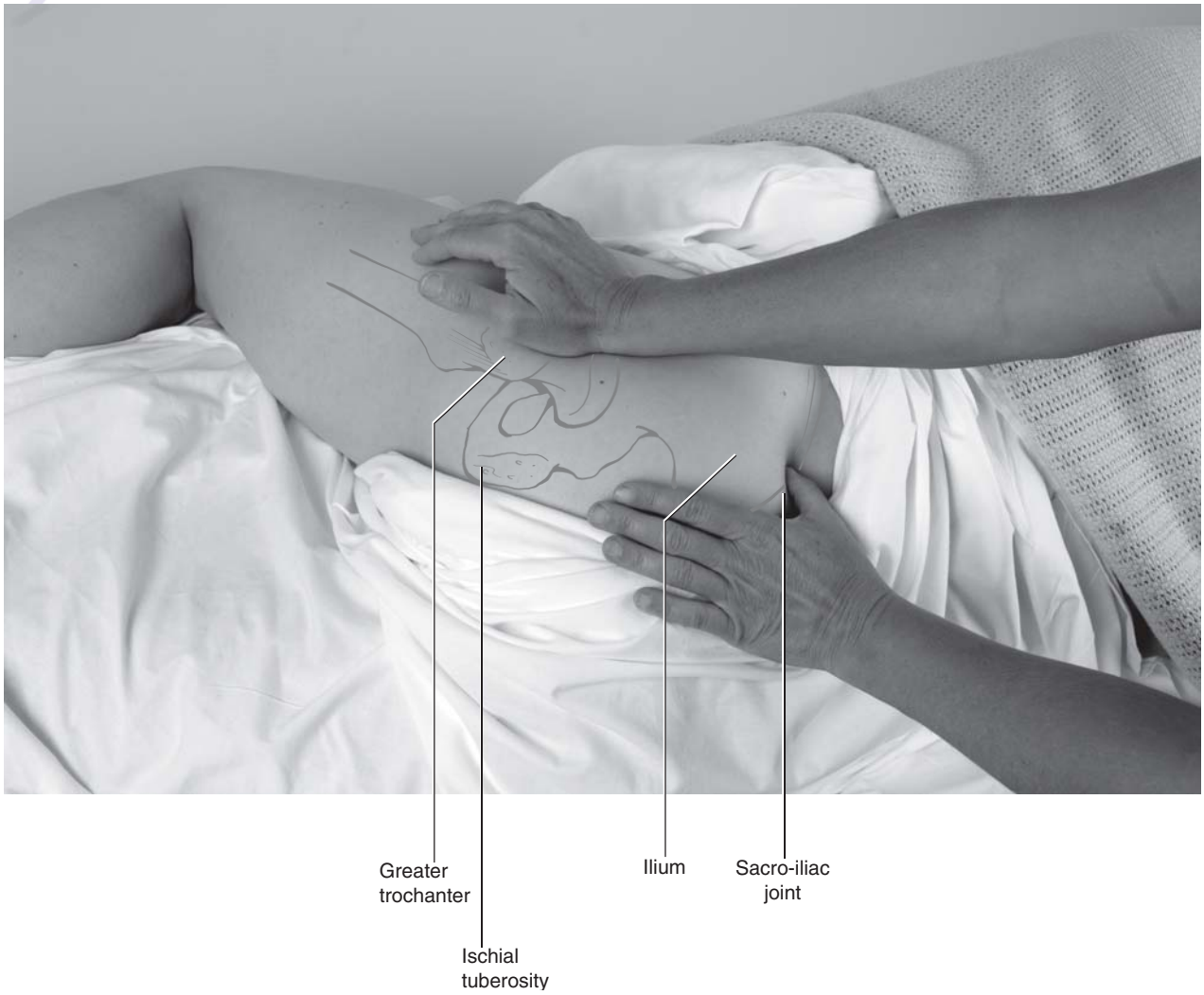

FIGURE 6.15 **Trochanter/sacroiliac joint traction.**
With one hand on the client's trochanter and the other on the sacrum, the therapist slowly tractions the hip away from the SI joint.

or if the client complains of pain in that area when doing the resistance. All of these techniques should be done cautiously, slowly, and carefully to avoid any risk of contributing to a diastasis of the symphysis pubis.

Step 1:

1. From the initial position above, instruct the client to bring one knee up to the chest, wrapping her hands around it. You can do this for her also, bringing her knee up and pushing it toward her chest or to the side of her belly.
2. Ask her to hold the flexion, breathing, and allowing the sacrum to relax. *Note: If this movement causes more pain, try flexing the opposite knee to the chest, flexing less, or stopping altogether.*
3. After she has relaxed a moment in this position, ask her to push her knee up slightly against your hands or against her own, isometrically attempting to lengthen the leg.
4. Repeat on the other side. One side normally will feel better than the other. Do not continue on a side if it increases pain. Do the isometrics three times on the least painful side.

Step 2:

1. Still in the initial position, place a hand on the lateral side of each knee. On the client's exhale, ask her to *abduct* isometrically—push out with her knees—against the resistance of your hands. Start slow to ensure there is no pubic pain that might indicate a separation of

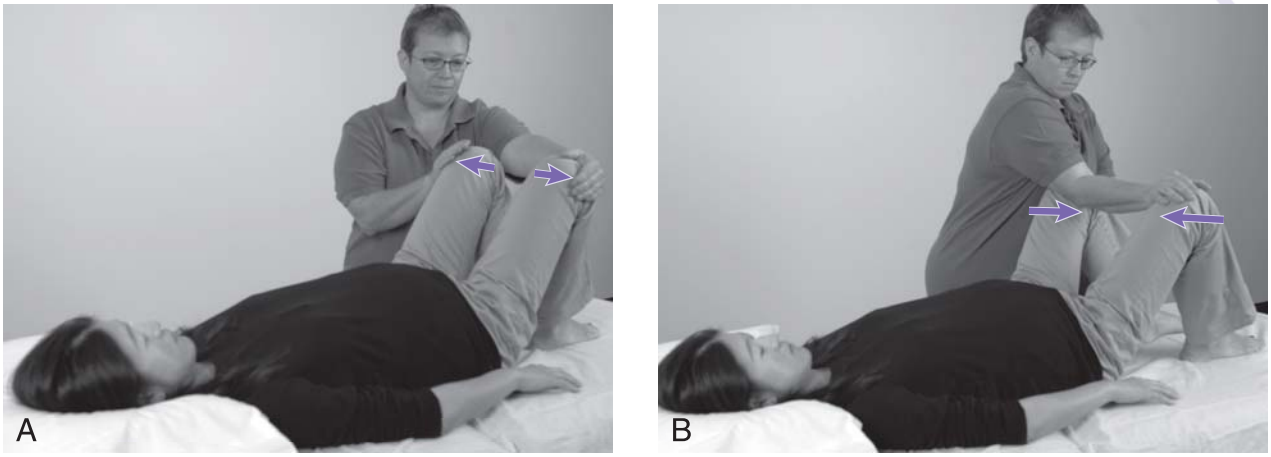

FIGURE 6.16 **Sacroiliac and pelvic rebalancing.**
(A) The client abducts her hips, pushing out with her knees against the therapist's hands. (B) The client adducts her hips, pressing in against the therapist's hand and elbow.

the symphysis pubis. Increase the pushing to her full strength for 10 seconds if there is no pain. If it hurts, stop (Figure 6.16A).

2. Place your forearm between the client's knees, with one hand against the medial aspect of the knee and your elbow region against the other knee. On the client's exhale, have her *adduct* isometrically against your resistance with the same care as above, gradually increasing in strength if it is comfortable for the client (Figure 6.16 B).
3. Rub firmly down the outside and tops of the thighs to help relax and soothe after this exercise. Extend the legs.

Femur Traction and Mobility

Benefit: Helps mobilize the hip joint, flattens the sacrum, and can relieve SI joint compression.

Position: Semi-reclining or supine with knees bent and feet flat on the floor. You need to be above the client to lift her upper leg easily. Use a stepstool.

Technique

1. Place your forearm, not your hand, under the client's knee and lift the leg without squeezing with your fingers into the thigh.
2. Use the femur like a lever, lifting up and out from the hip joint with traction (Figure 6.17).
3. Hold the traction as the client breathes and relaxes.
4. Push down into the hip joint, flattening the sacrum.
5. Work into the acetabulum, mobilizing the hip joint in small circles, and repeating traction.

FIGURE 6.17 **Freeing the hip using the femur as a lever to work into the acetabulum and flatten the sacrum.**

SHORTNESS OF BREATH

Many women in late pregnancy experience the difficulty of getting a full, satisfying breath. If a woman has not been physically active before now and has a large belly and significant extra weight in pregnancy, she is likely to experience even more shortness of breath due to the extra workload.

Cause

Sensations of shortness of breath can arise from common pregnancy-related nasal and sinus congestion, anemia, as well as from the growing uterus and baby pressing up into the diaphragm and ribs. When the baby drops into the pelvis at the end of the

pregnancy (called "lightening"), the mother is usually able to breathe more freely.

General Treatment

If shortness of breath is associated with the position of the baby, educate the client about correct posture and offer stretches that can help increase thoracic space, such as expanding the arms out, extending the upper spine, and stretching the internal shoulder rotators. Position the client in a semi-reclining position if it is uncomfortable for her to lie on her side. Often, having the head higher than the torso makes breathing easier. General massage to the scalenes, pectoralis minor, and the intercostals, and anything to help create *opening, lengthening,* and *space* in a woman's body will help to improve respiratory capacity.

Specific Bodywork Techniques

Below are specific bodywork techniques to address shortness of breath. Three more techniques, listed here, are presented in detail above, in the low back pain and midback and upper back pain sections.

- full body stretch
- chest opening
- pectoralis stretch and resistance

Shoulder Mobilization

Benefits: Opens chest, expands breathing.

Position: Sidelying

Technique

1. Stand at the client's back. Grasp the humerus firmly just proximal to the elbow. Encourage her to keep her arm heavy and to continue relaxation breathing.
2. Gently traction the arm straight up. Lift with your whole body and belly rather than just with your arms.
3. Holding the arm in gentle traction, rotate it in a circular motion, seeking the full range of motion.
4. Repeat in the opposite direction.

Rib Raking and Trigger Point Release

Benefits: Relieves shortness of breath, heartburn, and tension in the intercostals.

Position: Sidelying

Technique

1. Standing at the client's back, slide your fingers across the client's superior lateral side to place your fingertips in the intercostal spaces of ribs 8, 9, and 10 (Figure 6.18). Apply firm pressure into the intercostal space and drag your fingers laterally, from anterior to posterior, following the ribs to the vertebrae. Shift your fingers superiorly into the next intercostal space on the anterior side and repeat. Continue moving up the ribcage. When nearing the breast tissue, stay lateral or work on the posterior side only. You can work into the intercostal spaces from the sternum toward the breast tissue if that is comfortable for your client. You may need to hold her breast tissue out of the way as you do that work in the sidelying position.
2. Areas that feel tight can be worked more specifically, one rib at a time. Apply pressure to trigger points and allow the tissue to relax under your fingers.
3. Reaching over the sheet, feel for the inferior edge of the costal margin just lateral to the xyphoid process. Sink the fingertips in against the cartilage and diaphragm attachments with gentle compression, releasing abdominal and diaphragmatic tension while

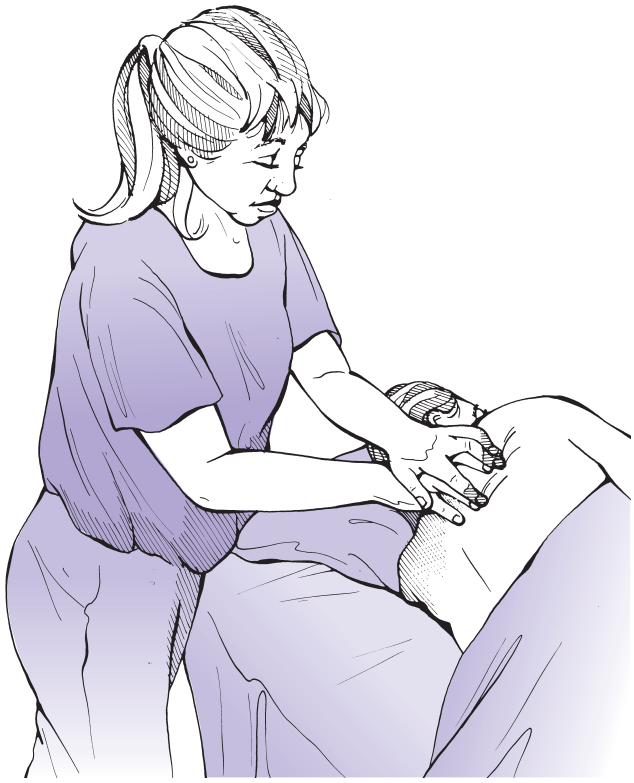

FIGURE 6.18 Rib raking by sliding fingers through the intercostal spaces.

FIGURE 6.19 Trigger points along costal margin.
The therapist applies careful firm fingertip pressure along the inferior edge of the costal margin, starting medial and moving laterally.

moving laterally (Figure 6.19). Ask for clear feedback regarding pressure when working in this tender and vulnerable area.

Note: Rather than work over the sheet, you may choose to use a breast drape and expose the belly for work on the costal margin.

CHAPTER SUMMARY

Massage therapists commonly encounter particular physical complaints from their pregnant clients. General full-body massage can be used to enhance relaxation, which will help diminish some discomfort, but specific techniques are more useful for addressing specific concerns. The techniques discussed in this chapter are simple and can be incorpo-

Self Care Tips FOR MOTHERS:

Stretches to Increase Respiratory Capacity

Encourage the client to do stretches that help expand the chest and lengthen the body. The following stretches may be helpful to her:

- *Arm Raise:* Sit against a wall, with legs extended. Raise the arms out to the side, palms against the wall, and walk them up the wall over your head while inhaling. Turn your palms out when necessary and relax.
- *Yoga Chest Opener:* This pose opens the chest, relieves pressure under the ribs, and increases lung capacity. From sitting or kneeling erect, raise one arm over your head, and with your elbow straight in air and close to your ear, reach your hand down the middle of the back. Place the other hand behind the back, bending the elbow, and reach up with it toward the top hand. Clasp your hands if you are able. Hold a scarf between your hands to help them connect, if necessary. Hold and breathe, filling the lungs and expanding the ribs (Figure 6.20).
- *Standing Arm Raise:* Stand and raise your arms up and out to the side with inhalation and the over your head until the hands are palm to palm. Exhale, bringing the arms down, curling your head down, tensing your hands into fists, and bringing them in toward the chest. On the inhale, extend your arms out, extend the fingers, and bring your arms over your head again. Repeat several times.

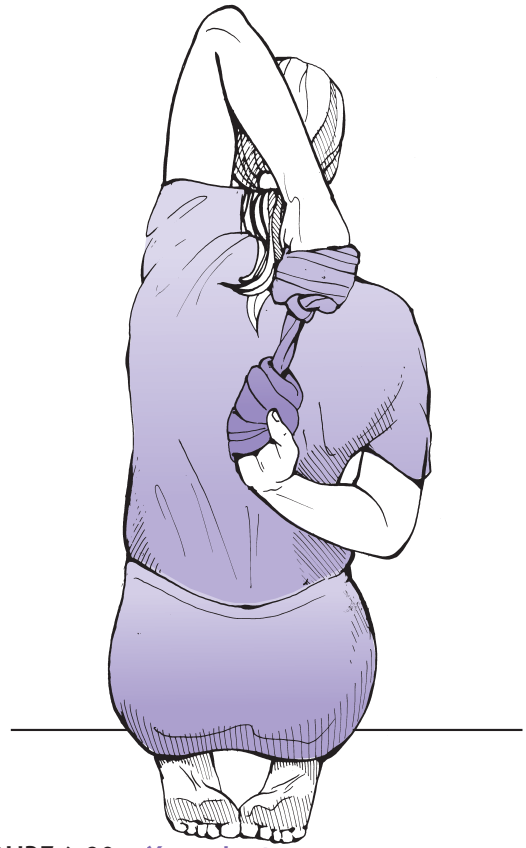

FIGURE 6.20 Yoga chest opener.
The mother can use a scarf between the hands if she cannot reach to grasp her hands behind her back.

Case Study 6.1
ADDRESSING A COMPLAINT OF SHORTNESS OF BREATH

Suzanne had seen her client several times during her pregnancy. Now Beth was in her 37th week and came for a massage complaining that the baby was kicking her in the ribs and pushing up into her diaphragm, making it feel difficult to get a full breath. She also stated that she was having sinus congestion and occasional nose bleeds.

Suzanne observed Beth's posture before positioning her on her left side on the massage table. She noted that Beth's breasts were quite large and that she was internally rotating her shoulders, collapsing somewhat in her chest. She spent some time helping Beth become aware of how she could expand her breathing capacity with some simple postural adjustments—lengthening her spine and lifting in her chest to externally rotate her shoulders. They also discussed the benefits of supportive bras during pregnancy, to help alleviate some of the anterior pull of the breasts.

Suzanne first ensured that Beth was positioned comfortably and had the fan blowing lightly toward her face. She then warmed Beth's back with effleurage and petrissage, and subsequently spent a significant amount of time working intercostally, releasing trigger points and encouraging Beth to breathe deeply to expand her ribs against Suzanne's finger pressure. She applied friction to and stripped along the attachments on the inferior edge of the clavicle and across the superior edges of the pectoralis. She worked briefly with compression on subscapularis. Suzanne then extended Beth's superior arm and did a full body stretch, encouraging Beth to breathe deeply. Suzanne worked similarly on the right side and then suggested repositioning to the semi-reclining position.

Before she changed position again, Beth wanted to use the restroom. As she shifted to sitting from lateral lying, and attempted to stand up, she suddenly felt lightheaded. She sat again on the edge of the table, and Suzanne stood by her, to ensure stability. Suzanne guessed it was a momentary episode of orthostatic hypotension, and apologized for forgetting to suggest that Beth wait a moment in a sitting position before attempting to stand. The lightheadedness passed quickly and Beth was fine after that.

Once back on the table and in the semi-reclining position, Suzanne reached around Beth's belly, and pressed into the multifidus and other spinae erectors on either side of the lumbar spine, pulling forward with enough pressure to arch Beth's back just slightly. She slid her hands anteriorly around the belly and repeated several times, adjusting the position at different areas of the lumbar spine region.

She then had Beth cross her arms over her chest and applied pressure anteriorly on both her arms while Beth pushed her arms out against the resistance during an inhalation. Suzanne had Beth raise both her arms up, flexed at the elbows. Standing behind her, Suzanne placed her hands on the anterior sides of Beth's elbows and inner arms, pulling slowly posteriorly until Beth felt some stretching in her chest. Beth then pushed anteriorly for 8 seconds against Suzanne's resistance, stretching fibers of the pectoralis. After a moment of relaxing the resistance, they increased the stretch and repeated the steps above.

At the end of the session, Suzanne remembered to instruct Beth to change positions slowly, but since she had already been in semi-reclining position, as opposed to lateral, she did not have an orthostatic hypotensive episode. Suzanne then taught Beth some stretches to open her ribcage and chest.

rated into a standard relaxation massage. Alternatively, an entire massage can be focused on a particular complaint. For instance, to help increase thoracic space and improve sensations related to respiratory capacity, a full massage session may be focused on warming up the upper chest and back adequately, releasing the pectoralis and subscapularis, extinguishing trigger points in the intercostal spaces, and utilizing the shoulder mobilizations and chest opening techniques. The choice of focus is dependent on the type of work you offer, and the client's preferences and needs.

Specific techniques that you like to incorporate in your work with *nonpregnant* clients can usually be adapted for work in the sidelying position for application with your pregnant clients as well.

MASSAGE THERAPIST TIP

Stretch Marks

Many women complain about stretch marks and ask their massage therapist for a cream or salve that can prevent them or make them go away. Stretch marks sometimes develop from the excessive skin stretching that can occur with twins, with an especially large baby, or after several pregnancies, but more often they are caused by hormonal and hereditary factors and cannot be prevented. Nourishing the skin with moisturizer cannot hurt, usually feels good, and can help maintain healthy skin tone, but will not prevent stretch marks from developing or make them go away. Perhaps, rather than thinking of stretch marks as disfiguring, a mother may think of them as her baby's unique story, written in the lines of her body. It is she and this child's unique and natural body art. They represent motherhood and are a sign shared by many women. Red marks during pregnancy generally become silvery and much less noticeable after pregnancy.

For general skin condition and care to the abdomen, add Vitamin E or wheat germ oil to your massage oils. The client may perform a daily moisturizing belly rub with any of the following oils known to be healing to skin: olive oil, cocoa butter, wheat germ oil, avocado oil, and vitamin E and A. Certain essential oils also aid skin healing and can be used in the second or third trimester. The following is a safe mixture that can nourish the skin and can be used with a low risk pregnancy *in the last trimester*: Add 4 drops of lavender and 3 drops of neroli, or 3 drops frankincense and 3 drops tangerine to 2 tablespoons of massage oil. Aromatherapy is an in depth study and science. If you choose to make your own mixture, undertake a course of study that will guide you in appropriate mixtures for pregnancy.

CHAPTER REVIEW QUESTIONS

1. Name two reasons why low back pain is so prevalent during pregnancy. Describe four maternal self-care tips and two bodywork techniques for decreasing low back pain during pregnancy.
2. Explain what might be a possible cause of mid-back pain developing as pregnancy progresses into the third trimester.
3. Determine whether breast massage is legal in your state and explain the social issues surrounding breast massage. Why should it be avoided with a client with a high risk of preterm labor?
4. Describe techniques you might use with a client who is 39 weeks pregnant and has a history of preterm labor and two previous consecutive miscarriages. She is now is complaining of upper back pain and breast tension.
5. Name three conditions for which use of an abdominal binder might be appropriate.
6. Discuss what problems may be avoided by having a client learn proper mechanics for sitting up from lying down.
7. Discuss whether the massage therapist has a responsibility to educate a client on body mechanics, postural awareness, and self-care. How could this benefit both massage therapist and client?
8. If a client experiences sharp pain in her groin, what might you suspect as a possible cause? Name two tips you could teach her as a method of addressing that cause.
9. Name three conditions discussed in this chapter that are often caused by poor posture or improper body mechanics during pregnancy.
10. Discuss your perception of stretch marks. What might you suggest to a client who has concerns about their development and asks for massage to reduce them?

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CHAPTER 7

BODYWORK IN PREPARATION FOR BIRTH

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Describe integrative bodywork techniques that can encourage relaxation prior to labor.
- Describe bodywork techniques that facilitate physical and emotional preparedness for labor.
- Practice the use of visualization and affirmations in conjunction with bodywork.
- Describe elementary acupressure techniques for supporting labor preparations.
- Have the resources to teach perineal massage techniques to a client's partner, and to know when that is and is not appropriate.
- Describe the massage therapist's role in supporting a client having an emotional release during a massage session.

Labor has a life, energy, and direction of its own, which, for a laboring woman, can be experienced as joyful, hard work, painful, and utterly transformative. In whatever way it is experienced, the process of inviting another life into the world through one's body is a rite of passage that is unpredictable and powerful. Nurturing and supportive touch can empower a woman to undergo it with trust in her body wisdom.

Massage can help women prepare for birth by releasing muscular and emotional tension, both of which can delay labor. Reducing muscular tension can help a woman "go with the flow" of labor more easily and increase her vitality and endurance. Releasing emotional tension will decrease production of stress hormones and allow beneficial hormonal releases to promote labor. Massage will give her a focused opportunity to practice relaxing with gentle touch while envisioning and practicing surrendering to the process of birth.

In the last 2 weeks of pregnancy, your client may wish to begin focusing on physical preparations for her birthing time. Specific massage techniques, acupressure points, breathing, affirmations, and visualizations all can be helpful. If your client is past her due date and is growing concerned about a possible induction of labor with Pitocin (synthetic oxytocin) at the hospital, stimulating massage might be used in conjunction with other methods she may be trying to encourage labor to begin. Massage itself will not induce labor, but will help prepare the mother's mind and body to step into the flow of birth. Acupressure is particularly effective in bringing the body into balance in this way, but detailed technical descriptions are beyond the scope of this book. Some useful points are included in this chapter, however, as they are frequently used by massage therapists and lay people who are not certified acupressurists.

GENERAL TREATMENT

Facilitating relaxation for a mother is one of the most important steps in preparation for labor. Any stress that causes obvious or subliminal tension can impede

Complementary Modalities:

Incorporating Visualizations and Affirmations

Visualization is a practice that can increase relaxation, reduce bodily stress responses and help to manifest desirable situations. For some women, it can be very powerful. Others do not relate to the technique and find it difficult to envision imagery in their mind. Some women visualize easily without guidance, while others want someone speaking to them with a soothing voice and suggesting particular types of imagery. Include visualizations in your sessions when you want to help your client increase relaxation, or revision fearful or negative thoughts. But, before incorporating imagery in your sessions, first determine whether your client has interest or experience using visualizations. Then, search for clues as to what type of imagery has power and significance for her, by asking her in what types of environments she feels safe or relaxed. Where is she most at ease? Use these images in your process. Not everyone will relate to the same type of imagery. Let the client be your guide in how to guide *her*.

Affirmations are often used in conjunction with visualization. Affirmations are positive, encouraging words to help shift fear-based or negative thought patterns. A useful way to incorporate affirmations is to notice negative thoughts that your client may have expressed about herself or her pregnancy, labor, baby, partner, etc. When you have identified these issues, seek a reversal of these thoughts. For instance, if she says "I'm afraid I can't handle the pain of labor," identify the positive mirror of this thought, such as: "Moment by moment, one contraction at a time, I will find ways to ride the waves of contractions," or, "As I relax, the pain will decrease." Avoid using negatives in an affirmation; rather than saying "I will not feel pain," try something like, "I have the ability to cope with the sensations I feel." She may like to have you repeat the affirmations to her, but generally it is more empowering for her to repeat the affirmations to herself, in her mind or out loud, while envisioning imagery that supports the affirmation.

Affirmations rely on the belief that beneath all of our exterior ego personas, we are pure, good beings, supported by a numinous energy that is larger than our ego-selves; it is *that* truth that we want to nurture. We may suggest to a client who feels inadequate about becoming a mother a short affirmation such as, "I have the capacity to be a good mother," or something more involved such as, "I have within me all the strength and wisdom I need to be a good mother, and I am supported by all energies and guidance to become that."

the commencement of labor. Remember that labor involves not only a physical release, but a spiritual and emotional one as well. Supporting her surrender into safety and trust will aid your client as she embarks on the journey of birth.

Help relieve tension with full-body relaxation massage, but also focus on the areas that will need to expand or release during labor. These include the hip adductors, the lateral hip rotators, the legs, the belly, and the groin area. Use flowing effleurage and petrissage to the upper thighs and long strokes down the entire body from head to toes to help mobilize energy. Thorough massage of the hands and feet will relax the mother and stimulate reflexive zones. More advanced work includes release of the perineal attachments and pelvic floor, some of which can be addressed by the client's partner with perineal massage, as discussed later in the chapter.

SPECIFIC BODYWORK TECHNIQUES

Several bodywork techniques that are effective in helping a mother prepare for labor and birth in her final weeks of pregnancy are presented below. Additionally, the following techniques, which are described in previous chapters, are useful in labor preparations as well:

- Femur traction and mobility (see the section "Sciatica and Sacroiliac Pain" in Chapter 6)
- Sacral compression and unwinding (see the section "General Full-Body Relaxation: Sacral Compression and Unwinding" in Chapter 5)
- All techniques in the section "Back Pain: Low" in Chapter 6

Jaw Release

Benefits

There is a reflexive relationship between the mouth and the perineum, and especially between the jaw and the pelvis and cervix. Releasing tension in the jaw can encourage the pelvic area and cervix to relax as well. This may be useful in preparation for and during labor.

Position: Any that provides access to the jaw.

Technique

1. Ask the client to relax her jaw.
2. Before applying lotion or oil to the face, gently palpate the masseter on one side with 1 or 2 fingers. Jiggle the fingers to provide a vibration into the muscle for several moments.

Case Study 7.1

HELPING A CLIENT PREPARE FOR LABOR

Joni was 40 weeks pregnant and planning on having her third child at home. Her friend, Terri, a massage therapist, came to Joni's home to offer a labor preparatory massage. Joni shared with Terri about her current fears and hopes for this birth. She was anxious for labor to begin, yet hesitant as well, due to a lack of support from her husband. She was aware of tension in her belly and in her mind. She hoped a massage would help her to relax and to invite labor with more confidence.

Terri was aware that nurturing touch can stimulate emotional issues to surface, but she was not trained in somato-emotional work. She was comfortable, however, being present with feelings that might arise during a session without having to analyze them. Terri asked Joni if she would like to try incorporating visualization into the massage session, to help Joni relax further. Joni agreed, and knowing that Terri knew her well, asked her to guide her with the types of positive imagery and affirmations that she related to. Acknowledging Joni's issues, they invited what they envisioned as a "Birthing Goddess" energy to enter into their space to assist Joni to surrender into the birth. They also focused their thoughts on the baby, acknowledging the baby's effect on stimulating labor and affirming to the baby that it was safe to come into the world whenever ready.

With Joni lying on her side, Terri began a full-body massage, using general effleurage and petrissage to the back, neck, shoulders, and gluteals. As she worked, she noticed areas of depleted energy and others with tense or full energy. She placed her hands on the depleted areas and envisioned her breath moving through her hands, filling these areas with qi or life-force. Terri then placed her hands on the areas of tension and encouraged Joni to breathe into each area, relaxing the tension as she exhaled.

Next, Terri placed her palms on either side of Joni's spine at the neck and palmed slowly down toward the sacrum to relax the back and connect the head with the pelvis. This also affected the acupressure Bladder meridian, which influences the flow of labor. On the sacrum, Terri did a friction rub, bringing a flush of circulation to the skin and warmth into the pelvis. She then applied deeper stimulating pressure into the sacral foramen, holding and making circling friction on each spot. Joni said this helped release some of the tension she was holding there and made her pelvic area feel more "alive."

To integrate her work, Terri used long strokes from the head and back, drawing energy down and out the extremities with each exhalation, encouraging Joni to envision energy surging down, like a waterfall through her body. While visualizing, Terri noticed tightness in Joni's right hip and groin area. Terri asked her to tighten and then relax that area, and then worked with isometric stretches to open the hips.

Throughout the session, Terri offered encouraging affirmations, as Joni had asked, reminding Joni that her body knew how to labor, that she had done this successfully twice before, that Joni could always rely on the support of the spiritual energy that she related to, as well as on the support of the millions of women who had birthed before her.

On the hands and feet Terri spoke of imagining opening the channels of energy in the upper and lower body so that the energetic river could flow freely. On the feet, she applied thumb pressure around each heel and ankle, stimulating reflexology areas and pressing into an acupressure point in the center of the sole of the foot, just below the ball of the big toe, bringing a calming, grounding, and energizing flow through the body.

Terri then focused on acupressure points that are prohibited earlier in pregnancy, including Spleen 6, Large Intestine 4, Bladder 60, and Kidney 3. On the shoulders, she applied downward pressure into Gall Bladder 21, while speaking about envisioning a soft beam of light streaming down through Joni's body, imagining it softening everything it touched—including the jaw, the belly, and the perineum.

As Terri worked, Joni sometimes noticed areas that felt tight and unwilling to release. Just by talking about these sensations, she was able to let go more, and the tissues softened under Terri's touch.

With warmed castor oil, mixed with essential oils of Clary Sage, Rose, and Jasmine, Terri did a stimulating belly rub, incorporating Joni's back and belly in the work.

In closing, Terri did face massage and included relaxing work to the jaw. She then placed her hands on Joni's heart and belly, asking Joni to visualize love flowing into her belly. As she did this, Joni's tears began to emerge, and she cried quietly for several moments, releasing more tension.

Two days later, Joni's labor began. Her support team was present, and she gave birth without complications to her baby girl. Later Joni said the massage had helped her feel relaxed and more mindfully prepared for what lay ahead of her. She said she was more balanced and connected to her body and felt that the massage, visualizations, and affirmations helped her have a greater sense of trust that all would resolve in the best timing possible.

FIGURE 7.1 Slow compression and myofascial release on the masseter.

Apply pressure in opposite directions over the masseter. Gradually, as the tissues and fascia melt away under compression, the fingers will begin to spread apart, sliding through the tissue.

3. Compress into the center of the masseter with two fingertips, allowing them to sink slowly into the muscle as it relaxes under the pressure. Apply a slight traction between the fingers. Gradually, as the tissues and fascia melt away under the compression, the fingers will begin to spread apart, sliding through the tissue. Repeat this compression and stretching in all directions from a central point on the masseter (Figure 7.1).
4. Apply lotion and use a sliding-compression stroke from the insertion of the masseter on the zygomatic arch to the mandible.

Adductor Resistance

Benefits

Some women are uncomfortable thinking about their perineal area being exposed to numerous people who may be present during the birth of the baby. Stretching and relaxing the hip adductors while in the semi-reclining position can offer a chance for her to relax more in preparation for the inevitable exposure that occurs during pushing and birth.

Position: Semi-reclining with knees flexed and soles of feet facing each other, flat together. Let her knees flop down toward the table as far as possible in a relaxed position.

Technique

Note: Be careful to maintain proper draping throughout this work.

1. Place your hands on the inside of the client's knees with light pressure, as she relaxes.
2. As she exhales, ask her to push slightly against your hands isometrically with her knees as you resist against her pressure. Hold for 8 seconds during an exhalation.
3. Have her relax the pushing, then stretch further and repeat.

Sacral Releases

Benefits: In the last weeks of pregnancy, stimulation to the sacral foramen helps release, relax, and prepare the pelvis for birthing. It brings circulation to the area, stimulates nerve function, and helps relieve back pain.

The sacrum has 8 foramen, or openings, through which pass nerves that innervate the pelvic floor. The sacrum shields and protects the uterus and provides stability and somatic grounding. In the late second trimester and throughout the third trimester of pregnancy, many ailments of the low back area can be relieved with careful work to the sacrum.

CAUTION: Excessive stimulation of the sacral nerves and foramen is contraindicated for those with a history or risk of miscarriage or preterm labor.

Position: Sidelying

Technique

1. Apply slow pressure with fingertips or thumbs into the sacral foramen, one on each side of the sacrum at the same time. The foramen are located about 1 thumb-width out from the center of the sacrum and can be felt as energetic or physical indentations in the sacrum. There are 4 holes on each side of the sacrum. Slide your fingers slowly, with firm pressure, along the sacrum to search for the foramen; sometimes you can see them through the skin as dimples.
2. Communicate with the client about comfortable levels of pressure. Hold each point for several of your breaths or until you feel a softening.
3. Move to the next foramen. Push with your thumbs into each of the sacral foramen, applying even pressure and holding, or making small circles on each hole (Figure 7.3).
4. Perform friction rub on the whole sacrum back and forth, creating heat in the area.

Cupping

Benefits: Increases energy from the pelvis down the legs, opening the circulation and flow of energy.

Position: Sidelying

Self Care Tips FOR MOTHERS:

Squatting Practice

You may want to suggest to your clients to practice squatting during their pregnancy in preparation for birth. Squatting has numerous benefits:

- It helps a woman become familiar with opening her hips as necessary for birth.
- It helps stretch the adductors and perineum, which need to be flexible and expansive for birth.
- It strengthens the legs, feet, and ankles, and reduces leg cramps.
- Encourages evacuation of the bowels, decreasing straining and risk of organ prolapse.
- It increases mobility of the pelvic joints, expanding the pelvic diameter, making space for the baby to descend during birth.
- It lengthens the low back, reducing low back pain.

CAUTIONS: Squatting should not be painful or stressful. A client with diastasis of the symphysis pubis should not squat.

One method of stabilized squatting practice is to stand with the feet a bit wider than hip width apart and turned out laterally. She can hold onto the back of a stable chair or onto the doorknobs on either side of an open a door. Keeping the elbows straight, she then pulls back and sinks into a squat as in Figure 7.2. She pulls up to return to standing. If it is too difficult to squat, a modified squat can be done by sitting on a small stool, with the hips abducted and the heels on the floor.

FIGURE 7.2 Squatting with support of the door.

Technique

Stimulate the buttocks and legs with percussive strokes, holding your hands in a cup like shape and patting or hitting lightly from the buttocks down the quadriceps and lateral side of the leg to the foot.

Belly Rub

Benefits: Belly rubs are very helpful at the end of pregnancy to help relieve pressure from the abdomen on the groin and to potentially increase preparedness for labor. If labor is late and contractions are desired, use warm castor oil as an added stimulant, and massage longer, with more stimulating energy than used in a standard belly rub. The addition of essential oils for a belly rub is helpful at this stage of a normal pregnancy. Use these oils only at the end of pregnancy, when labor is due, in the following dilutions: 3 drops of rose (*Rosa damascena*; *Rosa centifolia*) or lavender (*Lavandula officinalis*; *L. angustifolia*), 2 drops of jasmine (*Jasminum grandiflorum*), and 2 drops of clary sage (*Salvia sclarea*) to 2 tablespoons of warmed castor oil. If you wish to use other essential oils or other dilutions, consult aromatherapy texts and obtain aromatherapy training for pregnancy.

Technique: See Chapter 5.

FIGURE 7.3 Circling pressure into the sacral foramen.
Apply slow pressure with fingertips or thumbs into the sacral foramen, one on each side of the sacrum at the same time. The foramen are located about 1 thumb width out from the center of the sacrum and can be felt as energetic or physical indentations in the sacrum. Slide your fingers slowly, with firm pressure, along the sacrum to search for the foramen; sometimes you can see them through the skin as dimples.

DISPELLING MYTHS:

Using Massage as a Quick Route to Labor

When a woman's due date has come and gone, she may develop anxiety about whether labor will ever start. Usually after 41 weeks' gestation, doctors and midwives begin to consider options for inducing labor in an effort to avoid the baby getting too large or the placenta deteriorating. Some women who believe that receiving an "induction" massage might stimulate their labor ask their massage therapist for such help.

Massage does not trigger labor to begin. What massage can do is to help the mother relax. Relaxation helps diminish adrenalin and catecholamine production, allowing hormones, endorphins, and prostaglandins that prepare the body for labor, to function more optimally. Massage can be very beneficial at this late stage of pregnancy, and if a woman's labor does begin after receiving a massage, she may believe it was the touch that stimulated it. However, it is much more likely that it was due to her ability to relax under the touch and be offered reminders of her body's inherent wisdom regarding birth, which allowed the natural development of contractions to occur. In this way, massage was a complementary support, rather than the cause of labor beginning. For many women, labor still does not begin until other elements are in place—physically, psychologically, or spiritually—even after receiving a thorough and focused massage with the intent of supporting labor.

Complementary Modalities:

Acupressure for Labor

The acupressure points that are forbidden during pregnancy are helpful at the end of pregnancy to support the body's preparations for labor. They can be taught to a woman and her partner for use before and during labor. Acupressure is an in-depth study and practice of energy; the following are tips for a generalized approach that can still be effective when combined with a focused intention of support. As long as your client's PCP has affirmed that labor is due, these points can be incorporated into a therapeutic massage and used with any healthy pregnancy after 38 weeks. Gentle pressure to the points is not dangerous and will not cause harm or trigger labor to start suddenly; instead it will support the body to do what it naturally wants to do.

The most common points to support contractions and birth, and to decrease pain, are Large Intestine 4, Gall Bladder 21, Spleen 6, Bladder 60, and the Bladder 31 and 32 in the sacral foramen. These are pictured in Figure 4.3. Touch on these points gently but firmly every half hour when your client is preparing for labor, working both sides of the body simultaneously if possible. Hold each point for at least 5 minutes, encouraging the client to envision the cervix softening and dilating, imagining hormones coming into full strength to promote labor, envisioning energy flowing without blockage throughout her body. Acupressure points are not magic buttons that will cause a change immediately; they need thorough and consistent attention over a period of hours or days to be effective.

When searching for a point, ask how it feels; the woman may notice a special sensitivity when you touch the point, a discomfort, a zing of energy, or a pulsing. Or she may not feel much at all. Maintain open lines of communication; ask her to let you know what a comfortable pressure is for her. Think of the body as a temple in which it is appropriate to enter quietly and respectfully; use that same respect and caution when touching a point. Apply pressure gradually, with attention and intention, as she exhales. Release the pressure with the same attention.

Always initiate pressure from your belly rather than from just your hands or arms, using perpendicular pressure (90 degrees) into the points.

How the Partner Can Help

Perineal Massage

Many women giving birth experience some sort of trauma to their perineal tissues. This is not surprising, considering that a 6- to 10-pound little person has spent minutes or hours pushing her or his way against a woman's delicate innermost mucus membranes. If the baby descends too quickly or if the mother pushes too forcefully, it is possible that these tissues will not stretch adequately and they may tear. Studies are inconclusive as to whether prenatal perineal massage helps decrease perineal tears at birth. However, birth is a process that progresses more smoothly when a woman has familiarity and ease with her perineal area, and perineal massage can facilitate this when initiated up to 6 weeks before the expected delivery time. Many PCPs suggest that their clients practice perineal massage, but few women are given specific instructions for a gentle approach to this work.

Although scope of practice regulations and the sensitive nature of this work prevent a massage therapist from performing it, a client's partner can be taught to do general perineal massage for weeks ahead of the delivery to help prepare, soften, and stretch the tissues and help the mother become accustomed to the sensations of stretching.

The following description of benefits, contraindications, and techniques can be given to your client and her partner.

Benefits

Daily prenatal perineal massage of 5 to 10 minutes, beginning around 35 weeks of gestation, can provide the following benefits:

- Accustom a client to stretching and pressure sensations, enabling her to relax more easily when stretching during delivery.
- Release constricted perineal musculature.
- Allow a partner to be intimately involved with birth preparations.
- Create a pre-birth opportunity to work with possible emotional issues related to perineal trauma or abuse.
- Possibly decrease duration of the pushing stage of birth if emotional issues were addressed during prenatal perineal massage.

Precautions and Contraindications

Perineal massage should not be performed if any of the following situations exist:

- The woman has vulvar varicosities, active genital herpes lesions, yeast infection, or any active vaginal trauma, infection, or sexually transmitted disease.
- The woman does not wish to have the massage.
- The partner is uncomfortable with the procedure and unable to stay present with the woman's sensations, requests, or responses.
- The woman is experiencing preterm labor. If she is, avoid perineal massage until she is at 38 weeks' gestation.
- The woman is on bed-rest for any high-risk condition.

Observe the following precautions when doing perineal massage:

- Avoid rubbing on the urinary tract opening to prevent inflammation or introduction of infection-causing bacteria to the urinary tract.
- Use excellent communication with women who have a history of sexual abuse, as emotions or memories could be triggered during some perineal massage.
- Always clean the hands and fingernails well before and after the massage. Keep fingernails cut short to avoid injuring the perineal tissue.

Guidelines on Performing Perineal Massage

Preparations: While the woman gets comfortable in a well-supported semi-reclining position, warm a few tablespoons of nourishing sweet almond, vitamin E, or avocado seed oil. Do not use mineral oil or Vaseline, which leave a water-repellent residue and may ultimately dry out the tissues. Place a towel under her bottom, to absorb dripping oils. She may wish to take a warm bath or put warm moist washcloths on her perineum to help relax more fully before starting bodywork.

1. *Attunement:* When you are both comfortable, place your hands on your partner's perineum, allowing the palm of your hand to press gently against her outer labia and your fingers to rest on her mons and pubic bone. This gives her a chance to breathe and relax, getting accustomed to being touched in this way.
2. *Lubrication:* Dip your fingers into the warm oils, and gently lubricate the outside of her perineum. When she says she is ready, re-lubricate your fingers and slowly and gently slide one and then two fingers about 1/2 to 1 inch into the bottom of her vagina. Lubricate inside with the oil.

How the Partner Can Help

Perineal Massage (Continued)

3. *Kegels:* Ask her to squeeze her muscles, like a Kegel exercise. If you cannot feel her tightening, she may want to practice strengthening and toning these muscles for birth. Work together for a few moments tightening and relaxing these muscles, having her practice and focus on relaxing them completely in-between squeezes.
4. *Exploring:* Press down slowly in the bottom of the vagina, and then work your way up, pressing on the sides until about half way up toward the top. If you find tight areas, help them relax by using gentle pressure and rubbing. Press into the tissue and slide out, holding the pressure and encouraging opening. Communicate regularly with her to ensure comfortable pressure, speed, and amount of lubricant.

CAUTION: Avoid rubbing at the top under the pubic bone where the urinary opening is.

5. *Stretching:* Begin again at the bottom of the perineum. Press slowly down with the flats of your fingers, increasing pressure until she feels a burning or tingling or tightness and tells you to stop. Hold the pressure there where she feels the burning for 1 minute as she breathes and practices relaxing her perineal muscles. This should not be painful, but she should feel the stretch. This is a good time for her to practice breathing into her abdomen and relaxing fully with each exhalation. Visualization may help her relax. Verbally affirm her beauty and power and remind her to breathe slowly as she relaxes all of her muscles. Eventually the sensations in her perineum should be numbed or reduced. Repeat this stretching, moving up the walls of the vagina.
6. *Completing:* When completed, place your palm over the outside of her perineum, fingers resting over her pubic bone. Acknowledge and appreciate the work she has done relaxing and opening, and remind her that during birth, she will have the skills to again relax like this to allow the baby to come easily through her.

EMOTIONAL SPACE: LETTING IT FLOW, LETTING IT GO

During a massage, your client may naturally experience a release of deep emotion. There is no need to analyze her feelings or provoke emotional reactions; your role is a massage therapist or birth supporter, not a psychologist, and you must work within the scope of your field of practice. On the other hand, emotions often arise, unsolicited, just because a client feels your nurturing support. The most essential gift the massage therapist can offer is to maintain a supportive space . . . listening, continuing your nurturing touch, allowing her emotions to flow, encouraging her with verbal reassurance, letting her know that you are with her as a witness to her feelings. As emotions are released, blood flow increases throughout her body. Muscular tension along with the emotions that have been stored and held in the restricted muscle tissue are freed.

Crying, laughing, or deep breathing can all be signs of emotions rising to the surface. If these develop during a massage session and you are uncertain about how to help support your client, consider using the following tools:

- Notice your own breath. Maintain grounded, relaxed breathing that can serve as an anchor or grounding cord for your client. Stay calm and connected with breath. Keep your feet solidly on the ground.
- Maintain your touch, but slow it down to holding, rocking, or focused pressure in one particular area.
- If she is extremely agitated, you may consider calling on a higher dimension of support, if you relate to that. Spirit guides, plant spirits, or other spiritual allies can help to ground both of you. This can be done silently or out loud as seems appropriate and relevant for each client.
- Crush a healing herb, such as motherwort, mugwort, mint, or chamomile and have her hold and smell it. The scent and plant presence can be calming.
- Allow time for her to share whatever she would like about the experience afterward,

and leave time for grounding, assimilation, and re-entry into the world.
- Listen rather than judge or give advice. Acknowledge what she is saying, and perhaps repeat it to assure her that you have heard her correctly. Acknowledge that her feelings are valid, while remembering that feelings are transient.
- Affirm the importance and value of her emotional clearing at this time.
- To help your client return to the present moment after an emotional release, you might hold her feet or place a hand on her belly or head, reminding her to breathe into her belly. Help her notice her surroundings, the flowers outside the window, the picture on the wall, the feeling in her feet; this will help her to assimilate and return to the present from her emotional world.

CHAPTER SUMMARY

Any bodywork can help a woman in her preparations for birth; there is not a specific type of work that is necessarily better than another. However, the techniques discussed in this chapter can be useful for a variety of women, and do lend themselves to a focus on birth preparations. Perhaps more important than the type of bodywork done, is the incorporation of emotional safety and support with the touch. Using affirmations, creating a safe environment, encouraging full relaxation, and incorporating visualizations of positive processes and outcomes for birth, along with supporting the release of emotional restrictions—these are the keys for offering the most beneficial prebirth massage.

CHAPTER REVIEW QUESTIONS

1. Describe a primary focus of bodywork when helping a woman prepare for labor.
2. Explain why releasing the jaw can support labor preparation.
3. Discuss why relaxation is a critical ingredient for labor to begin.
4. Explain how the use of visualization and affirmations can be supportive prior to and during labor.
5. Describe the important application methods involved in utilizing acupressure for labor support.
6. Discuss issues surrounding the practice of perineal massage. Examine what would be necessary dynamics within a couple before beginning perineal massage.
7. Name three contraindications to perineal massage. Name four benefits of prenatal perineal massage.
8. Discuss methods of and tools for supporting a client if strong emotions arise during a massage session.
9. At what point during a pregnancy could you suggest working with labor preparations?
10. Describe the benefits of massage for labor preparation as you would to a client who wants you to work with this focus.