Section 2

Practical application of massage

This page intentionally left blank

Palpation

5

CHAPTER CONTENTS

One of the main keys to success with massage lies in the sensitivity of the therapist's hands. A well-developed manual sensitivity is important for:

- Examining and assessing tissues;
- Recognising the end-feel of the tissue, which influences the effectiveness and comfort of the massage;
- Modifying techniques to different tissues and tissue layers;
- Adapting techniques to suit an individual's tissues; and
- Adapting techniques so that they are appropriate to various pathological states and stages of healing.

Exercises to develop palpation skills

The student therapist may increase her sensory awareness by practising on inanimate objects as well as on the human body. To begin, it is helpful to find a friend who is willing to model; it is easier to develop palpatory skills when you do not have to concentrate on giving a massage simultaneously. There are many exercises that can help to develop palpatory awareness; a few of them are listed below but you will also benefit by making up some of your own. Make a habit of touching objects that are a part of your daily life. While you are doing so, describe the sensations to yourself; try giving words to what you feel so that you begin to differentiate—lots of things feel 'like' something else, but try to find the subtle differences between them. Palpate with the pads of your fingers and thumbs, which are highly innervated:

- Take two small bowls and put refined white flour into one and wholewheat flour into the other. Simultaneously put one hand into each and rub the flour between your fingers. Describe to yourself the different sensations.
- Collect together a number of different grades of sandpaper. Close your eyes and attempt to sort the paper by grade.
- Compare the differences in the texture of water, cooking oil and a thick body lotion by rubbing a little of each between finger and thumb.
- Place some small objects on a table (e.g. grains of rice, a piece of string, a matchstick, a key, a paperclip). Cover them with a thin cloth and palpate; repeat with thicker coverings such as a blanket and a piece of foam. Distinguish the variation of sensations between the covers and note any differences in the pressure you have applied.
- With one finger stroke your cheek, your arm, your palm, your abdomen, your knee and the sole of your foot. Feel any varying texture, skin temperature and moisture in these parts of the body.
- Practise palpation in the area of your wrist and forearm. The anterior aspect of the wrist is a good place to start; here you can see and feel the

© 2011, Elsevier Ltd.
DOI: 10.1016/B978-0-7020-3229-5.00005-0

tendons and blood vessels. Let the fingers of one hand rest as lightly as a feather on your contralateral wrist. Move them very gently over the skin without stretching and register what you feel. Now apply slightly more pressure, so that the skin moves with your fingers; this should give you more information about the structures under the skin. Apply more pressure still so that the subcutaneous structures are compressed on the underlying bone. With this heavy pressure the sensitivity of your palpation decreases and the structures will not be so easy to differentiate.

- Palpate your own thigh. Note the depth of pressure required to gain information about the tone of the muscles in this region. Using your whole hand pick up and stretch the muscles and register any changes you feel in the resistance of the tissues.

It is useful to perform specific exercises to increase the mobility of your hands before you begin to learn massage. Figures 5.1 and 5.2 show suggested exercises for stretching your fingers and wrists.

Palpation technique

To palpate effectively, the pads—rather than the tips—of the fingers should be used. The fingers should be straight but relaxed, with movement coming from the arm, not the intrinsic muscles of the fingers.

Layer palpation

As your hands progress from layer to layer, you should visualise each one in turn and mentally register differences in the quality of feeling that each layer has.

Epidermis

Rest your hands lightly on the surface of the skin of your patient/model. The first thing you should be aware of is the temperature. If you choose to compare the temperature of different parts of the skin, use the same hand (in case the temperature varies between your right and left hands), and it is best to use the dorsum rather than the palm. Slide the hand slowly over the skin, firmly enough not to tickle. Dryness, scaliness, sweating and smoothness will be immediately detectable. A visual reinforcement of palpation findings can be useful, so look for circulatory alterations in the skin. Any scarring will be palpable, as will any hot inflamed areas. You should note the patient's reaction to touch at this point: observe any alternations in facial expression (unless the patient is prone) and feel changes in underlying muscle tone. If the fingers remain at this depth but move *on* the skin, rather than *over* it, a wrinkle of skin will be formed around the fingertips, in front of the movement. This is because the epidermis is being pushed against the points of underlying adherence. A shear force is being created between the layers. As you push the epidermis, you almost immediately reach a point of resistance at which you will start to glide over the skin surface if your pushing continues. This is the *end-feel*, i.e., the feeling at the end of the movement (see below).

Dermis and subcutaneous layers

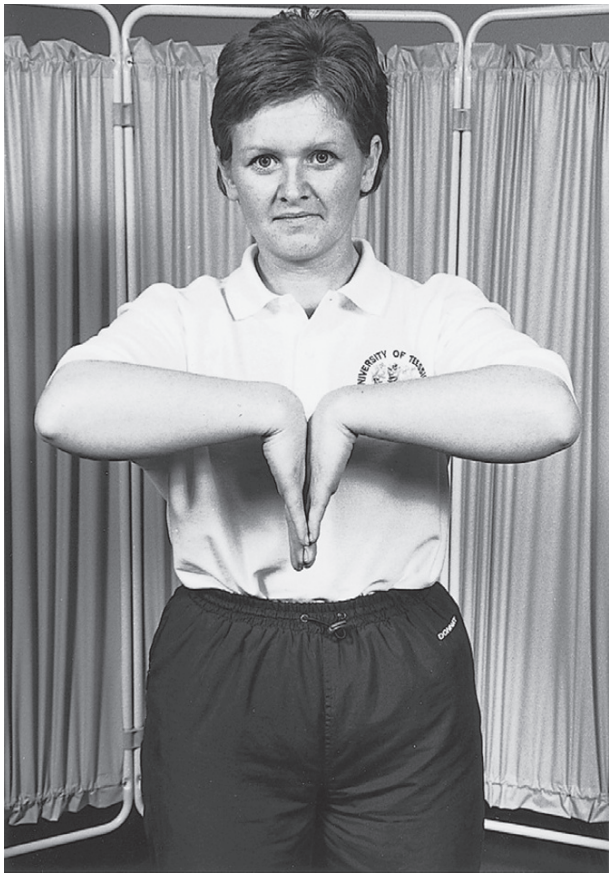
Next, ease a little further into the tissues by allowing the fingers to sink down a little. If done lightly, the fingers will come to rest in the subcutaneous layer. You should then ease off a little to feel the dermis.

Fascial layer

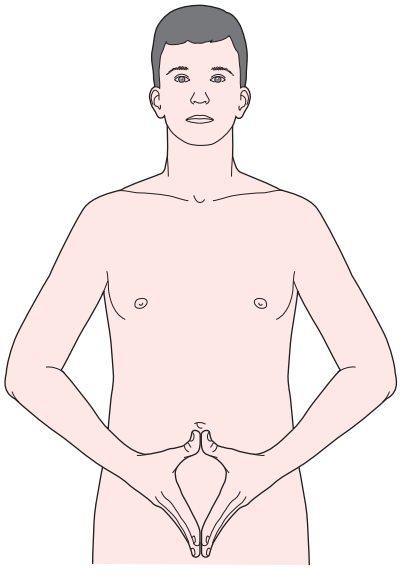
To reach the fascia, you should find a place where muscle attaches to bone subcutaneously, or where a fascial intermuscular septum lies immediately under the skin. Elsewhere, from a position where the fingers have come to rest on the subcutis, push down slightly deeper to feel the final layer of tissue surrounding the muscles, but take care not to compress the tissues between your fingers and underlying bone.

Muscle

Knowledge of anatomy will inform you when you are sinking into muscle. This is firmer than subcutaneous tissue, and so offers more resistance to your fingers. It has specific tone. The fibre bundles may also be apparent, as the muscle will feel 'ridged'. In erector spinae, it may be possible to feel a thick rounded cord which can often extend several inches. This is a group of muscle fibres which have increased in tone over a period of time, common in such a postural muscle. If it has been present for any length of time, surrounding connective tissue will be tight or may be partly fibrotic, in which case it will feel hard and will be less

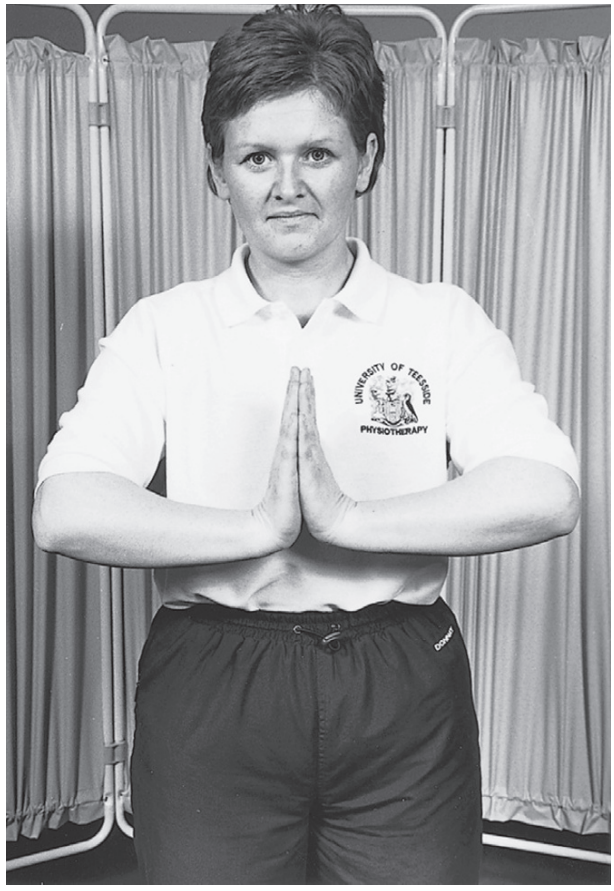


A

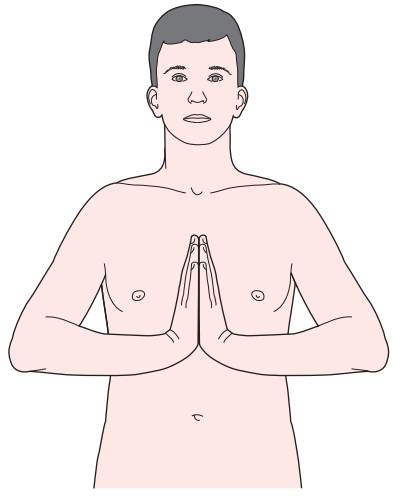


B

Figure 5.1 • (A, B) Exercise to increase flexibility in the joints of the thumbs and fingers.



A



B

Figure 5.2 • (A, B) Exercise to increase wrist extension: with the elbows up, push the wrists down, keeping the heel of the hands together.

readily responsive to massage. Slide your fingers right over the muscle and feel its edge and then its fascial attachment.

Other structures

- *Tendon* feels like a thin firm cord which can often be moved or 'twanged'. This is easy to achieve on the tendons of the wrist which can be seen and palpated on the flexor aspect.
- *Ligament* is usually felt as a discrete flattened band of dense connective tissue. Careful palpation on the medial side of the knee will identify the edges of a band of slightly denser tissue, which is the medial collateral ligament. On the lateral aspect of the knee it is possible to palpate a cord-like rounded structure stretching from the head of the fibula to the femoral condyle. This lateral collateral ligament is much rounder than the ligament on the medial side, but is denser than a tendon. Compare it with a tendon, which has a more mobile, elastic quality to it.
- *Joint capsules or synovium* can usually be palpated only if they are thickened. A capsule feels like a thickening over the line of the joint whereas a synovium has a more 'silky' feel.
- *Peripheral nerves* feel like small threads—much thinner than tendon, less elastic and difficult to feel because of their thinness. They are often fairly mobile and, if flicked, movement may be seen a few centimetres further along the course of the nerve.

End-feel

Recognition of the end-feel is essential for accurate localisation of the technique and for pain-free massage. As defined earlier, it is the feeling at the end of the available movement and it can be identified at each tissue layer and in joints. Initially, movement in the tissues is effortless. As the tissues near their limit of movement, a little extra effort is required to move them. The resistance increases until movement stops. Pushing through this end-feel will create traction between this layer and the next, and will cause you to lose your layer localisation. Continuing to push further will then cause discomfort to the patient. The quality of the end-feel varies with different tissues and will give information as to what has stopped the movement—whether it is the microstructure of the tissue itself, and therefore feels normal for that particular tissue, or whether it is altered because of an abnormality. In the epidermis, the fingers slide over the skin before any resistance is felt. In the dermis and subcutis, the end-feel is pliant. It is firm in fascia and elastic in muscle. Working *within* the end-feel will maintain but not increase mobility. Working *at* the end-feel will produce stretch in the tissues, which is necessary for mobilisation. Stretching *beyond* the end-feel will be uncomfortable and may cause damage. If pain occurs before the end-feel, the tissues are hypersensitive and tender, and this should be respected, as normal movement or squeezing will be perceived as painful. In the absence of trauma or underlying pathology, the skin can be desensitised by gentle massage.

Abnormalities

When palpating within a specific layer or structure, the therapist will encounter abnormalities which may be easy to find, but difficult to recognise. Very gentle palpation can detect a soft 'sponginess' which indicates excess tissue fluid in the superficial layers. Acute swelling in these layers is extremely soft and it is easily missed when it lies superficially. Very gentle palpation is required. A chronic swelling is more dense and resistant, but still soft in feel. A very superficial sogginess can sometimes be detected, which creates a *peau d'orange* effect, where the skin looks like orange peel when squeezed. Tiny indentations made by something as small as a matchstick will leave tiny pits. Gunn (1989) refers to this reflex effect as trophoedema. A long-standing pitting oedema will compress to leave a 'pit', the size of the palpating fingertip or thumb, which remains after the pressure is removed. A rapidly occurring very 'boggy' swelling around a joint may indicate haemarthrosis, which requires further investigation.

When fluid is discovered in the tissues, the therapist should decide:

- Whether it is lymphoedematous or hydrostatic (from its history and quality) (see Chapter 3);
- Which tissue layer it is in; and
- Whether it is acute, chronic or organised (fibrous).

Occasionally a small area in the tissues will be felt to 'pop' and disappear. This is thought to be a patch of enclosed fluid which dissipates under pressure. It can happen under the plantar fascia and should not be confused with crystal formation.

Crepitus can be felt or heard in the soft tissues if chronic fibrosis is present. This is a friction effect due to loss of lubrication and fibrosis in an area of tissue.

Cellulite is seen as an uneven surface and felt as tiny dimples and sectioned tissue. It may be moist, in which case it is enlarged (often perceived by the patient as increased fat) with swelling in the subcutaneous layer. If chronic, collagenous separation of groups of fat cells can be shortened and the tissue will feel hardened.

Any fibrous structure (e.g. aponeurosis) can be thickened as a result of continued tension on an adherent structure. A common example is the insertion of levator scapulae at the superior angle of the scapula. Knowledge of anatomy will indicate that what is felt is a thickened structure.

Myofascial trigger spots (Travell & Simons 1992) can be felt as a hardening in the muscle and diagnosed by the 'twitch' test. The spot is exquisitely tender and, when a finger is slid over the muscle fibre, it is seen to twitch.

Abnormality of the tissue interfaces can be felt as a loss of mobility. The normal glide between the interfaces is restricted and produces a sensation of being stuck together; rolling the tissues is impaired. In chronic situations the end-feel can be reached before movement has occurred.

Nodules are sometimes palpated in muscles. They can be herniations of fat through the fascia (Grieve 1990) or ischaemic fibrotic muscular lesions. They may be mobile or adherent, and are often painful on pressure. Their tenderness reduces when circulation and mobility are increased following massage.

With practice, you will become familiar with the feel and behaviour of normal tissues. This will enable you to get the most out of your experience of palpating and treating abnormal tissues, ensuring that your palpation and assessment skills become refined enough for effective practice.

Key points

- Palpation should be undertaken using the pads, not the tips, of the fingers.
- Exercises will help you to develop manual sensitivity.
- Different anatomical structures have their own unique feel.
- Working within the end-feel of a tissue maintains mobility; working at the end-feel will stretch the tissues; and stretching beyond the end-feel will cause discomfort and possible damage.
- Abnormalities in the tissues can be recognised by their own distinctive feel.

References

Grieve, G.P., 1990. Episacroiliac lipoma. Physiotherapy 76 (6), 308–310.

Gunn, C.C., 1989. Treating myofascial pain: intramuscular stimulation for myofascial pain syndromes of neuropathic origin. University of Washington, Seattle.

Travell, J.G., Simons, D.G., 1992. Myofascial pain and dysfunction: the trigger point manual, vol. 2. Williams and Wilkins, Baltimore, MD.

Assessment and treatment planning

6

CHAPTER CONTENTS

Therapeutic massage, when practised at a professional rather than a technical level, is influenced by a number of intellectual activities. It should be *directed* by the initial assessment of the patient, *modified* to suit the needs of the individual and *adapted* in the light of the individual's responses to it. Thus, the actual carrying out of a treatment intervention such as massage is only a part—albeit a highly significant one—of the whole process. The intellectual reasoning that precedes, accompanies and follows the treatment is essential but complex, and the quality of the decisions made about treatment depends on the sophistication of this clinical reasoning.

Clinical reasoning

Clinical reasoning is the process by which clinical decisions are made. This *clinical decision-making*, a continuous event that begins before treatment, is applied and maintained through the treatment programme in an ongoing evaluation of its effects, leading to any necessary adaptation. It culminates in discharge or re-referral of the patient. A wider reflection is also appropriate, whereby the therapist evaluates a series of patient interventions and the service she provides as a whole, on both a personal and a wider professional level. A useful approach to treatment is a *problem-based approach* which ensures that the essential cognitive steps are followed. With this approach, the thinking begins with the recognition and identification of the problem; essential information is acquired to help with analysis of the problem; and then decisions can be made to meet all the stages of problem-solving. For clinical reasoning to occur at its highest level, the therapist must develop the related intellectual skills; this is just as important as the acquisition of the psychomotor skills which enable the therapist to act on any clinical decisions made. Intellectual skills are divided into *cognitive* and *metacognitive* (Henley 1994). *Cognitive* skills are knowledge, understanding, synthesis, analysis and evaluation, which is known as Bloom's taxonomy (Bloom 1956). This is an acknowledgement of the hierarchical nature of intellectual functioning. The first step is to gain knowledge as this provides the foundation that underpins useful clinical thought. This knowledge can be applied to different situations only if it is understood. It must then be placed in a wider context so that aspects of previously acquired knowledge are selected if judged to be relevant, or temporarily disregarded if considered irrelevant. The new knowledge is then made to fit comfortably with previously gained knowledge in a synthesis which enhances the understanding of any individual component. At a higher level, this synthesis can be analysed, when a deeper interpretation, deconstruction and judgement takes place. Finally, the material can be evaluated when it is further examined critically in the light of other knowledge bases, experience, personal judgement, acknowledged opinion and so on. The total process occurs throughout

© 2011, Elsevier Ltd.
DOI: 10.1016/B978-0-7020-3229-5.00006-2

undergraduate study and should continue when an individual acquires new knowledge, either experiential or theoretical. However, of interest here is the fact that, experientially, the same process occurs throughout the assessment and treatment of patients. The *metacognitive* skills involved in clinical reasoning include reflection, in which an awareness and monitoring of our thinking processes (asking how and why) takes place (Henley 1994).

Payton (1985) applies this to the clinical situation and identifies the *stages of clinical reasoning* as follows:

- *Cue acquisition*—information is gathered from a variety of sources to provide 'clues' to the problem;

  Hypothesis generation—an experienced clinician will often formulate a hypothesis very early on in an assessment as to what the problems are;
- *Cue interpretation*—an essential step in which the 'clues' are interpreted in detail; and
- *Hypothesis evaluation*.

Put more simply, these are the steps involved in patient interviewing and examination, assessment of findings and evaluation of the opinions formed, and the establishment of a diagnosis or problem list, as appropriate.

The order in which the therapist travels through these stages may vary as ideas and thoughts are mentally checked and revisited. This occurs to satisfy the need to ensure that the decisions made are valid. Mattingley and Fleming (1994) term this hypothetical reasoning *procedural reasoning*. This is an additional category of reasoning which is interactive. The exact style varies, depending on the individual patient the therapist is working with, but it reflects the relationship between therapist and client and the impact this interaction has on the reasoning process. The same authors suggest that a holistic approach requires a further stage in reasoning, *conditional reasoning*, in which the problem is seen in its widest context.

Narrative reasoning is the term used for understanding the context in which the meaning and richness of the patient's story is understood, extending the specific facts and linear history (Fleming & Mattingley 2000, Jones & Rivett 2004). The therapist is required to respect and understand the individual's perception and unique experience of their problems and symptoms (Mezirow's meaning perspective). The individual's reality of the meaning of their condition and its impact on their emotions, physical and psychological well being and the significance of this to their life is a central factor in how they respond to both the condition and the treatment. Understanding the patient at this level will enable the therapist as an individual and the therapeutic relationship they build with the patient to become part of the treatment. The intervention will be directed at the person, not the problem (Jones & Rivett 2004). There is growing evidence that certain types of responses to injury (such as fear avoidance behaviour) is likely to lead to a chronic pain syndrome with its disabling behaviours. Patients exhibiting these traits should not be treated passively with massage. However, some patients in emotional distress may respond well to painless touch therapies as enabling techniques to build the confidence to actively participate in a functional, goal-driven rehabilitation process. The quality of the therapist's narrative reasoning will enable an appropriate, effective treatment prescription.

The theory of 'fuzzy traces' assumes that experiences are organised in the memory and retrieved in both verbatim and gist representations. These two types are encoded and stored independently. It is thought that gist representations support pattern recognition and verbatim memories assist in explaining things to others (Lloyd & Reyna 2001).

So, how do we go about this? Clearly, the central activity is assessment of the patient.

Patient assessment

Thorough assessment of the patient includes a *subjective* assessment, in which the patient is interviewed, and an *objective* examination. The findings from these two components must then be evaluated. The purpose is to identify any problems caused by the condition and to devise an intervention strategy to resolve them. Detailed discussion of patient assessment for the many and varied conditions for which massage may be used is outside the scope of this book and is covered in other texts. It is suggested that before massaging a patient, a full assessment is carried out in the usual way, depending on the patient's presenting condition and the preferred individual approach of the therapist. For example, a patient presenting with back pain should have a full assessment. A British physiotherapist will usually base this on the Maitland, McKenzie or orthopaedic medicine (Cyriax) approach. On the other hand, a patient with learning disabilities will be assessed in

a completely different way, attention being focused, for example, on functional ability, mental processes, developmental stage, the presence of contractures, behavioural problems, communication and social skills.

In addition, once it is thought that massage may be appropriate, the therapist may incorporate other factors into the usual assessment to assist with the clinical decision-making specific to massage.

Assuming, then, that each therapist has a preferred assessment approach, we will highlight factors which relate specifically to massage and which can be adapted to many types of clinical situation and incorporated into a wider assessment method. If the patient is being assessed specifically for massage midway through a treatment programme, or has consulted the therapist specifically for massage, then the assessment outlined below may be sufficient.

When assessing a patient for massage, it is important that the therapist is clear about what the main assessment principles are. We are trying to establish:

- What the patient's problems are;
- Whether massage can help these problems;
- What the limitations of massage will be in this particular set of circumstances;
- The presence of any dangers or contraindications;
- Any factors that will necessitate modifications to the preferred method of application;
- Which massage techniques will be most effective;
- Which media should be used; and
- How the patient is likely to respond to the massage.

Subjective assessment

Subjective assessment involves interviewing the patient to establish what symptoms the patient has noticed, what her/his perceptions are, and to extract detailed information which will assist in decision-making. It is also useful to identify a subjective marker by which progress can be monitored (for example, severity of pain). The interview should consist of a mixture of open and closed questions. Open questions are those that invite a patient's free expression. Prompting should be minimal, merely to invite expression but not to direct or constrain ('How do you feel about that?'; 'Tell me about your stress').

It is also important to employ the use of closed questions to ensure that specific and necessary information is obtained ('Do you ever experience pins and needles?' 'How *exactly* do you sit when typing?'). These can be 'search' questions which are very specific, or 'scan' questions which are somewhat wider and attempt to pick up further cues (Henley 1994). It is sometimes necessary to control a verbose patient tactfully, especially if time is re-strained ('Could we leave that for the moment—I need to ask you some specific questions about your thumb stiffness'; 'I understand, but where *exactly* is the sharp pain? Could you point to it with one finger?').

The following is a checklist of information required from the patient:

1. Symptoms
   - Pain
     - Location
     - Area to which it spreads
     - Type, quality (sharp, stabbing, ache)
     - Severity (rate on a scale of 0–10 where 0 = no pain, 10 = unbearable pain)
     - Irritability (i.e. how easily it is provoked and how long it lasts, once provoked)
   - Paraesthesia
     - Tingling
     - Numbness
     - Dullness
     - Hypersensitivity
     - Normal stimulus experienced as pain
   - Tenderness
   - Behaviour
     - Provoking factors such as pressure and stretch
     - Easing factors such as a change of position
   - Functional difficulties
   - Biomechanical adaptation
     - Posture
     - Gait
     - Range of joint movement
   - Muscle spasm
     - Presence
     - Tenderness
     - Position
     - Muscles involved
   - Emotional factors
     - Anxiety
     - Depression
     - Fear
   - Autonomic changes
     - Tissues
     - Sympathetic dominance
     - Parasympathetic dominance

2. Previous medical history
3. *Other medical problems* (alertness to possible contraindications)
4. *Palpation* (see Chapter 5).

Problem identification

Once the assessment is complete, the therapist should draw up a list of problems and, in partnership with the patient, try to prioritise them. There may be a difference between the therapist's objective prioritising and the patient's subjective perceptions. For example, it may seem clear to the therapist that the tissues must be mobilised first, to produce the outcome of pain reduction if tissue adherence is causing pain. The patient, however, may feel that some soothing pain relief itself is the first priority. It can also be discussed with the patient that a combination of techniques may be appropriate: some initially painful ones to loosen the tissue and treat the cause, but also some that will reduce pain and spasm. Explanation and discussion of this type of difference in perception will enhance communication between therapist and client and facilitate patient participation in the treatment programme.

Effective therapists have long been skilled at clinical problem-solving, but this has been difficult to learn other than by experience. In more recent years, there have been attempts to formalise the problem-solving and decision-making processes through identification and analysis of the steps involved, despite the fact that individual styles of problem-solving vary. It is worth bearing in mind that effective problem-solving demands a flexible approach so that skills are transferable to a variety of situations. The more specialised the therapist becomes, the less this characteristic is demanded of them.

Stages of problem-solving

Problem recognition

Some problems are more obvious than others and will be readily expressed by the patient—severe pain, for example. Others are more subtle and require highly developed interviewing or examination skills. Autonomic imbalance may be detected by asking the patient searching questions about sleep patterns, energy levels, urine output and so on, whereas slight autonomically induced changes in the tissues may be detected only by skilled palpation as the patient may be unaware of them. Thus, a systematic process of information gathering is essential to ensure that a stage is not omitted (May & Newman 1980), or problems will remain unrecognised. Both subjective and objective collection of information (sometimes referred to as clinical signs and symptoms, or patient data) from the patient is essential for this stage, which demonstrates the necessity for an effective thorough procedure.

Problem definition

The next stage is the interpretation of all the information received in stage 1. Data collected through listening, observing, palpating, testing and reading (the patient's medical notes or a referral letter) must then be analysed. Knowledge of the meaning of the information collected, and understanding of the implications of certain combinations of it occurring together, are essential prerequisites for effective decision-making. The therapist is, at this stage, defining the boundaries of the individual and collective problems. It is important that this is discussed with the patient. If, for example, a patient has a condition that is beyond the scope of the therapist, then it must be made clear that symptoms arising from that problem cannot be helped by massage and cannot be treated. Alternatively, the therapist may define several separate problems in unravelling the symptoms; for example, pain in the leg may reveal an arthritic knee but may also be referred from the lower back. In relation to massage, the source of pain may be perceived to be arising from local muscle spasm but the spasm may be found to be caused or perpetuated by biomechanical abnormalities, as a result of extensive tight scar tissue (following internal fixation of fracture, for example). Obviously, problem diagnosis at this level is possible only if a sensitive assessment method is used. The patient may identify some problems, for example back pain, and the therapist may discover associated or causative problems, for example adherent scar tissue. Thus, the problem list is more than a list of symptoms and should contain functional achievements to which the patient can directly relate (for example, the length of time the patient is able to sit without discomfort). This process often begins as soon as contact is made with the patient, but it

is important that the therapist does not jump to conclusions based on experience or on some new information just learned. Final decisions must be left until the end of the assessment process; otherwise, inaccuracies can occur.

Problem analysis

An analytical procedure involves organisation of all the data collected and determination of relationships between the separate pieces. This is where decisions will be made about whether past medical history is relevant: is this problem a new one, or a recurrence of an old problem? Possible outcomes can be discussed and agreed between therapist and client at this stage.

A key characteristic in the expert, as opposed to the novice, is an ability to recognise patterns (Patel & Groen 1991, Schon 1983) in symptoms, clinical presentation and patient response. This recall and interpretation of knowledge and experience enables the expert to solve problems quickly with apparent ease. Hypotheses should always be tested, however, to avoid error and to ensure that nothing is missed and that unusual factors are not involved.

Goal formulation

The data collected in the assessment are used to identify and analyze problems. Goal-setting depends on theoretical knowledge and previous experience, which informs the therapist as to which interventions are likely to help the problems, what the likely outcomes are, what the prognoses for solving the problems are and what is a realistic time span within which the outcomes can be achieved. In addition, psychosocial factors (the patient's personality, practical difficulties in following advice, personal feelings about any particular treatment methods, the acceptability of the treatment and associated psychological factors such as depression, anxiety, stress, etc.) must all be taken into account; this is especially important when predicting the length of a course of treatment. It is essential that the therapist and patient agree on desired outcomes and goals; otherwise, conflict could occur and the two parties involved will not be working towards the same ends. It is also essential that the patient is aware of exactly what the therapist can offer and what the limitations of the therapist or therapy are, so that he/she can decide whether to continue with treatment. The goals should be measurable (preferably objectively, although subjective measurement also has a place), or it is not possible to evaluate outcome.

Data management

The data referred to here are basically information, that is, any information of relevance to the patient. By this stage, the therapist has collected a great deal of data from the patient but, having analysed the problem, may decide that further information is required in order to *solve* the problem. First, then, it must be decided which methods of data collection are required. This may involve looking something up in a book; for example, if some thickened painful tissue is found in an unexpected place, the therapist may need to look up the anatomy of the region. If the patient is on an unfamiliar drug, does this require researching? Is the problem obscure or complex, and would the therapist benefit from discussion with fellow professionals? Is there a query concerning certain contraindications to treatment which warrants discussion with the patient's doctor? Thus, a complete picture can emerge by which the problems can be solved satisfactorily.

Development of the solution

Data analysis

Once complete, the data must be organised and relationships established. This may necessitate classification of complex data, either mentally or on paper, and the formulation of short-term goals which must be met if the eventual long-term goal is to be reached.

Alternative solution determination

Once this stage is reached, the therapist then must identify, from her 'toolbag' of techniques, which ones are appropriate to this situation.

Solution selection

Often, there seem to be several possible appropriate techniques and it is the selection of those optimally suitable for the individual situation which is difficult. This decision is often based on the experience and beliefs of the therapist, and the accuracy of this decision can shorten the treatment programme. Where possible, it should be based on sound research findings.

Solution implementation

This is the point at which treatment is carried out. Here, technical skill and competency are important. If the massage is to be performed by a technician, this is the only stage with which she is involved. Specific treatment is ordered and should be carried out skilfully. The referring practitioner carries out all the other stages, with or without consultation with the technician. In professional practice, however, this is only one stage of many. The preceding stages are intellectual and not apparent to the patient. It is asserted here that, when massage is used therapeutically, it should be used by a therapist who is as competent in problem-solving and clinical reasoning as in the psychomotor skills of massage.

Outcome evaluation

The outcome of the treatment is assessed in relation to the stated desired outcomes: in other words, the therapist checks that the goals are being met. If so, it may be appropriate to progress treatment by introducing a new treatment intervention aimed at achieving another goal. Alternatively, if it is unlikely that further progress will be made, the treatment may be terminated and the patient discharged. If the goals are not being met, but it is thought that this should be possible, the treatment may be modified in some way.

Goals that may be identified for which massage may be useful include the following:

- Reducing pain;
- Reducing swelling;
- Reducing muscle spasm;
- Increasing extensibility of tissues;
- Reducing tension in tissues;
- Improving skin condition;
- Increasing mobility at tissue interfaces;
- Stretching adhered tissue;
- Mobilising scar tissue;
- Increasing local circulation;
- Increasing general circulation;
- Assisting post-exercise recovery;
- Aiding removal of metabolites from muscle;
- Promoting remodelling of tissue;
- Removing toxins and waste products from the tissues;
- Promoting lymphatic drainage;
- Facilitating general relaxation;
- Promoting physiological relaxation;
- Inducing a feeling of well-being;
- Enhancing communication through touch;
- Promoting behavioural change;
- Facilitating a feeling of caring and security;
- Providing sensory distraction to assist drug tolerance or withdrawal;
- Increasing sensory threshold;
- Reducing hypersensitivity;
- Reducing feelings of stress;
- Enhancing body image;
- Increasing body awareness;
- Enhancing sense of self; and
- Providing caring through touch.

As already stated, the therapist will collect information regarding the patient's condition and examine the tissues through observation and palpation. It may also be necessary to take measurements, for example when tight or adherent tissue is restricting the joint range of movement. A problem list is identified and goals are set, both short- and long-term. It must be clear in the therapist's mind what she is trying to achieve and whether the massage is aimed at prevention (for example, in an athlete before competition, or to assist relaxation at the end of a hectic day at work), treatment (in mobilising scar tissue, for example, or in improving communication skills through touch), or maintenance (in a situation where muscles have a tendency to go into spasm because of an underlying joint problem that cannot be resolved). Change must be measured both subjectively and objectively; for example, does the patient feel better and is this accompanied by the tissues being looser or less swollen?

It is important to be organised so that the total process is facilitated in an efficient and effective manner. This can be achieved through the process of the *problem-oriented medical record* (POMR). In particular, the method of recording the assessment and treatment plan can be helpful. SOAP notes (see below) were introduced as a part of POMR by Weed (1971) and are now in wide use.

There are various modifications and interpretations of the method in common use and the principle of SOAP is popular among physiotherapists and medical students. Once the assessment findings are summarised, recording of the thought processes is as follows:

Subjective findings (e.g. movement in knee limited by painful feeling of stretch over scar);

Objective findings (e.g. knee flexion 90°);
Assessment: summary, impressions of situation, problem list, short- and long-term goals; and
Plan: treatment plan to match the set goals.

Some practitioners prefer to begin the SOAP list with a problem list. An example of an assessment chart with SOAP recording is given in Figure 6.1 and readers are recommended to consult Kettenbach (1990) for further reading on the topic.

PROBLEM-ORIENTED ASSESSMENT CHART

Personal details:

Name: _____ Address _____ Age ____

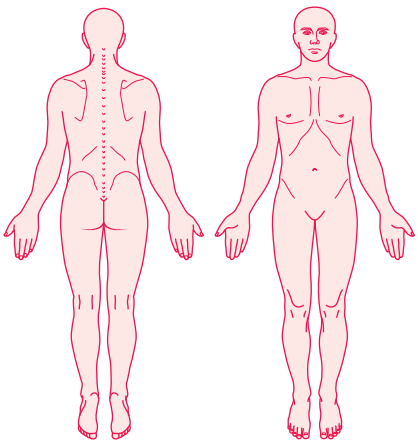
Occupation: _____ Hobbies: _____

Medical Practitioner: _____

Relevant Social History: _____

_____

History of Present Complaint:
(onset, site, spread, etc.)

Behaviour of Symptoms: 24-hour pattern:	
Aggravated by:	
Eased by:	
Medication	
Other treatments:	
Past Medical History:	
Contraindications:	Severity Irritability Nature
Observations: Posture	Gait:

Muscle Power:	
Muscle Length Tests:	
Range of Joint Movement:	

Summary: Problem list	P1	P2	P4	P4
Subjective				
Objective				
Assessment				
Plan				

Figure 6.1 • An example of a problem-oriented assessment chart.

The intellectual and practical processes must be in the context of reflective practice. Reflection should occur throughout an individual treatment session, must provide continuity throughout a course of treatment and must also take a wider view of the overall quality of service provided by the practitioner. In this way, the therapy offered will be of the highest quality and, more importantly, will remain so over the years. Reflection also guides continuous personal and professional development, necessary to maintain competence over time and to improve practice. Learning needs and the impact of learning on practice must be explored for learning to be effective. Clinical reasoning can be developed through the use of the script concept (networks of knowledge linked to clinical goals; Charlin et al 2000), teaching interventions (Round 1999) and fuzzy-trace theory (Lloyd & Reyna 2001).

Wolf (1985) has identified the principles underlying clinical decisions. These are helpful and are reproduced here:

1. Effective treatment must be based upon a plan;
2. Effective treatment forsakes empiricism as a primary guide;
3. The cornerstone of effective clinical decisions is the ongoing acquisition of knowledge;
4. Effective treatment is based upon integrative and often multiple treatment approaches;
5. Re-evaluation of treatment efficacy must be an ongoing process;
6. The body of knowledge that characterises physiotherapy practice is growing exponentially and promotes specialisation;
7. Enhanced clinical expertise comes from knowing when you do not know; clinical wisdom is born from knowing with whom to consult and when to effect the best treatment; and
8. The more chronic a patient's condition, the more time will be required to make decisions and treat effectively.

Reflective practice

The importance of professional reflection has been discussed earlier. Here are some points that may help to develop these reflective skills. The headings are in no way absolute or definitive as many other topics would fit into a number of these categories equally well.

Interpersonal

- Do I communicate well with my patients?
- Do my patients seem to understand what I am explaining to them?
- Are my patients usually happy to go along with my suggestions?
- Do I listen thoroughly to my patients and hear what they are saying?
- Do my patients and I have good eye contact and a relaxed, but professional, relationship?
- Am I aware of my body language?
- Do my patients feel I have time for them?

Cognitive

- Am I making the right decisions about which techniques to use?
- Do patients respond quickly to the massage: are there objective and subjective improvements within, on average, two treatment sessions?
- Do I progress my treatments gradually in response to improvement?
- Do I swap and change techniques because I am not very sure about which to use?
- Do I use the same techniques through the whole course of treatment?
- Am I creative but cautious about the media I use?

Psychomotor

- Do my patients relax when having massage or do they feel tense?
- Am I able to feel the changes in the tissues and the whole person as I massage?
- Do I always know which tissue or tissue interface I am working on?
- Are my techniques comfortable and enjoyable to receive?
- Is my massage effective?

Philosophical

- Do I have a holistic approach?
- Am I primarily satisfying the needs of my patient or of myself?

- Are the treatment methods and course of treatment negotiated with patients?
- What exactly is my personal philosophy for the use of massage and patient care?

Professional

- Are my patients satisfied with the treatment they receive?
- How do I monitor that?
- Do my treatments work?
- Have I done all I can to ensure the environment in which I massage is conducive and pleasant?
- Do I have superb health and safety mechanisms in place?
- Do I respect my patients' dignity and privacy (e.g. by leaving the room while they undress and dress)?
- Do I keep up to date with new developments?

Start your reflective practice now by making your own list.

A thoughtful therapist is more likely to be a good therapist. This process can be furthered by setting clinical standards and by auditing practice.

Key points

- Clinical reasoning is the process by which clinical decisions are made.
- The essential intellectual skills are knowledge, understanding, synthesis, analysis and evaluation (cognitive) and reflection (metacognitive).
- Clues are found, hypotheses generated, cues interpreted and hypotheses evaluated in clinical reasoning.
- A problem-based approach is central to clinical practice.
- Detailed and thorough subjective and objective assessment of the patient's problem is necessary.
- Treatment goals should be set and outcomes evaluated.

References

Bloom, B.S., 1956. The taxonomy of educational objectives. David Mckay, New York.

Charlin, B., Tardif, J., Boshuizen, H.P., 2000. Scripts and medical diagnostic knowledge: theory and applications for clinical reasoning instruction and research. Acad. Med. 75 (2), 182–190.

Fleming, M.H., Mattingley, C., 2000. Action and narrative: two dynamics of clinical reasoning. In: Higgs, J., Jones, M. (Eds.), Clinical reasoning in the health professions. second ed. Butterworth Heinemann, Oxford.

Henley, E.C., 1994. The clinical reasoning process - how can we maximize it? Journal of the Singapore Physiotherapy Association 15 (1), 16–21.

Jones, M.A., Rivett, D.A., 2004. Clinical reasoning for manual therapists. Butterworth Heinemann, Oxford.

Kettenbach, G., 1990. Writing SOAP notes. F A Davis, Philadelphia, PA.

Lloyd, F.J., Reyna, V.F., 2001. A web exercise in evidence-based medicine using cognitive therapy. J. Gen. Intern. Med. 16 (2), 94–99.

Mattingley, C., Fleming, M.H., 1994. Clinical reasoning: forms of enquiry in a therapeutic practice. F A Davis, Philadelphia, PA.

May, B.J., Newman, J., 1980. Developing competence in problem solving: a behavioural model. Phys. Ther. 60 (9), 1140–1145.

Patel, V.L., Groen, G.J., 1991. The general and specific nature of medical expertise: a critical look. In: Ericsson, A., Smith, J. (Eds.), Toward a general theory of expertise: prospects and limits. Cambridge University Press, New York.

Payton, O.D., 1985. Clinical reasoning process in physical therapy. Phys. Ther. 65 (6), 924–928.

Round, A.P., 1999. Teaching clinical reasoning - a preliminary controlled study. Med. Educ. 33 (7), 480–483.

Schon, D.A., 1983. The reflective practitioner: how professionals think in action. Temple Smith, London.

Weed, L.L., 1971. Medical records, medical education, and patient care. Year Book Medical, USA.

Wolf, S., 1985. Clinical decision making in physical therapy. F A Davis, Philadelphia, PA.

This page intentionally left blank

Massage techniques

7

CHAPTER CONTENTS

The first section of this chapter contains information about the lubricants and essential oils that may be used in massage. Stance, posture, movement and safety issues, in relation to both the therapist and the patient, are also addressed. The second section describes the techniques and manipulations of classical massage, and also includes those of neuromuscular technique and deep transverse frictions.

Lubricants (massage media)

Massage may be performed either with or without a lubricant; both methods have ardent supporters who are prepared to dispute the merits of the opposing point of view. To enable the therapist to form her own opinion on this question, some of the most common points for and against are presented here.

Points for massage with a lubricant

- Friction on the skin is reduced;
- Fragile skin is protected from being stretched;
- Very hairy skin is protected from being pulled;
- Some oils (e.g. wheatgerm, olive) are said to aid skin nutrition;
- Perspiration can be absorbed by a powder lubricant;
- The gliding effect of some massage manipulations is enhanced;
- Perfumed oil has a beneficial psychological effect on the patient;
- Essential oils can be selected for their therapeutic properties; and
- Lubricants make it easier to perform a comfortable massage.

Points for massage without a lubricant

- Massage can be applied more deeply in the tissues;
- Oil is messy to use and easily spilled;
- A lubricant may cause an allergic reaction;
- Oils may stain clothing;
- Lubricants create an increased risk of infection;
- The tissues are more easily palpated;
- The massage can be more stimulating;
- Tissues are more easily manipulated if they are not slippery;

© 2011, Elsevier Ltd.
DOI: 10.1016/B978-0-7020-3229-5.00007-4

- Commercial massage oils are over-priced and highly scented; and
- It takes more skill to perform a comfortable massage.

A balanced approach to these opposing viewpoints is recommended. Clearly there are occasions when a lubricant is desirable and times when it is not. The following factors may be taken into account when deciding whether the use of a lubricant is appropriate to a specific treatment:

Condition of the skin

On hairy, fragile or scaly skin a lubricant will aid patient comfort and prevent irritation.

Possibility of allergic reactions

Some people are allergic to nuts and will have an anaphylactic reaction (which causes shock, an acute fall in blood pressure, laryngeal oedema and bronchospasm, and can be fatal) if they are exposed to oil derived from nuts. Peanuts are the most common allergen: about 1 in 500 of the population is affected (Demain 1996). This type of allergy is becoming more common and exists whereby very young children are sensitised (Ewan 1996). Arachis oil is derived from peanuts and many commercial massage lotions use a nut oil, such as almond or hazel, in their preparation. The therapist should always question the patient concerning allergies before using any lubricant and be fully aware of the constituents of any lubricant she has not prepared herself.

Safety

Talc can be inhaled into the lungs where it can cause irritation. It can also cause eye irritation. It is no longer in use in the UK National Health Service for this reason.

Necessity for skin traction

Massage manipulations that grasp and lift the superficial tissues are ineffective if too much lubricant is used, making the surface of the skin slippery, and a highly viscous oil can cause excess skin traction. A small amount of oil or powder can, however, make these techniques more comfortable for the patient and prevent friction. It is not appropriate to use a lubricant for massage manipulations where the therapist's hand does not glide on the skin, but specifically moves the skin on underlying tissue. For these manipulations it is important for there to be traction between the massaging hand and the patient's skin; a lubricant would not serve any purpose.

Categories of lubricant

The literature contains many examples of lubricants that have been used in massage, some of which have waned in popularity in recent years.

Lubricants of vegetable origin

Oils: corn, safflower, sesame, soyabean, sunflower, wheatgerm, coconut, almond, hazel, grapeseed, arachis (peanut), olive, avocado. *Powder*: corn starch.

Lubricants of mineral origin

Baby oil, petroleum jelly, liquid paraffin, French chalk, talc, cold cream.

Lubricants of animal origin

Historically, various animal-based media has been used including wool fat, lanolin, soap solution, neat's-foot oil (*neat* is an old Saxon word meaning animals of the ox kind), hog's lard.

Other categories

This includes commercial preparations of oils, creams and lotions. Many of these use petrochemicals as a base; some use vegetable oil; and some are water based and easily removed from clothing by washing. Many commercial products do not list the ingredients and it is therefore impossible to determine whether they are suitable for use on a patient with specific allergies.

Comments

It is advisable for the therapist to sample a variety of the available lubricants and to try using them on her own skin. This will enable the therapist to judge their suitability for massage and experience the type of sensation that a patient may feel when they are used. (N.B. The authors do not recommend the use of hog's lard.)

Oils of vegetable origin are generally the most pleasant to use and are suitable as a carrier with essential oils. It has been found to penetrate transcutaneously in neonates (Solanki 2005), whereas the molecular structure suggests that it is unlikely to penetrate this

deeply in adults (Zatz 1993). Mineral oil does not penetrate the skin well and is therefore unsuitable for carrying volatile oils into the tissues. The lack of this property does, however, convey an advantage for general massage purposes, as it tends to stay on the surface of the skin and less is needed. There is some controversy concerning the use of mineral oil. Taken internally in large quantities it can interfere with the absorption of fat-soluble vitamins, but there is no evidence to suggest that it is detrimental when used as a massage lubricant (Skiba 1993). Some vegetable oils are more viscous than others (e.g. olive, wheatgerm) and should be added in small quantities to a lighter oil. Vegetable oils can become rancid; keeping supplies refrigerated in a well-sealed container slows this process, as does the addition of 5% wheatgerm oil, which has antioxidant properties. A therapist with sweaty palms may find that powder is a more suitable lubricant as it absorbs some of the moisture. A fine non-perfumed talc has traditionally been a useful addition to the therapist's equipment; some patients prefer it to oil and it does not degrade. Consent should be obtained from the client before using talc and great care should be taken to ensure it does not invade the atmosphere and that it cannot be inhaled by either the client or the therapist.

Essential oils

The medium used in massage can be therapeutic in its own right. Although oils can be used solely as lubricants for massage, they can also be the vehicle for the absorption of a particular substance, selected for its own therapeutic properties, into the body. Liniments, for example, have long been rubbed into the skin to affect the underlying tissues.

Aromatherapy is the name given to application of *essential oils*, which are the oils that provide the scent and/or flavour to flowers, fruit and herbs. They have been extracted from the plants and used for this purpose for thousands of years (Tisserand 1994), as herbal medicines, inhalations or compresses. Pure oils can be extracted from the leaves, flowers or seeds of plants and used for specific therapeutic purposes. Many have a pleasant smell which produces a psychological effect, a feeling of well being. Inhalation also ensures that they enter the bloodstream quickly through the highly vascular lung and respiratory tract fields; a popular method of inhalation entails heating the oils in an aromatherapy burner. Alternatively, they may be added to a warm bath for inhalation and skin absorption. They can therefore be self-administered, used simply to create a pleasant smell and atmosphere in a room, or can be skilfully prescribed and blended by an aromatherapist. Detailed discussion of each oil, sufficient to guide professional aromatherapy prescription, is beyond the scope of this book. However, the principles are described here to a sufficient depth to assist massage therapists to select a limited number of oils for safe use as a therapeutic or pleasantly scented medium.

Massage is a particularly popular way of applying essential oils, and results in a slow penetration. The oils are dissolved in a carrier oil and used as the medium for massage, allowing the effects of the oils to combine with the therapeutic effects of the massage. Relaxation massage should be used (see, for example, the one described in Chapter 10). As with any therapeutic substance that enters the body, dangers and side effects may be present and anyone using these oils for any purpose should be aware of them. This applies particularly to a therapist using oils in health care settings where clients may have a variety of health problems. Unfortunately, research into the effects of the oils is patchy and knowledge is based predominantly on oral tradition. Where research has been undertaken, it has often focused on the main chemical constituents of the oils, so pure oils should be used in which the constituents are known. Good quality oils from professional suppliers are the purest, and inexpensive ones should be avoided. Air, heat and light can cause degradation of oils. This results in a changed chemical composition which may be less effective or more toxic; therefore oils should be kept in a cool, dark environment and not kept for longer than 6 months once opened unless in a fridge. This safety advice is important as degradation and oxidation may make the oils more likely to become carcinogenic, although the transfer of research conducted on rats to humans is not straightforward (Tisserand 1996).

Any therapy which has been used throughout history becomes refined through experience and often the knowledge surrounding its use is accurate. Present-day researchers are attempting to deepen this knowledge of essential oils in the light of current scientific methods by isolating specific constituents of the oils and testing their effects. Albert-Puleo (1979) reviewed the literature concerning the oestrogenic properties of fennel and anise, as identified by numerous animal experiments conducted in the 1930s and 1940s. He suggested that the oestrogenic active ingredients are anethole polymers. Work by

Taylor (1964) has shown fennel to have low toxicity and no demonstrable carcinogenicity. Thyme (*Thymus capitatus*) has been found to have strong fungitoxic properties (Arras & Usai 2001).

Other researchers have attempted to define the effects of individual oils and isolate their mechanism of action. An example is the work by Aqel (1991) in which he applied oil of rosemary to rabbit and guinea-pig tracheal muscle samples. The oil inhibited muscular contractions induced by histamine and acetylcholine. Aqel suggested that the oil is a calcium modulator. Hills and Aaranson (1991) agreed with this suggestion, following similar work on the effects of peppermint oil on smooth muscle. Oil of orange diffused through a dental waiting room was found to have a relaxant effect (Lehrner et al 2000). Cooke and Ernst (2000) conducted a systematic review and concluded that aromatherapy massage has a mild, transient anxiolytic effect, useful for relaxation but not strong enough for the treatment of anxiety. Anderson et al (2000) found that tactile contact between mother and child in the form of massage improved childhood ectopic eczema but that adding essential oils was not more beneficial. A number of studies into the clinical effects of lavender oil in, amongst others, depression (Akhondzadeh et al 2003), postpartum perineal discomfort (Dale & Cornwell 1994), during radiotherapy (Graham et al 2003), anxiety and self-esteem (Rho et al 2006) and dementia (Snow et al 2004) have been conducted. The evidence remains unclear in all except for anxiety. Tea tree oil has attracted research interest as laboratory studies have found antimicrobial properties (Christoph et al 2000). Human studies, mostly on fungal infections, remain inconclusive (Arweiler et al 2000, Martin & Ernst 2004, Satchell et al 2002).

There is concern about the possibility of adverse effects of oils. Research in this area has often been conducted on animals using huge dosages of the oil, so transferability of findings to humans is difficult. Elliot (1993) reported a case of tea-tree oil poisoning, but suggested it may have been an allergic reaction. There is a growing body of literature on this topic (such as Prashar et al 2004) and this should be studied in detail by anyone qualified to prescribe essential oils for massage. This is also the case for interactions of essential oils with drugs. This does, however, highlight the fact that ingestion of these oils can carry some risk, the extent of which is unknown where there has been insufficient research. Studies into microbiological effects are easiest to conduct under controlled, scientifically valid conditions. Bassett et al (1990) found tea-tree oil to be as effective as 5% benzoyl peroxide in the treatment of acne, with fewer side effects. Carson and Riley (1994) found that terpinen-4-ol was the main antimicrobial component of tea-tree oil. It was tested against 12 organisms, including *Staphylococcus aureus*, *Candida albicans* and *Lactobacillus acidophilus*, and only one of the 12 (*Pseudomonas aeruginosa*) was found to be resistant to the oil. A detailed literature review of essential oils will not be undertaken here, but the clinically based studies are often inconclusive, conducted on animals and not readily transferable to humans. Caution is therefore needed and external application is safer than internal use. Aromatherapists should understand as much as possible about the oils they prescribe, and attempts are being made to examine and address safety issues (Tisserand & Balacs 1995).

Use of essential oils in massage

Choice and prescription of oils can be interesting. The principles of perfumery and medicine are used: asking what types of scents the patient prefers and blending from a base note (fixative), middle note (relates to bodily functions, with a longer lasting scent) and top note (volatile and stimulatory, often smelled immediately the top is removed from a bottle). It is possible to buy an essential oil preparation or a massage oil containing an essential oil. The massage therapist should ensure that contraindications for any oil are understood if these are to be used. Blending of essential oils must not be carried out by anyone not qualified to make such a preparation and local rules/laws on such manufacture should be followed. Medical history and present complaints are examined in detail to identify any contraindications or potential sensitivities to a particular oil (for example: Are migraine attacks provoked by strong odours? Is the individual epileptic?) and to use the blend to specific effect. The exact amount of carrier oil required varies with the absorptive properties of individual skin, but blending 3–12 drops of essential oil in 30 ml carrier oil is a useful guide. To ensure a pleasant blend, essential oil should be added to the carrier drop by drop, using as little as is required. Blending should only be undertaken by those qualified in aromatherapy. It should be noted that drop size differs between manufacturers and therefore dosage is approximate. The therapist cannot be sure of the exact dose administered (Olleveant et al 1999).

The massage is usually a full body massage as this ensures that a good dosage is absorbed into the bloodstream. The oils are volatile and evaporate readily, so more is blended than is actually absorbed into the skin. None the less, a full body massage administers a good dose and should therefore not be given more than once per week. The therapist should be aware of the potential dose she is receiving herself: four massages are regarded as maximal in any one day. Both therapist and client should drink plenty of water after massage as the oils have a diuretic effect and can lead to dehydration and headaches: they can often be tasted after a massage, so encouraging clients to drink is not difficult.

Contraindications

There are few specific recorded contraindications to general aromatherapy, although individual oils have their own specific contraindications and cautions. Obviously, the contraindications for massage should be respected and allergic reactions guarded against. On no account should essential oils come into contact with the eyes. If they do, the eyes should be douched with water and medical help sought. Tea-tree oil should not be used in childbirth as it has been found to reduce uterine contractions in rats (Lis-Balchin et al 2000).

Users of aromatherapy should be aware of a t study reported in the journal *Food and Chemical Toxicology* which examined the toxic effects of dill, peppermint and pine (Lazutka et al 2001). To summarise: all three oils were found to cause cytotoxic genetic mutations on human lymphocytes. These are worrying findings which raise concerns across all essential oil use. Until more is known about safe doses in humans, it would be wise not to use dill, pine or peppermint oils in massage.

Precautions

Precautions for each oil should be understood. In general (in relation to massage), certain oils should not be used in pregnancy as they have been found to cross the placental barrier in high doses. Oils that contain bergapten (bergamot) can produce ultraviolet sensitisation and phototoxic reactions have been reported (Kaddu et al 2001), so care should be taken, particularly in summer. Oils can cause contact dermatitis. Increased use of lavender flowers around the home and in pillows has been found to cause contact dermatitis (Sugiura et al 2000). Lavender, jasmine, rosewood, laurel, eucalyptus and pomerance have been reported to cause skin reactions (Schaller & Korting 1995). Severe contact dermatitis reactions to tea-tree oil have also been reported (Khanna et al 2000) as has hypersensitivity (Mozelsio et al 2003). Great care should be taken to ensure that susceptibility to adverse reactions is assessed prior to massage. It should also be noted that chemical constituents often behave differently when combined together, so the therapist should be aware that research on individual oils will not provide a total picture. Damaged skin is best avoided except when the practitioner is highly experienced; oils that may provoke sensitivity should not be used on babies and young children.

Table 7.1 lists the oils in common use, together with their constituents, main actions and uses. It also summarises the precautions for each oil.

Applying the lubricant

- *The lubricant should be at skin temperature*. Oil in a sealed container can be warmed by standing it in hot water. Talc can be warmed by being left close to a heat source.
- *Avoid spillages*. Oil can be transferred into a small squeeze bottle; this is probably the safest method. Alternatively it can be put into a shallow dish and placed on a surface close to the treatment couch but where it is not likely to be upset.
- The therapist's hands should be washed before beginning the massage.
- The patient's clothing should be protected.
- *Application*. The lubricant, be it oil or talc, is first rubbed onto the therapist's hands and then transferred to the skin of the patient. This method safeguards against applying too much lubricant or spilling it on the patient's clothing; it also protects the patient from the unpleasant sensation of feeling a sudden dollop of oil.
- The lubricant is spread on the skin by stroking or effleurage.
- *Reapplication*. During the massage treatment it may be necessary to reapply the lubricant and sometimes it is desirable not to lose physical contact with the patient. The technique is achieved by keeping the dorsum of one hand in contact with the patient so that the palm is upwards and can receive the lubricant from the other hand. The hands are rubbed together, maintaining patient contact, and the lubricant is then reapplied to the skin in the

Table 7.1 Oils in common use

Oil	Principal constituents	Main actions	Common uses	Precautions	Examples of research
Bergamot (*Citrus bergamia*) Base note	Linalyl acetate, limonene, bergapten	Analgesic, antiseptic, lifts mood, sedative, diuretic, aids digestion	Wound care, infections, anxiety, depression, stress, digestion	Photosensitivity, photocarcinogen (max. 0.4%)	Young et al (1990)
Chamomile (*Chamaemelum nobile* (*Roman*)) Middle note	Esters of angelica, tiglic acid	Analgesic, anti-inflammatory, sedative, antispasmodic, digestive	Musculoskeletal pain, menstrual and menopausal problems, skin problems, headache, insomnia	Slight risk of dermatitis	Patzelt-Wenczl & Ponce-Poschl (2000)
Cedarwood (*Cedrus atlantica* (*Atlas*)) Base note	Atlantone, caryophyliene, cedrol	Antiseptic, diuretic, expectorant, sedative	Skin conditions, arthritis, chest problems, stress	Avoid during pregnancy	None found
Geranium (*Pelargonium graveolens*) Middle note	Citronelleol, geraniol, linalol	Haemostatic, antiseptic, analgesic, diuretic, tonic	Dry sore skin, oedema, poor circulation, throat infections, PMT	Slight risk of sensitivity	Clerc et al (1934)
True lavender (*Lavanduala angustifolia*) Top note	Linalyl acetate, linalol	Antiseptic, analgesic, hypotensive, diuretic, anti-depressive	Skin conditions, joint problems, chest problems, aids digestion, menstrual problems, headaches, stress	Some types of lavender can cause convulsions True lavender generally safe	Atanassova-Shopova et al (1973), Saeki (2000)
Lemon (*Citrus limonum*) Top note	Limonene, bergamotene	Antiseptic, diuretic, stimulant, antirheumatic, haemostatic	Muscle problems, respiratory problems, skin problems, infections	Phototoxic (use 2% max) Some skin reactions	Roe & Field (1965)
Rosemary (*Rosemarinus officinalis*) Middle note	Pinenes, camphene, cineol	Analgesic, stimulant, antiseptic, diuretic, low dose hypotensor, high dose hypertensor	Musculoskeletal pains, fatigue, menstrual problems, digestive and liver problems, respiratory problems	Avoid if pregnant or epileptic due to camphor content	Craig & Frase (1953)
Tea-tree (*Melaleuca alternifolia*) Top note	Terpinene-4-ol, cineol, pinene	Bactericidal, anti-inflammatory, expectorant, immunostimulant, antifungal	Skin infections, thrush, chest problems, colds and flu	Slight risk of skin reaction	Carson & Riley (1994), Hills & Aaranson (1991), Aqel (1991), Bassett et al (1990), Albert-Puleo (1979), Lis-Balchin et al (2000)
Ylang-ylang (*Cananga odorata genuina*) Base note	Methyl benzoate, methyl salicylate, terpenes	Antiseptic, antidepressant, hypotensive	Raised pulse rate and blood pressure, insomnia, depression, stress	Can cause headaches or nausea	None found

Sources: Lawless (1992), Tisserand & Balacs (1995), Varman & Walker (1995).

usual way. To achieve this method gracefully the lubricant should be within easy reach of the treatment couch.

- *Hygiene*. To ensure there is no risk of cross-infection, at the end of treatment the therapist should dispose of any oil that may have become contaminated and thoroughly wash her hands.

Stance, posture and movement

Therapists who perform massage regularly are aware that the activity places demands upon their physical capacities. Unless stance, posture and movement are addressed initially by the student therapist she will find that giving massage treatments is fatiguing. Just as in any repetitive physical activity, the therapy also has the potential to induce overuse syndrome. To achieve maximum effectiveness the therapist should comply with ergonomic principles. This means giving attention to the safety of her stance and posture and to the economy of her movements. Although this may seem complicated when first learning how to massage, the student therapist should not feel disheartened. As with any other psychomotor skill, the refinements of the technique are achieved with practice; expect less than perfect coordination when you first begin.

Base of support

The position of the feet is important for three reasons. First, correct foot positioning enables the therapist to reach all parts of the patient's body without strain. The joints of the hands, arms and spine can be held in a stress-free position if body-weight is transferred from one foot to the other, thus reducing the need to reach.

Second, the direction in which the feet face is important to enable weight transference without trunk rotation. The knee to which the weight is transferred flexes, resulting in a lunge posture.

Third, foot position is important for balance. The body relies on the feet for its base of support—the area that encloses the feet and includes the space between them. The further apart the feet are, the wider the base of support. The weight of the body is transferred to the ground through the line of gravity; the body is most stable when the line of gravity falls in the centre of the base. If the line of gravity falls outside the base, the body will not be able to balance; this displacement is unlikely to occur when the base of support is large. Stability and balance enable the body to remain relaxed and free the muscles to perform the massage without strain on the therapist.

Stance

The therapist faces the direction of the massage manipulations. This varies according to the area of the body to be treated. The following examples can be adapted to encompass other massage techniques.

Long manipulations

For effleurage to the back, for example (Fig. 7.1A), the therapist stands close to the left of the treatment couch where she can place her hands at the start of the stroke with no trunk rotation. The left foot is a

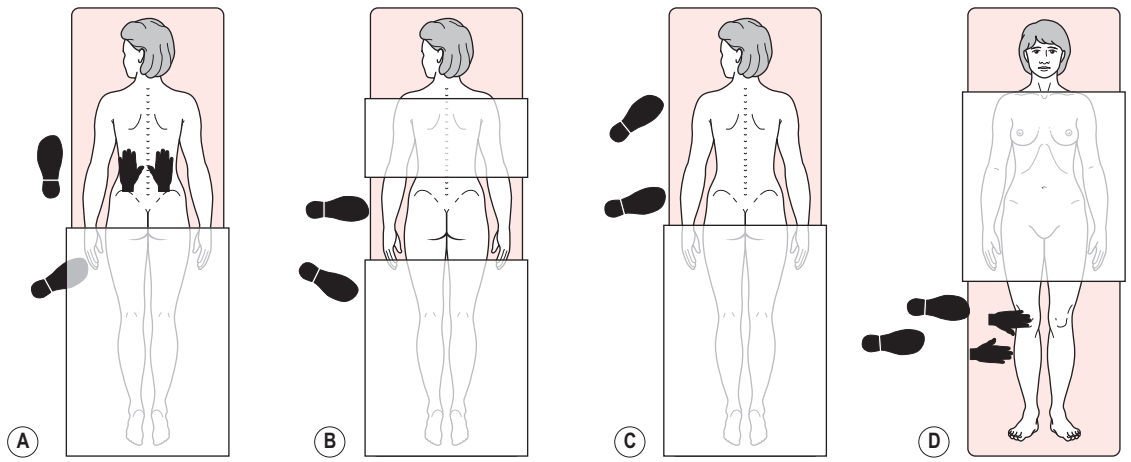


Figure 7.1 • Foot positions for (A) long manipulations (e.g. effleurage of the back); (B) transverse manipulations (e.g. wringing to the back) (exposed area); (C) small-range manipulations on specific structures (e.g. transverse frictions).

comfortable stride forward of the right one; the left foot points towards the head of the treatment couch and the right foot is angled. At the start of the stroke there is more weight on the right foot than on the left; the therapist is using some body-weight to create the pressure of the stroke. As the stroke progresses up the back, weight is transferred from the right foot to the left; the left knee flexes so that a lunge position is adopted.

Transverse manipulations

For wringing the back, for example (Fig. 7.1B), the therapist stands close to the treatment couch facing across the patient's back. The left foot is on a level with the thoracolumbar junction, which is where the manipulation begins. The right foot is angled so that the right lumbar segment can be treated with no trunk rotation. As the strokes move towards the buttocks, the therapist transfers weight to her right leg and flexes the knee. To massage the right thoracic region, the therapist adjusts her foot position so that the right foot is now on a level with the thoracolumbar junction. The procedure is repeated.

Small-range manipulations on a specific structure

For frictions, for example (Fig. 7.1C), the therapist faces the structure to be treated; the left foot is forwards of the right. The left hand is supporting the patient's thigh while the right hand performs the manipulation. There is more weight being taken through the right foot than the left and, as this is a deep manipulation, there is substantial weight transference to the patient through the therapist's arms to exert pressure on the tissues.

Posture and movement

The therapist should apply the same general principles of safe posture when giving massage as she would with any task that has an element of risk to the musculoskeletal system. The major areas of risk are identified below and suggestions are made about prevention:

- Excessive reaching causes unsafe trunk movements and is linked with muscle fatigue and soft tissue injury.

  Prevention: The therapist should stand close to the treatment couch. The correct stance will ensure that she is able to reach all parts of the area to be treated. When a small therapist is treating a very tall patient, it may be helpful to divide the treatment area into sections so that the therapist can change position between segments.
- Prolonged elevation of the arms necessitates static loading of the shoulder girdle muscles and is fatiguing, causing soft tissue damage and compromise to peripheral nerves.

  Prevention: Ensure the height of the work surface is correct. This should be just below waist level so that it is rarely necessary to flex the shoulders beyond a 45° angle from the therapist's body.
- Excessive compressive forces can cause joint injury. The wrist and joints of the fingers and thumbs are those at greatest risk when massaging.

  Prevention: Avoid prolonged repetition of movements and hyperextension of these joints. When performing manipulations that require compressive forces, keep the joints in a near-neutral position.
- Prolonged muscular activity of the arms and hands causes muscle fatigue.

  Prevention: Avoid using muscles to create pressure. This is best achieved by transferring body-weight to the patient through the massaging hands. The therapist's shoulder, arm and hand should be free of tension. All movements should be kept to the minimum necessary to achieve the desired effect.
- Poor balance leads to faulty movement.

  Prevention: Adopt the correct stance. A wide base of support lowers the centre of gravity and so aids equilibrium. Dynamic balance is achieved by a transfer of weight, at the correct time, from one foot to the other.

Environment and safety

The safety and comfort of the patient are paramount and it is the therapist's responsibility to ensure that high standards are maintained.

The environment

This should be tidy with equipment moved away from the area so that there is nothing the patient or therapist could bump into or trip over. For sedative massage, noise should be kept to a minimum if possible and, if not, as in a busy hospital department, it may be helpful to play music if the patient likes it. If music is played it should be relaxing and appropriate to the patient. It is always worth enquiring whether the chosen piece of music is acceptable to the patient,

as associations triggered by particular music may produce unwanted effects that conflict with the aim of the massage.

The temperature of the environment should be comfortable for the patient. Steps should be taken to ensure that there is no interruption during the treatment session. Protecting the patient's privacy and dignity is essential.

All the equipment needed for the massage, such as lubricants, covers and pillows, should be placed near to the treatment couch. The couch should be prepared with fresh linen and be ready to receive the patient.

The therapist

If a uniform is not worn then the mode of dress is optional, provided it is appropriate to the task. Appropriate, in this context, means that the therapist should be professional in appearance and that her clothing should not constrain her movements. The therapist should remove any jewellery that could come into contact with the patient, for example long necklaces, watches, bracelets and rings. Long hair should be tied back. Fingernails should be trimmed so that they do not protrude beyond the fingertips. Before each treatment the therapist should wash her hands and ensure they are warm.

Infection control

The therapist who works in a hospital or clinic will find that there are existing infection control policies and she should strictly adhere to these. The following are the minimum standards that should be applied to protect against the transmission of infections or viruses borne by blood or body fluids:

- Practise high standards of basic hygiene, with regular hand-washing; the minimum frequency of hand-washing is between each client.
- Disposable plinth covers should be used and destroyed after each client.
- Treatment couches should be washed down regularly.
- Cover all skin wounds or lesions with a waterproof dressing.
- Protect the mucous membranes of the eyes, mouth and nose from blood or body fluids.
- Wearing rubber gloves, clear up blood, urine, vomit and faeces immediately; disinfect surfaces.
- Dispose of contaminated waste by burning.

Patient positioning and draping

Adhere to the following principles:

- The patient must be comfortable and warm.
- The body part to be massaged should be free from clothing and jewellery.
- The body part to be massaged and the joints distal and proximal to it should be supported.
- Extra supplies of linen, pillows, blankets and towels should be nearby in case they are needed during the treatment.

The ideal patient position is lying on a treatment couch of adjustable height. For treatment to the arm and hand it is equally convenient to have the patient seated with the upper limb supported on a small table, with the therapist seated opposite. Massage to the neck and upper back can be performed with the patient sitting on a seated massage chair or seated at a table or on the couch. Pillows are piled up to a height that allows the patient to be supported anteriorly, with the upper limbs resting on the table. If the patient is not comfortable in any of these positions, the therapist should devise a suitable position which supports the body part to be treated and is also comfortable for the therapist.

Patient supine-lying on a treatment couch

- The patient may require one or two pillows under the head.
- A pillow or rolled towel may be placed behind the patient's knees.
- The patient is covered with a sheet; a blanket may also be required.
- The body part to be massaged is exposed by drawing back the cover from that area.

Patient prone-lying on a treatment couch

- The couch should have a removable section for the face; if it does not, two pillows can be placed in an inverted 'V' shape so that there is a space for the patient to breathe.
- A folded sheet may be placed under the patient's chest. This can be wrapped around the back, or, when that area is being treated, it can be draped over the upper arms.

- A female patient who has large breasts may require a pillow under her chest.
- A pillow may be placed under the abdomen to reduce lumbar lordosis.
- A rolled towel or small pillow is placed under the ankles so that they are not in an extreme range of plantarflexion and the knees are slightly flexed.
- The patient is covered with a sheet; a blanket may also be required.
- The body part to be massaged is exposed by drawing back the cover from that area.

Patient side-lying on a treatment couch

- The patient may require one or two pillows under the head.
- The upper arm and upper leg are supported anteriorly by pillows.
- A heavily pregnant woman may require pillows to support her abdomen.
- The patient is covered with a sheet; a blanket may also be required.
- The body part to be massaged is exposed by drawing back the cover from that area.

Techniques and manipulations

This section of the chapter describes the techniques and manipulations of classical massage, together with neuromuscular technique and deep transverse frictions. Specialised techniques such as myofascial release, manual lymphatic drainage and acupressure are covered in Chapter 9.

Technique: stroking

Categories: long stroking; thousand hands

Purpose

To apply the massage medium.
To habituate to touch.
To facilitate regression of sensory analgesia.
To sedate (slow stroking).
To stimulate (brisk stroking).
To decrease muscle tone (slow stroking).

Features

A unidirectional manipulation.
Usually applied from proximal to distal.

Manipulation: long stroking

Procedure

The manipulation begins at the most proximal part of the area to be treated.
The therapist places the whole of her hands in contact with the skin (Figs. 7.2A, B).
A gentle but firm pressure is maintained.
The hands are drawn towards the therapist, leading the movement with the heel of the hand (Figs. 7.2C, D).
An even depth of pressure is maintained while the hands mould to the body contours.
The hands are lifted off smoothly at the distal region of the treatment area without trailing the fingers.
The following stroke overlaps the first, continuing until the whole of the body region is covered.
The manipulation may be adapted for small areas by the therapist using only one hand, the fingers or thumbs.

Manipulation: thousand hands

Procedure

The therapist places one hand in contact with the skin at the proximal part of the area to be treated.
The therapist strokes distally for about 15 cm.
The alternate hand begins an overlapping stroke, along the same line of treatment, before the first hand is lifted off (Fig. 7.3).
There is always one hand in contact with the skin.
The fingers should not trail on the skin when lifting off.
The strokes are continued to the distal part of the treatment area.
The manipulation is repeated on an adjacent area until the whole of the region has been covered.

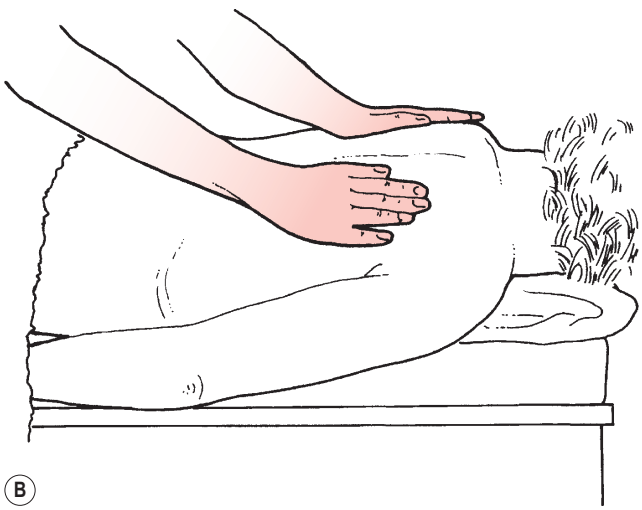


Figure 7.2 • Long stroking. • (A, B) start of stroke; (C, D) direction of movement.

Continued

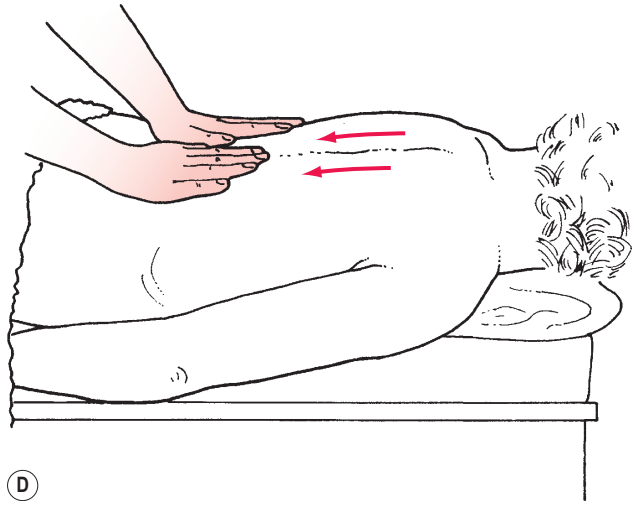


Figure 7.2—cont'd

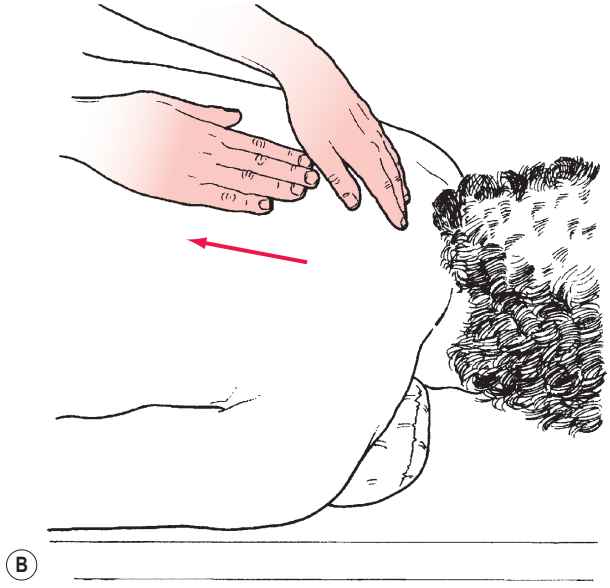


Figure 7.3 • (A, B) Thousand hands. • The arrow indicates the direction of movement of the short overlapping strokes.

Technique: effleurage

Purpose

To aid venous and lymphatic return.
To aid interchange of tissue fluid.
To aid removal of chemical irritants.
To restore mobility at tissue interfaces.
To stretch muscle fibres passively.
To increase muscle tone (deep effleurage).
To decrease muscle tone (light effleurage).

Features

The manipulation is commonly utilised at the start and end of a massage treatment and often between the various petrissage manipulations.
On fragile or hairy skin, oil or talc is applied liberally to avoid stretching the tissues or dragging the hair.
The manipulation is always performed towards the lymph glands.
Depending on the size and shape of the body region to be treated, the therapist may use one or both hands, fingers or thumbs.

Manipulation: effleurage

Procedure

The stroke begins at the distal part of the area to be treated.
The therapist contacts the skin and applies an even pressure to sink into the superficial tissues.
A sweeping movement is made to the proximal part of the treatment area, moulding to the body contours and maintaining the same depth of pressure throughout the stroke (Figs. 7.4A, B).
The stroke is rhythmic and slow to facilitate the movement of fluid.
The stroke is completed, over the site of lymph glands, with a slight pause and overpressure which is almost imperceptible to the patient.
The hands are lifted and repositioned at the start of the next stroke which overlaps the previous one.
The strokes are continued until the whole of the body segment has been covered (Fig. 7.4C).
If there are no lymph glands in the body segment, effleurage is then continued to the site of the nearest lymph glands.
On cylindrical body segments, the hands or fingers are wrapped around the treatment area to perform the manipulation (Figs. 7.4D, E).

Technique: petrissage

Categories: kneading; wringing; rolling; picking up; shaking

Purpose

To aid venous and lymphatic return.
To aid removal of chemical irritants.
To increase mobility and length to fibrous tissue.
To restore mobility between tissue interfaces.
To aid interchange of tissue fluid.
To improve the appearance and mobility of subcutaneous tissue.
To increase extensibility and strength of connective tissue.
To provoke somatovisceral reflex effects.

Features

Petrissage manipulations first compress the soft tissues; they are then lifted, squeezed or rolled, and taken to the tissue end-feel.
The manipulation is performed on superficial tissue, muscles or ligaments.
Petrissage manipulations should be avoided on sensitised tissue, where they may be painful.
Care should be taken not to overwork any treatment area.

Manipulation: kneading

Procedure

The manipulation is performed with one or both hands (Figs. 7.5A, B), or the pads of fingers or thumbs, depending on the size and shape of the area to be treated.

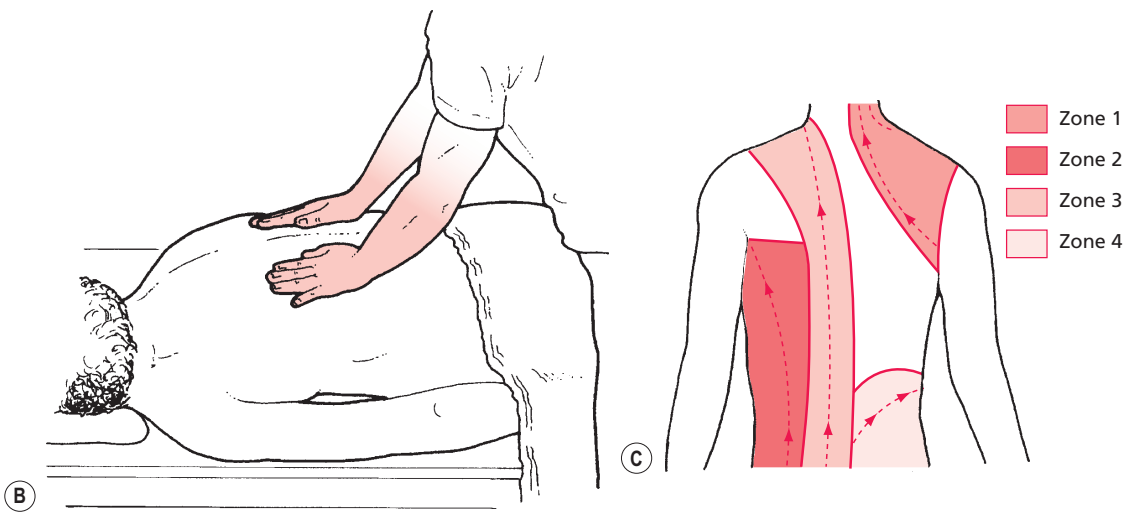


Figure 7.4 • (A, B) Effleurage of the back in the direction of the lymphatic flow; (C) suggested direction and sequence of effleurage strokes across the back; (D, E) effleurage of the forearm.

Continued

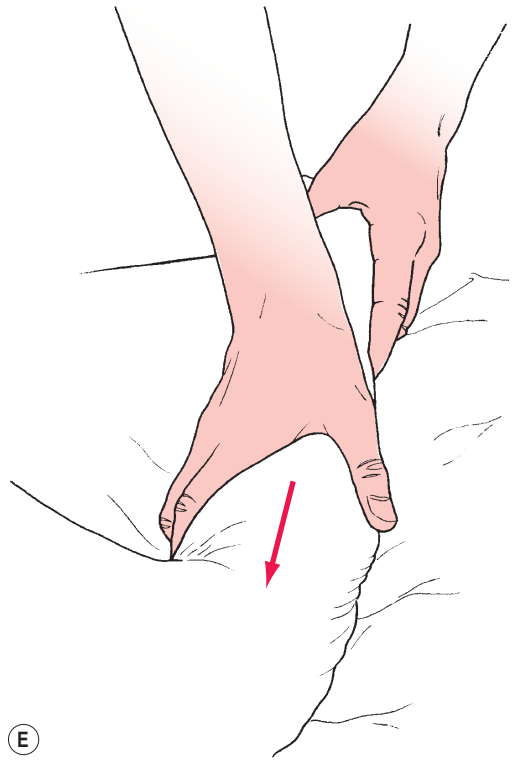


Figure 7.4—cont'd

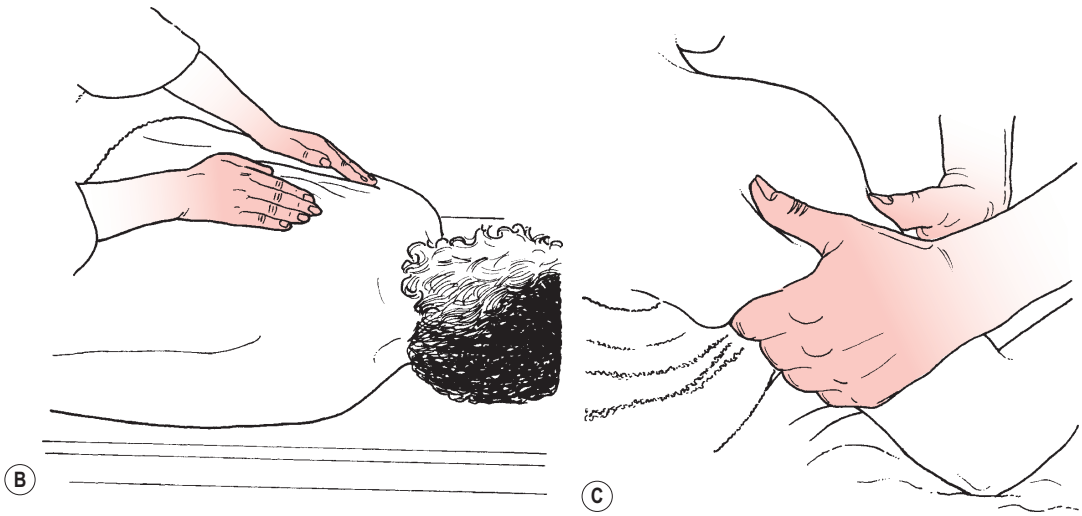


Figure 7.5 • (A, B) Whole-handed kneading of the back: (C, D) kneading a cylindrical body segment (upper arm); (E) direction and overlap of kneading manipulations of the back—pressure phase shown by the thickened line.

Continued

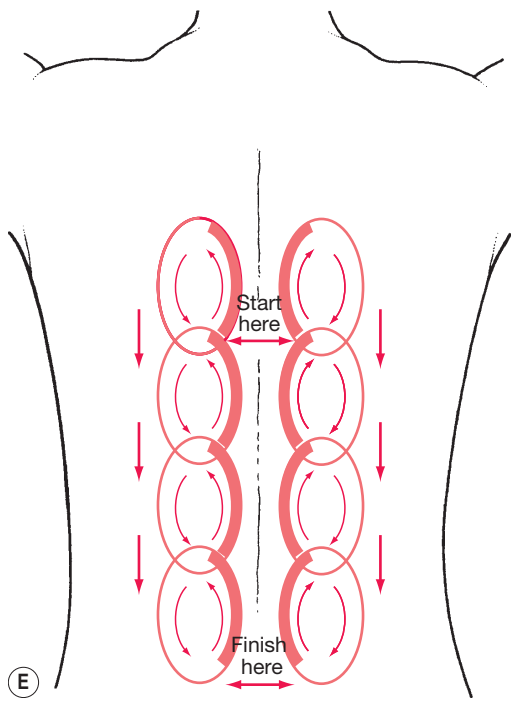


Figure 7.5—cont'd

The stroke begins at the proximal part of the area to be treated and moves distally.

The therapist contacts the skin and compresses the tissues.

The skin is moved on the underlying tissues; there is no glide.

The hands or digits are moved in a circular motion, which causes skin wrinkling ahead of the movement and a slight stretch behind it.

When both hands are used to perform the stroke they are moved alternately: the right hand moves clockwise and the left hand in an anticlockwise direction.

Hands can be placed on opposite aspects of the limb to apply extra compression ('box' kneading).

There is a pressure phase when the tissues are compressed on to the deeper structures.

The position of hands for the pressure phase requires a slight adjustment for flat and cylindrical body segments (Figs. 7.5C, D).

After the first circular stroke a light glide is effected on the skin to reposition the massaging hand at the start of the next stroke.

The strokes are continued on adjacent areas, overlapping the previous stroke, until the whole of the treatment area has been covered (Fig. 7.5E).

When extra compression is required the manipulation is performed with one hand on top of the other to give reinforcement.

The therapist should take care to maintain finger and thumb joints in a near-neutral position when using the digits to perform the manipulation.

Manipulation: wringing

Procedure

Wringing may be performed on skin and superficial tissue using the pads of the fingers and thumbs (Figs. 7.6A, B).

Wringing may be performed on muscle using the whole of the hands (Figs. 7.6C, D).

The therapist places her hands on the skin with the fingers adducted and the thumbs abducted.

The tissues are compressed.

The fingers and thumbs are squeezed together so that a roll of tissue or muscle gathers between them.

The therapist pushes one hand away and draws the other hand towards her; the roll of tissue is twisted (Figs. 7.6E, F).

The twist is then applied in the opposite direction by changing the position of the hands.

The manipulation progresses along muscle in the direction of the fibres, beginning at one end and finishing at the other.

On superficial tissue the manipulation progresses forwards across the body region and then adjacently until the whole of the area has been covered.

Manipulation: rolling

Procedure

Rolling of small muscles and superficial tissue is performed with the pads of the fingers and thumbs.

Rolling of large muscles is performed with the whole of the hands.

The therapist places her hands on the skin with the fingers adducted and the thumbs abducted.

The index fingers and thumbs of opposite hands are in contact to create a diamond shape between them (Figs 7.7A, B).

The tissues are compressed.

Keeping contact with the skin, the fingers are pulled towards the thumbs, creating a roll of tissue (Figs. 7.7C, D).

The thumbs are pushed forwards while the fingers travel backwards so that the tissue rolls away from the therapist (Figs. 7.7E, F).

Care must be taken to avoid pinching the tissues.

The roll of tissue gradually diminishes in size towards the end of the stroke where the fingers and thumbs of each hand make contact.

The following stroke is begun on an adjacent area of tissue and continues until the whole of the area has been covered.

On muscle, the manipulation is applied across the fibres beginning at one end and finishing at the other.

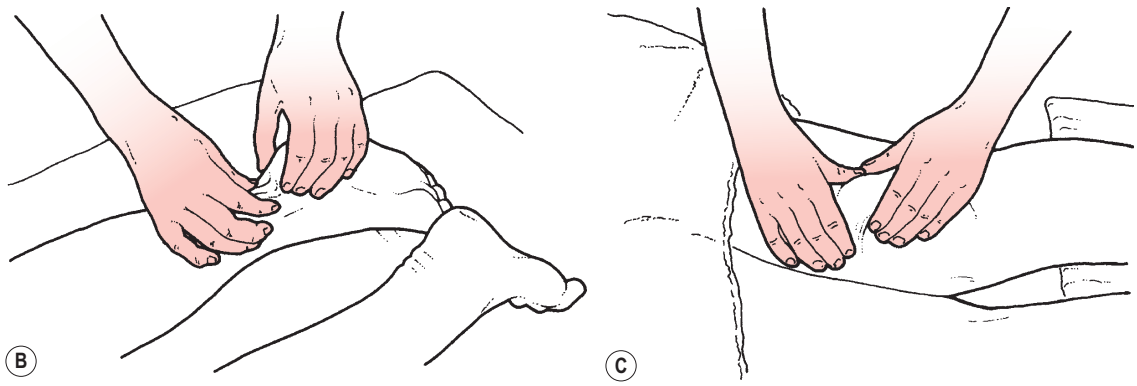


Figure 7.6 • (A, B) Wringing the Achilles tendon; (C, D) muscle wringing the back of the thigh; (E, F) wringing the back.
Continued

Figure 7.6—cont'd

Continued

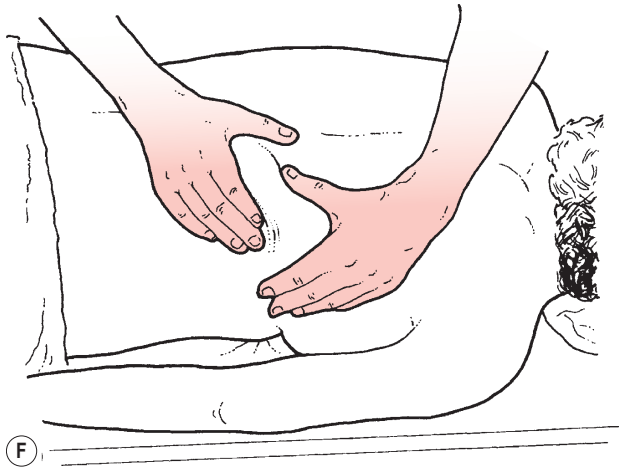


Figure 7.6—cont'd

Manipulation: picking up

Procedure

Picking up may be performed with one hand or with two hands working alternately.

The therapist places her hand on the skin with the fingers adducted and the thumb abducted.

The tissues are compressed.

The therapist makes a scooping motion with the massaging hand (Figs. 7.8A, B), at the same time bringing the fingers and thumb together to lift the tissues and gently squeeze them (Figs 7.8C, D).

The resultant roll of tissue is then pulled in the opposite direction and taken to the tissue end-feel.

The tissues are released and the next stroke begun in the adjacent area, progressing until the whole of the treatment area has been covered.

Manipulation: shaking

Procedure

Shaking is performed on muscle.

Small muscles may be shaken between the pad of the index finger and thumb.

On large muscles the manipulation is performed with the whole length of the fingers and thumb.

The patient is positioned so that the muscle is in mid-range.

The therapist grasps the belly of the muscle between fingers and thumb and lifts it away from the underlying bone (Fig. 7.9).

The muscle is shaken quickly from side to side.

Technique: friction

(*Cyriax* friction technique is described later in this chapter.)

Purpose

To stimulate local circulation.

To aid removal of chemical irritants.

To restore mobility between tissue interfaces.

To restore mobility to specific anatomical structures.

Features

There are two distinct manipulations in this category.

Manipulation 1

Performed with the whole hand, moving the skin back and forth on the underlying tissues (Fig. 7.10).

Manipulation 2

Performed with the tip of the thumb or fingers making small rotary movements, the pressure being appropriate to the desired tissue interface.

Lubricant is not used as there is no glide on the skin.

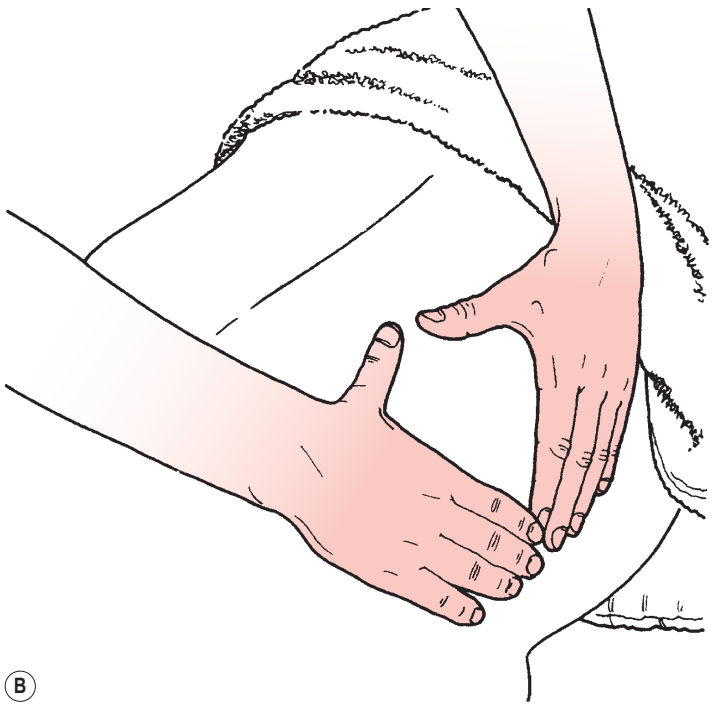


Figure 7.7 • (A, B) Rolling—the start of the manipulation; (C, D) creating a roll of tissue; (E, F) thumbs pushing the roll of tissue away.

Continued

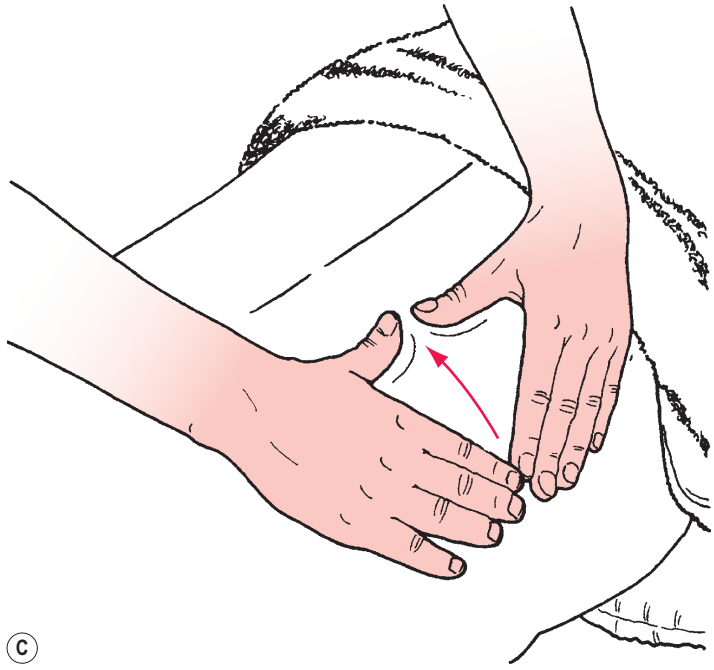


Figure 7.7—cont'd

Continued

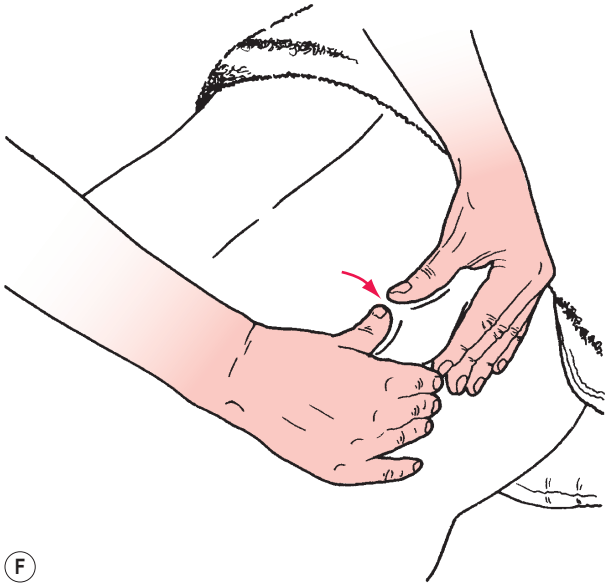
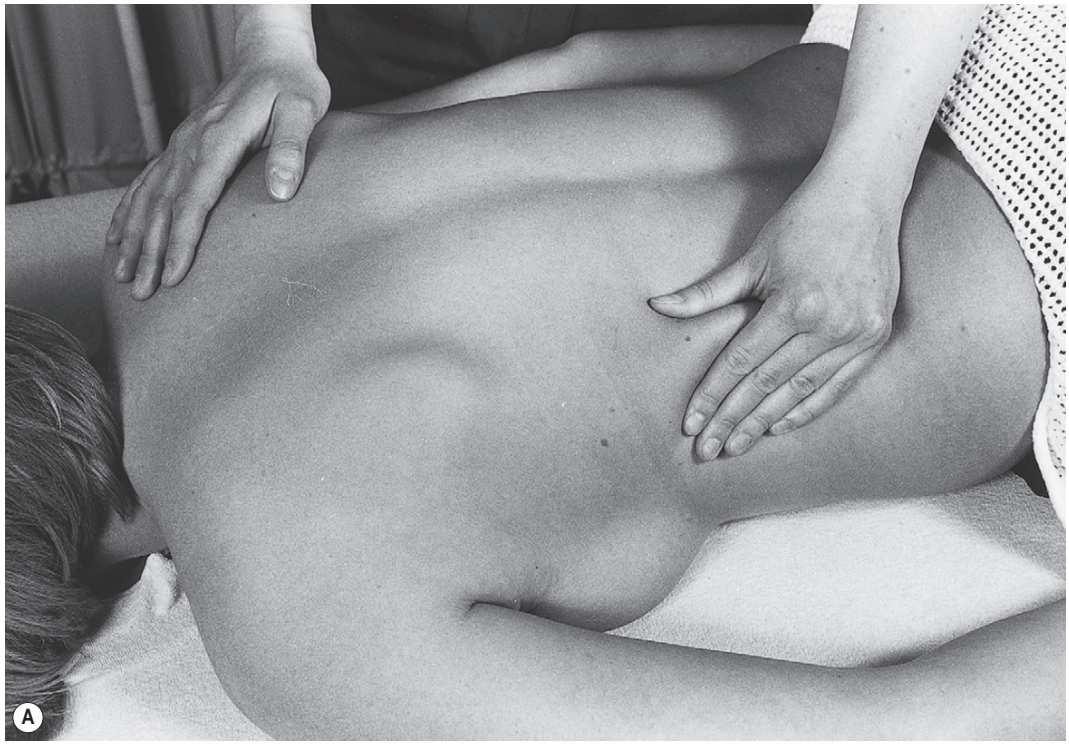


Figure 7.7—cont'd



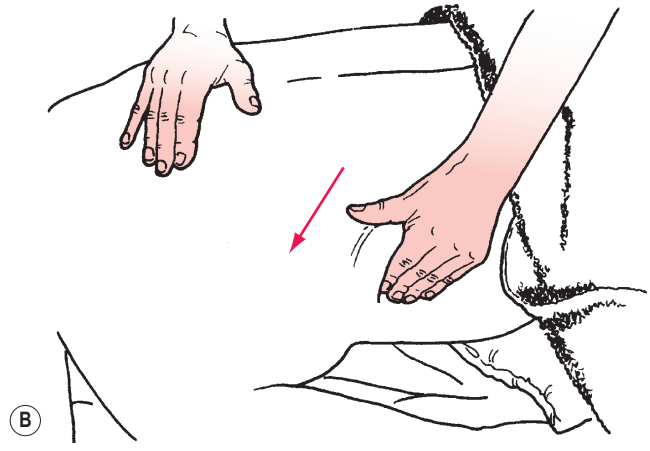


Figure 7.8 • (A, B) Picking up—the direction of the scooping stroke; (C, D) lifting the tissues.

Continued

Figure 7.8—cont'd

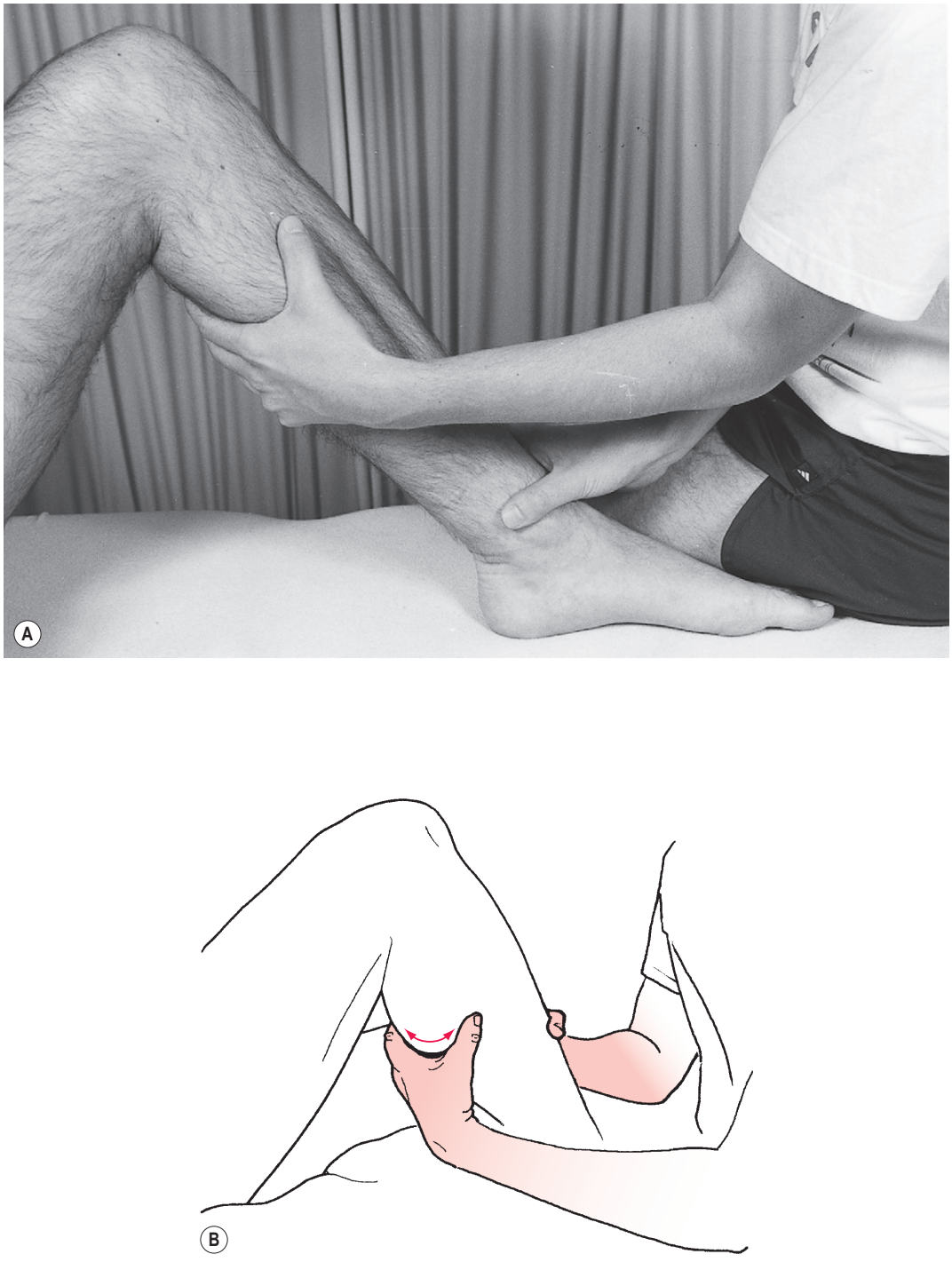


Figure 7.9 • (A, B) Muscle shaking the calf.

Figure 7.10 • (A, B) Frictions to the lower leg: manipulation 1.

Manipulation: friction

Procedure

Manipulation 1

The manipulation may be performed with one hand or two hands working alternately.

The therapist places her hands on the skin with thumb and fingers adducted (Fig. 7.10).

The therapist moves her hands back and forth repeatedly and briskly.

The following stroke begins adjacently and is continued until the whole of the treatment area has been covered.

Manipulation 2

The therapist places the tip of her thumb or finger(s) on the skin over the structure to be treated.

The tissues are compressed to the depth of the structure to be treated.

Small rotary movements are performed on the structure while maintaining a constant pressure.

There is no glide on the skin.

The superficial tissues are moved on the underlying structures.

Technique: tapotement

Categories: clapping; hacking; pounding; tapping; vibration

Purpose

To stimulate local circulation.

To provoke muscle and tendon reflexes.

To provoke a general stimulatory effect.

To aid peristalsis (vibration).

To stimulate muscle tone.

Features

Light tapotement has an effect on the superficial tissues.

Heavy tapotement penetrates to deeper layers and should not be used over organs unless this treatment is specifically indicated.

The area to be treated may be covered with a sheet or thin clothing to ensure patient comfort.

Manipulation: clapping

Procedure

The therapist's fingers and thumbs are adducted, with the thenar and hypothenar eminences in opposition so that a cup shape is formed by the relaxed hand (Fig. 7.11).

The therapist's elbows are flexed and the arms abducted.

The arms are alternately flexed and extended so that the borders of the hands and fingers strike the skin.

The strokes are rapid, light and brisk.

Air is trapped between the hands and the skin, and produces a hollow sound as contact is made.

The whole of the treatment area is covered.

Manipulation: hacking

Procedure

The therapist's arms are abducted and her elbows flexed to near 90° (Figs. 7.12A, B).

Her wrists are fully extended and the fingers relaxed (Figs. 7.12C, D).

Her hips are flexed so that the shoulders are over the area to be treated.

The medial borders of the hands and fingers strike the skin alternately, lightly and rapidly.

The movement is at the radio-ulnar joint, which pronates and supinates.

Very light hacking is performed by the fingers only striking the skin.

Manipulation: pounding

Procedure

The therapist's arms are abducted and her elbows flexed to near 90°.

Her wrists are extended and the fingers flexed loosely into a fist (Fig. 7.13).

Her hips are flexed so that the shoulders are over the area to be treated.

The medial borders of the fifth fingers strike the skin alternately and rapidly.

The movement is at the radio-ulnar joint, which pronates and supinates.

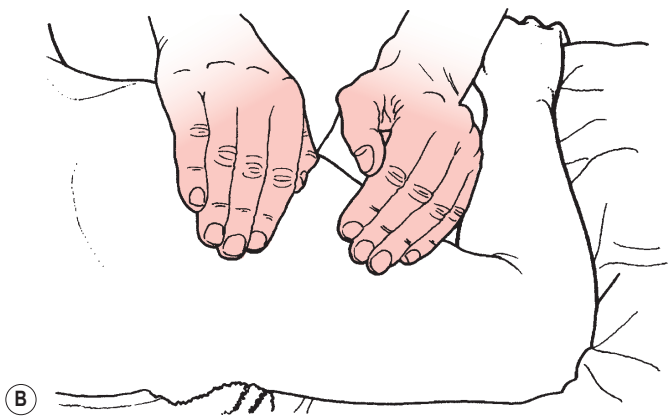


Figure 7.11 • (A, B) Clapping the deltoid.

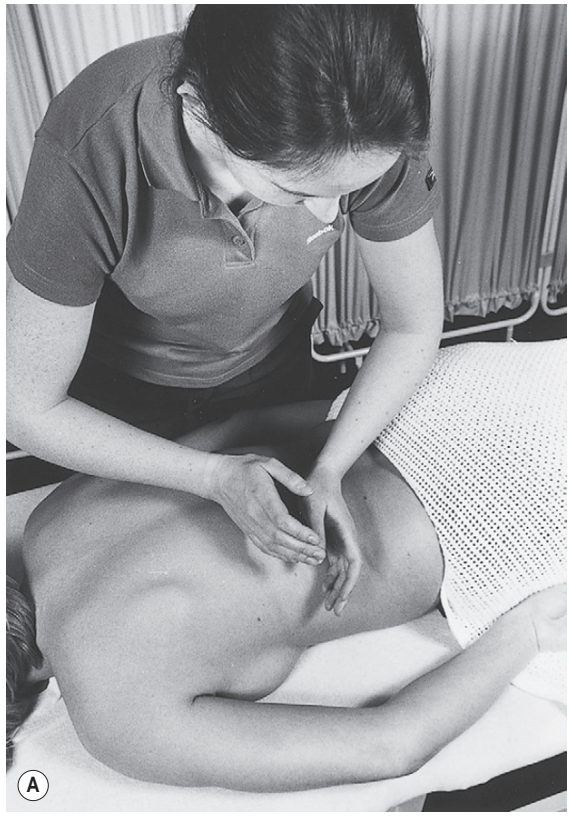


Figure 7.12 • Hacking (A, B) the back and (C, D) the forearm.

Continued

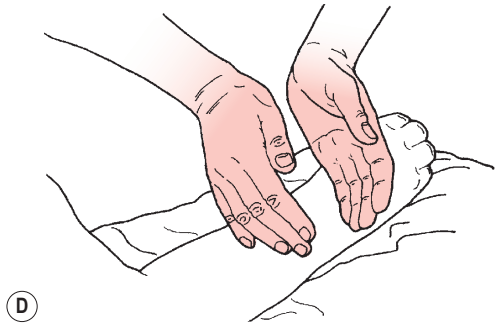


Figure 7.12—cont'd

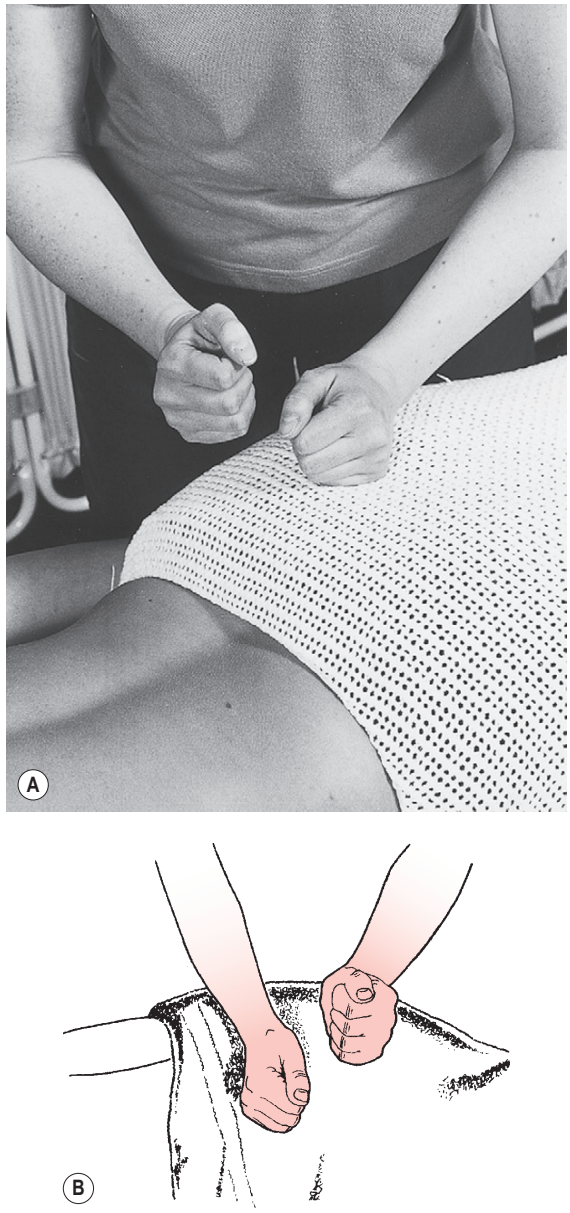


Figure 7.13 • (A, B) Pounding the covered gluteal area.

Manipulation: vibration

Procedure

The manipulation is performed with one hand.

The therapist's shoulder is abducted and the elbow is slightly flexed.

The hand is placed on the skin with fingers adducted (Fig. 7.14).

The tissues are alternately compressed and released while performing small oscillations by movement of the whole arm, which produces a trembling effect.

The vibration travels through the patient's tissues.

When working in small areas, the fingertips may be used to perform the manipulation.

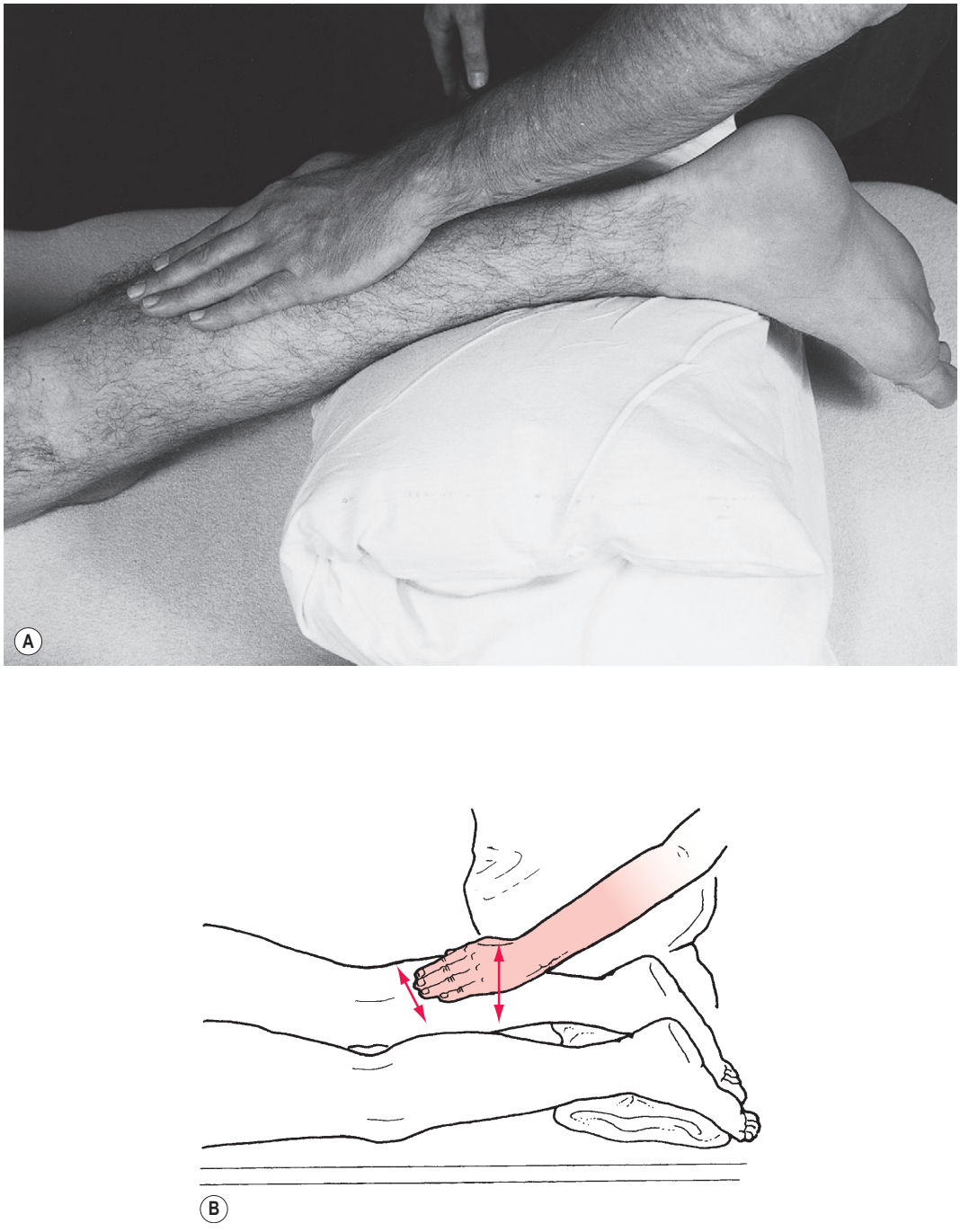


Figure 7.14 • (A, B) Vibration to the calf.

Technique: neuromuscular technique

Purpose

To identify and treat abnormalities of soft tissue.

To stretch and smooth thickened and fibrosed tissues mechanically.

To exert a reflex effect on underlying reflex points.

To reduce pain and restore function.

Features

This is an examination and treatment technique characterised by a stroking palpation of the soft tissues.

On finding any thickenings, indurations or nodules, the palpatory technique or pressure is used repetitively to treat the lesion.

A cream lubricant can be used if required.

Manipulation: neuromuscular technique

Procedure

The web space between the therapist's thumb and index finger should be stretched.

The therapist's finger and thumb tips should be placed on the patient's skin.

The thumb should be slid slowly 5–8 cm towards the fingers (Fig. 7.15).

The fingers are then lifted off the skin and moved away from the thumb.

The stroke is then repeated, overlapping with the previous one.

Lesions found are treated by a repetitive application of the stroke or other appropriate techniques.

The stroke can be applied with the fingers if the thumb is too large for any area.

Technique: deep transverse frictions (cyriax friction massage)

This is a specialised technique developed by Dr James Cyriax for the treatment of soft tissue lesions. It is a very specific, localised technique applied to the point of injury of a structure. It is aimed at producing a widthways stretching across the fibres, separating them to lengthen the cross-bridges between collagen fibres, restoring interfibre mobility. This has the effect of restoring longitudinal stretch and widthways expansion to the structure, allowing the broadening of a contracted muscle. The stress applied by this technique ensures that remodelling of connective tissue is stimulated appropriately by precipitating plasticity of molecular bonding in the linear region of the stress–strain curve. Frictions are said to produce a reactive hyperaemia (Chamberlain 1982), which can be useful in healing and chronic scarring.

Frictions should be applied at the correct phase of healing. If they are used too early (within 48 hours of injury), the delicate fibrous network may be disturbed. However, beyond that stage, movement is important as it helps to limit adhesions and scar formation by encouraging proteoglycan synthesis and stimulating new collagen fibres to be aligned in the direction of stress.

The technique is well described in orthopaedic medicine textbooks (Cyriax & Cyriax 1993, Ombregt et al 1995). In addition, there is a limited amount of good research literature on the subject (Stasinopoulos & Johnson 2004). De Bruijn (1984) assessed the onset and duration of the analgesic effects by treating 13 patients with a variety of soft tissue injuries by deep transverse frictions (DTFs). He reported that the range in duration of friction massage was 0.4–5.1 (average 2.1) minutes before analgesia was achieved. In 10 sessions with five patients, the post-massage analgesia lasted between 0.3 minutes and 48 hours (mean 26 hours). It is postulated that the analgesic effect is useful as it facilitates earlier movement following soft tissue injury. Troisier (1991) used DTFs to the common extensor tendon below the epicondyle in 131 patients suffering from tennis elbow. 'Good and excellent' results were achieved in 63% of patients. Unfortunately the English abstract of this French paper does not give further detail of the study or method of measuring improvement. A further study (Pellechia et al 1994) compared two regimens in the treatment of patellar tendinitis. The first comprised iontophoresis (movement of a drug through the skin by the application of an electrical current) of dexamethasone and lidocaine (lignocaine). The second protocol consisted of transverse frictions, moist heat and phonophoresis (movement of a drug through the skin by the application of ultrasound) of 10% hydrocortisone and a cold pack. Some 17 men and 9 women were studied, age range 14–43 years. Symptoms had been present between 3 days and 10 years. They received six sessions and were changed to the other

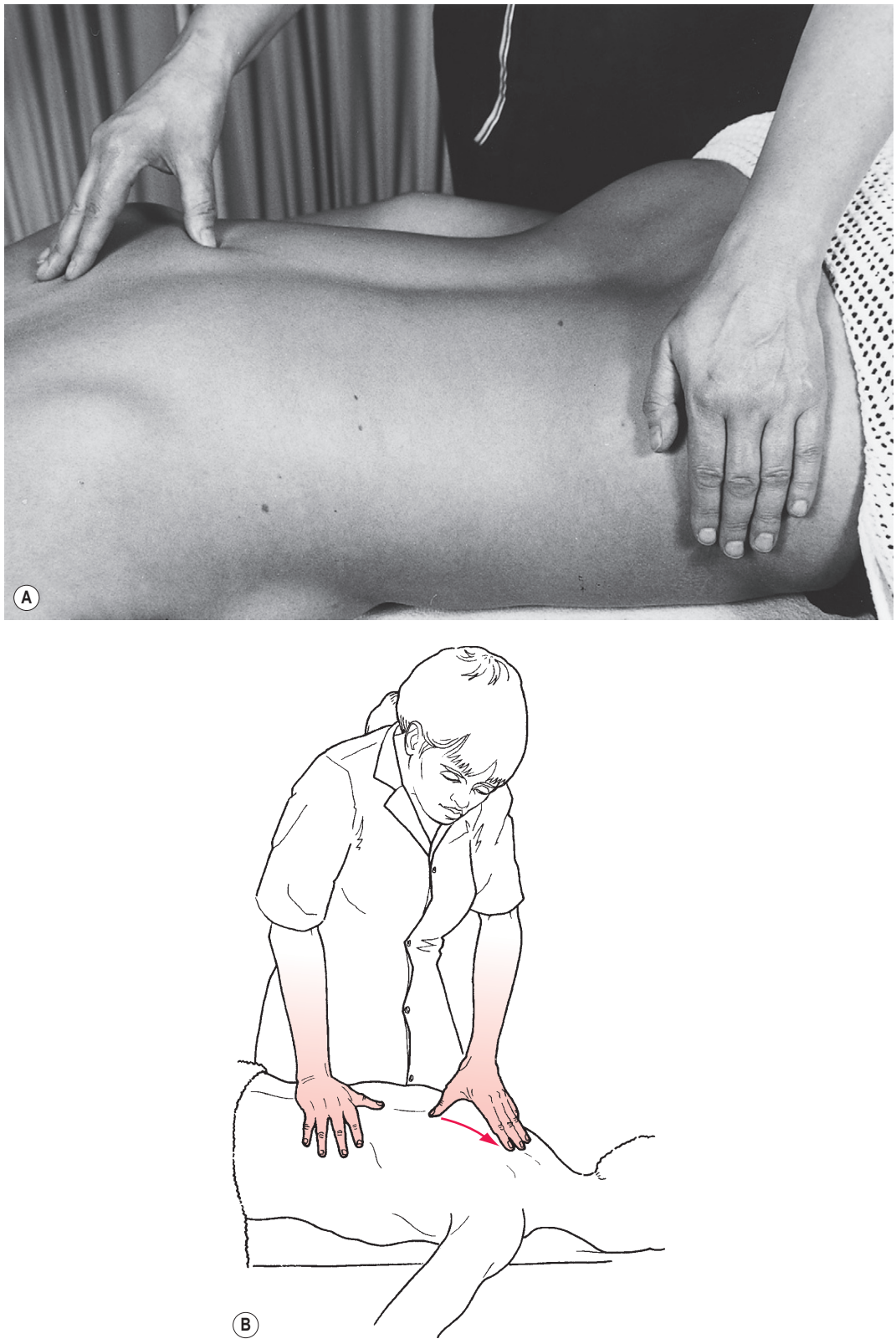


Figure 7.15 • (A, B) Neuromuscular technique.

protocol if the symptoms persisted at session 7. Iontophoresis showed significant improvement in measures of a visual analogue pain scale, a functional index questionnaire, a rating of palpation tenderness and the number of step-ups needed to elicit pain. Only the last measure improved significantly following the combination treatment protocol. The conclusion reached was that iontophoresis is the most effective treatment. Obviously, this study did not examine the separate components of the combined treatment. Further work to analyse this programme would be useful. A more curious study was undertaken in which changes in biting force were measured following DTFs to the masticatory muscles of 10 cerebrovascular accident victims. The improvement in bite was primarily attributed to facilitation of muscle tone (Iwatsuki et al 2001), although there were no differences between affected and non-affected sides.

Other research has attempted to demonstrate the exact effects of DTFs. Walker (1984) studied the effects of frictions on the healing of a minor sprain in the medial collateral ligament of the rabbit. Twelve rabbits received a sprain on the right side; the left sides were used as healthy controls. A further six rabbits were additional untreated controls. Tissue samples showed no differences between treated and untreated ligaments. Unfortunately, there were no clinical signs of inflammation following the sprains. The earliest any of the tissues was examined following injury was 11 days, in which case healing would be well advanced in a small animal. As there were no differences between sprained and unsprained ligaments, the injuries may have been too negligible to have been influenced by this technique. Unfortunately, then, this study does not enhance our knowledge of the effects of DTFs.

A Cochrane systematic review concluded that there is no evidence of clinically important benefits of DTFs for treating iliotibial band syndrome, but acknowledged that more studies are needed before any conclusions relating to practice can be drawn (Brosseau et al 2002). (See Chapter 13 for discussion of the use of DTFs in bursitis.)

Manipulation: deep transverse frictions

Purpose

Produces local hyperaemia, aiding the resolution of inflammation.

Reduces pain as a result of a counterirritant, pain-gate effect and the resorption of metabolites.

Promotes movement and remodelling of healing tissue.

Stretches fibrous tissue.

Prepares the structure for manipulation.

Features

Must be applied accurately to the exact site of damage.

Must be applied at 90° to the direction of the fibres, across the structure.

Must take the tissues through their full sweep, i.e. to their end-feel.

The skin must move with the therapist's fingertips.

The patient must be warned that the technique will be painful until numbing is achieved (after approximately 2 minutes).

Should be applied within the patient's pain tolerance.

Position

Patient

Comfortable, fully supported, body position.

Limb fully supported.

Structure exposed, e.g. shoulder laterally rotated for infraspinatus tendon (Figs. 7.16A, B); internally rotated for supraspinatus.

Ligaments—on stretch (Figs. 7.16C, D).

Tendons in sheath—on stretch.

Tendons without sheath—either taut or short (Figs. 7.16E, F).

Muscle—shortened.

Therapist

Close to structure.

Comfortable position.

Joints of the arm in a neutral position.

Procedure

Contact made between pad of index or middle finger.

Reinforce with adjacent finger.

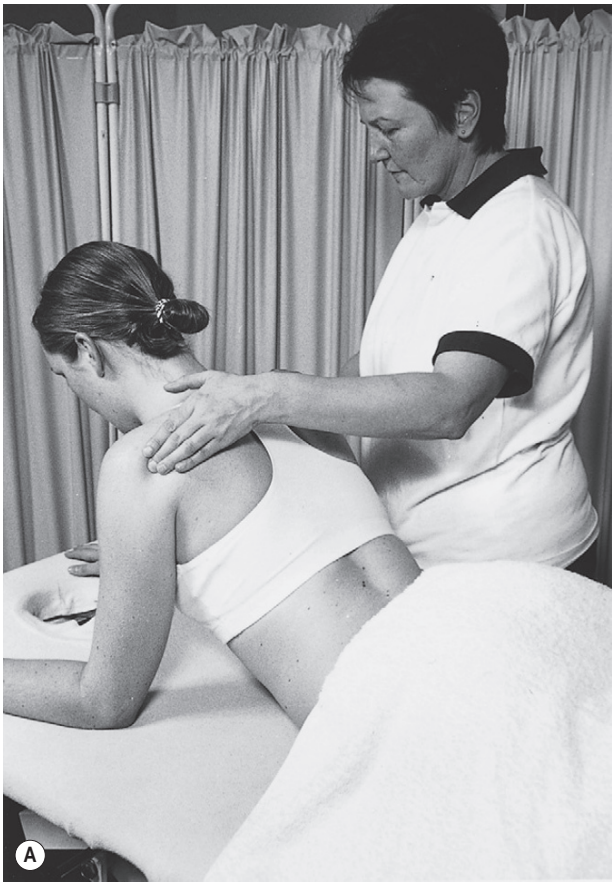
Apply counterpressure with the other hand.

Sweep back and forth across the lesion using the large muscles of the arm.

Ensure the therapist's fingertips and patient's skin move together.

A full sweep should be achieved—to the end-feel of the tissue.

Continue for up to 15 minutes (expect a numbing effect after about 2 minutes).



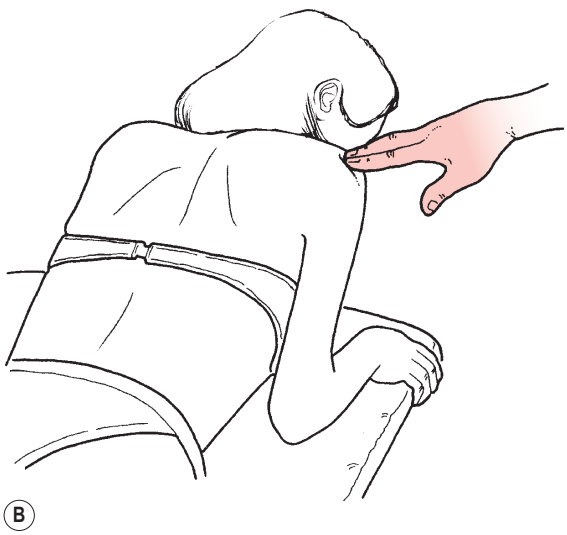


Figure 7.16 • Cyriax friction technique to (A, B) tendon of infraspinatus, with patient's shoulder in lateral rotation; (C, D) coronary ligaments, right knee—the knee is laterally rotated to place the ligaments on a stretch; (E, F) left common extensor and flexor tendon.

Continued

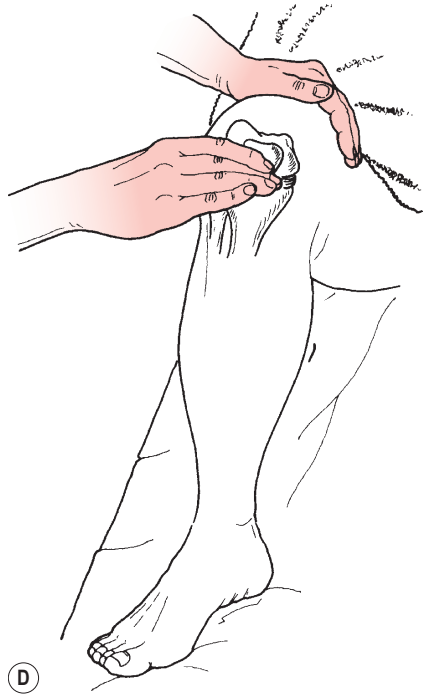


Figure 7.16—cont'd

Continued

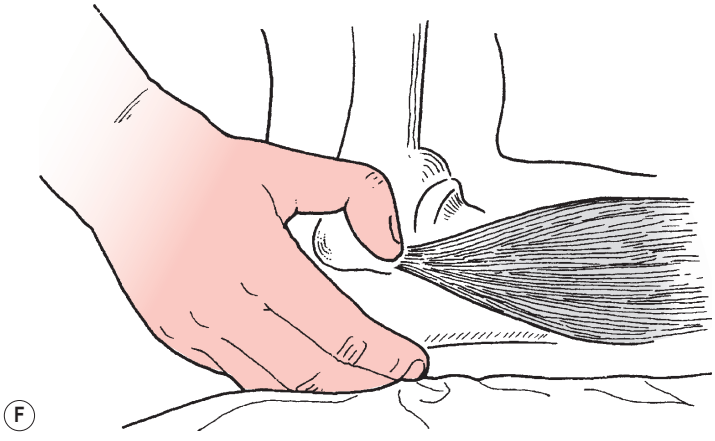


Figure 7.16—cont'd

References

Akhondzadeh, S., Kashani, L., Fotouhi, A., et al., 2003. Comparison of *Lavandula angustifolia* Mill. tincture and imipramine in the treatment of mild to moderate depression: a double-blind, randomized trial. Prog. Neuropsychopharmacol. Biol. Psychiatry 27 (1), 123–127.

Albert-Puleo, M., 1979. Fennel and anise as estrogenic agents. J. Ethnopharmacol. 2, 337–344.

Anderson, C., Lis-Balchin, M., Kirk-Smith, M., 2000. Evaluation of massage with essential oils on childhood ectopic eczema. Phytother. Res. 14 (6), 452–456.

Aqel, M.B., 1991. Relaxant effect of the volatile oil of Romarinus officinalis on tracheal smooth muscle. J. Ethnopharmacol. 33, 57–62.

Arras, G., Usai, M., 2001. Fungitoxic activity of 12 essential oils against four postharvest citrus pathogens: chemical analysis of thymus capitatus oil and its effect in subatmospheric pressure conditions. J. Food Prot. 64 (7), 1025–1029.

Arweiler, N.B., Donos, N., Netuschil, L., et al., 2000. Clinical and antibacterial effect of tea tree oil—a pilot study. Clin. Oral Investig. 4 (2), 70–73.

Atanassova-Shopova, S., Roussinov, K., Boycheva, I., 1973. On certain central neurotropic effects of lavender essential oil. II. Communication: studies on the effects of linalool and of terpineol. Bulletin of the Institute of Physiology 15, 149–156.

Bassett, I.B., Pannowitz, D.L., Barnetson, R., 1990. A comparative study of tea tree oil versus benzoylperoxide in the treatment of acne. Med. J. Aust. 153, 455–458.

Brosseau, L., Caslmiro, L., Milne, S., et al., 2002. Deep transverse friction massage for treating tendinitis: a systematic review. Cochrane Library, (issue 1), Oxford.

Carson, C.F., Riley, T., 1994. The antimicrobial activity of tea tree oil [letter]. Med. J. Aust. 160, 236.

Chamberlain, G.J., 1982. Cyriax's friction massage: a review. J. Orthop. Sports Phys. Ther. 4 (1), 16–22.

Christoph, F., Kaulfers, P.M., Stahl-Biskup, E., 2000. A comparative study of the in vitro antimicrobial activity of tea tree oil s.l. with special reference to the activity of beta-triketones. Planta Med. 66 (6), 556–560.

Clerc, A., et al., 1934. Experiments on dogs with certain substances which lower the surface tension of the blood. Current Reviews of Society of Biology 116, 864–867.

Cooke, B., Ernst, E., 2000. Aromatherapy: a systematic review. Br. J. Gen. Pract. 50 (455), 444–445.

Craig, J.O., Frase, M.S., 1953. Accidental poisoning in childhood. Arch. Dis. Child. 28, 259–267.

Cyriax, J.H., Cyriax, P.J., 1993. Cyriax's Illustrated manual of orthopaedic medicine, second ed. Butterworth-Heinemann, Oxford.

Dale, A., Cornwell, S., 1994. The role of lavender oil in relieving perineal discomfort following childbirth: a blind randomized clinical trial. J. Adv. Nurs. 19 (1), 89–96.

De Bruijn, R., 1984. Deep transverse friction: its analgesic effect. Int. J. Sports Med. 5, 35–36.

Demain, S., 1996. Departmental danger of death [letter]. Physiotherapy 82 (1), 71.

Elliot, C., 1993. Tea tree oil poisoning [letter]. Med. J. Aust. 159, 830–831.

Ewan, P., 1996. Clinical study of peanut and nut allergy in 62 consecutive patients. Br. Med. J. 312, 1074–1077.

Graham, P.H., Browne, L., Cox, H., 2003. Inhalation aromatherapy during radiotherapy: results of a placebo-controlled double-blind randomized trial. J. Clin. Oncol. 21 (12), 2372–2376.

Hills, J.M., Aaranson, P.I., 1991. The mechanism of action of peppermint oil on gastro-intestinal smooth muscle. Gastroenterology 101, 55–65.

Iwatsuki, H., Ikuta, Y., Shinoda, K., 2001. Deep friction massage on the masticatory muscles in stroke patients increases biting force. Journal of Physical Therapy Science 13 (1), 17–20.

Kaddu, S., Kerl, H., Wolf, P., 2001. Accidental bullous phototoxic reactions to bergamot aromatherapy oil. J. Am. Acad. Dermatol. 45 (3), 458–461.

Khanna, M., Qasam, K., Sasseville, D., 2000. Allergic contact dermatitis to tea-tree oil with erythema multiforme-like id reaction. Am. J. Contact Dermat. 11 (4), 238–242.

Lawless, J., 1992. The encyclopaedia of essential oils. Element, Shaftesbury, Dorset.

Lazutka, J.R., Mierauskiene, J., Slapsyte, G., et al., 2001. Genotoxicity of dill (*Anethum graveolens L.*), peppermint (*Menthaxpiperita L.*) and pine (*Pinus sylvestris L.*) essential oils in human lymphocytes and Drosophila melanogaster. Food Chem. Toxicol. 39 (5), 485–492.

Lehrner, J., Eckersberger, C., Walla, P., et al., 2000. Ambient odor of orange in a dental office reduces anxiety and improves mood in female patients. Physiol. Behav. 71 (1–2), 83–86.

Lis-Balchin, M., Hart, S.L., Deans, S.G., 2000. Pharmacological and antimicrobial studies on different tea-tree oils (*Melaleuca alternifolia, Leptospermum scoparium* or *Manuka* and *Kunzea ericoides* or *Kanuka*), originating in Australia and New Zealand. Phytother. Res. 14 (8), 623–629.

Martin, K.W., Ernst, E., 2004. Herbal medicines for treatment of fungal infections: a systematic review of controlled clinical trials. Mycoses 47 (3–4), 87–92.

Mozelsio, N.B., Harris, K.E., McGrath, K.G., et al., 2003. Immediate systemic hypersensensitivity reaction associated with topical application of Australian tea tree oil. Allergy Asthma Proc. 24 (1), 73–75.

Olleveant, N.A., Humphris, G., Roe, B., 1999. How big is a drop? A volumetric assay of essential oils. J. Clin. Nurs. 8 (3), 299–304.

Ombregt, L., Bisschop, P., ter Veer, H.J., et al., 1995. A system of orthopaedic medicine. W B Saunders, London.

Patzelt-Wenczler, R., Ponce-Poschl, E., 2000. Proof of efficacy of Kamillosan cream in atopic eczema. Eur. J. Med. Res. 5 (4), 171–175.

Pellechia, G.L., Hamel, H., Behnke, P., 1994. Treatment of infrapatellar tendinitis: a combination of modalities and transverse friction

massage versus iontophoresis. J. Sport Rehabil. 3, 135–145.

Prashar, A., Locke, I.C., Evans, C.S., 2004. Cytotoxicity of lavender oil and its major components to human skin cells. Cell Prolif. 37 (3), 221–229.

Rho, K.H., Han, S.H., Kim, K.S., et al., 2006. Effects of aromatherapy massage on anxiety and self-esteem in Korean elderly women: a pilot study. Int. J. Neurosci. 116 (12), 1447–1455.

Roe, F.J.C., Field, W.E.H., 1965. Chronic toxicity of essential oils and certain other products of natural origin. Food Cosmet. Toxicol. 3, 311–324.

Saeki, Y., 2000. The effect of foot-bath with or without the essential oil of lavender on the autonomic nervous system: a randomized trial. Complement. Ther. Med. 8 (1), 2–7.

Satchell, A.C., Saurajen, A., Bell, C., et al., 2002. Treatment of interdigital tinea pedis with 25% and 50% tea tree oil solution: a randomized, placebo-controlled, blinded study. Australas. J. Dermatol. 43 (3), 175–178.

Schaller, M., Korting, H.C., 1995. Allergic airborne contact dermatitis from essential oils used in aromatherapy. Clin. Exp. Dermatol. 20 (2), 143–145.

Skiba, B., 1993. The mineral oil myth. Massage 44, 40–41.

Snow, L.A., Hovanec, L., Brandt, J., 2004. A controlled trial of aromatherapy for agitation in nursing home patients with dementia. J. Altern. Complement. Med. 10 (3), 431–437.

Solanki, K., Matnani, M., Kale, M., et al., 2005. Transcutaneous absorption of topically massaged oil in neonates. Indian Pediatr. 42 (10), 998–1005.

Stasinopoulos, D., Johnson, M.I., 2004. Cyriax physiotherapy for tennis elbow/lateral epicondylitis. Br. J. Sports Med. 38, 675–677.

Sugiura, M., Hayakawa, R., Kato, Y., et al., 2000. Results of patch testing with lavender oil in Japan. Contact Dermatitis 43 (3), 157–160.

Taylor, J.M., 1964. Fennel. Toxicol. Appl. Pharmacol. 6, 378–387.

Tisserand, R., 1994. The art of aromatherapy. C W Daniel, Essex.

Tisserand, R., 1996. Essential oil safety. I. International Journal of Aromatherapy 7 (3), 28–32.

Tisserand, R., Balacs, T., 1995. Essential oil safety: a guide for health professionals. Churchill Livingstone, Edinburgh.

Troisier, O., 1991. Les tendinites epicondyliennes. Rev. Prat. 41 (18), 1651–1655.

Varman, S., Walker, A., 1995. Introduction to aromatherapy for physiotherapists [course notes]. University of East Anglia, Norwich.

Walker, J.M., 1984. Deep transverse frictions in ligament healing. J. Orthop. Sports Phys. Ther. 62, 89–94.

Young, A.R., Walker, S.L., Kinley, J.S., et al., 1990. Phototumorigenesis studies of 5-methoxypsoralen in bergamot oil: evaluation and modification of risk of human use in an albino mouse skin model. J. Photochem. Photobiol. 7, 231–250.

Zatz, J.L., 1993. Scratching the surface: rational and approaches to skin permeation. In: Zatz, J.L., (Ed.), Skin permeation: fundamentals and application. Allured, Wheaton.

This page intentionally left blank

Regional application of classical massage techniques

8

CHAPTER CONTENTS

The basic massage strokes must be adapted to the contours of the body and guided by the underlying anatomy (Fig. 8.1). In this chapter, we suggest a format for each region.

Upper limb: the arm

Positioning of the patient

Sitting, arm supported on a table.

Lying, arm supported on a pillow, resting on the treatment couch.

Lying, arm elevated on pillows.

Special anatomical points

Lymph glands: in the cubital fossa at the front of the elbow and in the axilla.

Major muscle groups: trapezius, deltoid, triceps, biceps, brachioradialis, flexors and extensors of the forearm.

Manipulations

Stroking

Effleurage: apply three overlapping strokes to the flexor aspect of the forearm with your right hand, repeat on the extensor aspect with your left hand (Fig. 8.2).

Kneading: trapezius, two-handed reciprocal kneading to deltoid (Fig. 8.3), biceps, triceps, forearm and hand.

Finger kneading: fibres of deltoid, between the forearm muscles, tendons of the wrist.

Picking up: deltoid, biceps, triceps (Fig. 8.4), brachioradialis.

Wringing: triceps (Fig. 8.5), biceps, brachioradialis.

Muscle shaking: biceps, triceps, brachioradialis (Fig. 8.6).

Clapping: flexor and extensor aspects of the arm and forearm (see Fig. 7.11).

Hacking: flexor and extensor aspects of the arm (Fig. 8.7) and forearm.

Upper limb: the hand

Positioning of the patient

Sitting, arm supported on a table.

Special anatomical points

Swelling is commonly trapped in the fibrous compartments of the hand.

© 2011, Elsevier Ltd.
DOI: 10.1016/B978-0-7020-3229-5.00008-6

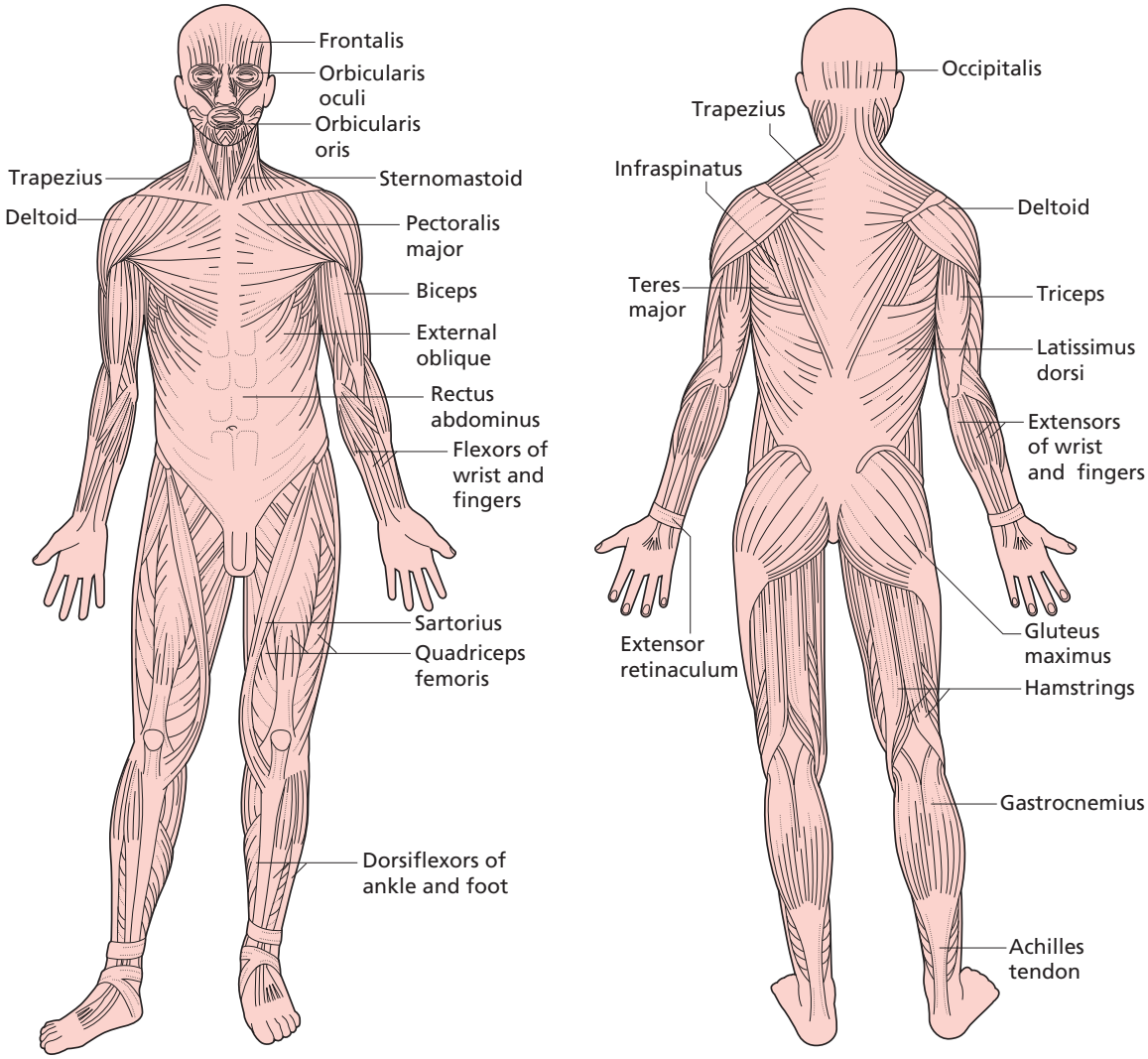


Figure 8.1 • Major muscles of the body.

The areas between adjacent metacarpal bones may need special attention.

Splintage or chronic swelling may lead to soft tissue contracture which will require petrissage manipulations.

The hand contains numerous muscles and tendons that can be implicated in burns and scarring. As resulting disability can be serious massage should be vigorous.

It is often desirable to include the wrist in a hand massage (see Fig. 8.11); manipulations may include thumb kneading to the carpal bones, petrissage to the flexor retinaculum.

Manipulations

Effleurage: to the nearest proximal lymph glands with the whole hand (Fig. 8.8), individual fingers (Fig. 8.9), between the metacarpals, thenar and hypothenar eminences.

Kneading: finger kneading to individual fingers, thumb kneading to the thenar eminence and hypothenar eminence (Fig. 8.10), between the metacarpals. (See also Fig. 8.11.)

Wringing: skin on the dorsum of the hand (Fig. 8.12), the muscles of the thenar eminence (Fig. 8.13) and hypothenar eminence.

Figure 8.2 • Finish of effleurage stroke along the extensor aspect of the arm. • Note that the stroke ends in the axilla.

Picking up: the dorsum of the hand, the thenar and hypothenar eminences.

Lower limb: the leg and foot

Positioning of the patient

Lying supine, with leg elevated.

Lying supine, with leg supported on pillows.

Sitting on the treatment couch, with leg supported on pillows.

Special anatomical points

Lymph glands: in the popliteal fossa behind the knee and in the groin.

Knee, patella and iliotibial band require special attention.

Anatomical spaces behind the malleoli and either side of the Achilles tendon can contain swelling.

The posterior aspect of the limb can be massaged with the patient lying prone.

Major muscle groups: quadriceps, hamstrings, adductors, anterior tibials, triceps surae, interossei and the layers of the foot.

Manipulations

The whole of the leg

Stroking

Effleurage: the whole leg; start at the toes and include the calf and anterior tibial area, around the patella (Fig. 8.14) and continue along the thigh to the groin (Fig. 8.15).

The thigh

Kneading: medial and lateral aspects together, anterior and posterior aspects together.

Picking up: anterior aspect, adductors, posterior aspect (with leg laterally rotated).

Wringing: anterior aspect (Fig. 8.16), adductors, posterior aspect (with leg laterally rotated).

The knee

Finger/thumb kneading: around the patella, along the joint line, over the collateral ligaments.

The leg

Kneading: single-handed and thumb kneading to the anterior tibials, reciprocal two-handed kneading to the calf (see also Fig. 8.17).

Picking up: the calf (Fig. 8.18).

The foot

Kneading: whole-handed, finger/thumb kneading to the medial and lateral borders of the foot, the interosseous spaces (Fig. 8.19), around the malleoli, to the sides of the Achilles tendon.

In addition, if required, the following can be applied: *clapping*, *hacking*, *muscle shaking* to the thigh and calf (see Fig. 7.9), *vibrations* to the thigh and calf.

Figure 8.3 • (A, B) Hand positions for reciprocal kneading of the deltoid.

Figure 8.4 • (A, B) Picking up the triceps, the therapist's hand fully grasping the muscle.

Figure 8.5 • (A, B) Wringing the triceps, the therapist's hands on the extensor aspect of the arm.

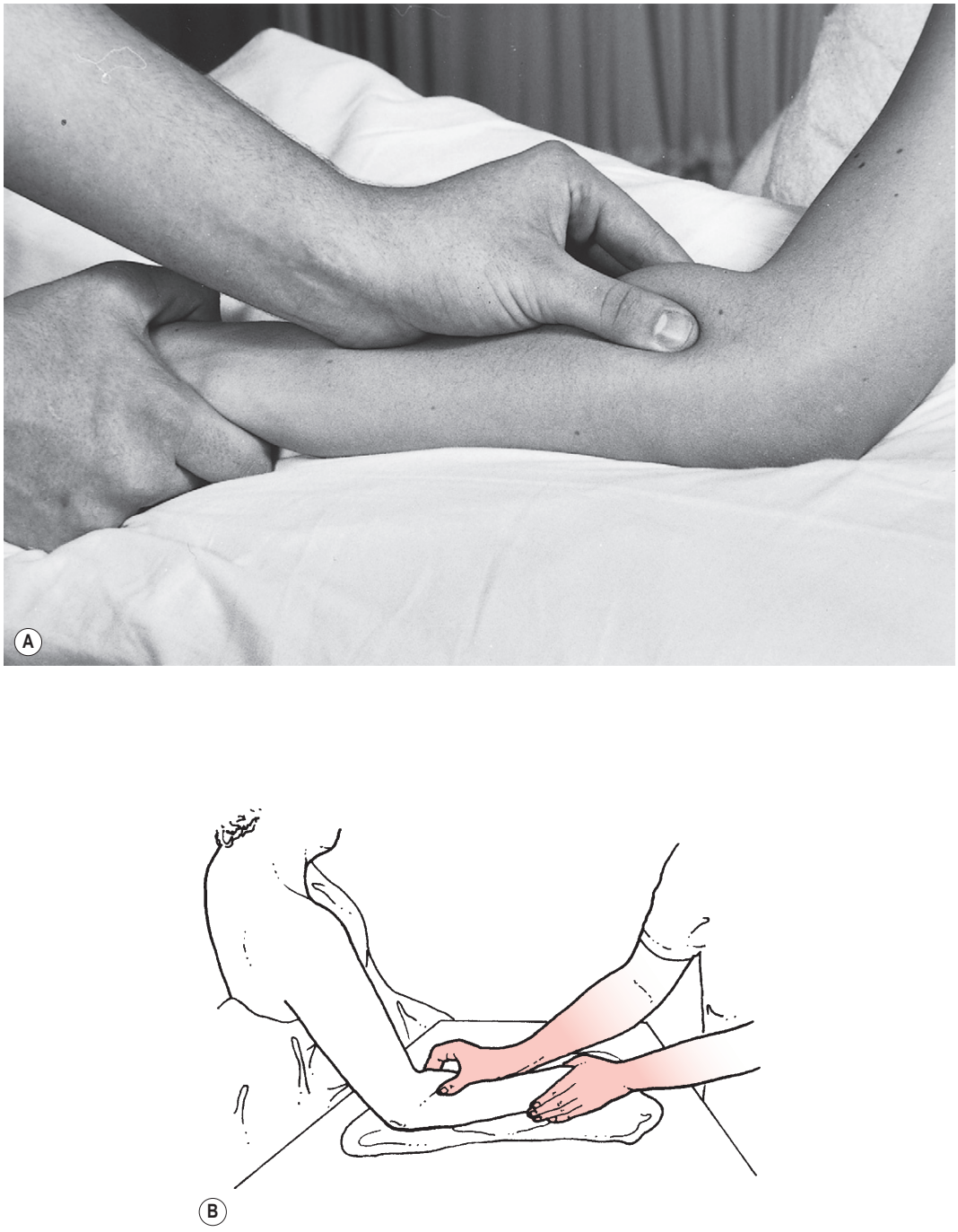


Figure 8.6 • (A, B) Muscle shaking the brachioradialis. • Note the position of the therapist's supporting hand.

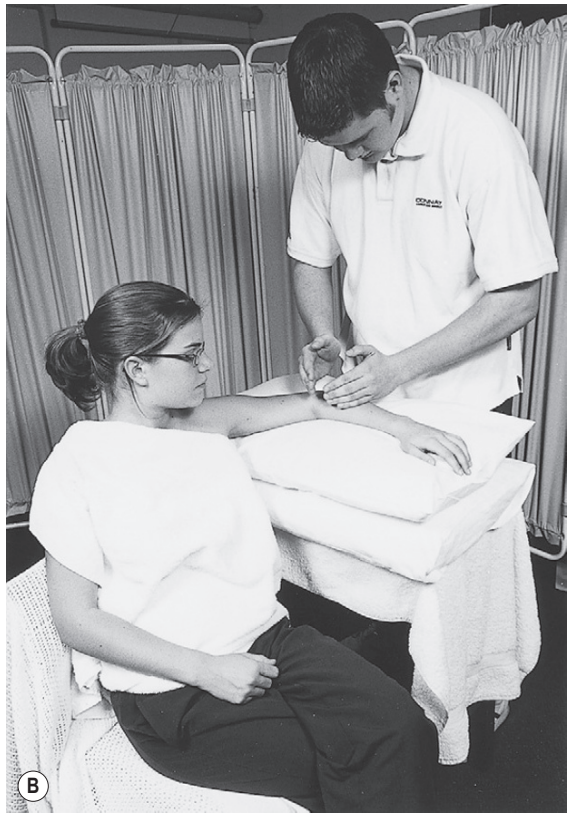


Figure 8.7 • (A–C) Hacking the biceps with the patient's forearm supinated. • The therapist then asks the patient to pronate her arm and continues along the extensor aspect, avoiding bony prominences.

Continued

Figure 8.7—cont'd

The back

Positioning of the patient

Patient supine, pillows underneath abdomen and ankles

Special anatomical points

Lymph glands: the lower back drains into the groin, the thorax drains into the axilla, and the neck and shoulder girdle drain into the anterior triangle of the neck.

The bony points which are tender are the spinous processes, the scapulae and the ribs.

There is considerable natural variance of skin mobility in different parts of the back.

The patient's arms should remain by her/his side; if they are above or under the head, the skin over the trunk becomes taut and therefore difficult to massage.

Major muscle groups: trapezius, rhomboids, supraspinatus, infraspinatus, erector spinae, latissimus dorsi, quadratus lumborum, the glutei.

Manipulations

Stroking: start at the shoulder girdle and work downwards.

Effleurage: start at the sacrum and work in sections towards the lymph glands (see Fig. 7.4).

Kneading: whole handed (see Fig. 7.5).

Finger/thumb kneading: along bony attachments—iliac crest (Fig. 8.20), vertebral border and spine of scapula. Attention should be focused on problem areas—insertion of levator scapulae at the superior angle of scapula (Fig. 8.21).

Reinforced kneading: glutei (Fig. 8.22), quadratus lumborum.

Skin rolling: thorax and lower back (see Fig. 7.7).

Picking up: latissimus dorsi (see Fig. 7.8).

Wringing: trapezius (Fig. 8.23), lower back, glutei (Fig. 8.24).

Tapotement: as required.

The neck

Positioning of the patient

Prone, head and body supported, as described in Chapter 7.

Seated at table and supported anteriorly, as described in Chapter 7.

In a seated massage chair.

Supine on the treatment couch, head supported by pillows on the therapist's lap (for acute neck pain).

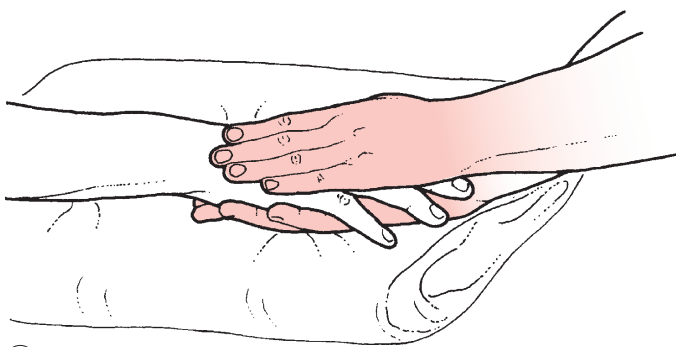
Side-lying, upper arm supported by pillows (acute neck and arm pain).

Special anatomical points

Lymph glands: in the anterior triangle of the neck.

The cervical spine should be maintained in a neutral position during the massage.

A



B

Figure 8.8 • (A, B) Effleurage of the whole hand.

Figure 8.9 • (A, B) Effleurage of the fingers.

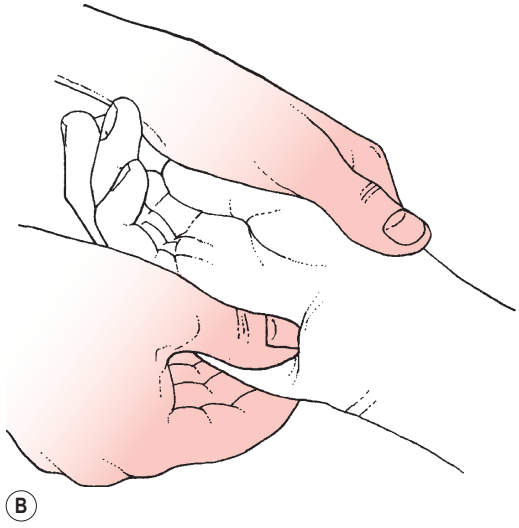


Figure 8.10 • (A, B) Thumb kneading the hypothenar eminence. • The left hand of the therapist is supporting the patient's hand.

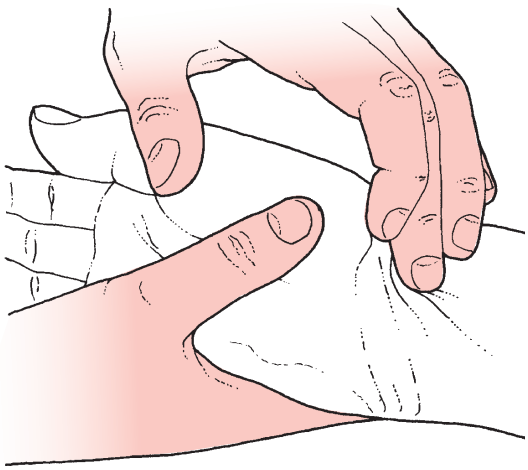


Figure 8.11 • (A, B) Position for finger kneading between the tendons of the wrist and along the tendon sheaths.

Figure 8.12 • Wringing the skin on the dorsum of the hand.

Figure 8.13 • Wringing the muscles of the thenar eminence.

Deep massage should be avoided at the anterior aspect of the neck.

Avoid the vicinity of the thyroid gland (see Chapter 4).

Major muscle groups: paravertebral muscles, scalenes, sternocleidomastoid, trapezius.

Manipulations

Stroking

Effleurage: from the occiput to the lymph glands, across trapezius to the lymph glands, along the scalenes to the lymph glands (Figs. 8.25 and 8.26).

Kneading: whole handed to the paravertebral muscles (Fig. 8.27) and trapezius.

Finger kneading: paravertebral muscles (Fig. 8.28), insertion of trapezius along the nuchal line of the occiput, scalenes (Fig. 8.29), sternocleidomastoid and problem areas—insertion of levator scapulae, nodules, trigger points.

Picking up: upper fibres of trapezius.

Wringing: upper fibres of trapezius, paravertebral muscles and sternocleidomastoid (Fig. 8.30).

Skin rolling: upper fibres of trapezius.

The abdomen

Positioning of the patient

Supine, pillows under the knees to facilitate relaxation of the abdominal muscles.

Patient sitting on the treatment couch, its head section inclined at a 45° angle to support the patient's back.

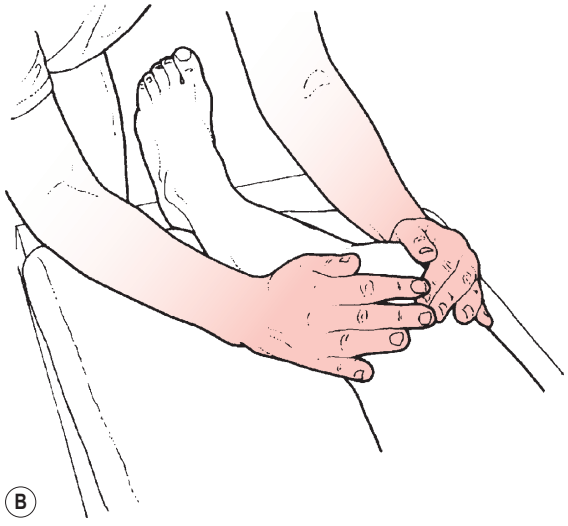


Figure 8.14 • (A, B) Effleurage around the patella. • The manipulation continues into the popliteal fossa.

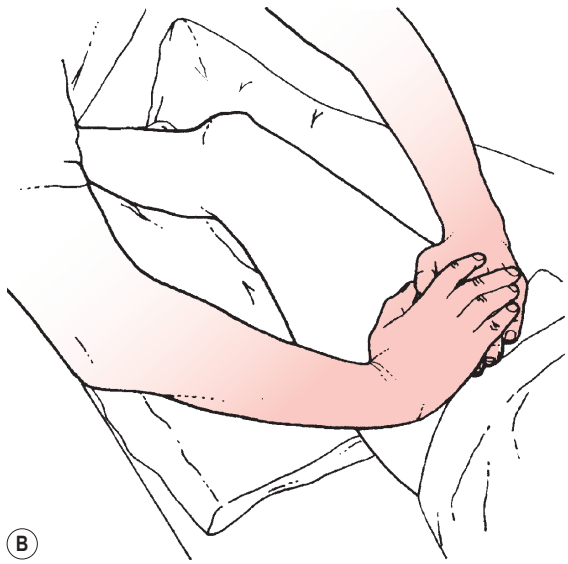


Figure 8.15 • (A, B) Finish of the effleurage stroke along the leg, over-pressure being applied to the lymph glands in the groin.

Figure 8.16 • (A, B) Muscle wringing the thigh.

Figure 8.17 • (A, B) Skin rolling the medial aspect of the knee.

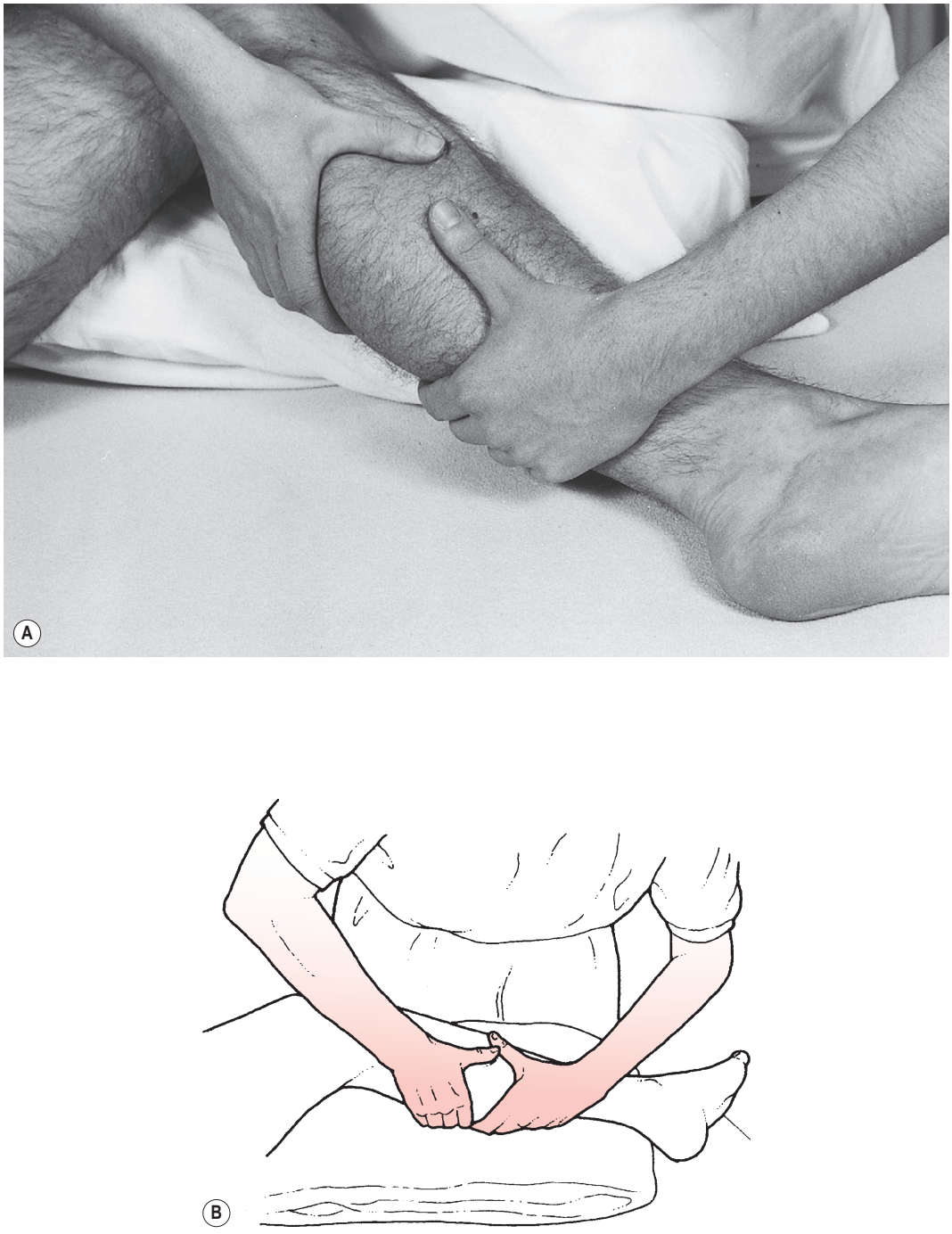


Figure 8.18 • (A, B) Reciprocal picking up of the calf muscles. • Note the positioning of the patient's leg.

Figure 8.19 • (A, B) Thumb kneading the interosseous spaces of the foot. • The therapist's hand supports the foot.

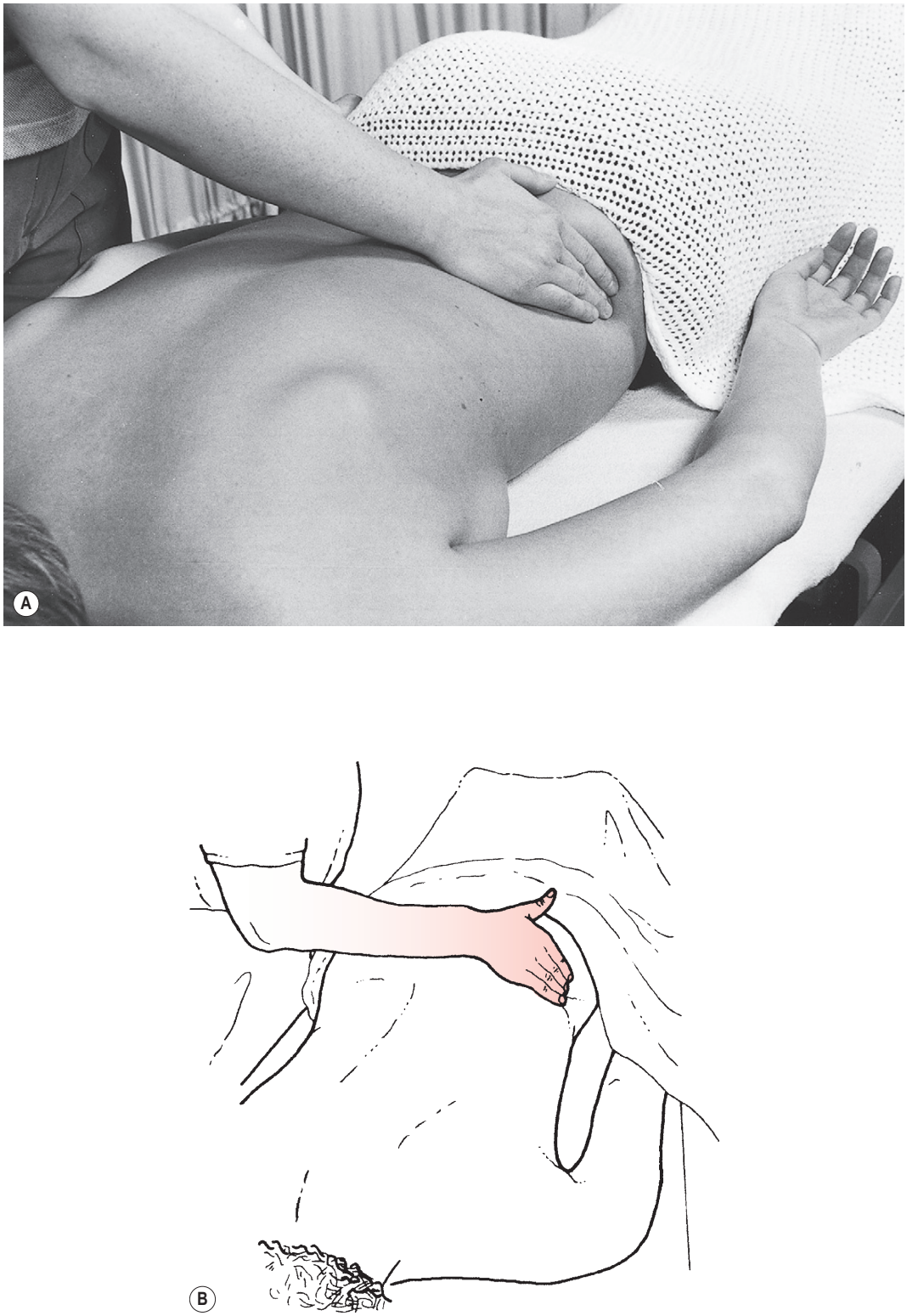


Figure 8.20 • (A, B) Finger kneading along the iliac crest.

Figure 8.21 • (A, B) Thumb kneading the insertion of levator scapulae at the superior angle of scapula.

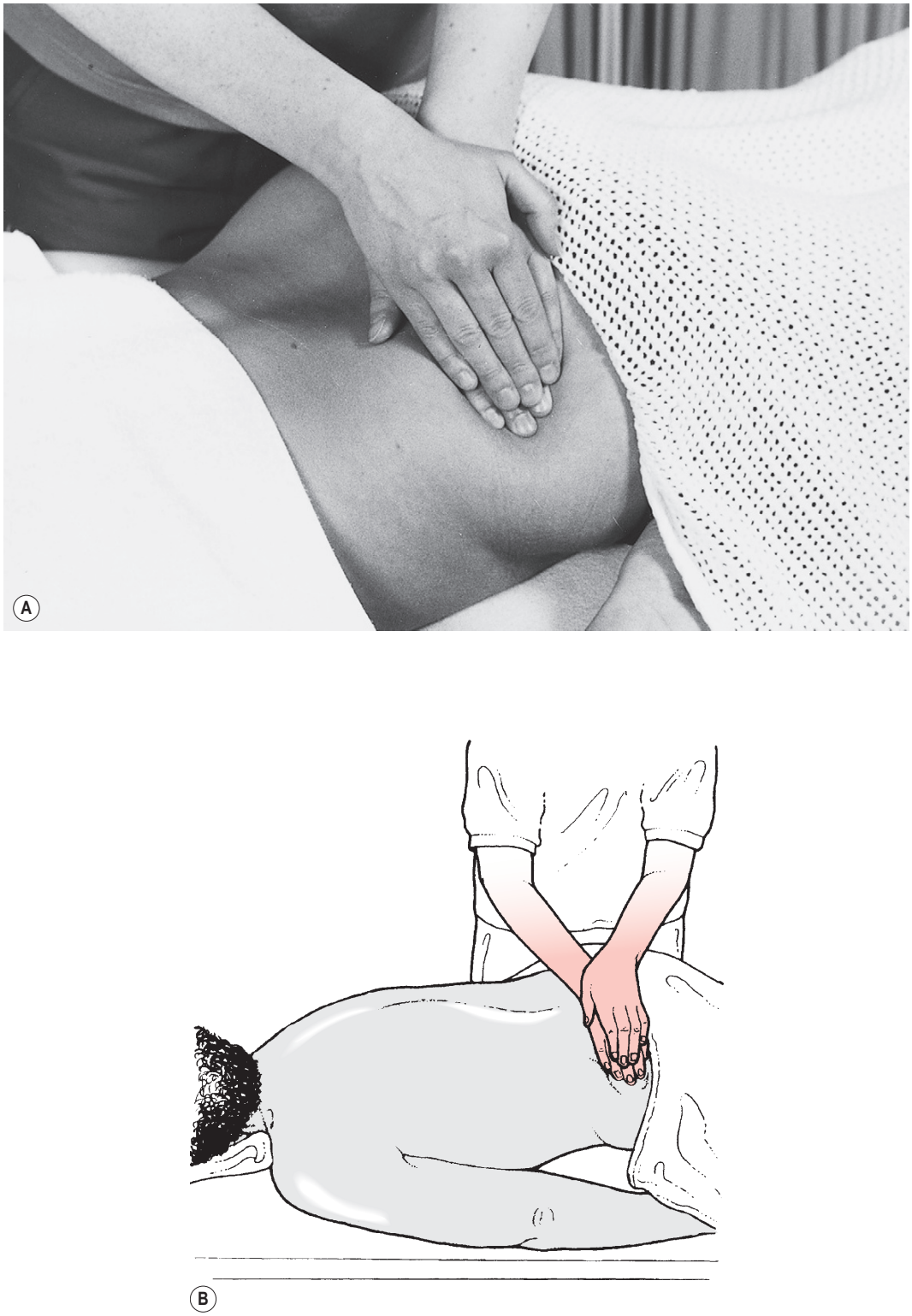


Figure 8.22 • (A, B) Reinforced kneading of the glutei.

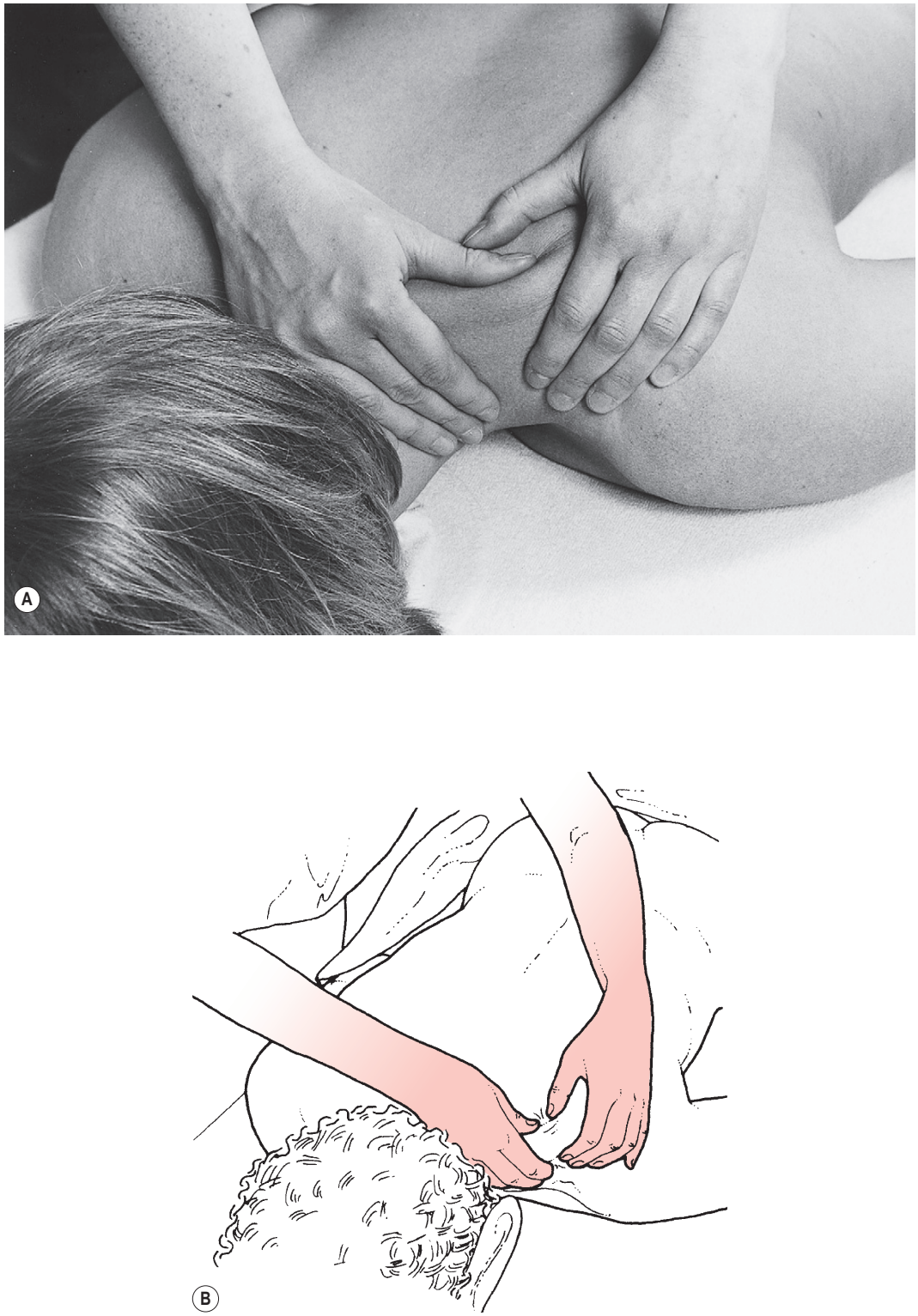


Figure 8.23 • (A, B) Wringing the trapezius.

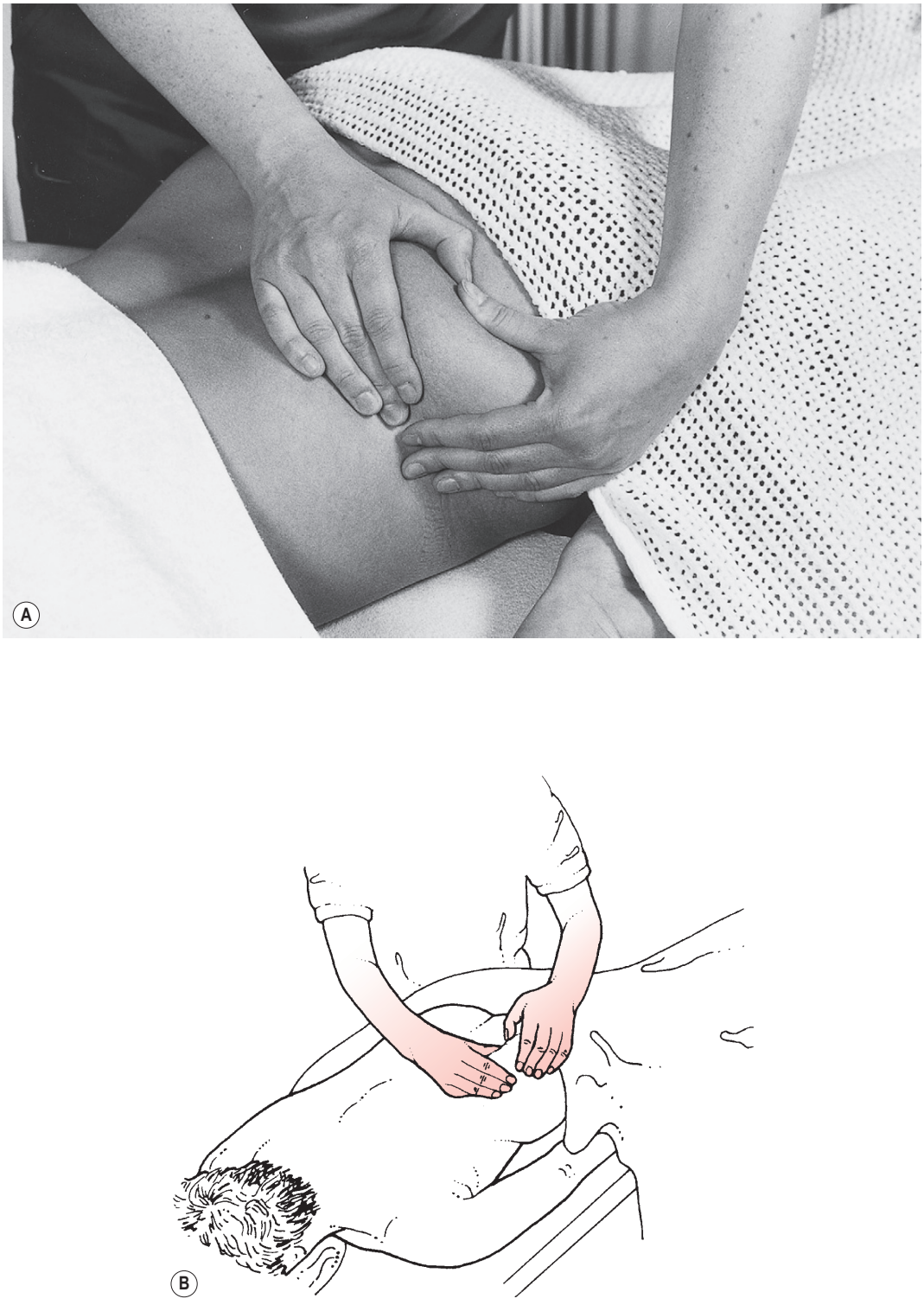


Figure 8.24 • (A, B) Wringing the glutei.

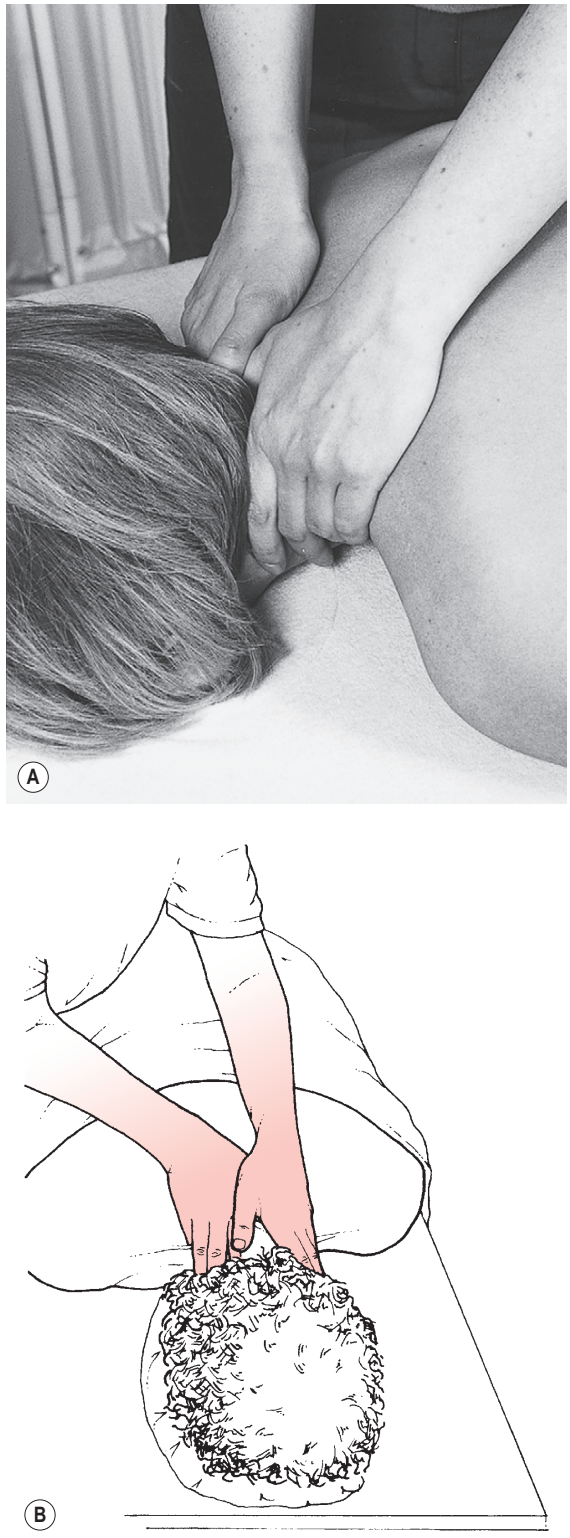
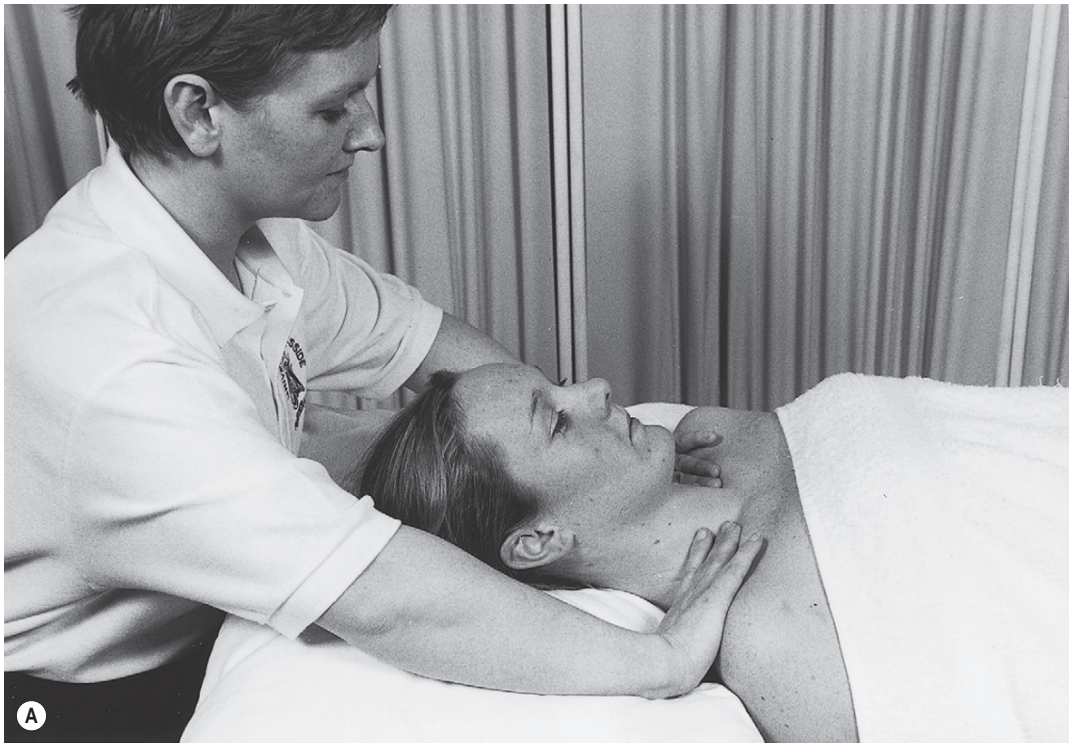


Figure 8.25 • (A, B) Effleurage of the neck. • Note the therapist's overlapped hands.



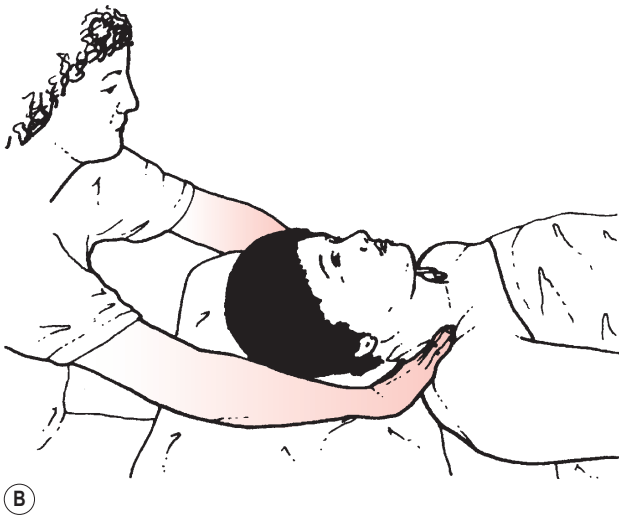


Figure 8.26 • (A, B) Finish of the effleurage stroke along the neck in the anterior triangle of the neck, above the clavicle.

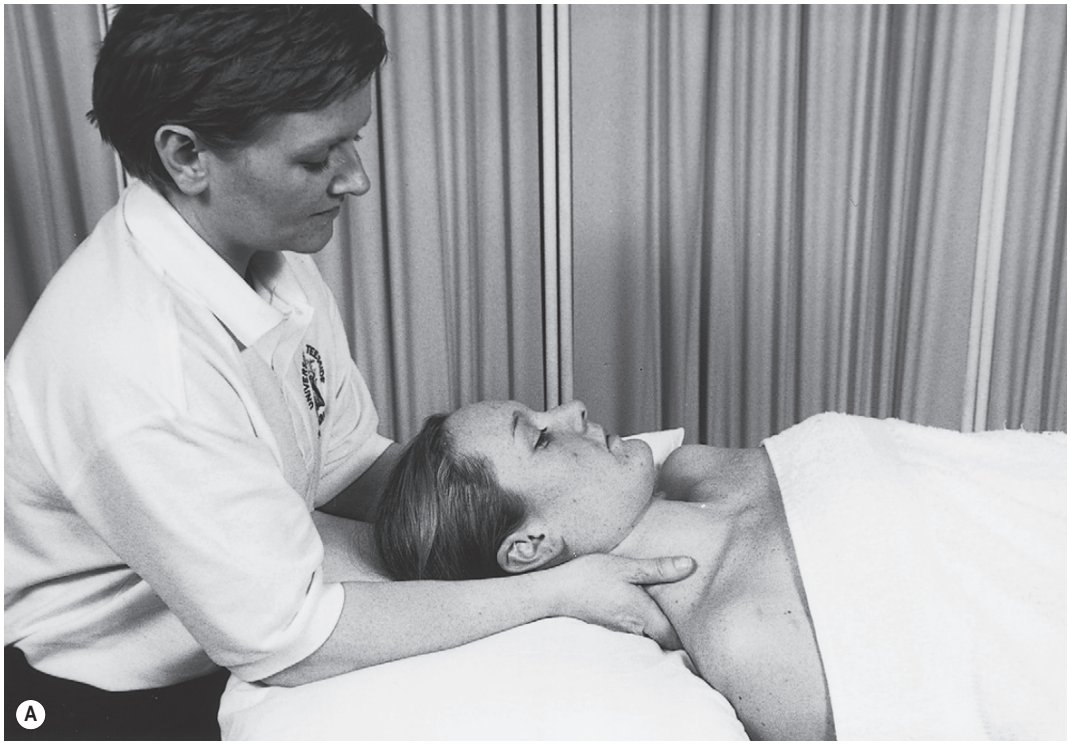


Figure 8.27 • (A, B) Whole-handed kneading of the paravertebral muscles of the neck. • For acute neck pain the patient's head is supported on a pillow on the therapist's lap.

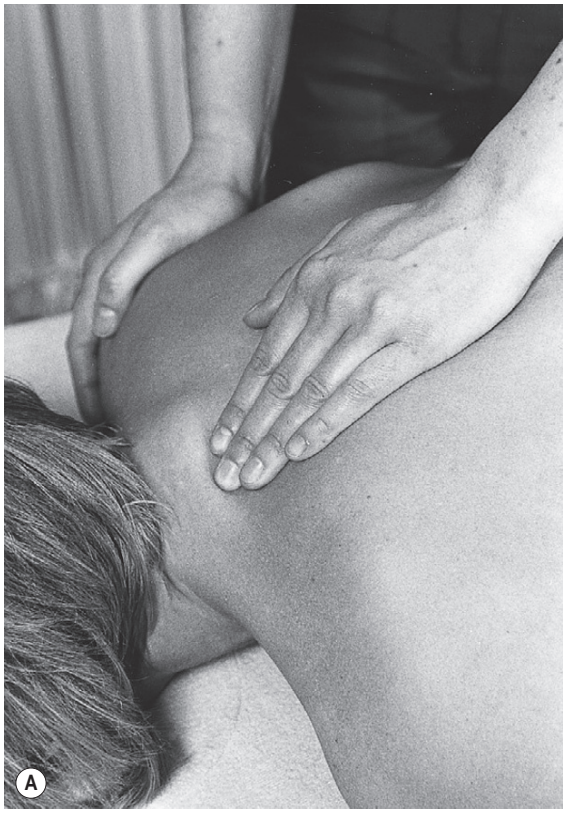


Figure 8.28 • (A, B) Finger kneading the paravertebral muscles.

Figure 8.29 • (A, B) Finger kneading the scalene muscles using the pads of the fingers.

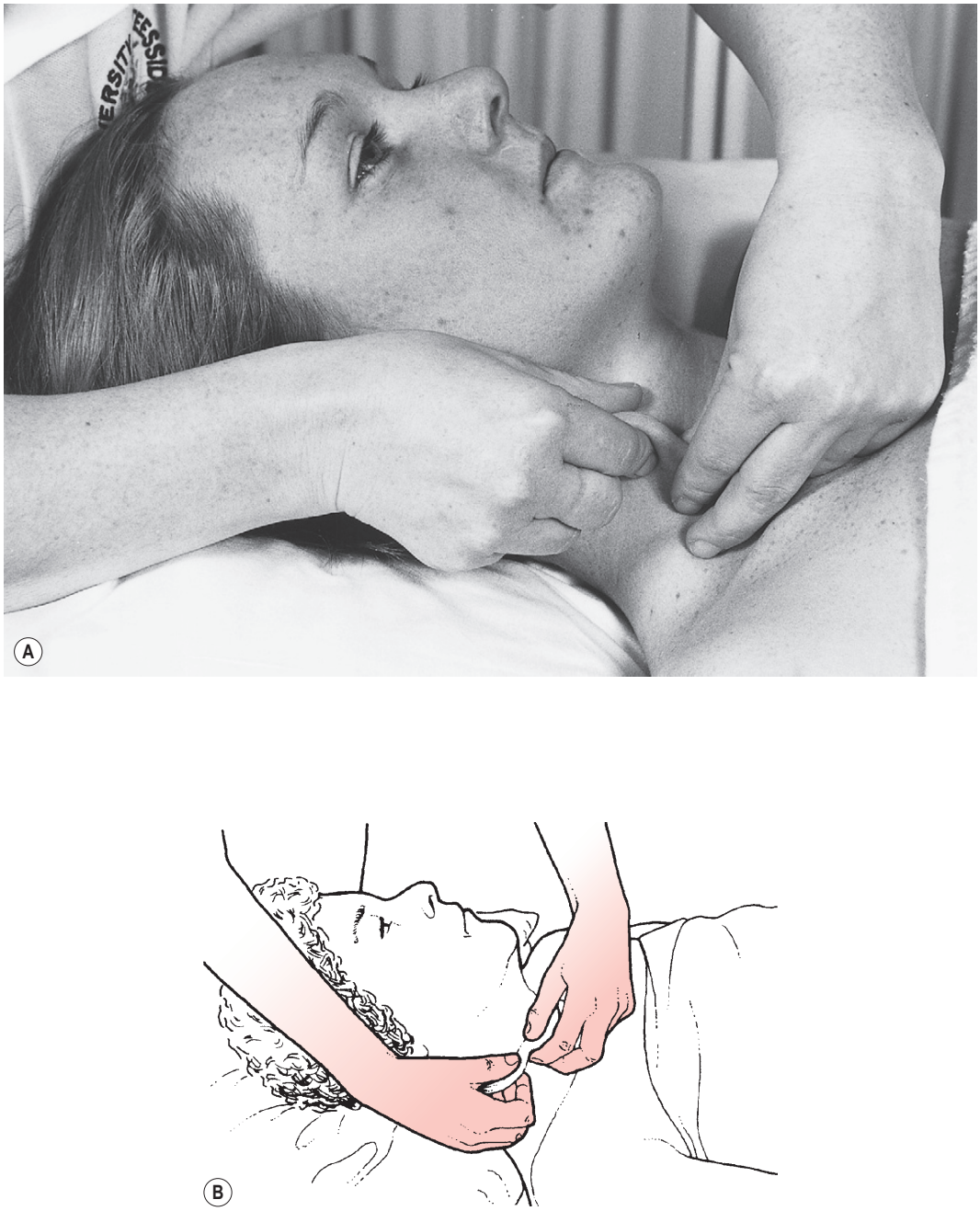


Figure 8.30 • (A, B) Wringing the sternocleidomastoid.

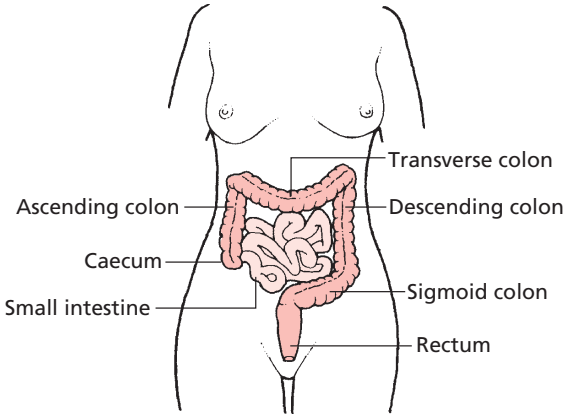


Figure 8.31 • Surface position of the intestines.

Special anatomical points

Direction of strokes directed by the underlying visceral anatomy (note the ascending colon lies from the right iliac fossa to the ribs, the transverse colon runs transversely under the costal margin, arching below the ribs, and the descending colon runs down to the left iliac fossa; Fig. 8.31).

Depth of massage is dictated by the depth of the superficial tissue.

The colon should be palpable during the massage.

The organs may be displaced if trunk deformity is present.

Manipulations

Stroking: across the abdomen (Fig. 8.32) until relaxation of the muscles occurs.

Small intestine

Kneading: finger kneading and flat-handed kneading across the abdomen (Fig. 8.33).

Colon

Deep stroking along the line of the ascending, transverse and descending colon (Fig. 8.34).

Kneading: finger kneading (Fig. 8.35) and flat-handed kneading along the ascending transverse and descending colon or moving the colon sideways with flngertips, or on the abdominal wall at the start of massage, to dispel wind.

Vibrations: along the colon (Fig. 8.36).

The face

Positioning of the patient

Supine on the treatment couch, head supported on a pillow.

Supine on the treatment couch, head supported on a pillow on the therapist's lap.

Sitting on a low-backed chair, head supported on a pillow against the therapist's chest.

Special anatomical points

Lymph glands: submandibular nodes drain the forehead and the anterior part of the face; parotid nodes (just below the ear) drain the lateral part of the face and eyelids; submental nodes (just below the chin) drain the chin. All these nodes drain into the deep cervical glands (Fig. 8.37).

The muscles of the face are supplied by the facial (7th cranial) nerve.

In facial (Bell's) palsy, massage should maintain the mobility of the facial muscles.

Major muscles: procerus, orbicularis oculi and oris, levator labii superioris, levator and depressor anguli oris, zygomaticus major, buccinator, occipitofrontalis, corrugator, depressor labii inferioris, mentalis, platysma, masseter, temporalis and the pterygoids (Fig. 8.38).

Manipulations

Effleurage: across the cheeks to the parotid glands, across the forehead (Fig. 8.39) down the sides of the cheeks to the submandibular nodes (Fig. 8.40).

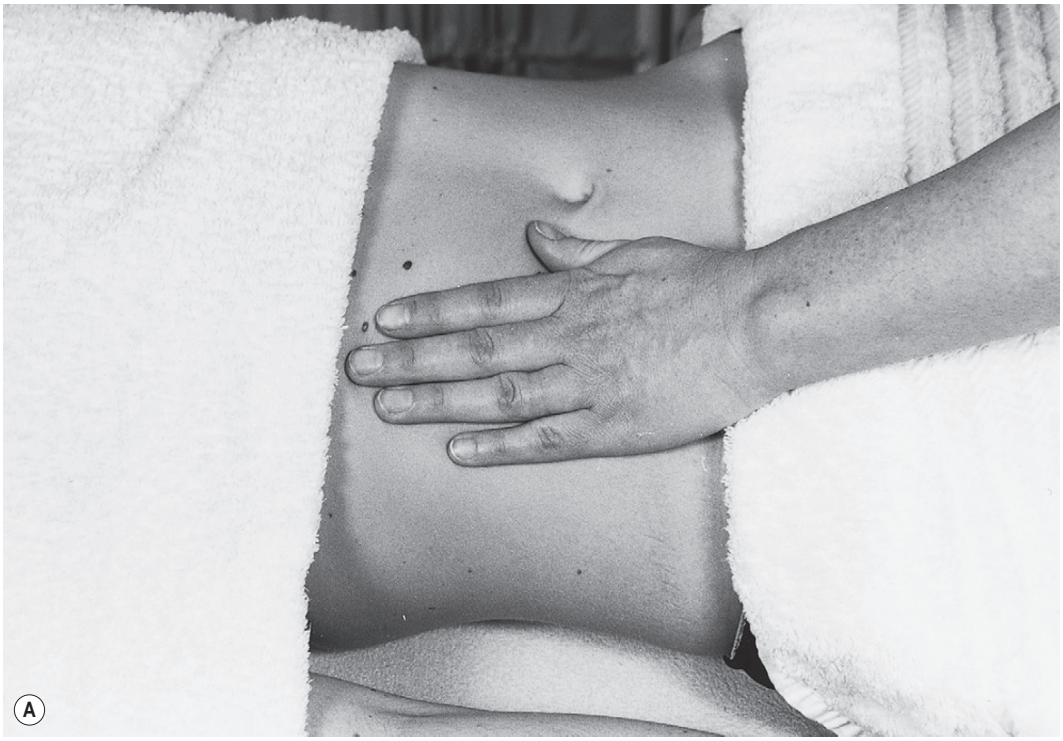
Finger kneading: across the forehead, cheeks, upper lip and chin, following the facial muscles. Avoid over-stretching the muscles or the skin.

Plucking: pluck the tissues gently in the same areas as finger kneading (Fig. 8.41).

Wringing: gentle wringing in a continuous line over the forehead, cheeks (Fig. 8.42) and chin.

Tapping: over the muscles for stimulation, or the sinuses to aid drainage.

Vibrations: using the middle finger only, vibrate over the foramina where the ophthalmic (supraorbital foramen), maxillary (infraorbital foramen) and mandibular (mental foramen) nerves emerge and over the sinuses.



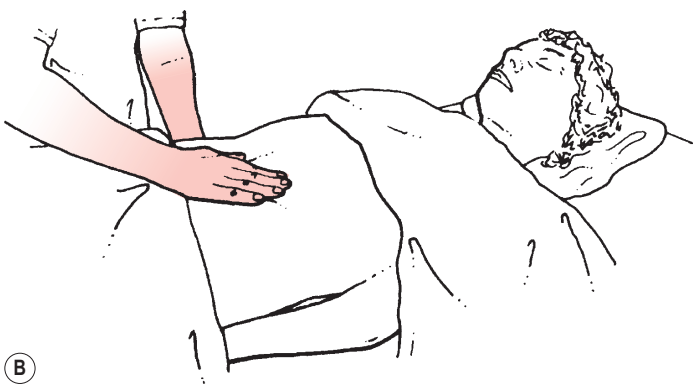


Figure 8.32 • (A, B) Stroking across the abdomen.

Figure 8.33 • (A, B) Kneading the small intestine with the heel of the hand.

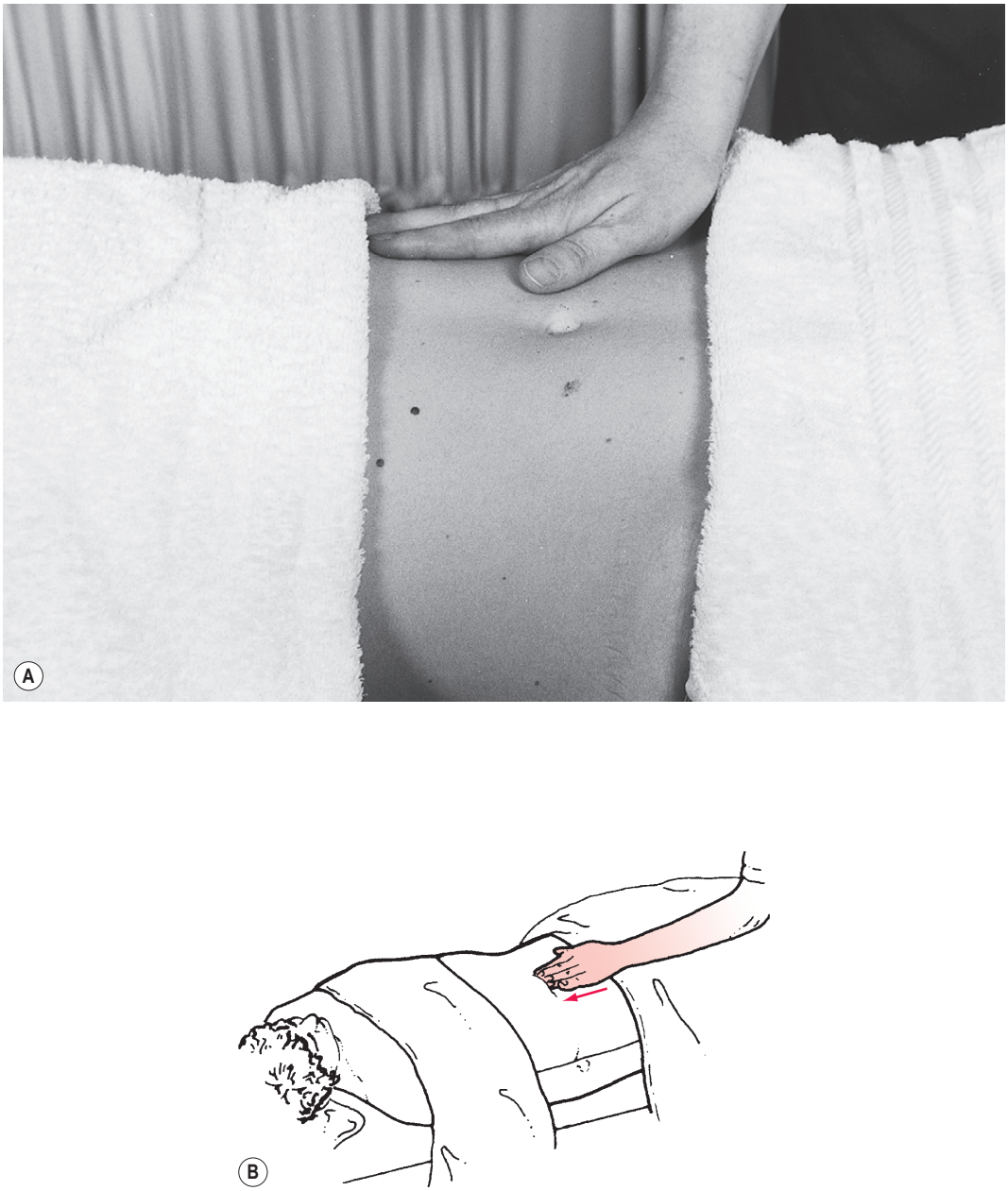
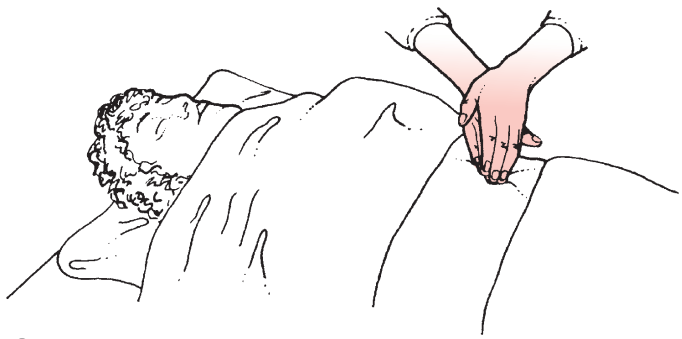


Figure 8.34 • (A, B) Deep stroking along the course of the colon.

A



B

Figure 8.35 • (A, B) Reinforced finger kneading the colon.

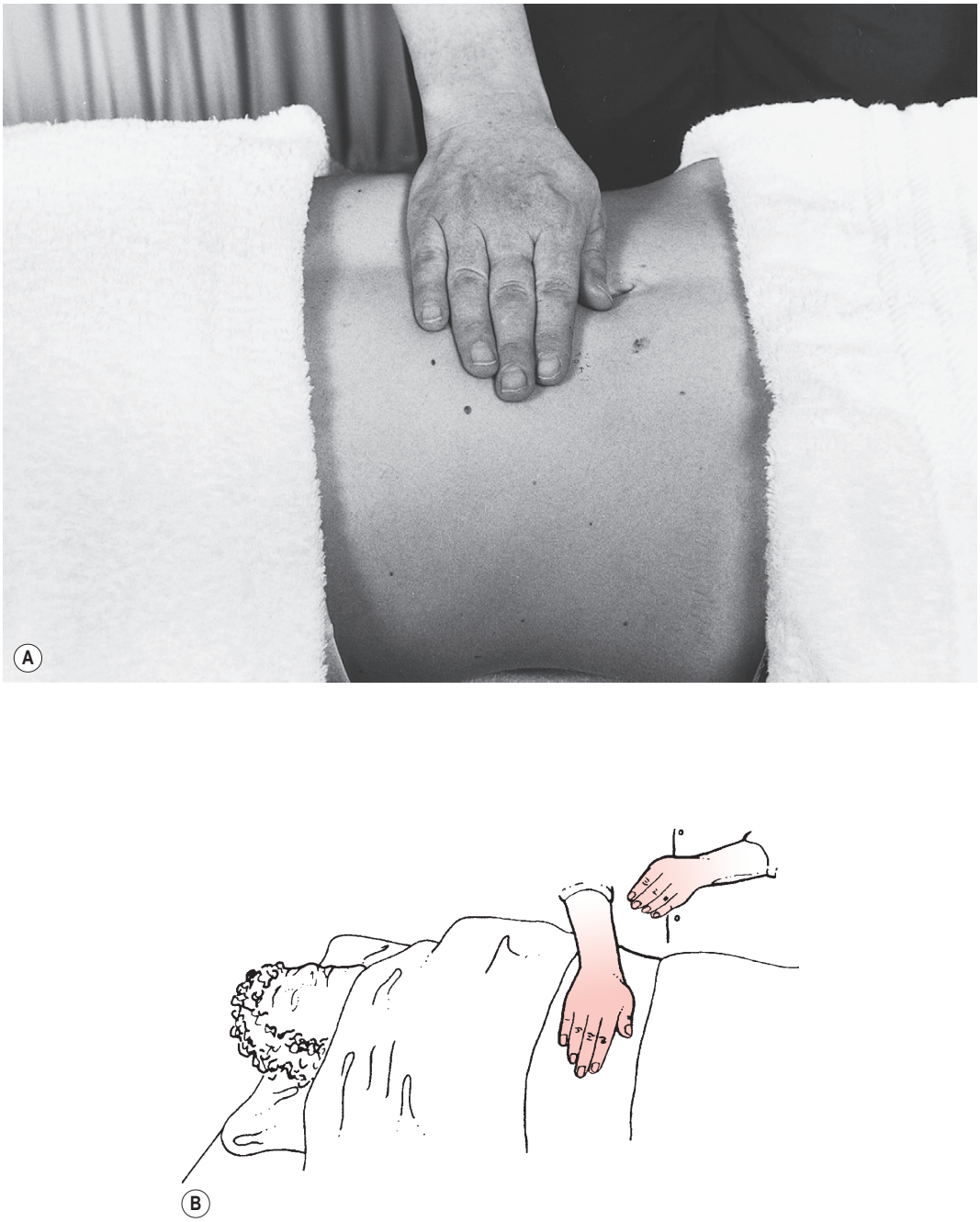


Figure 8.36 • (A, B) Vibrations along the course of the colon.

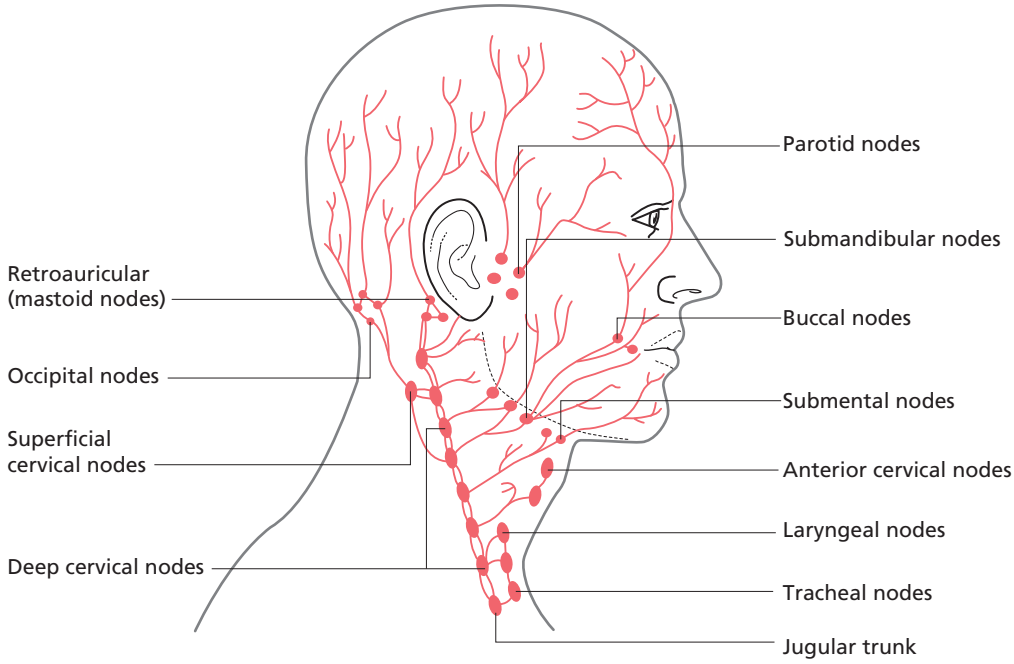


Figure 8.37 • Lymphatic drainage of the head and neck.

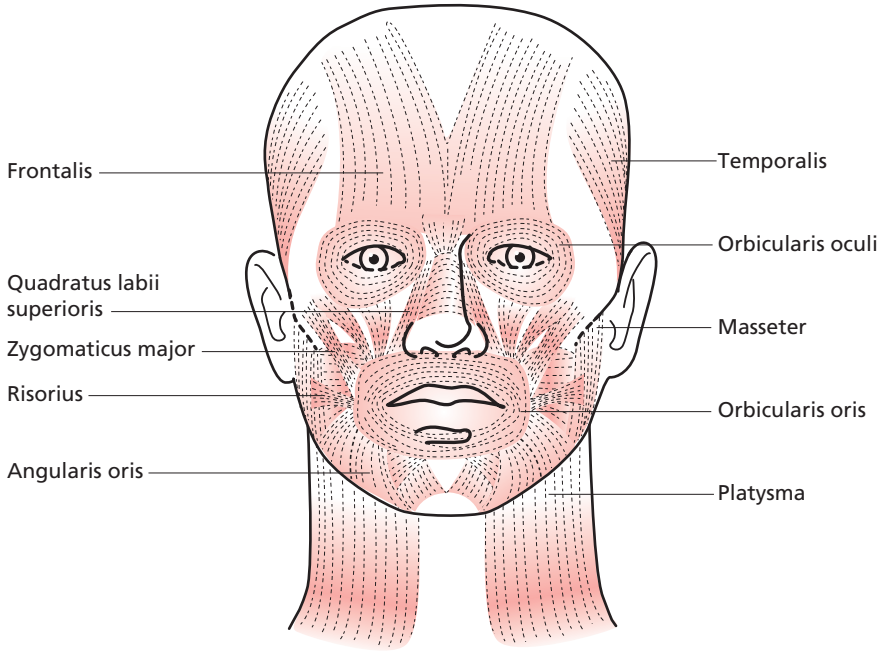


Figure 8.38 • The muscles of facial expression.

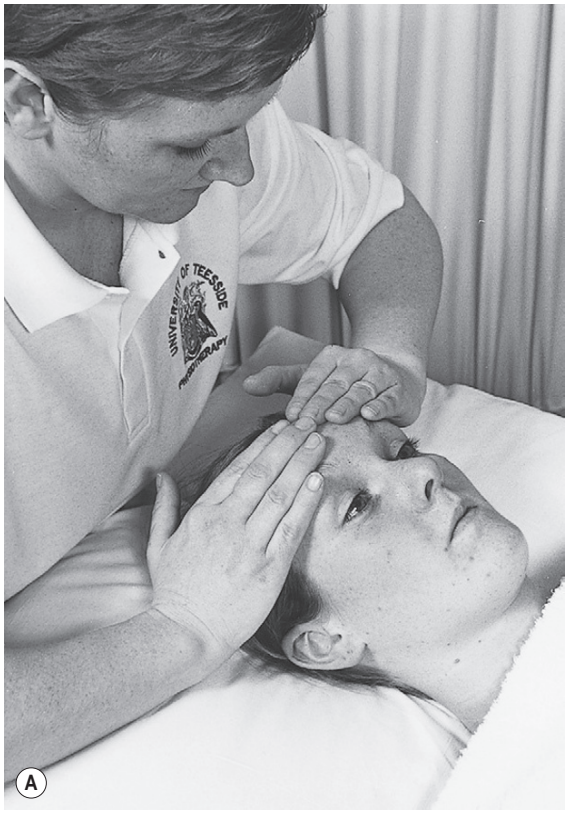


Figure 8.39 • (A, B) Start of the effleurage stroke across the forehead.

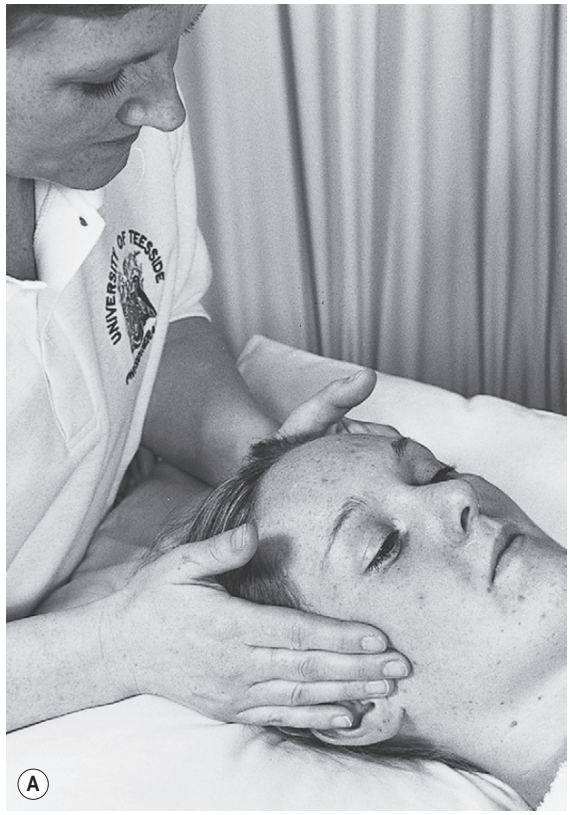


Figure 8.40 • (A, B) Finish of the effleurage stroke over the parotid lymph nodes.

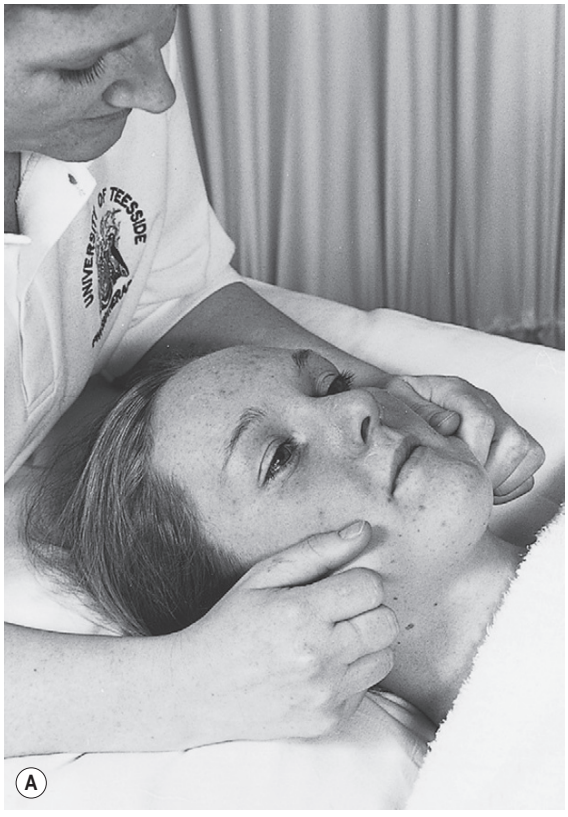


Figure 8.41 • (A, B) Plucking the tissues of the face.

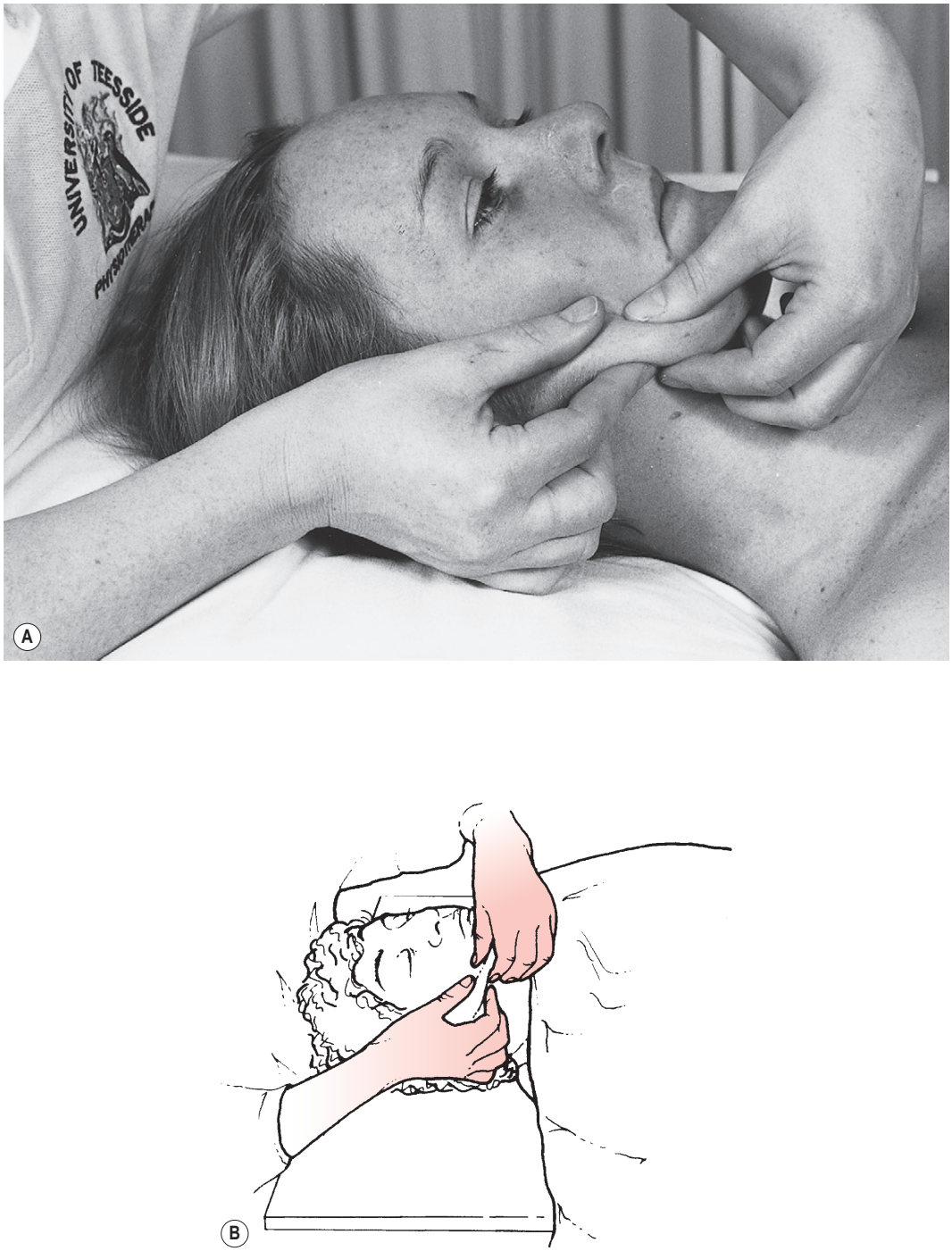


Figure 8.42 • (A, B) Wringing the cheeks.

Reflex therapies

9

CHAPTER CONTENTS

This chapter introduces a variety of specialised techniques which are either employed for particular clinical situations or rather complex to use. While the techniques in themselves may not be difficult to learn, their safe application requires sophisticated clinical reasoning and the detailed conceptual framework for this is outside the scope of this book. It is important to emphasise that they are simply introduced here (some very briefly) and must be learned from an experienced practitioner.

Technique: connective tissue manipulation/ bindegewebsmassage

Features

Connective tissue manipulation (CTM) is a soft tissue manipulative therapy which is, conceptually, a reflex therapy. It influences cutaneovisceral autonomic reflexes (see Chapter 3) to induce balance between the sympathetic and parasympathetic nervous systems. It utilises connective tissue (CT) zones derived from the skin zones of Head and the muscle zones of McKenzie. These are found principally on the back where they can be seen and palpated. The zones are both visible and palpable, with a degree of inter-rater reliability (Holey & Watson 1995) Acute zones are seen as 'puffy' raised areas which feel soft to the touch, with underlying tension felt when superficial layers are moved on deeper layers. Chronic zones are recognised as drawn-in areas in which the tissues are palpated as tight and adherent (Haase 1962). They are often hypersensitive. The zones (see Fig. 3.7) are assessed to detect the level of autonomic balance and specific functional problems. For example, a positive liver zone may indicate recent drug therapy, heavy social drinking or disease. The number of visible and palpable zones indicates the generality of autonomic imbalance. The zones can indicate the degree to which imbalance has occurred or can inform progression of treatment or location of strokes to be applied, or can indicate cautions. A specific stretch manipulation is applied to the fascial layer and is thought to stimulate segmental and suprasegmental cutaneovisceral reflexes. All structures sharing the same spinal segmental innervation are stimulated via the autonomic nervous system (ANS), resulting in effects that include vasodilatation and alterations in smooth muscle tone. The suprasegmental effects are mediated in the medulla and wider physiological effects are achieved, such as improved balance between the two components of the ANS, endocrine and hormonal balancing and raised beta-endorphin levels. It produces a feeling of well being and increased flexibility.

© 2011, Elsevier Ltd.
DOI: 10.1016/B978-0-7020-3229-5.00009-8

CTM must be applied skilfully at the correct tissue interface and must begin at the sacrum to avoid adverse autonomic reactions. The progression of the strokes depends on the aims of treatment and on clinical reasoning. The technique and its clinical application must be learned from an experienced practitioner.

Patients who may benefit from this treatment are those with:

- Local mechanical musculoskeletal problems, for example scarring or shin splints;
- Hormonal problems, for example women experiencing menopausal or menstrual symptoms;
- Visceral problems, for example bowel disorders; and
- Autonomic problems, for example complex regional pain syndrome, intractable nerve root pain.

Application of the different techniques depends on individual patient needs. Generally, the therapist is aiming to use the fascial technique. If this is used inappropriately, adverse reactions such as fainting can occur. The 'basic section' must be treated first to induce a parasympathetic response, to prepare the body for stimulation of sympathetic dermatomes. Superficial layers must be prepared first. The preparatory strokes are usually used initially and these are often clinically effective in their own right. Treatment is progressed by working superficial to deep and caudad to cephalad. Care must be taken not to overtreat, due to the possibility of producing adverse reactions. Treatment should always be comfortable, and never painful.

Categories—Preparatory Strokes: Fascial Technique; Skin Technique; Subcutaneous Technique; Flat Technique

Manipulation: fascial (*fazien*) technique

Purpose

To reduce fascial tension.

To reduce trophoedematous changes in zonal areas.

To improve visceral function.

To promote fluid level balance.

To achieve balance between the sympathetic and parasympathetic nervous systems.

To reduce sympathetically maintained pain.

To increase circulation.

To produce a feeling of well being.

To increase local and general flexibility.

To enhance hormonal and endocrine function.

To increase circulation.

Procedure

This is CTM 'proper', which produces the strong autonomic reflex reactions.

The pad of the therapist's third finger makes contact with the skin (Fig. 9.1A).

The finger is reinforced by the ring finger.

The distal interphalangeal joint is flexed, to gather up the slack superficially in the tissues.

The therapist should then push into the end-feel using the hand and arm to exert a traction effect at the fascial layer.

Each stroke must be performed in the palmar or radial direction of the operating hand.

The stroke must be accurately aimed at the correct tissue interface.

The tissues must be adequately prepared by preparatory techniques to produce the desired effect.

Each stroke must produce a cutting sensation and a triple response, or adverse reactions will occur.

All strokes must be within the patient's tolerance of discomfort.

The strokes *must* begin at the sacrum.

Progression of the strokes depends on the individual patient's response and on the aims of treatment: they can be dictated by the zones, segmental relationships and understanding of the underlying pathological processes.

Manipulation: skin (*haut*) technique

Purpose

This is to be used during the fascial technique when most of the strokes produce the normal 'cutting' reaction, to ensure uniformity of reaction.

Skin technique is applied to a localised area where it becomes difficult to obtain a clear 'cutting' response.

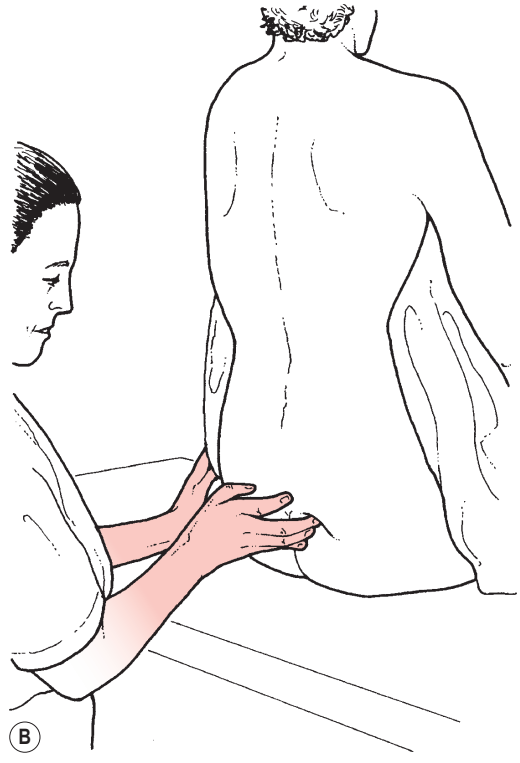


Figure 9.1 • Connective tissue manipulation: (A, B) fascial (fazien) technique; (C, D) skin (haut) technique; (E, F) shallow (flashige) technique; (G, H) subcutaneous (unterhaut) technique.

Continued

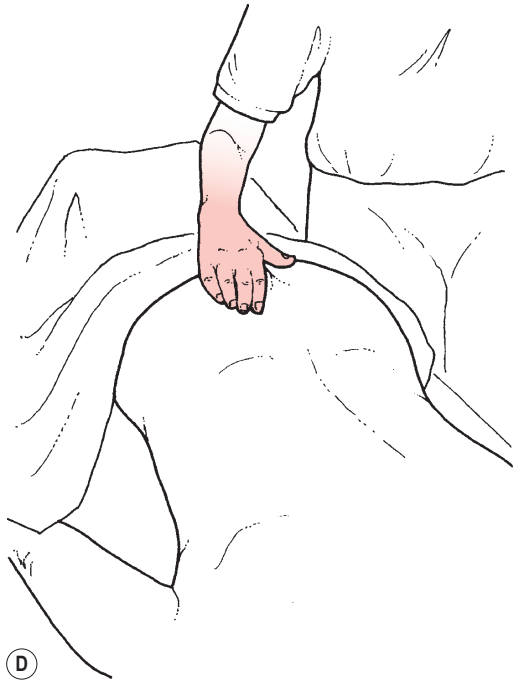


Figure 9.1—cont'd

Continued

Figure 9.1—cont'd

Continued

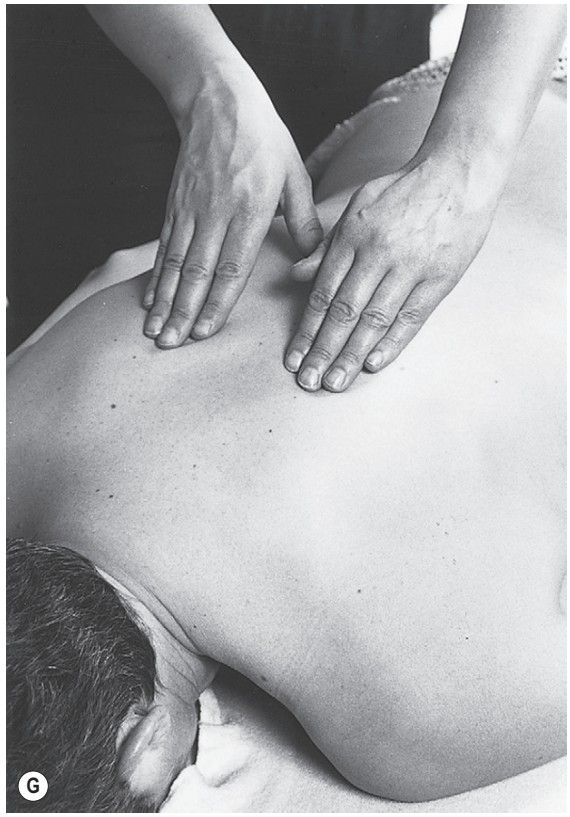


Figure 9.1—cont'd

Procedure

The therapist places all four finger*tips* on the skin where treatment is required (Figs. 9.1C, D).

The fingertips are lightly and rapidly brushed over the surface of the skin.

The fascial technique is then retried, and should now produce the cutting sensation.

Manipulation: flat (*flashige*) technique

Purpose

To be used where there is subcutaneous swelling and the fascial technique is unable to produce the 'cutting' sensation.

Procedure

The patient should be side-lying.

The therapist sits behind the patient.

The therapist's thumbs are flexed, the nails placed together and the tips hooked under the subcutaneous tissues at their insertion into the sacral border (Figs. 9.1E, F).

The therapist's fingers are spread over the skin, which they pull gently towards the thumbs.

The thumbs are pushed away, towards the fingers, applying a stretch to the fascia, *to* the end-feel of the movement.

Do not stretch *into* the end-feel by exerting an over-pressure, to produce a 'cutting' reaction.

Proceed the strokes in the following order: along the sacral border, along erector spinae (both edges), along the vertebral border of the scapula and along the greater trochanter.

Manipulation: subcutaneous (*unterhaut*) technique

Purpose

This is to be used when the tissues are extremely tender and unable to tolerate other techniques.

Procedure

The patient lies prone.

The therapist stands to one side of the patient's trunk.

The therapist places the pads of the fingers of both hands lightly on the skin (Figs. 9.1G, H).

The finger pads sink into the subcutaneous layer.

Small pushing movements are made in a cephalad direction.

The skin is moved with the fingers and the stimulus must remain in this layer.

The strokes can be progressed over the area requiring treatment or over an area implicated in a desired reflex effect.

Technique: myofascial release

Features

A stretching technique that recognises and utilises the craniosacral rhythm.

The craniosacral rhythm, believed to be a pulsing of the cerebrospinal fluid, is particularly involved with release of the cranial base, the dural tube and the pelvic and respiratory diaphragms.

Tightening of the myofascia is identified by palpation.

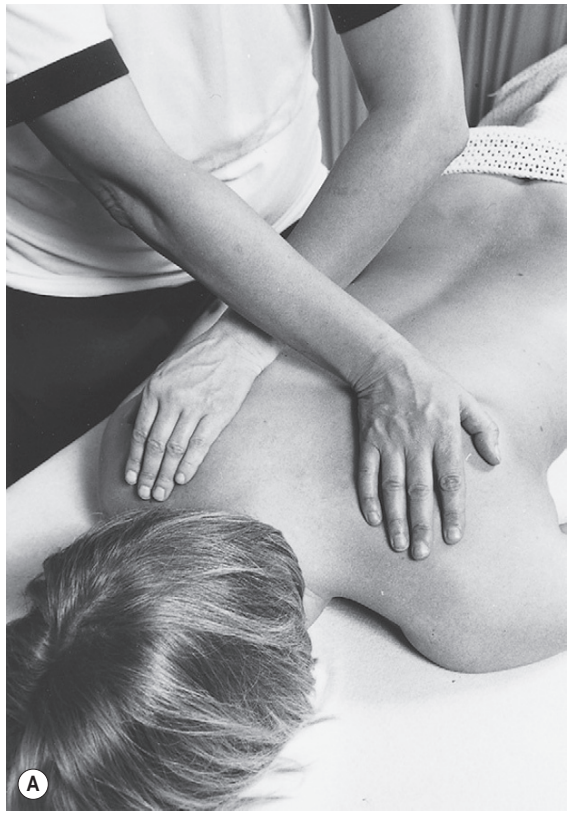
Passive stretching along the direction of the muscle fibres is followed by a hold, until release is felt and the process is repeated until there is no further release.

Somato-emotional release can occur, so it is important that the therapist is qualified to work with and support this release, or functions within a multidisciplinary team.

Procedure

A longitudinal stretch is applied along the direction of the muscle fibres by:

1. Applying the therapist's fingertips on the skin and moving the fingers and underlying skin apart;
2. Placing crossed hands on the skin, exerting pressure through the ulnar border of the hands and separating the hands to stretch the underlying skin (Figs. 9.2A, B);



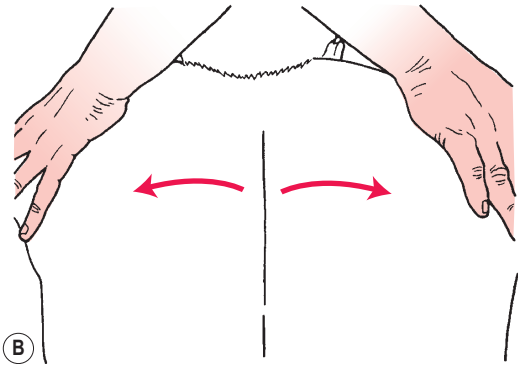


Figure 9.2 • (A, B) Myofascial cross-handed release technique; (C, D) longitudinal myofascial release.

Continued

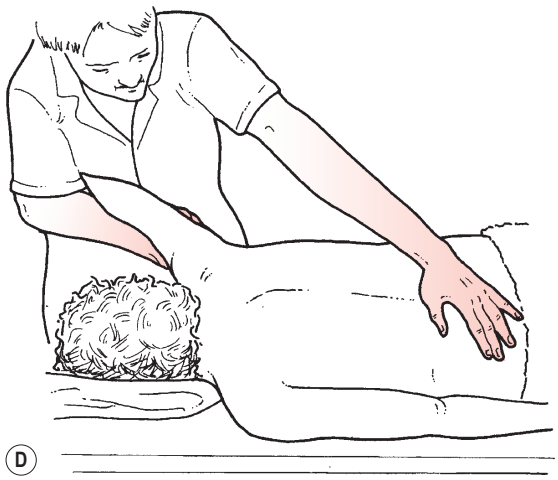


Figure 9.2—cont'd

3. Firmly grasping the limb and pulling along its long axis, the muscle to be stretched dictating the position of the joints (e.g. internal rotation with adduction); and
4. Increasing the localisation of a longitudinal stretch by placing one hand on the proximal border of the muscle under stretch (Figs. 9.2C, D).

Technique: segmentmassage

Features

Effective as a reflex technique.

Works by stimulating the ANS via the skin by a mechanism similar to that of CTM.

It is particularly effective at the maximal tenderness points of CT zones.

It has a more gentle, gradual effect than CTM, working predominantly in the subcutaneous layer but also the fascial layer and the periosteum.

It produces a strong parasympathetic effect and is less likely to produce an adverse reaction.

A wide variety of techniques are included, some of which relate to spinal segments and others to the dermatomes in the limbs.

Assessment of the patient involves stroking segmentally with the thumb tips; a 'paradoxical reaction' which leaves white lines rather than the triple response of CTM is produced.

If the skin does not move or react appropriately, vibrations are performed.

Purpose

To produce a parasympathetic reaction, promoting a feeling of relaxation and well being.

To influence other functions or structures within the same spinal segment and to stimulate cutaneovisceral reflexes.

To reduce pain.

To increase circulation.

Segmentmassage manipulations

The names for these manipulations do not translate easily from the German and this will not be attempted here.

Procedure 1

The patient sits on a stool, pelvis tilted forwards to sit on the ischial tuberosities.

The therapist sits behind and places her hands around the patient's iliac crests.

The therapist's thumb tips are placed on the skin on the border of erector spinae and pushed into the muscle layer.

The thumbs are circled away from the spine (Figs. 9.3A, B).

The hands gradually progress in a cranial direction, circling in each spinal segment.

Procedure 2

The patient sits on a chair and leans back on to the therapist, who is standing behind.

The patient's head is supported on the therapist.

The therapist places the tips of her fingers on the patient's forehead, with the fingernails of each hand back-to-back (Figs. 9.4C, D).

Small light circles are followed with the fingertips.

The skin should move with the fingers; there should be no glide over the skin.

Procedure 3

The patient is sitting upright.

The therapist stands behind and grasps the point of the patient's shoulder.

The other hand slides underneath the scapula, with fingers on teres minor and the thumb under the scapula.

The length of the rhomboid attachment is thumb kneaded (on the periosteum) on the vertebral border of the scapula.

The technique is then modified so that the hand is turned round and small circular movements are applied to the undersurface of the scapula (Figs. 9.4E, F).

Technique: periosteal massage

Features

Works very specifically on the periosteum.

Small stationary circles are circumscribed.

Utilises a reflex effect.

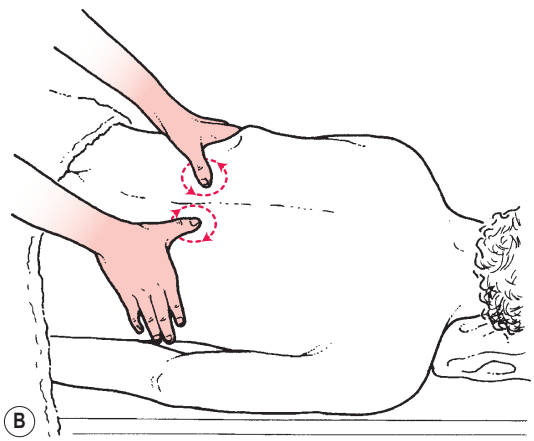
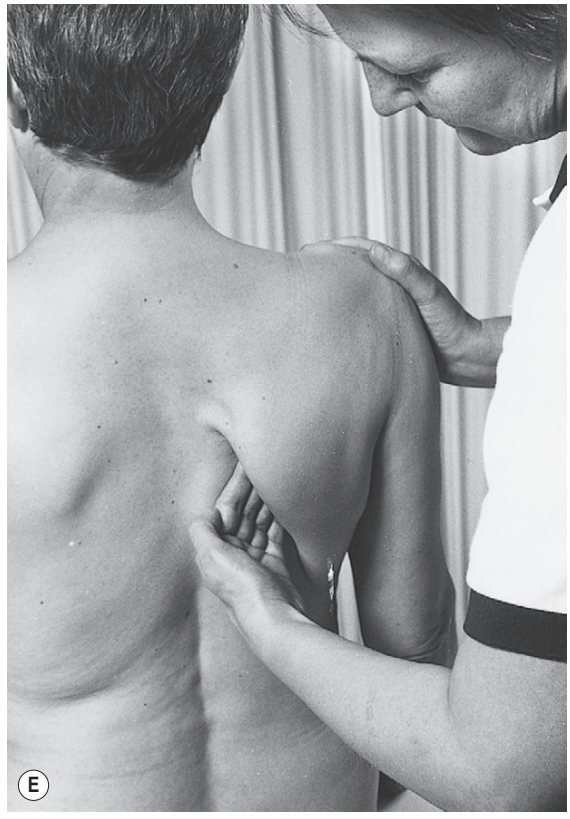


Figure 9.3 • Segmentmassage: (A, B) thumb circling; (C, D) of the forehead; (E, F) of the undersurface of scapula.

Continued

Figure 9.3—cont'd

Continued



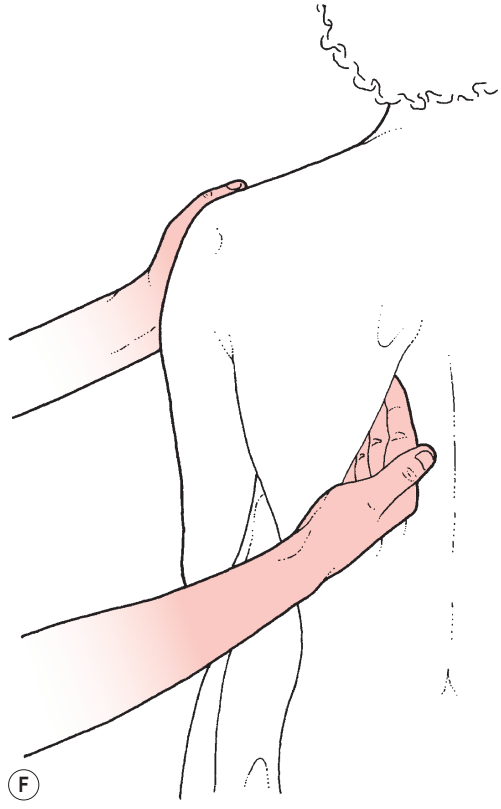


Figure 9.3—cont'd

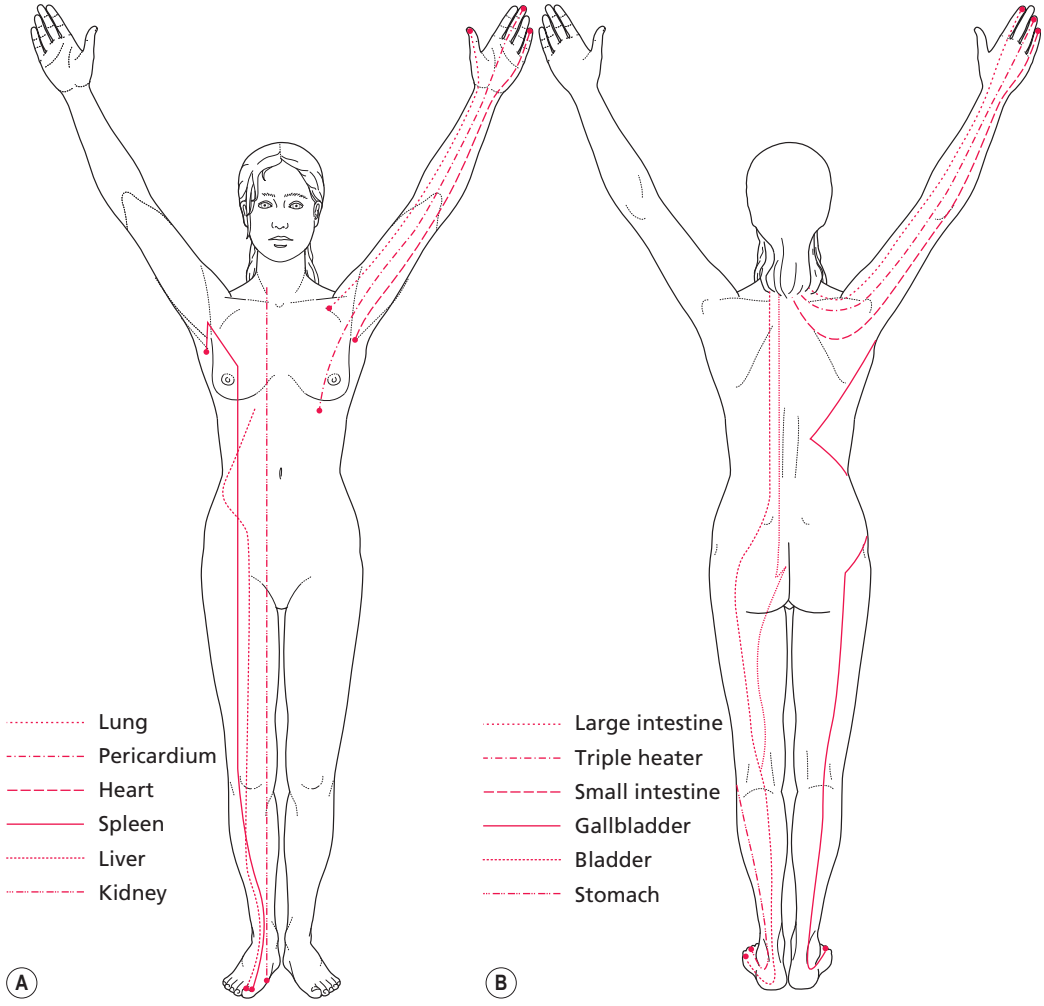


Figure 9.4 • Major meridians of (A) the anterior and medial and (B) the posterior and lateral aspects of the body. • (A) Short dashed line—lung; dash dotted line—pericardium; long dashed line—heart; solid line—spleen; dotted line—liver; dash treble dotted line—kidney. (B) Short dashed line—large intestine; dash dotted line—triple heater; long dashed line—small intestine; dash treble dotted line—stomach; dotted line—bladder; solid line—gallbladder.

Purpose

Reduces pain.

Stimulates the ANS through the maximal points of reflex zones.

Procedure

The therapist flexes all the joints of her index finger.

Contact is made between the ulnar border of the proximal interphalangeal joint of the index finger and the point to be treated.

Pressure is increased through this point until the periosteum is reached.

Tiny circular movements are performed with the hand, maintaining the pressure to ensure that the knuckle does not glide over the skin (2 minutes).

Bioenergy therapies

A growing number of therapists incorporate what has come to be known as 'bioenergy healing' into their preferred system of massage or touch therapy. This

is probably due to an emerging collection of evidence about the biology of human energy. While, historically, more attention has been paid by the medical community to the chemical factors of human biological communication, it is also speculated that electrical and electronic factors may be of equal importance (Oschman 2000a). Clearly, a therapeutic intervention in the nature of bioenergy healing is wholly different in character to the therapies traditionally used in orthodox medicine. It creates a new paradigm in relation to the boundaries of holism.

Very concisely, an accepted explanation of bioenergy healing is that a therapist's intentions can create specific patterns of electrical and magnetic activity in her own nervous system which may interact or influence the electrical and magnetic activity of the patient. The evidence for human energy fields, as with any physical entity, is not in dispute. Seto and co-workers (1992) detected large biomagnetic fields emanating from human hands, confirming the earlier work of Zimmerman (1990). The fields are in the frequency range 0.3–30 Hz, the same frequency as brainwaves. It is well accepted that a 7-Hz frequency of pulsating magnetic fields can stimulate the growth of bone after fracture, an event initiated therapeutically by a medical device. It is thought that similar stimulation can occur with nerves (2 Hz), skin and fibroblasts (15 Hz) and ligaments (10 Hz) (Oschman 2000b), but the relevance of this to therapist/client interaction is not clear but controversial.

Although the proposed mechanism for bioenergy healing is speculative, there are many types of healing intervention being practised where the focus is the therapist's intention to affect, for example in reiki, faith healing, spiritual healing, psi healing, bioenergy therapy and therapeutic touch. These therapies are becoming accepted in mainstream medicine, particularly in oncology and palliative care, albeit for the feeling of well being and hope they induce, rather than any specific bioenergy effect. Their use is justified because of the vast number of reported studies which have shown bioenergy therapies (or 'healing') to be effective, thus supplying an evidence base. Benor (1993, 1994) conducted a comprehensive literature review of 131 trials where the standards of research reached modern protocols. Of these trials, 59% reported a statistically significant outcome, considerably more than would have been expected to occur by chance.

Acupressure

Eastern therapies, in particular acupuncture, acupressure and shiatsu, use reflex effects to assist in diagnosis and treatment.

Meridians

In Traditional Chinese Medicine there are 12 major channels (meridians) of the body in which *chi* (energy or life force) circulates (Fig. 9.4). The meridians are paired and named after the organs with which they are connected: the Lung and Large Intestine; the Stomach and Spleen; the Heart and Small Intestine; the Urinary Bladder and Kidneys; the Pericardium and Triple Heater; the Gallbladder and Liver.

Of each pair, one channel is *yin* and the other is *yang*, reflecting the concept of balance between a negative and a positive state of energy. When yin and yang are in dynamic balance this is reflected by a healthy body and mind; if the yin and yang are out of balance this denotes a state of ill-health in the individual.

The channels link together the organs and interact with each other, and there are also regions where they run close to the surface of the body. These superficial regions often coincide with intermuscular or intertendinous depressions, which are easily palpated by a trained therapist. Acupoints are situated along the course of the channels. The points are believed to be three dimensional; that is, not only are they on the surface of the skin but also they extend to a varying depth into the underlying tissues. They also have a different electrical resistance to that of the surrounding tissue. The significance of the acupoints is that they offer a means of access to the channels, the energy of which can then be altered by the application of various treatment modalities, for example needling, finger pressure, electrical current, laser or moxibustion.

Although there is a lack of definitive evidence (in Western terms) for the existence or non-existence of the channels, there is a growing body of research which supports claims that stimulation of acupoints can cause neurohumoral and chemical changes. For example, it has been shown that stimulating acupoints produces significant analgesic effects when compared with non-acupoints (Chapman et al 1977); stimulating an acupoint near the wrist can reduce nausea and vomiting in postoperative patients (Dundee et al 1986).

Acupuncture is being used increasingly by Western orthodox medical practitioners to relieve pain. It is thought both to influence the pain-gate mechanism and to provoke the release of analgesic endogenous opiates.

It has been found that ohmic resistance is generally lower over acupoints in relation to surrounding areas of skin. The phenomenon is used by practitioners of Ryodoraku acupuncture therapy, based on the belief that the points of high conductance correspond with increased excitability of sympathetic nerves. There is, however, some disagreement as to the significance of the difference in electrical conductance, as this can also be influenced by autonomic arousal. (Chinese researchers have found a correlation between acupoints and nerves.)

Although complete mechanisms have not yet been found for the changes produced by stimulation of acupoints, there is a vast body of empirical evidence which supports its clinical effectiveness.

Practice

The therapist should at least be aware that there are many types of reflex points suggested by various schools of medicine; she should be wary of their presence and the possible effects of manipulating them. Alternatively, having assessed the individual patient and made decisions concerning treatment goals, she may choose a specific type of reflex massage with the intention of having a wider physiological and therapeutic effect, rather than a purely local mechanical effect. For example, she may also choose to incorporate their therapeutic power as an integral part of a massage treatment, as in massaging the reflex points of the feet (reflexology) for a combined local mechanical and broader reflex effect (see Fig. 9.9).

Acupressure is another example of a therapy that was brought to the West from the East. Early Chinese texts indicate that the practice of applying finger pressure to points on the body predates the practice of acupuncture.

The technique is variously described as Chinese micromassage, pressing the Tsubo (shiatsu) or acupressure. Although the philosophies and practices differ, they all have in common a system of channels (meridians) and the manipulation of points along the channels to effect a change in the balance of energy. The different schools advocate various methods of manipulation and some propose that the channels should be tonified or sedated, depending on the diagnosis, which may be of either excess or deficient yin or excess or deficient yang. The yin-yang theory is based on the belief that all qualities contain the potential of their opposite. Yin is associated with such attributes as passivity, cold and rest, whereas yang is associated with activity, heat and stimulation (Kaptchuk 1983). When yin and yang are in balance, a person is presumed to be in an optimum state of health; conversely, a state of ill-health exists when they are out of balance. Most systems agree that, in a condition where yin is depleted, the treatment should be aimed at tonifying; this is done by working along the channel in the direction of the energy flow, using slow and gentle pressure. If the condition is thought to be yang, sedation is the aim of treatment; this is achieved by working against the flow of energy more quickly and with greater pressure.

The therapist usually uses the pad of a finger or thumb to apply the pressure. Some writers maintain that this is because there is a relative electrical neutrality at the end of the digit, being the location where yin and yang are in equilibrium (Lavier 1977). Whether or not this is so, the digits are clearly the tools of choice. However, on regions of the body covered by thick muscular or fascial layers, and which do not have a low pain threshold for pressure, an elbow or knuckle may be used to apply the pressure, which should always be within the tolerance of the patient. As with acupuncture, the aim of treatment can be to reduce pain, to alleviate symptoms of disease and to promote a balance for maintaining or restoring health. Acupoints should not be overtreated and it is generally recommended that local points be pressed for up to 1 minute, while more distal points may be held for up to 3 minutes.

Cautions and contraindications

Caution is required when working with acupoints because of the potential reflex effects. If acupressure is used as a method of pain relief in musculoskeletal disorders, the therapist should be aware of the possibility of stimulating complex visceral and autonomic effects. For this reason, acupressure should not be used for patients with heart disease and other serious visceral disorders. Neither should it be used for the treatment of any disease state unless the therapist is appropriately qualified.

Manipulation: acupressure

Procedure

There is no requirement for the patient to remove clothing for acupressure. However, if the therapist relies on palpation to find the points, clothing should be removed.

The patient is lying or seated in a comfortable position.

The body area to be treated is supported.

Method 1

The therapist contacts the skin over the acupoint with the tip of her finger or thumb. The digit is held stationary while the pressure is gradually increased. The pressure is kept within the tolerance of the patient.

Method 2

The therapist uses the pad of the finger or thumb and, keeping contact with the skin, makes very small rotary movements (Figs. 9.5A, B).

Method 3

The therapist taps the acupoint with one or two fingers.

Method 4

Over thick muscular or fascial layers, the therapist may use a knuckle (Figs. 9.5C, D) or the elbow (Figs. 9.5E, F) to apply pressure.

Location of acupoints

Due to individual anatomical variation some of the locations of acupoints are best described with reference to the *cun*. This is a unit of measurement based on the patient's anatomy. Thus, 1 cun is the distance between the creases of the distal and the proximal interphalangeal joint of the patient's middle finger (the length of the middle phalanx of that finger). The breadth of the index and middle finger, at the level of the distal interphalangeal joint when the fingers are adducted, is 1.5 cun. The breadth of the patient's four fingers, at the level of the proximal interphalangeal joint when the fingers are adducted, is 3 cun.

The following are points commonly used in acupressure massage.

Lateral View (Fig. 9.6)

GV 20

Location: On the median line of the head, bisected by a line joining the highest points of the ears.

Indication: Psychologically effective point, general sedative and harmonising effect, good for weakness of memory, headaches. Not to be used if the patient is hypertensive.

GB 20

Location: In a depression inferior to the occiput, between the origins of sternocleidomastoid and trapezius.

Indication: Common cold, occipital headaches, torticollis, vertigo.

GB 21

Location: On the highest point of the shoulder, over the angle of the first rib.

Indication: Pain in shoulders and upper back, stiff neck.

GB 25

Location: At the tip of the lower border of the twelfth rib.

Indication: Intercostal neuralgia.

GB 30

Location: In a depression lateral to the greater trochanter.

Indication: Low back pain, hip pain, sciatica.

GB 31

Location: On the lateral border of the thigh, where the tip of the second finger touches when standing.

Indication: Aches and pains in the legs.

GB 34

Location: In the depression anterior and inferior to the head of the fibula.

Indication: An influential point for muscles and tendons anywhere in the body; also ankle pain, knee pain, mental disorders.

GB 39

Location: 3 cun above the tip of the lateral malleolus, between the posterior border of the fibula and the peroneus longus and brevis tendons.

Indication: Cervical spondylitis, torticollis, Achilles tendinitis, sprained ankle.

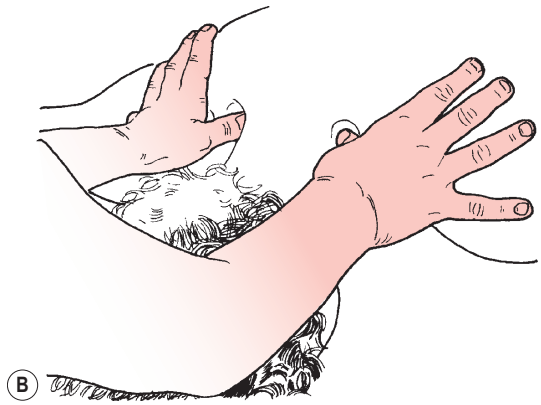


Figure 9.5 • Acupoint stimulation: (A, B) With the thumbs making small rotary movements; (C, D) using the knuckle; (E, F) using the elbow.

Continued

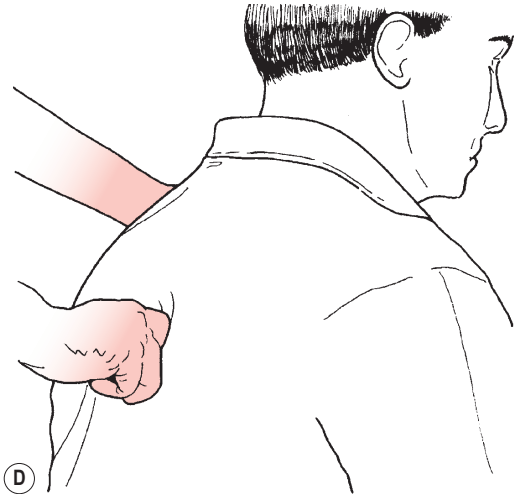
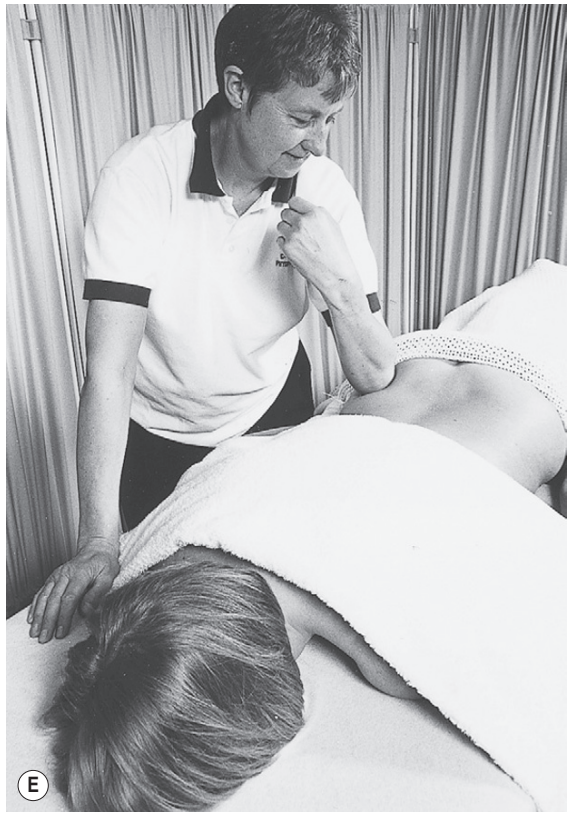


Figure 9.5—cont'd

Continued



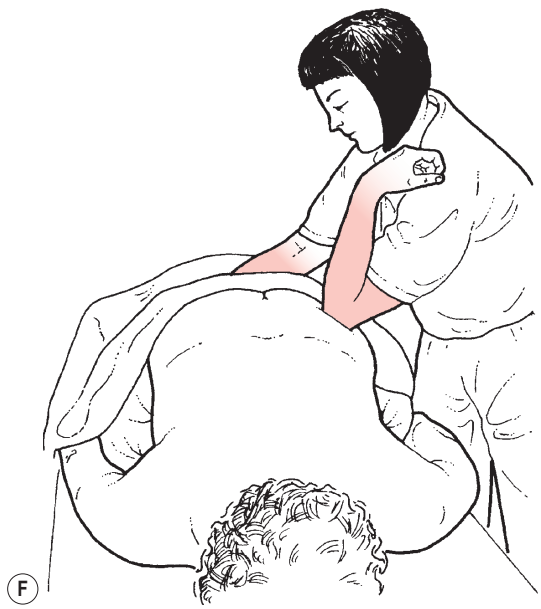
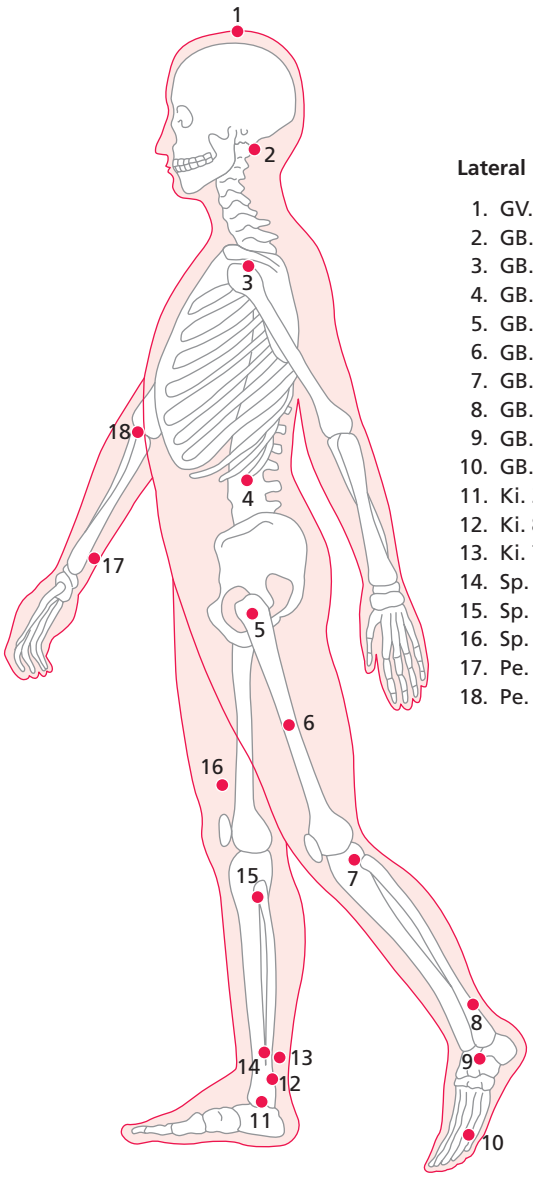


Figure 9.5—cont'd



Lateral

1. GV. 20
2. GB. 20
3. GB. 21
4. GB. 25
5. GB. 30
6. GB. 31
7. GB. 34
8. GB. 39
9. GB. 40
10. GB. 41
11. Ki. 3
12. Ki. 8
13. Ki. 7
14. Sp. 6
15. Sp. 9
16. Sp. 10
17. Pe. 6
18. Pe. 3

Figure 9.6 • Location of commonly used acupoints: lateral view.

GB 40

Location: In the depression inferior to the lateral malleolus posterior to extensor digitorum tendon.

Indication: Pain in the legs, arthritis, soft tissue problems around the ankle.

GB 41

Location: In the depression distal to the base of the fourth and fifth metatarsals.

Indication: Pain in the hand and wrist, headaches.

Ki 3

Location: Midway between the Achilles tendon and the tip of the medial malleolus.

Indication: Bladder and menstrual problems.

Ki 7

Location: 2 cun above the tip of the medial malleolus on the anterior border of the Achilles tendon.

Indication: Mental depression, night sweats, cystitis.

Ki 8

Location: 0.5 cun anterior to Ki 7 on the posterior border of the tibia.

Indication: Mental depression, urinary bladder disorders.

Sp 6

Location: 3 cun above the medial malleolus, slightly posterior to the border of the tibia.

Indication: Pain in the ankles, pain related to menstruation, nocturia, mental depression, insomnia, chronic fatigue syndrome.

Sp 9

Location: In the depression inferior to the medial condyle on the posterior border of the tibia.

Indication: Local problems at the knee joint, irregular menses, enuresis.

Sp 10

Location: At the highest point of vastus medialis, 2 cun proximal to the upper border of the patella.

Indication: Mental disorders, menstrual pain, itching skin, urogenital disorders.

P6

Location: 2 cun proximal to the transverse crease of the wrist, between the tendons of flexor carpi radialis and palmaris longus.

Indication: Gastric problems, nausea, anxiety.

P3

Location: Middle of elbow crease on medial side of biceps brachii tendon.

Indication: Palpitations, angina pain, mental disorders.

Posterior View (Fig. 9.7)

GV 14

Location: Between the spinous processes of C7 and T1.

Indication: Headaches, cervical spondylosis, torticollis, mental disorder, depression.

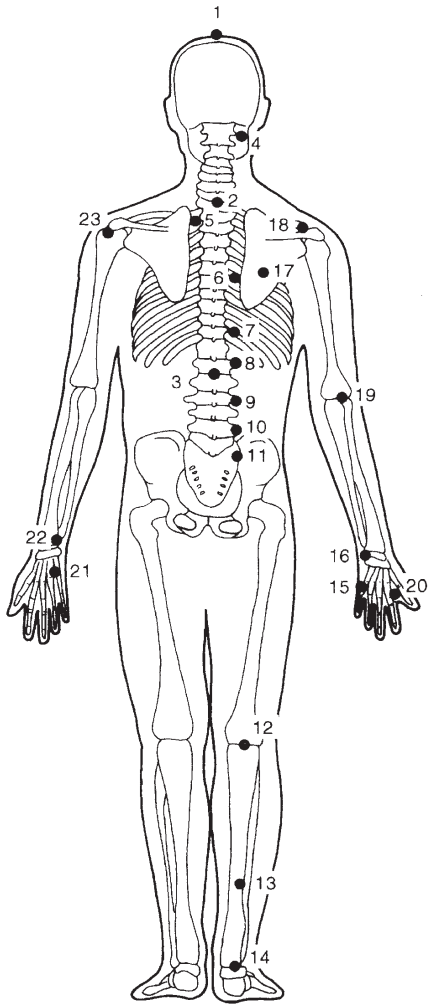
GV 4

Location: Between the spinous processes of L2 and L3.

Indication: Tinnitus, low back pain, sciatica.

Bl 10

Location: 1.3 cun lateral to the midline at the C1–C2 vertebral joint.



Posterior

1. GV. 20
2. GV. 14
3. GV. 4
4. B. 10
5. B. 11
6. B. 15
7. B. 20
8. B. 22
9. B. 23
10. B. 25
11. B. 27
12. B. 40
13. B. 57
14. B. 60
15. SI. 3
16. S. 16
17. S. 111
18. LI. 15
19. LI. 11
20. Li. 4
21. TH. 3
22. TH. 5
23. TH. 14

Figure 9.7 • Location of commonly used acupoints: posterior view.

Indication: Nasal obstruction, headache, cervical spondylosis.

Bl 11

Location: 1.5 cun lateral to the lower border of the spinous process of T1.

Indication: Shoulder pain, neck pain.

Bl 15

Location: 1.5 cun lateral to the lower border of the spinous process of T5.

Indication: Chronic chest disorders, angina pain, mental disorders.

Bl 20

Location: 1.5 cun lateral to the lower border of the spinous process of T11.

Indication: Abdominal pain.

Bl 22

Location: 1.5 cun lateral to the lower border of the spinous process of L1.

Indication: Low back pain, general fatigue.

Bl 23

Location: 1.5 cun lateral to the lower border of the spinous process of L2.

Indication: Decreased energy, low back pain, sciatica.

Bl 25

Location: 1.5 cun lateral to the lower border of the spinous process of L4.

Indication: Low back pain, sciatica, constipation.

Bl 27

Location: On a level with the first sacral foramen, 1.5 cun lateral to the midline.

Indication: Low back pain, sciatica, intestinal disorders.

Bl 40

Location: At the midpoint of the transverse popliteal crease.

Indication: Sciatica, low back pain.

Bl 57

Location: On the midline of the calf at the musculotendinous junction of gastrocnemius.

Indication: Sciatica, muscle spasm in the legs.

Bl 60

Location: At the midpoint of a horizontal line connecting the highest point of the medial malleolus and the Achilles tendon.

Indication: Local pain, sciatica, low back pain, cervical spondylitis, Achilles tendinitis.

SI 3

Location: With the hand making a fist, this point is on the transverse crease just proximal to the head of the fifth metacarpophalangeal joint.

Indication: Tinnitus, headaches, torticollis.

SI 6

Location: In the depression on the radial side of the styloid process of the ulna.

Indication: Painful or stiff joints in the arm or neck.

SI 11

Location: In a depression at the centre of the infrascapular fossa.

Indication: Shoulder and upper back pain.

LI 15

Location: With the arm abducted the point is located at the anterior–inferior border of the acromioclavicular joint.

LI 11

Location: With the elbow flexed to 90°, the point is at the lateral end of the transverse cubital crease.

Indication: Immune enhancing point, local elbow pain, depression, general fatigue.

LI 4

Location: At the highest point of adductor pollicis with the thumb adducted.

Indication: Toothache, face pain, headache.

TH 3

Location: On the dorsum of the hand between the fourth and fifth metacarpals and proximal to the metacarpophalangeal joints.

Indication: Ear disorders, pain in the hands, mental disorder.

TH 5

Location: 2 cun proximal to the dorsal wrist crease, between the ulna and radius.

Indication: Pain in the arm and hand, torticollis, headache.

TH 14

Location: With the arm abducted to 90°, the point is in the depression dorsal to the greater tubercle of the humerus.

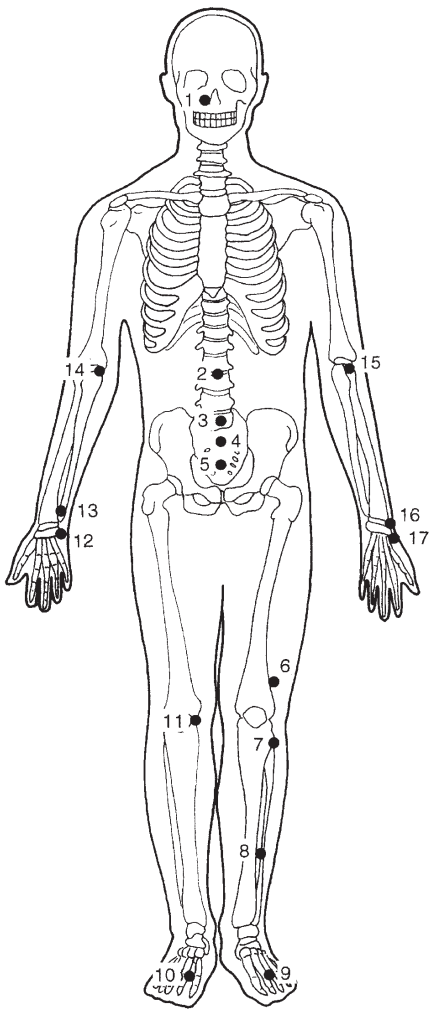
Indication: Shoulder joint pains, arm pain.

Anterior view (Fig. 9.8)

LI 20

Location: Between the nasolabial groove and the nasal ala.

Indication: Trigeminal neuralgia, tension of the facial muscles, toothache.



Anterior
1. LI. 20
2. CV. 12
3. CV. 7
4. CV. 6
5. CV. 4
6. ST. 34
7. ST. 36
8. ST. 38
9. ST. 44
10. Liv. 3
11. Liv. 8
12. H. 7
13. H. 5
14. H. 3
15. Lu. 5
16. Lu. 7
17. Lu. 9

Figure 9.8 • Location of commonly used acupoints: anterior view.

CV 12

Location: On the midline, midway between the inferior border of the xiphoid process and the umbilicus.

Indication: Nausea, vomiting, diarrhoea, abdominal distension.

CV 7

Location: 1 cun below the umbilicus.

Indication: Irregular menstruation.

CV 6

Location: On the midline, 1.5 cun below the umbilicus.

Indication: Together with Sp 6 and St 36 is a general tonification point for chronic fatigue, depression.

CV 4

Location: On the midline 3 cun below the umbilicus.

Indication: Dysmenorrhoea, cystitis, enuresis, depression.

St 34

Location: 3 cun superior to the superolateral border of the patella.

Indication: Knee pain, abdominal pain.

St 36

Location: 0.5 cun lateral to the tibial tubercle and 3 cun inferior to the tibial plateau.

Indication: General pain relief, depression.

St 44

Location: 0.5 cun proximal to the web between the second and third metatarsals.

Indication: Headache, toothache, abdominal pain.

Liv 3

Location: 2 cun proximal to the web between the first and second metatarsals.

Indication: Headache, eye disorders, mental disorders.

Liv 8

Location: In a depression at the medial end of the transverse popliteal crease.

Indication: Disorders of the knee joint, leg pain, dysmenorrhoea.

H7

Location: On the transverse wrist crease, in the depression on the radial side of flexor carpi ulnaris.

Indication: Stress, anxiety, insomnia, irritability.

H5

Location: 1 cun proximal to H 7, on the radial side of flexor carpi ulnaris.

Indication: Wrist pain, insomnia, mental disorder.

H3

Location: With the elbow flexed, midway between the end of the cubital crease and the medial epicondyle of the humerus.

Indication: Tennis elbow, anxiety, irritability.

Lu 5

Location: On the cubital crease lateral to the tendon of biceps.

Indication: Tennis elbow, sore throat, lung disorder.

Lu 7

Location: 1.5 cun proximal to the transverse wrist crease on the radial border.

Indication: Common cold, headache, respiratory disorders, pain or tension in the muscles of the neck.

Lu 9

Location: On the radial end of the anterior wrist crease, lateral to the radial artery.

Indication: Useful for reviving a person who has fainted, influential in circulatory disorders such as arteriosclerosis and intermittent claudication.

Technique: reflextherapy

Purpose

Reflextherapy is also an example of an ancient therapy which originated in the East. It is known variously as reflextherapy, reflexology or zone therapy. Reflexologists believe that each area of the body is represented by zones on the feet and that the feet can be used as a diagnostic tool to uncover imbalances. The therapist treats the relevant area to produce a reflex response in the connected somatic area (see Fig. 9.9).

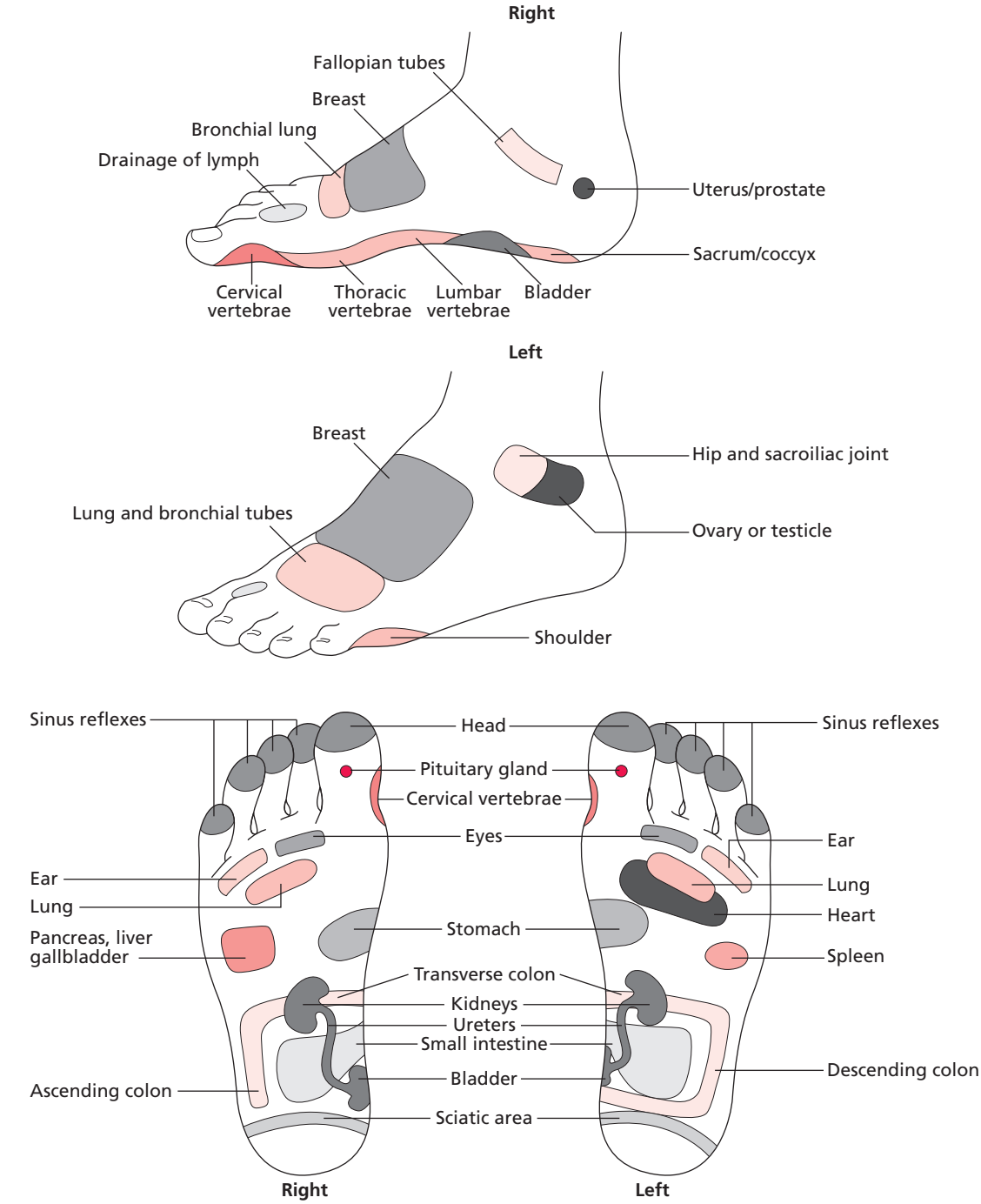


Figure 9.9 • Reflex therapy zones of the feet.

Two studies have examined reflexology as a diagnostic tool. Baerheim et al (1998) engaged three reflexologists to find the clinical problems of 76 patients by examination of the soles of the feet. Inter-rater agreement, measured by weighted Kappa, was significantly better than chance for six parts of the body but was too low to be of clinical significance. White et al (2000) investigated whether reflexology charts could be used as a valid method of diagnosis. Two reflexologists examined 18 patients with six specified clinical conditions. The therapists were blinded to the conditions and rated the probability that each of the six conditions were present. Inter-rater reliability scores were very low, providing no evidence of agreement between examiners. The researchers concluded that this method of diagnosis was very poor at distinguishing between the presence and absence of medical conditions. Blood flow has been examined in two further studies. Using Doppler sonography, blood flow changes in the right kidney were measured in a placebo controlled double-blind, randomised study. One group of 15 adults were given reflexology on the zone of the right kidney; the control group had reflexology on other foot zones. There was a significant difference between groups with the kidney group showing an increase in renal blood flow (Sudmeier et al 1999). Support is given to the findings by Mur et al (2001). Here the treatment group ($n = 16$) received foot massage on the intestinal zone, while the placebo group ($n = 16$) had foot massage on unrelated zones. Blood flow velocity in the superior mesenteric artery and a resistive index as a parameter of vascular resistance were calculated. During treatment there was a significant reduction in the resistive index for the treatment group, suggesting an increase in blood flow in the superior mesenteric artery and the subordinate vascular system.

Reflexology has been found to significantly decrease premenstrual symptoms (Oleson & Flocco 1993) and to decrease anxiety in patients with breast or lung cancer who were on a medical oncology unit. In the latter study, the patients with breast cancer also experienced a significant reduction in pain. Degan et al (2000) found that of 40 patients with pain associated with a lumbar-sacral disc herniation, 62% reported a reduction in pain after three sessions of reflexology. This supports the earlier work of Kovacs et al (1993) with patients who had low back pain. After reflextherapy they showed significant improvement in pain scores.

Two contrasting studies have examined the role of reflexology in bronchial asthma. Brygge et al (2001) gave 10 weeks of either active or placebo reflextherapy to two groups of 20 with bronchial asthma in a blind, controlled trial. Objective lung function tests did not change for either group; beta$_2$ inhalation and quality of life scores improved in both groups with no significant difference between them. This is at odds with a study by Hui-Xian (1994) in which it was reported that all 45 children with bronchial asthma showed improvements in symptoms after reflexology. These two studies clearly demonstrate the value of controlling for placebo. Frankel (1997) examined the effect of reflexology on baroreceptor reflex sensitivity (BRS), blood pressure and sinus arrythmia. There were two experimental groups, one receiving reflexology and the other foot massage, plus a control group. Both experimental groups showed a decrease in BRS and an increase of over 30% in frequency of sinus arrythmia compared to the control. This may indicate that simple foot massage could be as effective as reflexology in certain conditions but further research is needed. A recent German paper has raised the issue that reflexology is not always beneficial. The researchers investigated the possible usefulness of foot reflexology on recovery after a surgical intervention. A total of 130 patients who had undergone abdominal surgery for gynaecological reasons were given reflexology. The authors concluded that reflexology is not recommended for acute, abdominal post-surgical situations in gynaecology because it can trigger abdominal pain (Kesselring 1999).

Features

The zones of the feet are usually pressed gently with the thumb or fingers of the therapist. Some writers advocate deeper pressure with a knuckle if this is thought appropriate.

Position

Reflexologists generally position their clients in a specially developed chair which is comfortable for the client and for the therapist. Alternatively, a treatment couch can be used. The client is in a supine-lying or semi-recumbent sitting position.

Procedure

The treatment is usually begun with a bilateral foot massage leading to treatment of specific zones. Many therapists treat all the zones of the foot in one session. Others concentrate on specific zones to achieve the desired therapeutic effect.

References

Baerheim, A., Algroy, R., Skogedol, K.R., et al., 1998. Feet a diagnostic tool? Tidsskr. Nor. Laegeforen. 118 (5), 753–755.

Benor, D.J., 1993. Healing research, vol 1. Helix, Deddington. Cited in: Charman, R.A. (Ed.), Complemenary therapies for physical therapists. Butterworth-Heinemann, Oxford.

Benor, D.J., 1994. Healing research, vol 2. Helix, Deddington. Cited in: Charman, R.A. (Ed.), Complementary therapies for physical therapists. Butterworth-Heinemann, Oxford.

Brygge, T., Heinig, J.H., Collins, P., et al., 2001. Reflexology and bronchial asthma. Respir. Med. 95 (3), 173–179.

Chapman, C.R., Chen, A.C., Bonica, J.J., 1977. Effects of intrasegmental electrical acupuncture on dental pain: evaluation by threshold estimation and sensory decision theory. Pain 3 (3), 213–227.

Degan, M., Fabris, F., Vanin, F., et al., 2000. The effectiveness of foot reflextherapy on chronic pain associated with a herniated disc. Prof. Inferm. 53 (2), 80–87.

Dundee, J.W., Chestnut, W.N., Ghally, R.G., et al., 1986. Traditional Chinese acupuncture: a potentially useful antiemitic? Br. Med. J. 293, 583–584.

Frankel, B.S., 1997. The effect of reflexology on baroreceptor reflex sensitivity blood pressure and sinus arrythmia. Complement. Ther. Med. 5 (2), 80–84.

Haase, H., 1962. Bindegewebsmassage Wirkungsphysiologische grundlagen und methodik. Zschr Artzl Fortbild 62 (13), 134–136.

Holey, L.A., Watson, M., 1995. Inter-rater reliability of connective tissue zone recognition. Physiotherapy 81 (7), 363–369.

Hui-Xian, 1994. A clincial analysis of foot reflex massage for the treatment of 45 cases with infant bronchial asthma. AOR Research Reports, fourth ed. AOR, Henfield.

Kaptchuk, T.J., 1983. Chinese medicine: the web that has no weaver. Rider, London.

Kesselring, A., 1999. Foot reflexology massage: a clinical study. Forsch. Komplementarmed. 6 (Suppl. 1), 38–40.

Kovacs, F.M., Abraira, V., Lopez-Abente, G., et al., 1993. Neuro-reflextherapy of non specified low back pain. AOR Research Reports, fourth ed. AOR, Henfield.

Lavier, J., 1977. Chinese micro-massage. Thorsons, Wellingborough.

Mur, E., Schmidseder, J., Egger, I., et al., 2001. Influence of reflex zone therapy of the feet on intestinal blood flow measured by color doppler sonography. Forsch. Komplementarmed. 8 (2), 86–89.

Oleson, T., Flocco, W., 1993. Randomized controlled study of premenstrual symptoms treated with ear hand and foot reflexology. Obstet. Gynecol. 82 (6), 906–911.

Oschman, J.L., 2000a. Energy medicine—the new paradigm. In: Charman, R.A. (Ed.), Complementary therapies for physiotherapists. Butterworth-Heinemann, Oxford.

Oschman, J.L., 2000b. Energy medicine: the scientific basis. Churchill Livingstone, Edinburgh.

Seto, A., Kusaka, C., Nakazato, S., et al., 2000. Detection of extraordinary large biomagnetic field strength from human hand. Acupuncture Electrotherapeutics Research Int Journal 17, 75–94. Cited in: Oschman, J.L. (Ed.), Energy medicine: the scientific basis. Churchill Livingstone, Edinburgh.

Sudmeier, I., Bodner, G., Egger, I., et al., 1999. Changes of renal blood flow during organ-associated foot reflexology measured by color Doppler sonography. Forsch. Komplementarmed. 6 (3), 129–134.

White, A.R., Williamson, J., Hart, A., et al., 2000. A blinded investigation into the accuracy of reflexology charts. Complement. Ther. Med. 8 (3), 149.

Zimmerman, J., 1990. Laying-on-of-hands healing and therapeutic touch: a testable theory. BEMI Currents Journal of the Bio-Electro-Magnetics Institute 2, 8–17 Cited in:In: Oschman, J.L. Energy medicine: the scientific basis. Churchill Livingstone, Edinburgh.

This page intentionally left blank