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Headache—Migraine

Definition: Periodic, unexpected, debilitating, pulsating headache.

GENERAL INFORMATION

- Etiology unknown
- Triggered by stress; physical exertion; sleep deprivation; hot weather; certain foods, such as chocolate, citrus fruits, onions, coffee, MSG (monosodium glutamate); any form of alcohol; hormonal fluctuations; head trauma
- Early childhood onset with increased frequency during puberty, continued occurrence in 30s and 40s; rare after age 50
- Duration from hours to several days
- Strong genetic predisposition
- Prevalence in females
- Two types: migraine with aura (classic migraine) and migraine without aura (common migraine, 80% of migraine diagnoses)

Morbidity and Mortality

About 28 million people, or 10–20% of the U.S. population, suffer from migraine headaches, of which 17% are females and 6% are males. Before puberty, the incidence is higher in males; with the onset of puberty, the incidence and prevalence increase in both genders. After age 40, the incidence for both males and females declines dramatically. Persistent symptoms after the age of 50 often indicate other (more serious) etiologies. Some 70–80% of migraine sufferers report a first-degree relative (parent or sibling) who also has these debilitating headaches.

If migraines occur before the age of 50, they are *not usually* indicative of serious medical conditions. However, migraines at any age have been associated with an increased risk of stroke and seizure, Tourette syndrome, depression, anxiety, asthma, and brain lesions.

PATHOPHYSIOLOGY

Several theories attempt to explain the pathophysiology of this puzzling condition. A vascular theory proposes that the migraine "trigger" (a substance or event that initiates the headache) creates cerebral vasoconstriction (constricted blood vessels in the brain), followed by dramatically responsive cerebral vasodilation. The rush of intracranial pressure from the vasodilation causes profound pain. Interestingly, prodromal euphoria, irritability, yawning, depression, and/or excitability are also thought to be related to this change in intracranial pressure. (Prodromal refers to the earliest stage, before usual symptoms manifest.)

Another theory follows the trail of cerebral vascularity but maintains that a series of cascading neurotransmitters set up an inflammatory response in the brain. Finally, one study found postural dysfunctions such as the head-forward posture and extreme

low-back curvature as possible causative factors. No single theory explains the two types of migraines, the variety of triggers, onsets, and durations, or the inexplicable differences in intense migraine experiences.

Most migraines are appropriately diagnosed and treated by a primary care physician who approaches the patient clinically, taking into account her family history and personal symptoms. A physician may choose to perform a neurologic workup, but a CT scan or lumbar puncture is usually reserved for patients presenting with symptomatic complications beyond the normal migraine pattern. The great majority of migraine sufferers seen in an emergency center are referred to a primary care physician, not a neurologist.

Thinking It Through

Because massage therapists are found more frequently in hospitals, clinics, and hospices, it becomes tempting, in a zealous effort to gain professional credibility, to overstate the physiologic effects of massage. Two effects have, in fact, been proven: Massage therapy techniques reduce anxiety and reduce the perception of pain. Multiple other studies are currently under way to further prove the profound effects of this work. Keeping in mind that understatement is the safer road, the therapist should think through how she might explain the following to a physician or health care professional who has entrusted a patient or client to the care of a massage therapist.

- What is the difference between "pain" and "the perception of pain"?
- How could a client be helped by anxiety relief?
- How can the power of touch affect most clients who are stressed?
- Why should a physician grant a massage therapist access to and the care of any seriously ill patient?
- Although massage therapists are gaining a foothold in medical environments, what might be some *disadvantages* of becoming one more member of a hospital team?

OVERALL SIGNS AND SYMPTOMS

Any combination of the following signs and symptoms can occur in the migraineur, depending on her history, the trigger, the headache's severity, and whether she experiences auras:

- Unilateral cerebral disturbance or pain
- Blurred vision
- Dizziness or lightheadedness
- Peripheral visual auras, zigzagging lines in front of the eyes, ringing in the ears
- Extremely painful pulsating and throbbing in one or both sides of the head
- Hypersensitivity to light, and/or sound, and/or smells
- Nausea and vomiting
- Malaise

SIGNS AND SYMPTOMS MASSAGE THERAPY CAN ADDRESS

Massage therapy can do little to ease the signs and symptoms of a full-blown migraine while it is occurring; in fact, the migraineur would find bodywork unbearable, as any stimulus or approach to the body exacerbates symptoms. The following signs and symptoms that occur before and after the attack may be addressed by massage therapy:

- Scalp, face, neck, and shoulder hypertonicity are effectively treated with massage therapy techniques.
- The anxiety that accompanies the unpredictable nature of this condition can be addressed with soothing modalities.
- Self-help techniques can be taught to the migraineur, who is often eager for any nonpharmaceutical preventive measures.

TREATMENT OPTIONS

Often, a migraine sufferer's first response is to retreat; she will find a dark, quiet space in an attempt to ease the pain. Cool compresses to the neck and head, placed directly on the painful areas, can help. Strong anecdotal evidence indicates that complementary and alternative medicine (CAM) techniques, such as massage therapy, chiropractic adjustments, acupuncture, and acupressure, provide symptomatic relief, although these approaches have not been thoroughly studied. Two preventive herbs, butterbur and feverfew, have been found to be effective.

Prescription medications dominate the treatment for migraine headaches. Vasoconstrictors address constricted cerebral blood vessels, analgesics can reduce the pain that accompanies all migraines, tranquilizers calm anxiety, antiemetic medications help prevent nausea from dizziness, and some medications affect serotonin and dopamine levels in the brain. Migraineurs often take a combination

of medications, and, unfortunately, the duration of this powerful chemical cocktail can lead to a "rebound migraine"—a migraine that occurs as a side effect of the combinations and accumulation of medications used to treat the migraine itself. The long list of medications taken by most migraineurs—and the possible side effects—should be regularly monitored by the attending physician.

Common Medications

- Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Motrin, Advil); naproxen (Aleve, Anaprox, Naprelan, Naprosyn); ketoprofen (Oruvail, Orudis); and ketorolac tromethamine (Toradol)
- Nonopioid pain relievers and fever reducers, such as acetaminophen (Tylenol, Feverall, Anacin, Panadol)
- Antipsychotic, antiemetic anxiolytics, such as prochlorperazine (Compazine)
- Antiemetic, antivertigo, antihistamine sedatives, such as promethazine hydrochloride (Phenergan)
- Antiemetic gastrointestinal stimulants, such as metoclopramide hydrochloride (Reglan)
- Antimigraines, such as sumatriptan succinate (Imitrex), zolmitriptan (Zomig), eletriptan hydrobromide (Relpax), and rizatriptan benzoate (Maxalt)
- Narcotics, such as acetaminophen and codeine (Tylenol #3)
- Cranial vasoconstrictors, such as ergotamine tartrate and caffeine (Cafergot suppositories) and dihydroergotamine mesylate (Migranal spray)

MASSAGE THERAPIST ASSESSMENT

If a person is experiencing a migraine headache, she will probably not be found on a massage table. Driving to the appointment would have been impossible and unsafe. Being touched during a migraine attack is usually unpleasant at best. Therefore, this assessment assumes the client is in either the prodromal, post-headache stage, or the mildly symptomatic phase.

The therapist can perform a full intake outlining the client's history before palpating the head, neck, face, and shoulders to determine hypertonicity. The client can help by relating past occurrences, as well as self-help and medical treatments. Reasonable expectations regarding the outcome of a massage therapy session, as well as the techniques used, should be discussed in detail. The client's high hopes for relief and the fear of triggering stimuli need to be fairly addressed before the session begins.

THERAPEUTIC GOALS

Anxiety relief; reduced perception of pain; decreased hypertonicity in the head, neck, and shoulders; and providing a safe, quiet, noninvasive hour of peace are reasonable therapeutic goals.

MASSAGE SESSION FREQUENCY

- Before or after a migraine headache, 60-minute sessions may be exhausting; modify length to the client's tolerance.

MASSAGE PROTOCOL

Head, neck, face, and shoulder hypertonicity are the focal points of an effective treatment aimed at reducing the muscular side effects of excruciating pain. Application of cold packs to the side of the neck (but not on the carotid artery region), the back

Massage Therapist Tip

An Assault on All Senses

If you have never experienced a migraine headache and want to empathize with a client who does have them, imagine what it would be like if each of your senses were simultaneously assaulted. Imagine a very low light feeling like a high-beam headlight being directed at your eyes; think about the subtlest of smells causing you to feel sick; determine what it might be like if your normal vision were compromised by sharp, wavy, moving lines that make it difficult to focus; add a sense of nausea combined with a fear of vomiting at any moment. Finally, accompany this sense-assault with a pain in your head so severe, it feels as if someone has taken an ice pick to your skull. You now have some idea of the horrible, unrelenting, unpredictable, and debilitating nature of the type of headache your client is enduring.

Step-by-Step Protocol for Migraine Headache

Technique	Duration
With the client positioned supine, well-supported by pillows, place a cold pack on her neck or head, as she directs. Leave it in place for this opening technique. Greet the body with general warming compression. Do not touch the face, head, or neck at this point. Work slowly, *not* rhythmically; *vary your rhythm*, trying not to rock the body. • Start at the feet • Work up the legs • Include the abdominal region • Work the arms and hands • Include the pectoral region	5 minutes
Remove the cold pack. Stroking, even, long, careful, rhythmic strokes • Through the entire length of the hair from the scalp to the ends of the hair, over the entire head region	5 minutes
Cleanse your hands Digital kneading, medium pressure, evenly rhythmic • Bony prominences of the frontal, ethmoid, maxilla, and sphenoid (sinus configuration) bones • Work along the temporomandibular joint (TMJ)	5 minutes
Effleurage, using flattened fingers, medium pressure, evenly rhythmic • The entire face, working from the midline of the face, down toward the ears and the table	3 minutes
Digital kneading, medium pressure, evenly rhythmic • All muscles of the forehead, cheeks, and jaw	5 minutes
Effleurage, using flattened fingers, medium pressure, evenly rhythmic • The entire face	3 minutes
Digital kneading, medium pressure, *not rhythmic* • Occipital ridge	5 minutes
Digital kneading, medium pressure, *not rhythmic* • Posterior bony prominences of the cervical spine and posterior and lateral neck muscles • Include the insertions and origins of the sternocleidomastoid (SCM) on the mastoid and the sternum	5 minutes
Effleurage, medium pressure, rhythmic • All neck muscles	3 minutes
Effleurage, petrissage, effleurage, medium pressure, rhythmic • Bilateral superior trapezius muscles • Work away from the midline, out from the middle of the body to the lateral portion of the body	5 minutes

(continued)

Contraindications and Cautions

- **Do not apply heat to any portion of the client's body, but especially the head, neck, or shoulders. Increased vasodilation from the application of heat can exacerbate symptoms.**

The following signs and symptoms are not merely contraindications and cautions for massage therapy, but are indications that your client should be referred to a physician promptly:

- **A statement such as "This is the worst headache I've ever experienced; it's never been this bad"**
- **A migraine that has a more rapid onset than usual**
- **A change in frequency, duration, or severity of the migraine headache**
- **Headache onset by coughing, sneezing, or bearing down during a bowel movement**
- **Headache accompanied by fever, and/or a feeling of malaise, and/or neck stiffness**
- **Unexplained weight loss**
- **Fainting, difficulty speaking, or balance problems**

Technique	Duration
Cleanse your hands.	
Effleurage, medium pressure, *vary your rhythm* • The face • The neck • The superior trapezius	5 minutes
Stroke, evenly rhythmic • Through the hair, from the scalp to the tips of the hair	5 minutes
Whole-body compression, evenly rhythmic • Starting at the feet • Working up the legs • Including the abdominal region • Working the arms and hands	6 minutes

of the neck, or the head can bring significant relief. Relaxation techniques to any part of the body, as requested by the client, will help reduce anxiety and pain perception.

Perform all techniques slowly and carefully, using light-to-medium pressure. Pressure that is too light can stimulate and irritate; too deep pressure might feel invasive. Be careful *not to use consistently rhythmic strokes*. This client is on the border of vertigo, and constant rhythmic techniques can trigger dizziness. Subtly vary the pace of the techniques, being careful not to initiate any rocking movements of the body.

Perform all neck and shoulder strokes *away from the head* to reduce the chance of increasing intracranial pressure.

Getting Started

Have a cold pack ready. Lights should be lowered, lotions should be scent-free, and the music set at a low volume. Silence might be best. Monitor your vocal tones and rate at which you speak to match your client's tolerance to stimuli. Make sure she has someone to drive her home, or that her session is timed so she can be left to sleep afterward.

The client will probably prefer a well-pillowed supine or side-lying position because lying prone may increase sinus, and therefore intracranial, pressure.

HOMEWORK

Write out any specific homework assignments for your migraine client. She may be so relaxed after her therapy session, or unable to concentrate because of her symptoms, or unable to focus because of her medications, that verbally assigning homework may be counterproductive. Keep your voice modulated and quiet, and don't overwhelm her with instructions.

- When you feel the next migraine headache coming on, begin massaging your face, scalp, and neck immediately. Use your fingertips, move slowly, but go in deeply enough to touch the bone under the muscle. Work in slow circles; try to work directly over any painful points.
- When you feel the migraine is coming on, get a cold pack, even just a bag of frozen fruit or vegetables. Put the pack in a pillowcase and place it directly on your neck or any painful spot on your head.

- Keep a journal of possible foods or activities that might have triggered your migraine; these triggers can help you and your physician to determine future preventive measures.
- If you feel you're getting headaches from your prescribed medications, return to your physician and ask her to reformulate your prescriptions.
- Continue to experiment with other CAM therapies; consider seeing a chiropractor or an acupuncturist.

Review

1. What are the two types of migraine headaches?
2. List several possible migraine headache triggers.
3. Why would a migraineur probably not seek massage therapy during a migraine attack?
4. List various classifications of medications commonly prescribed for migraine sufferers.
5. Describe some CAM therapies that might help migraineurs.
6. Based on one of the pathophysiologic theories, explain why cold packs might provide some relief.

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18

Headache—Tension

Also known as:

Tension-Type Headache (TTH)

Definition: A dull or vice-like pain of mild-to-moderate intensity experienced in the scalp, forehead, temples, jaw, and/or base of the skull.

GENERAL INFORMATION

- Causes: tightening of the head, jaw, neck, and upper shoulder muscles; depression
- Physical triggers: forward-head position, prolonged lateral head tilt, slouching, poor neck support while sleeping, poor workstation ergonomics
- Psychosomatic triggers: emotional stress, worry, and anxiety leading to shoulder elevation, holding the breath, jaw clenching.
- Aggravating factors: caffeine withdrawal, hypoglycemia (low blood sugar), fear, dehydration
- Onset: any age, but most common in young adults
- Duration from 30 minutes to several days
- Prevalence in females

PATHOPHYSIOLOGY

Although the research on headache etiology is ongoing, the current thinking is that the condition results from changes in the levels of the neurotransmitter serotonin in the brain. These fluctuations, combined with a possible inflammatory response that flushes the already tightly compacted cranial cavity with more fluid, cause increased intracranial pressure, resulting in the feeling of head pain. The person's response is to tighten the surrounding muscles (Figure 18-1), which then become hypertonic. This reaction produces a vice-like feeling in the head, as the cycle of head pain and hypertonicity continues.

Headache is the ninth most common reason for which Americans consult a physician. However, only a small percentage have a serious underlying pathology. Headaches are ubiquitous yet so varied that medical experts have identified primary and secondary headaches, as well as several classifications. A diagnosis of primary headache is simply the headache itself, with no accompanying pathology. A secondary headache results from, or coexists with, trauma (physical or emotional), or another incident or pathology. Classifications include cluster, migraine, chronic daily headache (CDH), rebound, vascular, mixed, and the most common, tension-type headache (TTH). Tension headaches, the focus of this chapter, are usually not debilitating, even if chronic, and the person can perform daily activities, and function at work and play.

OVERALL SIGNS AND SYMPTOMS

- Muscle tenderness and hypertonicity in the scalp, temples, forehead, neck, and upper shoulders
- Tightening sensation in the head muscles
- Mild-to-moderate steady, bilateral head pain

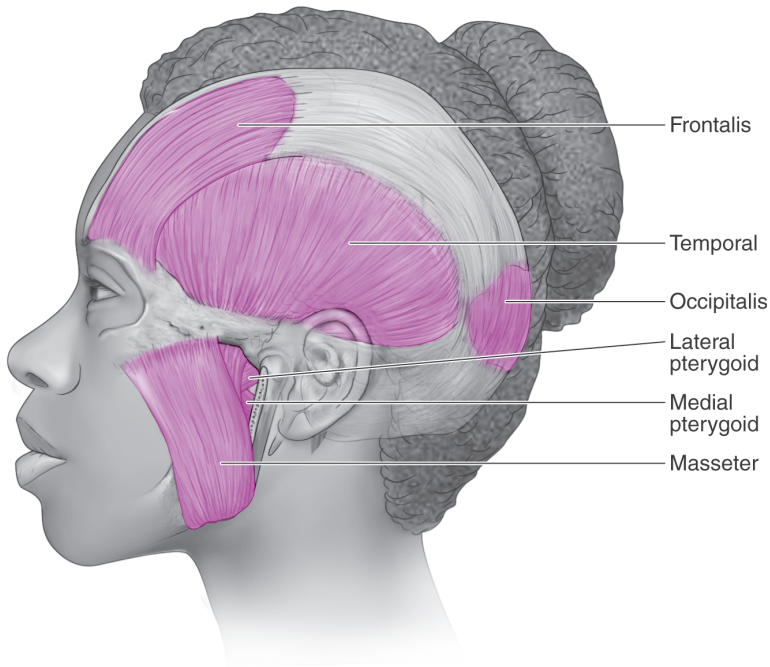

FIGURE 18-1 Tension headache. Lateral and posterior views of the head muscles.

SIGNS AND SYMPTOMS MASSAGE THERAPY CAN ADDRESS

- Helping a client achieve a parasympathetic state and addressing muscular hypertonicity are basic skills in every massage therapist's toolkit.
- Treating the client holistically—identifying muscular hypertonicity while simultaneously listening to the emotional and psychological components of the headache—is also well within the massage therapist's scope of practice.

Massage Therapist Tip

It's Not Just "In the Head"

Trigger points often accompany the common tension headache. A trigger point is a localized, palpable area of extreme hypertonicity that causes radiating pain in regional—although not always directly localized—areas of the body. (Refer to Chapter 43 for more on trigger points.) The levels of aggressiveness and stretching that should accompany trigger point treatments are controversial, and a full explanation is outside the scope of this book. However, if you have been trained in identifying and treating trigger points, this work on the head, face, neck, and shoulders is appropriate for clients with tension headaches, as long as you use caution.

TREATMENT OPTIONS

Physical therapy (PT) for headache sufferers with postural abnormalities can be effective in both relieving pain and preventing future occurrences. PT modalities may include the application of hot and cold packs, ultrasound, and electrical stimulation. Regular exercise, stretching, adequate sleep, stress-relief measures, and finding one's joy in life can also help prevent or reduce recurring headaches. Unrelenting headache pain is sometimes treated with cervical traction, local anesthesia injected into trigger points, and occipital nerve blocks.

The long-term use of even the mildest over-the-counter (OTC) pain medications can cause rebound headaches. A rebound headache results from the accumulation of the medications taken to treat the original headache.

Common Medications

- Salicylate nonopioid pain relievers, such as aspirin (Ecotrin, Empirin, Astrin)
- Nonopioid pain reliever and fever reducers, such as acetaminophen (Tylenol, Feverall, Anacin, Panadol)
- Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ketorolac tromethamine (Toradol)
- Antipsychotic, antiemetic anxiolytics, such as prochlorperazine (Compazine)
- Antiemetic, antivertigo, antihistamine sedatives, such as promethazine hydrochloride (Reglan)

MASSAGE THERAPIST ASSESSMENT

Although she might not know exactly what set off the headache, the client will know the location, duration, and severity of her pain. Since a headache is one of the few conditions that can be pinpointed, the therapist's palpating assessment, combined with the client's detailed input, can provide an accurate treatment map. It's best to assess the client before she undresses, while she is sitting in a chair, and while the therapist is standing behind her. In this position, the therapist can palpate the client's face, jaw, temporomandibular joint (TMJ), neck, upper shoulders, and base of her skull to determine the exact points of pain and accompanying hypertonicity.

To determine the deficits in range of motion (ROM) and the extent of muscular hypertonicity, the therapist can ask the client to perform active (unassisted) head and neck ROM movements.

These movements include flexion, extension, and rotation from side to side, and they should be performed with only minimal discomfort.

Questioning the client about her medications, other complementary and alternative medicine (CAM) modalities she is using for pain relief, and whether she is seeing a physician will provide other essential information that can contribute to an effective session.

Headaches often accompany many conditions treated by massage therapists. It is important to know if the client has fibromyalgia, chronic fatigue syndrome, or TMJ syndrome, for example, in order to determine a treatment plan that addresses more than a localized headache.

THERAPEUTIC GOALS

Reducing muscular hypertonicity, restoring normal head and neck ROM, reinforcing a normal and relaxed breathing pattern, and helping the client reach a parasympathetic state are reasonable goals.

MASSAGE SESSION FREQUENCY

- 60-minute sessions twice a week during headache occurrence
- At least monthly preventive or maintenance sessions after the headache passes
- Underlying postural abnormalities, breath-holding patterns, and secondary effects of head tilt or forward-head posture will need to be addressed in subsequent, at least monthly, sessions.

MASSAGE PROTOCOL

Anatomic knowledge of the head and face muscles, joints, and bony prominences, combined with your sensitive hands that will seek out subtle areas of hypertonic tissue, perhaps buried under the hair or evident along the masseter, will serve both you and your client as you approach the highly personal treatment area. Your work will be performed slowly, deliberately, and only moderately deep as you focus on the head, neck, face, and shoulders. Working too deeply, quickly, or aggressively can lead to a recurring "kick-back" headache. This frustrating return of a headache, either hours or sometimes days after treatment, is in direct physiologic response to manual techniques that return blood flow too quickly to a constricted area.

Fascial release techniques are essential during this protocol because the scalp muscles are buried under a taut layer of tendon (galea aponeurotica), and the facial muscles can be surprisingly resistant to release. Placing your two thumbs on any facial muscle, and pushing them toward each other to create an S-shape in the underlying skin, is one effective fascial release technique that can be used, to varying depth, anywhere on the face. Gentle cross-fiber friction at muscle origins and insertions also provides fascial softening.

Thinking It Through

People who have tension headaches are often thought of as hypochondriacs, and their regular physicians, or other health care practitioners, might not take their discomfort seriously. A massage therapist, however, although not a diagnostician, has the luxury of spending an entire hour with the client and can sometimes unearth underlying pathologies that signal a visit to a neurologist, specialist, or talk therapist. Although pathologies are of concern, the compassionate therapist may be the first and only health care practitioner to look at the client's postural abnormalities and lifestyle stressors—themselves often the cause of headaches—and suggest a therapeutic path for pain relief. As the client offers her history, the therapist may ask himself the following questions:

- Is this client enduring recurring headaches, or worsening, noticeable changes in duration or severity, because she does not believe they are severe, when in fact these symptoms warrant another medical consultation?
- Who is attending to her underlying stressors? Should I tactfully suggest she seek psychological counseling and talk therapy because of her recent divorce?
- Did she experience a head trauma in the last 6–12 months that might have caused these headaches, and for which she never sought medical attention?

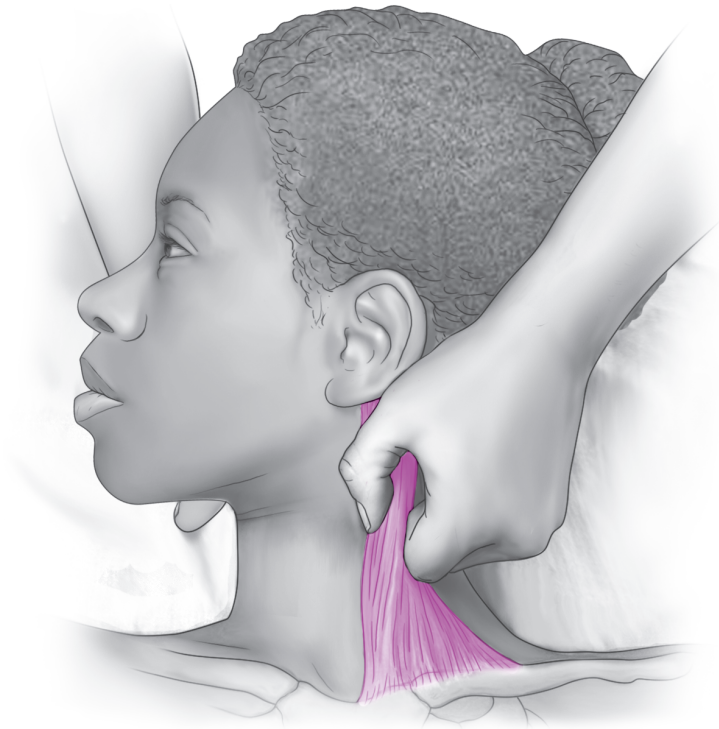

FIGURE 18-2 SCM release. Grasping the SCM between the thumb and middle finger and alternating pressure between the two is an effective method of releasing hypertonicity in this muscle, which is often involved in clients with tension headaches.

Hair tugging, when performed properly, can release the tough scalp tendon between the occipitalis and frontalis muscles. By spreading your open fingers and sliding them into your client's hair, make a gentle fist so your knuckles rest on the scalp itself, and then tug the hair forward and backward several times. This technique prepares the galea aponeurotica for successive kneading.

A sternocleidomastoid (SCM) release can be highly effective in treating a headache and is suggested during the step-by-step protocol. Although not customarily taught in massage therapy school, this release is relatively simple to perform. With your client lying supine on the table and her head turned to one side, you will be able to easily palpate the SCM. With your thumb and middle finger, gently grasp the muscle anywhere you can and push the alternating thumb and middle finger in opposite directions, effectively putting this muscle into a stretch (Figure 18-2). Following this gentle stretch with cross-fiber friction at both the SCM origin and insertion produces a very effective softening of one of the primary points of hypertonicity that typically accompanies a tension headache.

Precede all of your work with general effleurage to warm the tissue. Follow all work with gentle joint stretching and tissue lengthening. It is appropriate to ask your client, after about 20 minutes of massage therapy work, if her symptoms have decreased or subsided.

Shorten as many muscles as you can before working on a muscle set to allow greater accessibility to muscle origins and insertions. This is especially true of the posterior cervical muscles as you cross-fiber friction along the spinous and transverse processes. Cervical muscles are easily shortened when the client is lying supine and is asked to point her chin toward the ceiling, or when she is side-lying and asked to tilt her head backward.

Getting Started

Cool packs (not cold) on the closed eyes or forehead might comfort the client. Warm packs placed on the shoulders may also prepare the muscles for further work.

Step-by-Step Protocol for Tension Headache

Technique	Duration
Position the client supine; no pillow under the head. Place a cool pack on the eyes or forehead; leave it in place for a few minutes as you work on her shoulders.	
Effleurage, medium pressure, evenly rhythmic, stroking *away* from the head and neck • From the occiput to the top of the deltoids. Perform bilaterally, alternating hands.	2 minutes
Place one hand at the top of the client's shoulder, the heel of that hand resting on the table; cup the occipital ridge in the other hand and hold her head stable. Gently but firmly push the shoulder. • Down toward the toes until you feel resistance. Hold for a few seconds and release. Repeat 3 times. Alternate hands. Perform bilaterally.	3 minutes
Effleurage, medium pressure, evenly rhythmic, stroking *away* from the head and neck. • From the occiput to the top of the deltoids. Perform bilaterally, alternating hands. Cleanse your hands.	2 minutes
After asking permission to do so, lay your hands on either side of your client's face. Effleurage, medium pressure, evenly rhythmic. • From the midline of the face, down toward the table, several times	2 minutes
Slide seamlessly to the TMJ. Perform cross-fiber friction, *working on one side of the face at a time, while bracing the face on the opposite side*. Perform digital kneading and effleurage, medium pressure. • From the TMJ to the base of the nose and back to the TMJ. Perform bilaterally.	5 minutes
Slide seamlessly to the forehead. Perform fascial release techniques, medium pressure. • From the center of the forehead, down to the temples, and back. You can work with both hands, bilaterally, simultaneously.	5 minutes
Slide seamlessly to the masseter muscle. Perform cross-fiber friction, medium pressure, *working on one side of the face at a time, while bracing the face on the opposite side*. • Start at the superior insertion point, work on both anterior and posterior ridges of the muscle, as well as the tiny belly, ending at the inferior insertion point.	5 minutes
Effleurage, medium pressure, slightly brisk pace • The entire face, lateral and posterior neck	1 minute
Cleanse your hands of all lubricant. Lay your client's head to one side. Perform nonaggressive, deliberate, thorough hair tugging. • Along the midline of the scalp from the forehead hairline to the occipital ridge. Give several brisk tugs at each position before moving on to the next position.	2 minutes

(continued)

Contraindications and Cautions:

- **During the physical assessment, you can expect the client to report tenderness, but a sudden withdrawal or wincing is not a normal response during palpation of client with TTH. Suspect an underlying pathology, and refer the client to her physician.**
- **If upon palpation the client feels warm to the touch, ask about fever or infection, both of which are contraindications for continuing a massage therapy session.**
- **Increased, uncomfortable pressure felt anywhere around the head by the client during assessment or palpation is unusual, and you should refer her to her physician.**
- **Nausea, vomiting, unusual eye pain, extreme agitation, or seeing spots before the eyes may indicate a serious medical condition, and you should refer her to her physician.**

Contraindications and Cautions: *(cont.)*

- **Recent head trauma can cause a headache; even a seemingly innocuous knock on the head can create intracranial swelling sufficient to cause a headache. However, a motor vehicle accident, fall, sports injury, or blow to the head, although accompanied by an expected headache, often coexists with more serious conditions. Until a physician has ruled out accompanying complications, do not proceed if a client has experienced head trauma.**
- **New headaches in people older than 50 years of age, or in young children, require a referral to a physician before proceeding.**
- **Vertigo, or increased pain during the gentle assessment or when performing normal ROM of the head and neck, is a red flag to stop the treatment and refer the client to her physician.**

Technique	Duration
Before proceeding, ask your client to take several slow, long, full, deep breaths.	2 minutes
Ask your client to roll her head slowly from side to side, stretching as far as she can comfortably move.	1 minute
Shorten the cervical spine muscles by positioning the client's chin toward the ceiling, as far as she can stretch. Do this by placing your fingertips along the occipital ridge and sliding up under the ridge until the entire weight of the head rests in your hands, and then point your fingertips toward the ceiling. The head will naturally fall into your hands. Hold her head this way for several seconds. Once you feel the head relax, roll it to one side, hold the head in one hand and digitally knead, with evenly rhythmic, medium pressure. • The entire occipital ridge, posterior surface of the scalp, into the spinous and transverse processes of the cervical spine Turn the head to the other side and repeat.	6 minutes
Effleurage, medium pressure, *stroking away from the head* • Both sides of the neck, along the entire course of the SCM	1 minute
Roll the client's head to one side to clearly identify the path of the SCM. Knead and lightly petrissage, several times, *down* the path of the SCM from the mastoid process to the manubrium. (You are "priming" the SCM for some relatively aggressive and unusual work and gaining the client's trust.) Grasp the SCM at any comfortable point, and alternate pressure between the thumb and middle finger for several seconds. Release and perform the same technique on the other side.	4 minutes
Stroke and effleurage, medium pressure, working *down* the neck from the occipital ridge • Bilateral sides of the neck	1 minute
Ask your client to take several full, deep breaths while rolling her head from side to side and working through several relaxed, active ROM positions.	4 minutes
With the client positioned side-lying, effleurage, petrissage, digital kneading, and repeat effleurage • The entire superior trapezius, cervical and thoracic muscles, working around the spinous and transverse processes from C-2 to T-12. Turn the client to the other side and repeat.	14 minutes
Stroking and compression, slow, even, deliberate • Through the hair, down the neck, down to the middle of the back	1 minute

Use adequate lubrication while working on the neck because stretching this delicate tissue without sufficient lubrication can irritate the skin. Slight lubrication helps with facial work, but be sure to ask for the client's permission to lubricate and/or touch her face before proceeding.

HOMEWORK

Although some people might expect to endure chronic headaches, the following preventive measures can reduce the incidence and severity. These homework assignments can easily be performed throughout the day.

- Get up from your desk every hour on the hour; roll your shoulders, turn your head from side to side, look up and down, and make funny faces to move your face muscles.
- Drink water throughout the day.
- Breathe deeply throughout the day, especially when you feel yourself getting tense.
- Ask family, friends, or colleagues to gently remind you when you are "wearing shoulder earrings," and bring your shoulders down to rest in their normal position.
- Get a phone headset instead of crimping your neck to the side.
- Ask your partner to notice if you are grinding your teeth at night; if you are, consider seeing a chiropractor or dentist.
- Look into seeing a chiropractor to relieve your neck and shoulder tenseness.
- Find ways to relax and enjoy yourself.
- Apply heat to your shoulders (*not to your neck*) when you are watching TV or reading at night after a particularly stressful day.
- Try not to sleep on your stomach, but if you must, support your head with pillows to maintain proper cervical alignment.
- If you continue to experience headaches while taking your medication, consider the possibility of a rebound headache, and check back with your physician.

Review

1. What distinguishes a diagnosis of a primary headache from that of a secondary headache?
2. List other classifications of headache.
3. Name the most common type of headache.
4. List several contraindications for the treatment of a client who has tension headaches.
5. Explain an efficient method of physical assessment during the intake process.
6. What is a "kick-back" headache, and what causes it?
7. How is a rebound headache caused?

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19

Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome

Also known as:
HIV/AIDS

Definition: HIV refers to both the virus itself and the associated viral infection that attacks the human immune system; AIDS is a chronic, life-threatening disease resulting from a long struggle against HIV.

GENERAL INFORMATION

- Caused by HIV, a retrovirus (a virus that reverses normal cellular function)
- Transmission via infected blood, semen, and vaginal fluids through unprotected vaginal, anal, or oral sex, and the sharing of drug needles
- Transmission also possible during pregnancy, delivery, and breastfeeding
- Transmission through donated blood or blood products rare
- Transmission not possible through casual touching, hugging, coughing, shared eating utensils, mosquito bites, and tears
- Lifelong duration
- Prevalence in developing countries
- Pandemic disease (an epidemic occurring simultaneously globally)
- No cure

Morbidity and Mortality

Although misconstrued as a disease affecting those choosing same-sex partners, the HIV/AIDS global statistics indicate that 85% of HIV transmission occurs among heterosexuals. In the U.S., about one-third of all new diagnoses are related to heterosexual activities, one-half are related to male-to-male sexual contact, and IV drug users account for the remaining cases.

Worldwide, 42% of reported HIV cases are female; in the U.S., about 25% of new diagnoses are female. African American women are almost 23 times more likely to be diagnosed than Caucasian women. HIV infections in American children are now rare due to early screening and treatment of possibly infected mothers. Although most of those affected by HIV/AIDS live in developing countries, it is estimated that approximately 1.2 million U.S. citizens are currently infected, and that the virus and the syndrome have taken approximately 550,000 American lives. In the U.S., HIV/AIDS is the fifth leading cause of death among people aged 35–44, and AIDS is the leading cause of death among African Americans aged 35–44.

With a pandemic incidence rate nearing 40 million and the total measured death toll near 25 million, the cost of treatment is inestimable.

Not everyone infected with HIV develops AIDS, although that is the normal course of the disease. Not everyone suffering from AIDS will die from the disease, although survival is rare. The quality of the patient's nutrition, his socioeconomic status, the availability and intake of the appropriate medications, the control of opportunistic infections, and the person's ability to support his immune system affect progression and mortality. (An opportunistic infection is one that takes advantage of

a weakened immune system.) It is possible to live asymptomatically for years and yet still carry HIV; during this time, a person can transmit the virus to unsuspecting sexual partners.

Risky sexual behaviors include unprotected sex (heterosexual, bisexual, and/or homosexual), multiple sexual partners, and having sex with someone who is HIV-positive. Higher HIV/AIDS incidence occurs among those already infected with a sexually transmitted disease (such as genital herpes or gonorrhea) and those sharing needles during IV drug use.

Transmission in the U.S. rarely occurs through the blood supply, because strict screening techniques were initiated in 1985 to detect the presence of HIV in all donated blood and blood products.

PATHOPHYSIOLOGY

A person's ability to fight disease—any disease, from the common cold to cancer—depends on a highly functioning immune system. The human immune system includes various white blood cells, some of which fight specific invaders. Certain ones oversee the entire immune process, including the powerful CD4 or T4 cells. The strength of the body's immune response is directly reflected by the CD4 cell count. When a persistent infection, a serious disease, or an opportunistic invader ravages the body, the CD4 rate reflects whether the immune system is winning or losing the battle.

Once infected with HIV, the body's immune system is forever compromised. Although a latent (symptom-free) period may occur immediately after infection and may even last a dozen or more years, ultimately, the toll of fighting this pernicious invader manifests as symptomatic HIV and/or HIV/AIDS. Rarely does an HIV-infected person live a normal, uncompromised life span.

Two tracking systems classify adults infected with HIV, monitor the progression toward HIV/AIDS, and help determine treatment. One system tracks the CD4 cell count; the second system, used concurrently with the first, monitors the patient's clinical symptoms.

Diagnostic tests, approved by the U.S. Food and Drug Administration (FDA), can detect the presence of HIV in the urine, saliva, or blood. Anonymous HIV testing is available in physicians' offices, public health clinics, hospitals, and some Planned Parenthood clinics. A home HIV test kit is also available through drugstores or by mail order. Testing is essential for anyone who has practiced risky behaviors, not only to ensure prompt personal care, but also to stop the spread to future unsuspecting sexual partners.

OVERALL SIGNS AND SYMPTOMS

Signs and symptoms are measured according to the stage of the disease. Since HIV/AIDS affects multiple body systems, common accompanying medical conditions are listed along with typical signs and symptoms.

Following an initial HIV infection, the symptoms mimic those of a cold or flu and might develop either immediately or weeks after exposure. Although a person may remain completely asymptomatic for years, the following temporary symptoms usually occur and last for 2–3 weeks:

- Fever
- Headache
- Fatigue
- Sore throat
- Muscular aches and pains
- Enlarged neck lymph nodes
- Mild skin rash

Throughout the initial, sometimes innocuous stage, the virus continues to multiply; it infects and weakens the now-compromised immune system. The CD4 count significantly declines, and symptoms progress in severity. Category A is the first clinical stage indicating symptomatic HIV. Symptoms and indicators include:

- Severe fatigue
- Weight loss
- Night sweats
- Fever
- Enlarged lymph nodes in the neck, armpit, or groin
- Persistent rashes
- Short-term memory loss
- History of HIV infection

Category B patients have a profoundly compromised immune system, and they are seeking medical treatment for both related and unrelated conditions but have not yet advanced toward a final diagnosis of HIV/AIDS. Symptoms and conditions include:

- Persistent mouth or vaginal yeast infection
- Cervical dysplasia (abnormal cells growing in the cervix)
- Persistent fever of 101.4°F or higher
- Diarrhea persisting longer than 1 month
- Sores on the sides of the tongue
- Shingles
- Pelvic inflammatory disease
- Numbness, tingling, and/or pain in the fingers and toes

Category C patients have developed AIDS, along with severe opportunistic infections or cancers. The following is a list of only a few of the signs, symptoms, and medical conditions:

- Soaking night sweats
- Persistent chills and fever higher than 100°F
- Persistent dry cough
- Shortness of breath
- White spots in the mouth or on the tongue
- Severe headache accompanied by neck stiffness
- Blurred vision
- Confusion
- Peripheral neuropathies
- Weight loss
- Cancer of the lymphatic system
- Tuberculosis
- Cancer of the cervix
- Kaposi's sarcoma
- Wasting syndrome (diarrhea, weakness, fever, and loss of weight and muscle mass)
- Severe headaches accompanied by stiff neck

SIGNS AND SYMPTOMS MASSAGE THERAPY CAN ADDRESS

- An educated, open-minded, and compassionate massage therapist can offset the effects of social and health care stigmas that often accompany a diagnosis of HIV/AIDS.
- Research supports a significant increase in the body's natural killer cells and the function of the immune system resulting from massage therapy techniques. (Natural killer cells are immune system cells that act as a first defense against any foreign body.)

- Massage therapy reduces stress hormones.
- Hypertonicity from inactivity and stress is relieved through massage therapy.
- Numbness and tingling from either the medications or the condition's progress can be relieved by appropriate massage therapy techniques.

TREATMENT OPTIONS

From the early onset of an HIV infection to the final stages of AIDS or AIDS-related cancers, the patient should be under the care of a physician specializing in immune disorders. Although primarily pharmaceutical, effective HIV/AIDS treatment also addresses nutrition, stress, exercise, and lifestyle habits in an effort to holistically support the failing immune system.

A regimen of powerful drugs aimed at halting viral reproduction is usually prescribed in combination with prophylactic (preventive) medications to stop the spread of opportunistic infections. These highly active antiretroviral therapies (HAART) can slow the rate at which the virus multiplies. The medications include two or three different prescriptions that must be taken consistently, at the exact same time every day, for the rest of the person's life. The inconvenience and expense are offset by the fact that this "cocktail" can give HIV-positive patients many productive years of life, although it does not cure the disease. Without the medications, death is imminent.

Since there is no cure, prevention is paramount. These lifestyle behaviors can help prevent HIV: supporting a healthy immune system by eating plenty of fruits and vegetables, exercising, not smoking, and reducing stress; avoiding IV drug use; decreasing alcohol use; avoiding unprotected sex or having multiple sexual partners; using latex or polyurethane condoms during sex; not using oil-based lubricants while using latex condoms (the oil breaks down latex, rendering the condom ineffective); and avoiding the sharing of toothbrushes or razors.

Common Medications

- Antivirals, such as zidovudine (AZT, Retrovir), saquinavir mesylate (Invirase), and nevirapine (Viramune)
- Antiviral antiretrovirals, such as tenofovir disoproxil fumarate (Viread)
- Anti-HIV antivirals, such as enfuvirtide (Fuzeon)

MASSAGE THERAPIST ASSESSMENT

The first step of the assessment is to determine how the diagnosis was made. Was it done by a physician or by a home test? This will tell the therapist how well the patient is being taken care of, how the therapist might join the health care team, and what his resources are as the disease inevitably progresses.

A complete medical history will provide the therapist with knowledge about disease progression, the type and efficacy of medication, present and past symptoms, and the patient's massage therapy expectations. In order to develop a helpful and yet reasonable treatment plan, the therapist must gently probe to discover symptoms, which may range from mild aches and pains to insomnia, to severe immunosuppression and depression.

Once the patient is on the table, a visual and manual assessment will identify areas of extensive bruising, possible IV drug use, skin fragility, possible tumors, hypertonic muscles, and respiratory distress.

THERAPEUTIC GOALS

The mercurial nature of HIV/AIDS means that one day, the patient will feel strong and able, and the next, he may feel inconsolable and exhausted. Taking his presentation into account, the therapist can help support the immune system, allow the

Massage Therapist Tip

Unbiased, Ungloved, and Unmasked

Whether the person sitting in your office has manifested HIV/AIDS because of a chosen lifestyle, a mother who had HIV, or a blood transfusion he received years ago is not your concern. Your concern is the simple, compassionate, glove-free, and mask-free manual and visual examination of a human being who needs your unbiased intent and massage therapy skills. It's not necessary to use gloves unless you have an open cut on your hand. A mask is not necessary unless you have a cold or the flu, or unless the patient has a contagious respiratory infection. This patient has probably endured overt and subtle judgments by health care practitioners and possibly friends and family. Any unnecessary barrier you erect may be misconstrued as yet another insult.

Thinking It Through

Because HIV/AIDS patients are susceptible to opportunistic infections and are taking large doses of strong medications, the toxic load on every organ and system in the body is profound. Even the mildest hour-long session could release toxins into the bloodstream, thus, causing very uncomfortable side effects. A massage therapist might ask herself the following questions before, during, and after a massage

Thinking It Through *(cont.)*

therapy session to ensure that her work does no harm:

- What are my patient's normal side effects from taking all his medications?
- Does he feel slightly warmer to my touch today; does he have a slight fever?
- How active is he? If he continues to exercise through his disease, how will this affect the depth and duration of his massage?
- How inactive is he? If he is very weak with not much muscle movement, what are our goals for this session?
- Is he dehydrated? Is he drinking enough fluids so his muscles and brain are sufficiently hydrated and his liver can process his medication? How can I encourage his hydration?
- Is his breathing labored or shallow? What can I do to help him breathe more deeply, not only on my table but also throughout the day?
- Is he bruising easily? How will this affect the depth and duration of his massage?
- Is he taking narcotics for his pain? Is he constipated? Can he offer reasonable feedback to my massage depth or pressure?
- How is he handling the normal, everyday exposure to toxins (on unwashed fruits and vegetables, in crowds of people)? Is my practice room as clean as it can be (doorknobs, sink hardware, linen)? Am I feeling my best today with no impending cold or flu?

patient to reach a parasympathetic state, help flush accumulated toxins from his bloodstream, increase lymphatic flow, and encourage deep breathing. All of these are reasonable therapeutic goals that can be accomplished in each session without placing too much duress on the patient, even when he is particularly tired.

MASSAGE SESSION FREQUENCY

Duration and frequency are determined by the patient's tolerance, by the strength of his immune system, and by the massage environment (hospital, home, hospice, massage therapy office). However, research indicates that increasing the frequency of massage sessions provides greater immune system support.

- Ideally: 60-minute sessions twice a week
- Helpful: 60-minute sessions once a week
- Supportive but not as physiologically effective: 60-minute sessions every other week
- Infrequent, inconsistent therapy can provide palliative support but little physiologic benefit

MASSAGE PROTOCOL

The following protocol is for a Category B HIV-positive male who continues to work and function despite his continual battle with opportunistic infections. He is taking his medications regularly and is fortunate enough to have the expense and care covered by insurance, but his stress level is very high.

Your mind-set when approaching a patient suffering from a profound systemic disease must be quite different from the mind-set for a person with a hypertonic muscle mass. Every stroke you choose must be weighed carefully as you focus on supporting the immune system. New research indicates that *slow, relatively deep massage strokes* are effective in helping generate natural killer cells and boosting overall immune function. This may seem counterintuitive as you approach your seemingly fragile patient. Certainly monitor your touch to the patient's tolerance, but err on the side of depth rather than performing a too light massage.

Since pneumonia constantly threatens to compromise or end this patient's life, deep-breathing exercises throughout the session—and in your homework assignments—are essential.

Providing passive range-of-motion (ROM) exercises after working on each limb will help flush toxins from the body by triggering lymphatic flow. Although your passive ROM is performed gently, it must bring the joint and limb to end-feel—the springy, slightly resisting point at the very end of the patient's normal ROM. To move short of end-feel is to perform ineffective ROM.

The numbness and tingling he may experience in his hands and feet can be addressed quite effectively with massage therapy. Chapter 25 includes massage instruction for neuropathies, and those skills can be used whenever the patient can tolerate focused, deep hand and footwork. The following protocol focuses on relaxation and immune support for a patient who remains relatively active and healthy. The neuropathy protocol, which takes 30–60 minutes, is one more skill to add to your toolkit but is not performed during this protocol.

Getting Started

Remember that this patient's aches and pains will vary from session to session, so be prepared to accommodate his immediate needs. Have plenty of pillows and blankets on hand for both comfortable positioning and warmth for a patient who may be cold on a hot August day. Again, beyond all clinical preparedness, listen with a compassionate, unbiased heart.

Step-by-Step Protocol for HIV/AIDS

Technique	Duration
With the patient lying prone, greet the body with general warming compression using medium-to-deep pressure. • Posterior calves, thighs, buttocks, back	2 minutes
Effleurage, petrissage, effleurage, compression, medium-to-deep pressure, evenly rhythmic • Gastrocnemius • Hamstrings • Buttocks Perform bilaterally.	4 minutes (8 minutes)
Passive ROM to end-feel, slow and rhythmic • Ankle joint (circumduction, plantar flexion, dorsiflexion) • Knee joint (extension, flexion) Finish with cephalic effleurage of the entire leg using deep pressure. Perform bilaterally.	2 minutes (4 minutes)
Effleurage, petrissage, compression, effleurage, medium-to-deep pressure, evenly rhythmic • All muscles of the back, from the lumbar spine region to the base of the occiput	5 minutes
Digital kneading, medium-to-deep pressure • Along each transverse process from T1 to L5 • Along and into the posterior costals, from the spine to the lateral side of the body	5 minutes
Gentle rocking, to and fro, evenly rhythmic, placing hands on • Posterior costal cage • Posterior, lateral gluteal region	2 minutes
Ask the patient to take one deep breath before positioning him supine.	1 minute
Passive ROM to end-feel, slow, evenly rhythmic • Knee joints • Hip joints • Shoulder joints Finish with deep compression and whole-body effleurage, working cephalically.	6 minutes 1 minute
Ask the patient to take three deep breaths while you gently place your hands on his anterior chest, offering slight resistance as he inhales and exhales. Do not come off the chest, but continue to apply gentle yet unyielding pressure on his chest as he breathes in and out deeply, 3 times.	3 minutes
Effleurage, petrissage, digital kneading, compression, effleurage, evenly rhythmic, medium-to-deep pressure • Foot, lower leg, thigh Perform bilaterally.	4 minutes (8 minutes)

(continued)

Contraindications and Cautions

- **Massaging over or near an open sore is a universal massage therapy contraindication and is especially important while working with an HIV/AIDS patient.**
- **Fever, particularly if low-grade and persistent, is a contraindication for bodywork, and the patient should see his physician immediately.**
- **Medication metaports, indwelling catheters, and feeding tubes require localized cautions.**
- **An open cut, even a minor hangnail or paper cut, on your hand dictates wearing gloves during the treatment.**
- **Keen awareness of the patient's fatigue, bruising, and possible narcotic intake will help determine session duration.**
- **If you have the slightest prodromal cold or flu symptoms, either cancel the session or wear a mask and wash your hands frequently.**
- **Short nails and the absence of rings will reduce the risk of breaking the patient's skin.**

Technique	Duration
Clockwise circles, performed with medium pressure, even and slow • Entire anterior surface of the abdomen, from the region of the diaphragm to above the mons pubis	2 minutes
Effleurage, petrissage, compression, effleurage, evenly rhythmic, medium-to-deep pressure • Hand, forearm, arm, shoulder region Perform bilaterally.	4 minutes (8 minutes)
With the patient's permission, perform a scalp massage, using slow, even digital kneading strokes. Focus on the occipital ridge. End with long, even strokes through his hair.	3 minutes
Compression, medium-to-deep pressure, very slow, rhythmic • Entire anterior surface of the body	1 minute
Ask the patient to take one more deep breath as you initiate very gentle rocking by placing one hand on either side of his pelvic region and rocking the body to and fro. At the point where the body takes over the rocking itself, move your hands away from the body and step away from the table.	1 minute

Although the patient's finances may be limited and his busy life may make scheduling a challenge, strongly suggest that he receives massage at least weekly. It's a good idea to call your patient the day after treatment, at least for the first few sessions, to see if there have been any negative side effects from your work.

HOMEWORK

Since HIV/AIDS infects the body for the patient's entire life, any suggestions you can make that will help support his immune system, keep him breathing deeply, and get or keep him moving can contribute to both the quality and the quantity of his years. Here are some homework assignments:

- Scrub all of your fruits and vegetables.
- Several times during the day, take a very deep inhalation, hold it for a few seconds, and forcibly exhale.
- Stretch while taking your daily shower; support yourself while rolling your shoulders, neck, hips, and ankles. Also, while in the shower, breathe deeply a few times.
- While watching TV or sitting or standing comfortably, move *every* joint in your body as far as it will go. Once you reach a comfortable point where the joint will move no farther, push a little beyond that point.
- Consider a gentle aerobic and strengthening program if you're not already active. Don't become sedentary.
- Drink plenty of water.
- Wash your hands frequently throughout the day, and especially after shopping or being out in crowds.
- Don't go into crowds if you're getting a cold or the flu.
- Suggest to friends who are not feeling well that they visit you after they are well.
- Find ways to relax, and make time for those techniques every day.
- Get plenty of sleep.

Review

1. Explain the difference between HIV and AIDS.
2. Which population is affected by HIV/AIDS?
3. What do the acronyms HIV and AIDS stand for?
4. Describe this disease's duration.
5. How is HIV/AIDS treated?
6. Is HIV always fatal?
7. Name behaviors that spread HIV/AIDS.
8. List behaviors that can prevent the spread of HIV/AIDS.
9. Is it common for a person to be infected with HIV/AIDS through the U.S. blood supply?

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20

Hyperkyphosis

Also known as:
Hunchback

Definition: An exaggerated, often progressive, increase in the normal posterior thoracic spinal curvature.

GENERAL INFORMATION

Hyperkyphosis is the correct term used for an exaggerated thoracic curve. (Lay, and often medical, literature mistakenly uses the terms interchangeably; the two terms are not synonymous.)

- Two forms: structural and postural
- Causes of structural hyperkyphosis: congenital factors, thoracic spine fracture, osteoporosis, arthritis, degenerative disc disease, ankylosing spondylitis, spinal cancers or tumors, paralytic conditions, spinal trauma
- Causes of postural hyperkyphosis: slouching, rounded-shoulder sleep posture (fetal position), persistent work-related postures
- Onset immediate or gradual, depending on etiology
- Duration: lifelong in structural form, short-term in postural form
- Prevalence of both structural and postural forms fairly evenly distributed among children, adolescents, and adults

PATHOPHYSIOLOGY

The term *kyphosis*, correctly used, refers to the *normal* posterior thoracic curvature that develops after an infant gains control of her head, begins crawling, and eventually stands upright. Normal spinal anatomy manifests a slight thoracic *kyphotic curve*.

The exaggerated forward rounding of the shoulders in both structural and postural hyperkyphosis compromises the musculature of the entire spinal column. The forward-head thrust position commonly assumed by people with hyperkyphosis leads to postural and structural problems, as well as head and jaw pain.

Scheuermann's kyphosis, a primary hyperkyphosis of unknown origin, develops in children (more often in males) between the ages of 10 and 15, and noticeably deforms the vertebrae. If untreated, Scheuermann's kyphosis results in lifelong deformity, muscular and joint pain, and/or organ compromise. Congenital hyperkyphosis, which occurs during fetal development, often worsens after the child is born; if untreated, it can lead to paralysis of the lower body.

Adolescent girls with poor posture, large-breasted women, anyone working at a computer or leaning over a desk, and those who frequently sleep in a fetal position have an increased risk of developing postural hyperkyphosis. This nonpathologic form of the condition usually disappears with normal physical development, changes in postural habits, physical therapy, weight loss, or breast reduction. Older adults with spinal arthritis or osteoporosis, or the long-term effects of an earlier trauma, are at greater risk for developing the less resilient, structural form of hyperkyphosis.

Untreated at any age, hyperkyphosis can lead to irreversible physical deformity, body image difficulties, ineffective breathing patterns, neurologic problems,

and organ damage. Decreased lung capacity, which can develop regardless of the severity of the condition, is a continued medical concern because inefficient breathing patterns often result in bronchitis or pneumonia, both of which are more serious, and possibly life threatening, than the original hyperkyphosis.

The initial diagnosis is often made via a simple clinical intake and spinal palpation, followed by the patient assuming various spine-bending positions. X-rays reveal arthritic changes and identify spinal fusion, and they are essential if the patient manifests neurologic difficulties in the lower extremities. An MRI will indicate spinal tumors or soft tissue infection surrounding the bones or discs. Breathing tests determine the extent of thoracic compromise.

Hyperkyphosis does not usually directly shorten the person's life span. However, secondary conditions, such as recurring pneumonia, can affect the quality and quantity of years lived.

OVERALL SIGNS AND SYMPTOMS

Mild, transient, postural hyperkyphosis is often asymptomatic. Once muscles and bones compensate repeatedly over time, however, the following muscular signs occur:

- Shoulder protraction (drawing forward) and elevation (rising upward), combined with weaker middle and lower trapezius muscle, from shortened upper trapezius and levator scapula
- Rounded-shoulder effect from shortened and tightened pectoralis major and minor
- Noticeable "winging" of the scapula from weak serratus anterior

Signs and symptoms occurring as a result of the previous muscular signs include:

- Slouching posture
- Mild-to-moderate back pain
- Back pain upon movement
- Shoulder height imbalance
- Spinal stiffness and/or tenderness
- Forward-head posture
- Inefficient breathing patterns

SIGNS AND SYMPTOMS MASSAGE THERAPY CAN ADDRESS

A note of caution: Softening the surrounding musculature of a *structurally* hyperkyphotic spine that has been locked in hypertonicity for months or years can trigger extremely painful muscle spasms and result in an unstable spine. This chapter therefore presupposes that the massage therapist is addressing *postural* hyperkyphosis only. Unless she is working as part of a health care team, with the client's primary physician and/or physical therapist, or has advanced training, a massage therapist should not attempt to treat structural hyperkyphosis. (See Massage Therapist Assessment later in this chapter to determine the difference between structural and postural hyperkyphosis.)

- The back pain, shoulder height imbalance, and spinal stiffness and tenderness associated with postural hyperkyphosis can be effectively treated with massage therapy techniques.
- The secondary effects of the forward-head posture can be reduced or eliminated by massage therapy.
- Thoracic capacity can be increased and inefficient breathing patterns can be corrected with the intelligent use of specialized massage techniques.
- The temporarily immobile shoulder girdle will yield to massage therapy techniques.

TREATMENT OPTIONS

Noticeable deformity and chronic back discomfort or pain are often the triggers that prompt a visit to a sports or physical medicine physician, or an orthopedic specialist. Treatment is directly related to the condition's onset, severity, and symptoms. No matter how mild or severe the condition is, the treatment's effectiveness correlates to early intervention.

Postural hyperkyphosis often does not progress and can improve with focused, noninvasive treatment, such as massage therapy, physical therapy, chiropractic adjustments, exercise, joint mobilization, and stretching. In addition, improvements in workstation, posture, and sleeping habits can completely alleviate both the deformity and the pain associated with this milder form of hyperkyphosis. Over-the-counter (OTC) pain medication can relieve transient discomfort.

Depending on the age of onset and the progression, structural hyperkyphosis is generally treated more aggressively and invasively because of postural, breathing, neurologic, and organ complications, which are often accompanied by significant pain. In growing children and adolescents, wearing a back brace can prevent further curvature if the brace is applied early in the child's development. Full correction is sometimes possible using bracing alone. In adults where a slow, lifelong spinal compromise has caused a noticeable deformity, accompanied by only moderate pain, then pain medication, localized hot or cold packs, physical therapy, and breathing exercises may be helpful.

Spinal surgery is indicated in the case of tumor- or infection-related hyperkyphosis, intractable pain, severe progressive curvature, and neurologic problems. Vertebroplasty and kyphoplasty are recently developed, less risky, less invasive surgical procedures involving the injection of an inert cement into the vertebrae.

Common Medications

- Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Motrin, Advil)

MASSAGE THERAPIST ASSESSMENT

To ensure that the client has postural—and not structural—hyperkyphosis, the therapist should first ask whether she has seen a medical professional. If the client's response indicates that she experiences mild or moderate transient back pain and stiffness secondary to sleeping position, postural or work habits, or large breasts, the therapist can proceed.

Asking the client to bend forward, then observing her back for the absence of abnormal angles or curvatures, will further confirm postural hyperkyphosis. Finally, when lying supine on the massage table, the shoulders, after a few moments of relaxation and deep breathing, should naturally lie on the table with no abnormal, unmovable, or stiff shoulder forward rounding.

When the client is disrobed, under the sheets, and ready for treatment, palpation of the pectoralis major and minor; subclavius; sternocleidomastoid (SCM); levator scapulae; serratus anterior; suboccipitals; and anterior, lateral, and posterior intercostals and thoracic erector spinae will reveal hypertonicity, and the client may report tenderness. In addition, with the client in either the side-lying or the prone position, the hypertonic rhomboids, trapezius, and teres major and minor will render the scapula difficult, if not impossible, to move.

If the client has assumed the forward-head position in response to her rounded shoulders, the muscles surrounding her temporomandibular joint (TMJ) will be hypertonic, and she may complain of teeth clenching, which will result in tender anterior neck muscles and/or headache. The therapist should be aware of the client's further attempts at self-care via visits to a chiropractor or physical therapist.

Massage Therapist Tip

Combining Assessment with a Gentle Stretch

The fact that your client is hyperkyphotic can be visually confirmed by asking her to lie supine on the table. Typically, her shoulders will be rounded and not lie flat. The rounding might be slight, perhaps no more than a hand's width, or you might be able to fit an entire fist between the posterior shoulder and the table. To help nudge the hypertonic pectoralis major and minor into a more natural, lengthened position, place your cupped hands over the top of your client's shoulders, and with a rocking, alternating motion, press her shoulders into the table, one after another. This should not cause pain but, in fact, often results in the client feeling as if she is "being opened up."

THERAPEUTIC GOALS

Easing the pain-spasm-pain cycle, flushing out local muscular waste products, stretching tight joints and shortened muscles, and improving thoracic capacity are all reasonable massage therapy goals for a client who has postural hyperkyphosis. Achieving these goals, however, is not possible without the client's adherence to daily self-care techniques.

MASSAGE SESSION FREQUENCY

- Ideally: twice a week for 2 weeks, then once a week for 6 weeks or until the postural abnormality is resolved
- Minimally: once a week for 2 months
- Infrequent, inconsistent sessions will be ineffective

MASSAGE PROTOCOL

Because of the extent of musculature involvement, the care that must be taken not to release hypertonic muscles too quickly, the various symptomatic differences clients will have, and the length of time and commitment required for the client to relearn postural adaptations, a single 60-minute protocol cannot address this condition. Instead, the protocol that follows offers a series of techniques with a suggested range of durations you can use depending on your client's symptomatic presentation before each session. Durations are suggestions only. Of all the recommended techniques, be sure to include those that address thoracic capacity in every session.

Some of this work is very aggressive and must be performed deeply. Be sure to soften the superficial tissue before going into the body with any invasive techniques.

During intercostal and parasternal digital kneading, ensure the client's comfort and drape appropriately. This is most easily done by gripping the sheet with one hand to keep it close to the client's chin while sliding your working hand under the sheet.

Hot packs can be applied to areas before they are massaged. Cold packs are effective if the client is experiencing spasm or pain.

Getting Started

A posturally hyperkyphotic client will be uncomfortable lying completely flat. Place pillows under her knees and under her head in the supine position. While prone, she may require a small pillow under her abdomen, or might want to hug a pillow close to her chest. Side-lying is ideal for treating postural hyperkyphosis, but be sure to provide cervical, thoracic, and pelvic pillowing support.

Have hot and cold packs ready. With any deep work on delicate or thin tissue, such as the anterior neck, be sure to use plenty of lubrication to avoid irritating the skin.

HOMEWORK

In order to free the shoulder girdle from the grip of hyperkyphosis, long-held incorrect posture must be reversed. Although the client will be well served by seeing a physical therapist who can recommend muscle stretching and strengthening exercises, the soft tissue work that you, the skilled massage therapist, can perform, combined with the following self-care suggestions, can lead to complete recovery.

Thinking It Through

To fully understand the anatomic effect of the forward-head posture assumed by most clients with postural hyperkyphosis, the therapist can try going about her day for 30 minutes in this position. After about 15 minutes spent with her shoulders rolled forward, she can ask herself:

- What position does my jaw assume if I need to look forward?
- What happens to my forehead muscles as I try to look straight ahead?
- How does my breathing change in this position?
- What does my lower back feel like with my shoulders constantly pulled forward?
- How does this position affect how I feel about myself?
- Am I clenching my jaw?
- Are my abdominal muscles feeling strong and engaged or weak as a result of this position?

Step-by-Step Protocol for Hyperkyphosis

Technique	Duration
With the client supine, apply hot packs (over the sheet) on the left and right superior pectoralis major, below the clavicles. Leave in place as you greet the client's body with general warming compression, using medium-to-deep pressure applied evenly and rhythmically. • Use this time to evaluate the client's breathing pattern and scapular placement on the table. • Be sure to address the anterior thoracic and abdominal region in your compression techniques.	3 minutes
With the hot packs still in place, ask the client to take several very deep breaths as you perform effleurage, medium pressure, in a clockwise direction. • Over the entire abdominal region from the diaphragm to above the mons pubis	2 minutes
With the hot packs still in place, ask the client's permission to massage her head. Digital kneading, medium-to-deep pressure, evenly rhythmic • All the muscles of the head from the forehead hairline to the occipital ridge • Roll the head to one side, firmly holding it in one hand while you work deeply to the client's tolerance along the occipital ridge and into the laminar grooves of the cervical spine. Roll the head to the other side. Repeat.	5–10 minutes
Hold the entire weight of the head in your hands with your fingertips lodged just below the occipital ridge. Ask the client to inhale deeply as you apply pressure to the occipital ridge, which should allow the head to fall slowly backward into the palms of your hands, thrusting the client's chin toward the ceiling. Rest with her head in your hands until you feel a muscular release along the occipital ridge, and then return the head to its normal position.	2 minutes
Slide your hands down the anterior surface of the neck so each set of fingertips rests on the sides of the manubrium, at the top of the sternum. Begin digital kneading, medium-to-deep pressure, making small circles, evenly rhythmic. • From the sternum, addressing the attachment of the pectoralis major below the clavicle, out to the acromioclavicular joint	
Grip the sheet with one hand and keep it close to the client's chin. Ask permission to work along the sternum. With the other hand, digitally knead. • Attachment points of the intercostals and pectoralis major, and along the lateral border of one side of the sternum	
Avoiding breast tissue and nipple contact, effleurage • As much of the pectoralis major and minor as you can appropriately reach Switch the hand, maintaining modest draping, and repeat on the other side of the sternum and pectoralis major and minor.	3–6 minutes (6–12 minutes)

(continued)

Contraindications and Cautions:

- **If the client believes she has postural hyperkyphosis but improvement is not demonstrated after a few massage therapy sessions, stop the therapy and refer the client to a physical medicine or orthopedic specialist.**
- **Spinal traction, forcible twisting, and extensive joint stretching are usually outside the massage therapist's scope of practice. Work that is too aggressive on either a hypomobile or a hypermobile spine could result in neurologic damage or muscle spasm.**
- **Palpating hands must determine whether a muscle set is hypertonic, in spasm, or weak before aggressive soft tissue therapy is performed—especially on the cervical musculature. Overrelaxing weak muscles may compromise the neck's ability to hold up the head and could cause muscle spasms, leading to headache, teeth-clenching, and nausea.**

Technique	Duration
Effleurage, medium pressure, in the direction of the axilla • As much of the pectoralis major as you can appropriately reach	1–2 minutes
Effleurage, muscle stripping, digital kneading, effleurage, medium-to-deep pressure • Pectoralis minor, bilaterally	3–5 minutes each side
With the client's permission, reveal the abdomen, using appropriate draping techniques. Effleurage in a clockwise direction, medium pressure, evenly rhythmic • The entire abdominal region from just below the rib cage to above the mons pubis	3 minutes
Ask the client to bend her knees. Digital kneading, medium pressure, evenly rhythmic • Along the border at the bottom of the rib cage, searching with your fingers to feel as if you are pushing up *under* the rib cage and engaging the diaphragm. If performed slowly and carefully, the client will not resist this technique. If the work is performed deeply enough, there will be no "tickle" response. Finish with slow, even deep effleurage, working clockwise • In the entire abdominal region	5–8 minutes 1 minute
Place the client in the side-lying position; pillow appropriately. Perform fascial stretching techniques, and skin rolling, as deeply as you can grip the skin • Along the border of the cervical spine, out to the lateral neck, down to the region of about C-7, along the superior border of the scapula, out to the lateral tip of the shoulder, down to approximately T-10. Finish with effleurage to the entire area.	8 minutes 1 minute
Position the client's arm (the one closest and not lying on the table) so you can access the entire scapula. Digitally knead, effleurage, petrissage, effleurage • Lateral, superior, and medial scapular borders, working the bony prominences, rotator cuff muscles, latissimus dorsi, teres major and minor, rhomboid major and minor. Attempt to *slightly move* the scapula as you work around the bone.	10 minutes
Effleurage, medium-to-deep pressure • From the occipital ridge, down the cervical spine, all along the scapula out to the tip of the shoulder and down to T-10	2 minutes
Ask the client, while still side-lying, to stretch out as far as she can and straighten her position on the table. In this position, undrape the quadratus lumborum (QL); working alternative hands using scooping motions, muscle stripping, digital kneading, effleurage, and petrissage, work deeply to the client's tolerance. • The QL working from the superior ridge of the pelvis to the lower edge of the posterior/lateral rib cage. Ask the client to take a deep breath and slightly soften and round her position. Repeat the previous technique, going in as deeply as you can.	5 minutes 3 minutes

(continued)

Technique	Duration
Turn the client to the other side and repeat all previous side-lying steps.	
Place the client in the prone position. Pillow for comfort. Apply a hot pack to the bilateral trapezius while you perform general relaxation techniques on her head, legs, or feet. Remove the hot pack. Effleurage, petrissage, effleurage, deep pressure • All posterior muscle sets, bilaterally, from the occipital ridge to, and including, the lumbar region	5 minutes 5 minutes
While applying gentle effleurage to the entire back, inform the client that you will be performing deep work that may feel a bit unusual. Ask her to give feedback if she is uncomfortable.	1 minute
Skin rolling, skin plucking, hacking (over the sheet), soft-fist beating, and fascial stretching techniques over the entire back from the superior trapezius down to the level of T-10. *Use no percussive techniques over the kidneys.* Work as deeply and aggressively as the client will allow, and then effleurage the area.	10 minutes
Effleurage, digital kneading, petrissage, effleurage, deep pressure, not necessarily rhythmic • Erector spinae in the cervical, thoracic, and lumbar region • Rhomboid major and minor • Teres major and minor	10 minutes
Shoulder mobilization—performed with the client prone. Gently place the client's arm so her hand lies in the small of her back, palm up. With one of your hands, brace her elbow; with the other hand, deeply palpate the medial border of her scapula. When you have a firm hold on the scapula, rest for a moment—and without warning the client—firmly pull the medial scapular border up, trying to move it so your fingers can reach "underneath." The client may initially resist this sensation, but firmly hold the scapula for as long as you comfortably can. Ask her to take a deep breath and tug on the scapula for one more inch, then slowly release. Follow with effleurage to the entire region. Repeat on the other side.	5–10 minutes
Shoulder mobilization—performed with the client side-lying. Position the client's arm to rest on her side. Digitally knead around the scapula and soften the superior trapezius. Place the client's arm behind her so her hand rests on the table (or as far behind her as it can comfortably rest), palm up. Gently rock the client's shoulder to and fro as you palpate the medial border of the scapula. When you feel as if you can grip the medial border of the scapula, with one firm, relatively quick grasp, tug the scapula toward you by a few inches, as far as it will move. Hold it. Ask the client to take a deep breath and pull the scapula 1 inch farther. Then slowly release the scapula and effleurage the surrounding area. Repeat on the other side.	5–10 minutes

(continued)

Technique	Duration
Position the client supine. Remove the pillow from the head region, and position yourself above the client. With a slow, methodical, and firm rocking motion, alternate pushing the client's shoulders down into the table. The final push is performed with equal pressure on both shoulders, holding this position for a moment. *If this technique creates any discomfort for the client, stop immediately.* The client might take a deep breath after this technique is performed, as the body resettles into its normal thoracic kyphotic curve.	5 minutes
Resisted breathing technique, client supine. Place your hands along the lateral and slightly distal borders of the client's rib cage. Apply gentle but firm pressure. As she inhales deeply, maintain your pressure on her thoracic cavity; she should feel substantial pressure and resistance as she inhales. Stay on the chest as she exhales, maintaining your pressure. Repeat 3 times. *Do not perform this technique on older adults or anyone with osteoporosis.*	5 minutes
Finish the session with any form of relaxing Swedish techniques preferred by the client.	

Massage therapy alone—without self-care—will yield no improvement. Here are some homework assignments:

- Frequently throughout the day, perform the doorway stretch (see Figure 6-1). Give yourself a reminder, such as every time you go to the bathroom or before and after meals.
- Fold your hands in front of your chest in a praying position; take a very deep breath as you raise your arms and stretch them as far behind your head as you can. Take another deep breath with your arms in the air, and slowly return them to the starting position. Do this six times throughout the day.
- Interlace your fingers together behind you at the level of your lower back. Take a deep breath as you raise your arms as high as you can push them. Press your shoulder blades together. Repeat three times a day.
- Lie on the floor or on your bed with your arms stretched completely out to the side, as far as you can reach. Take several deep breaths as you feel the full length of your spine settle into the bed or floor. Try to feel your shoulder blades pressing against the floor or bed.
- Lie on your side and curl into a tight fetal position. Tense every muscle in your body. Take a deep breath and slowly uncurl; roll onto your back and spread your arms out wide to either side.
- When you feel yourself slouching, immediately stand up, alternating raising, lowering, and rolling your shoulder blades backward. Take a deep breath and assume your previous position in a straighter posture.
- Ask friends, family, and coworkers to gently remind you when they notice you are slouching.

Review

1. Explain the difference between kyphosis and hyperkyphosis.
2. Name the two forms of hyperkyphosis.
3. List some of the causes of both forms of hyperkyphosis.

4. Why should a massage therapist not attempt to treat structural hyperkyphosis?
5. List as many muscles as you can that can be affected by both forms of hyperkyphosis.
6. Explain why a forward-head posture often occurs secondary to hyperkyphosis, and describe some of the effects of this position.
7. Why are breathing exercises and thoracic cavity mobilization important in the treatment of this condition?

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