Role of the Interview and Documentation Instruments in Assessment

Assessment

A learned skill

Enhances quality of treatment

Collection and interpretation of information

- May come from client, client's consent advocates, and referring medical professionals

Remember that although the massage therapist assesses and makes decisions, she is not equipped to diagnose or treat any specific medical condition unless under the direct supervision of a licensed medical professional.

Purpose of Premassage Assessment

To determine whether referral to a medical professional is necessary

To discover cautions

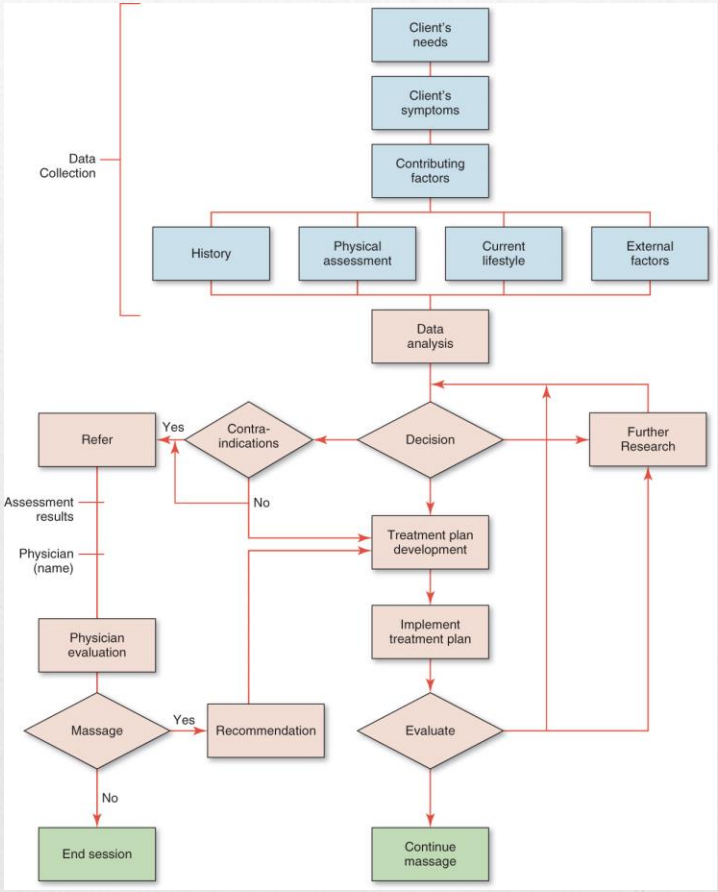
To obtain client input that is used in developing the massage care/treatment plan

To design the best massage

Some considerations that go into designing the best massage for a client are the methods used and the forces generated by those methods, as well as the proper application of depth of pressure, drag, direction, speed, rhythm, duration, and frequency of each method

Development of Care/Treatment Plan

In many cases, the same techniques used to assess a tissue are those required to intervene and restore its normal function. They usually differ in intensity, however.



Compensation Patterns

Resourceful compensation – develops when body adapts to trauma or repetitive use pattern

Examples:

- Change in bone shape during healing
- Swelling and muscle tension around joint sprain

Compensation patterns are the result of the body's adjustment to some sort of dysfunction.

Resourceful compensation must be supported, not eliminated, because determining whether the changes in the body are helpful or harmful can be difficult.

Detecting Resourceful Compensation

During massage, client stiffens or flinches away from application

- Do not force tissue changes

After massage, clients indicate they feel good and loose, but experience soreness and increase of symptoms within 24-48 hours

- Massage has destabilized a resourceful pattern

In massage, a general guideline for detecting resourceful compensation is that the body resists the changes introduced by massage.

During assessment procedures, if you are unable to come up with a logical reason for the tissue and movement changes, the best course is to use general methods in the area and to avoid aggressive specific procedures during the massage.

Immediate improvement and 50% improvement 24-48 hours later

- Compensation pattern is reversible
- Massage is therapeutic change

Immediate improvement, but symptoms return and increase

- Compensation likely resourceful
- Massage is condition management

No reduction in symptoms

- Palliative care appropriate

Dysfunction as Solution

Is pattern a problem or solution?

Similar to resourceful compensation

Consider client's whole situation

Support solution

Understanding the bigger picture when analyzing assessment information adds a very important dimension to the development of essential and appropriate massage care plans.

Establishing Rapport

Rapport is the development of a relationship based on mutual trust and harmony.

It is enhanced by using words, voice tone, and body language similar to that of the client's.

A good way to begin to establish rapport is to learn the client's name and use it.)

Typical assessment pitfalls usually fall into one of two categories: Some therapists hurry through the assessment to get to the massage. Other therapists drag the assessment out and cut the massage time short.

Both situations can detrimentally affect rapport, but they are easily correctable if the therapist understands the importance of time management during assessment.

How to Observe

Only gather information, don't interpret it.

Get a sense of the client's general presence.

If your client is active, be active.

If your client is tired or depressed, begin slowly.

Watch where and how clients indicate problems with their bodies.

As you listen to your clients closely, watch their body language as well. The whole picture should be considered as you prepare a treatment plan.

Gestures

Common gestures and indications:

- Finger pointing to specific area suggests hyperactivity of acupressure or motor point or possibly joint problem
- Finger pointing, but hand swipes in certain direction indicates trigger point problem
- Grabbing/pulling/holding and moving an area indicates muscle or fascial shortening

The skilled massage practitioner pays attention to where and how a client indicates a problem on the body.

Common gestures and indications, cont'd:

- Movement to show area of tightness indicates need for muscle lengthening combined with muscle energy work
- Acts as if stuck in a position indicates need for connective tissue stretching
- Drawing lines on body may indicate nerve entrapment

These gestures often reveal whether a client has a muscle, joint, or visceral problem.

Interviewing and Listening

Both are subjective acts.

Use open-ended questions to elicit detail.

Use words the client can understand.

Listen actively, with an open mind.

Let your client finish his statement, and then restate it to make sure you have grasped the full nature of the situation.

Assessment Interview Sequence

Greet Client. Smile, introduce yourself, extend your hand and give a firm handshake

Initiate conversation. Ask how the client would like to be address: Mr., Mrs., Ms., or by first name. Explain the assessment process and the forms used Include information on confidentiality

Give the Client time to respond.

Begin the health history. Give Client the health history form.

Follow the sequence on the form to gather the information. Any areas indicating some sort of past illness, injury, experience with massage, and so forth should be explored in more detail.

After completing the history form review, summarize the findings.

Respectfully, wait for a moment, then move to the physical assessment portion.

Hand the client the physical assessment form and explain it briefly.

Use the physical assessment form to perform the assessments. Do as many as possible as part of the massage.

Summarize your findings.

In writing up the history and the physical assessment, follow these rules:

Record all pertinent data
Avoid extraneous data
Use common terms
Avoid abbreviations
Be objective
Use diagrams when indicated

Physical Assessment

The objective aspect of assessment

"Are there any areas you feel I should avoid?"

Includes general assessment of posture and gait

Biomechanics and Kinesiology

Biomechanics – science of the action of forces, internal or external, on the living body

Kinetics – branch of the study of biomechanics that describes the effect of forces on the body

Biomechanics and Kinesiology

Table 11-1 Forces and Resulting Injuries

Force	Injury
Tension force	Soft tissue stretching: tears, strains
Compression force	Contusions, tearing, direct blows
Bending force	Ligament tears, fractures
Shearing force (forces occur perpendicular to tissue fibers)	Ligament tears, blisters, abrasions
Rotational/torsion force (combined tension and shearing forces)	Ligament tears, spiral fractures

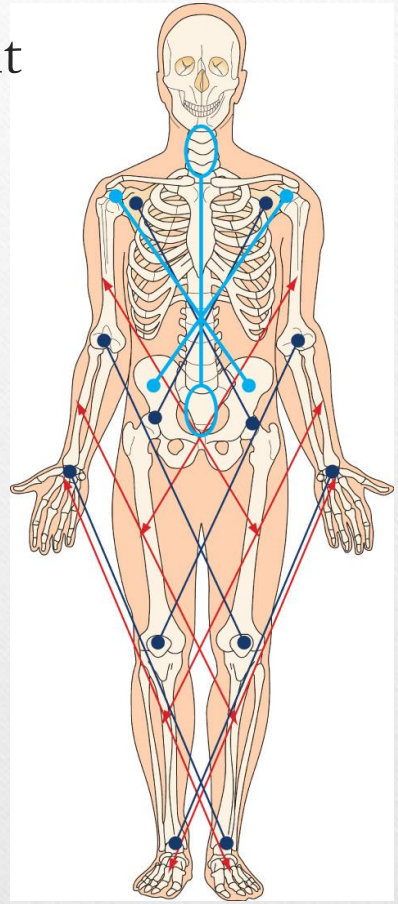
Force application is what a massage professional does when giving a massage.

These forces also can cause injury.

When we perform various assessments, these forces are applied to identify whether the area is injured.

Kinesiology – science of the study of movement

- Stability
- Balance
- Coordination
- Endurance



The kinetic chain describes the body as a linked system of interdependent segments.

Just as there is no such thing as an individual muscle, body segments do not exist in isolation.

The diagram shows the common areas of interrelated kinetic chain function. Follow the colored lines to locate the interconnections.

Outcome Documentation Instruments

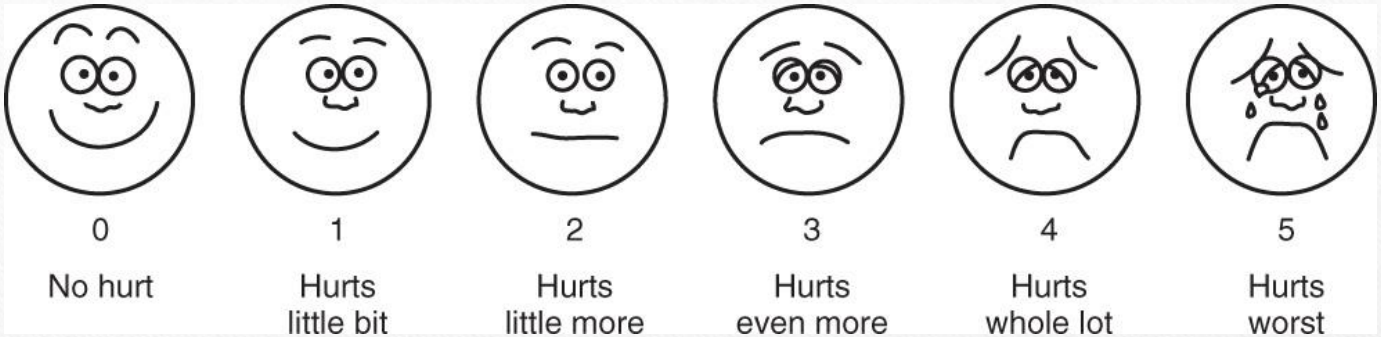
Representative samples of pain intensity rating scales

Numerical Scale

0	1	2	3	4	5	6	7	8	9	10
No pain										Worst pain imagin-able

Visual Analog Scale

No pain		Worst pain
	Directions: Ask the patient to indicate on the line where the pain is in relation to the two extremes. Qualification is only approximate; for example, a midpoint mark would indicate that the pain is approximately half of the worst possible pain.	



The outcome measurement instruments can be divided into two categories: (1) subjective data, provided by the client and (2) objective data, provided by the practitioner assessment.

The measurement of pain has classically been a subjective measure. Examples of subjective outcomes assessment instruments include:

Visual Analog Scale (measures pain intensity)

Pain Drawing (measures location and quality of pain)

McGill Pain Questionnaire (measures sensory, cognitive, and motivational evaluation to pain)

Physical Evaluation

Objective

Main considerations are:

- Body balance
- Efficient function
- Symmetry

Are people exactly symmetric?

No, but the right and left halves of the body should be similar in shape, range of motion, and ability to function.

Assessment data quantified by:

- Standardized Palpation of Tenderness
- Physical Capacity (Impairment) Assessment
- Muscle Testing Assessment

Muscle Strength Grading Scale

Muscle Strength Grading Scale (Oxford Scale)
Medical Research Council [MRC] grading scale

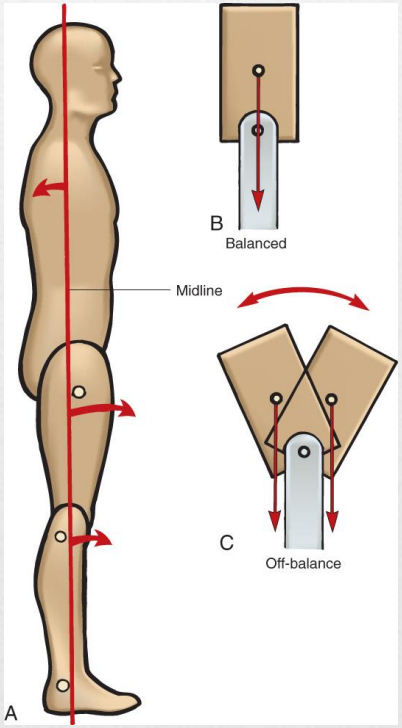
Grade	Value	Muscle Strength
5	Normal	Complete range of motion (ROM) against gravity with full resistance
4	Good	• Complete ROM against gravity with some resistance: Full range of motion with decreased strength • (Sometimes this category is subdivided further into 4^-/5, 4/5, and 4^+/5)
3	Fair	Complete ROM against gravity with no resistance; active ROM
2	Poor	Complete ROM with some assistance and gravity eliminated
1	Trace	Evidence of slight muscular contraction, no joint motion evident
0	Zero	No evidence of muscle contraction NT: Not testable

Posture Assessment: Standing Position

Posture influenced by heredity, disease, and habit

Balance of body against gravity: posture's fundamental determining factor

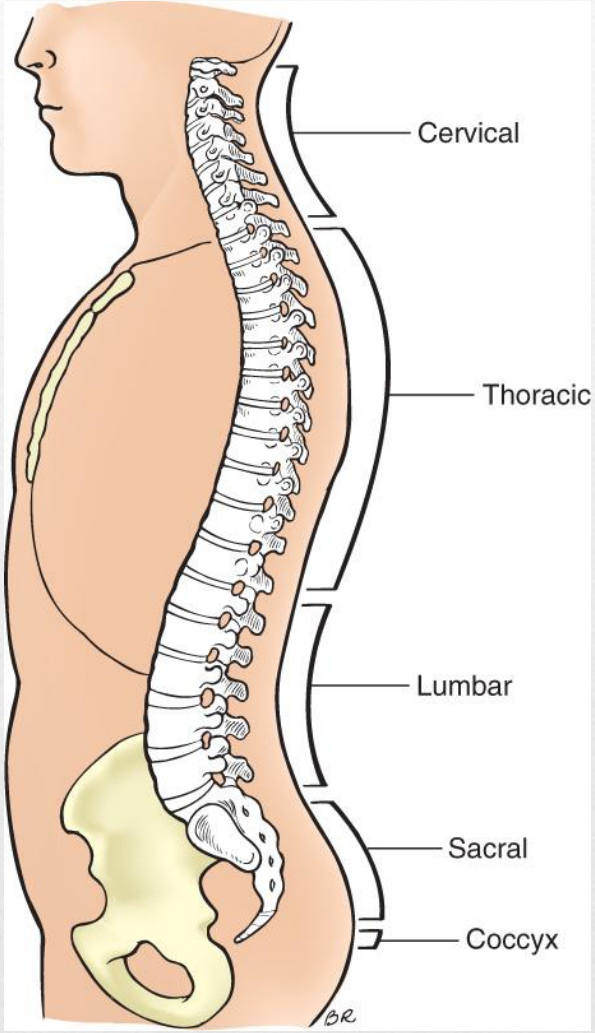
Habit is the easiest factor of these three to change. Massage therapists can normalize soft tissue and teach balancing exercises in an effort to overcome habitual postural distortion.



Normal Spinal Curves

Why do the normal spinal curves appear?

They develop as we grow to help us maintain an upright position against gravity.



Assessing the Standing Position

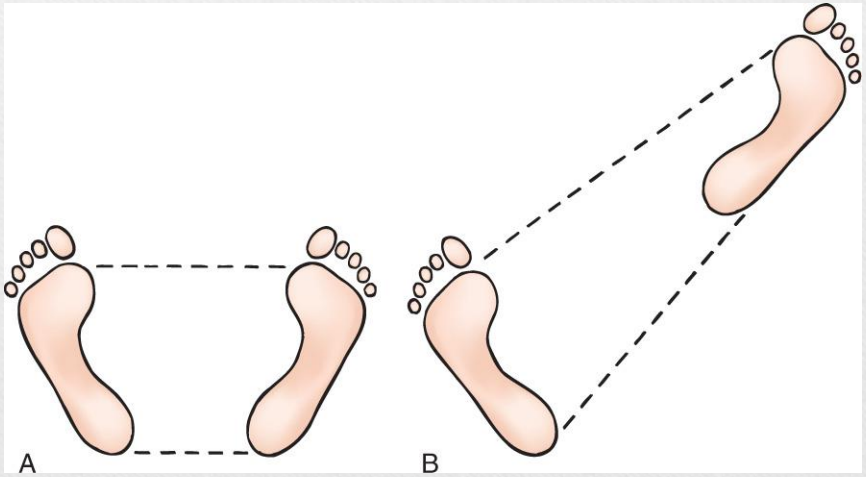
Use symmetric stance (A)

Feet at shoulder width

Eyes closed

Head tip indicates imbalance

The eyes are closed when assessing the standing position because this prevents one from orienting the body visually.



Box 11-4 Landmarks That Help Identify Lack of Symmetry

The following landmarks can be used to compare the symmetry of the body in different aspects. Be sure to observe the client from the back, the front, and the left and right sides.

- The middle of the chin should sit directly under the tip of the nose. Check the chin alignment with the sternal notch. These two landmarks should be in a direct line.
- The shoulders and clavicles should be level with each other. The shoulders should not roll forward or backward or be rotated with one forward and one backward.
- The arms should hang freely and at the same rotation out of the glenohumeral (shoulder) joint.
- The elbows, wrists, and fingertips should be in the same plane.
- The skin of the thorax (chest and back) should be even and should not look as if it pulls or is puffy.
- The navel, located on the same line as the nose, chin, and sternal notch, should not look pulled.
- The ribs should be even and springy.
- The abdomen should be firm but relaxed and slightly rounded.
- The curves at the waist should be even on both sides.
- The spine should be in a direct line from the base of the skull and on the same plane as the line connecting the nose and the navel. The curves of the spine should not be exaggerated.
- The scapulae should appear even and should move freely. You should be able to draw an imaginary straight line between the tips of the scapulae.
- The gluteal muscle mass should be even.
- The tops of the iliac crests should be even.
- The greater trochanter, knees, and ankles should be level.
- The circumferences of the thigh and calf should be similar on the left and right sides.
- The legs should rotate out of the acetabulum (hip joint) evenly in a slight external rotation.
- The knees should be locked in the standing position but should not be hyperextended. The patellae (kneecaps) should be level and pointed slightly laterally.
- A line dropped from the nose should fall through the sternum and the navel and should be spaced evenly between.

Intervention Guidelines: Posture

Watch symmetry—asymmetry indicates dysfunction.

Prepare connective tissue before stretching it to avoid spasms.

Use a multidisciplinary approach to client care.

One effective method in treating posture problems is to exaggerate the problem pattern and have the client push or pull out of the stabilizing pressure.

Gait Assessment

Factors affecting gait:

- Equilibrium
- Locomotion
- Bones, joints, muscles
- Vision
- Vestibular, auditory, and sensory motor systems

Gait is the way we walk.

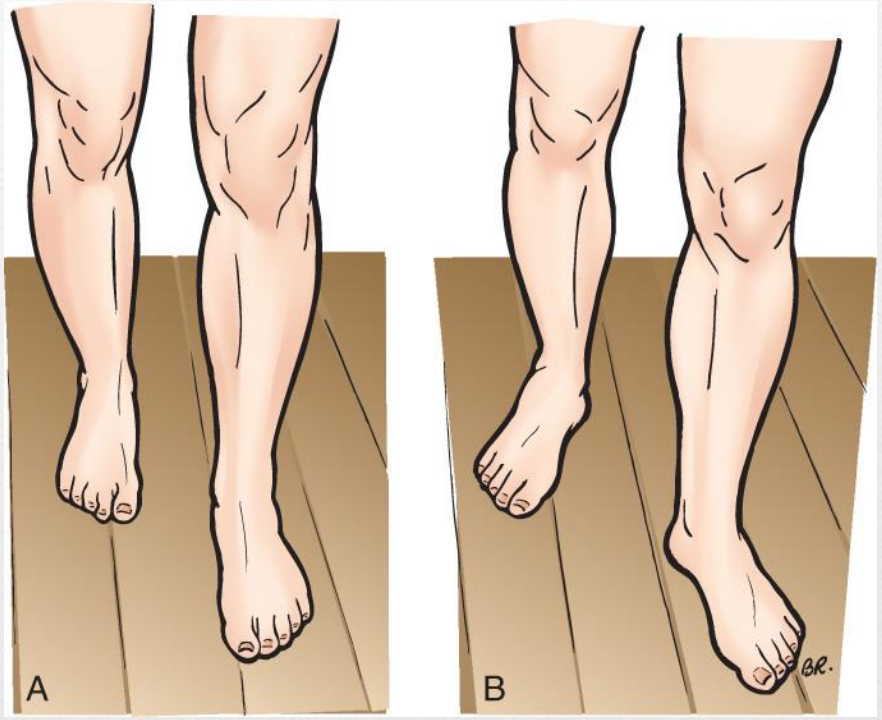
Many factors are involved in the process of walking.

Procedure for Gait Assessment

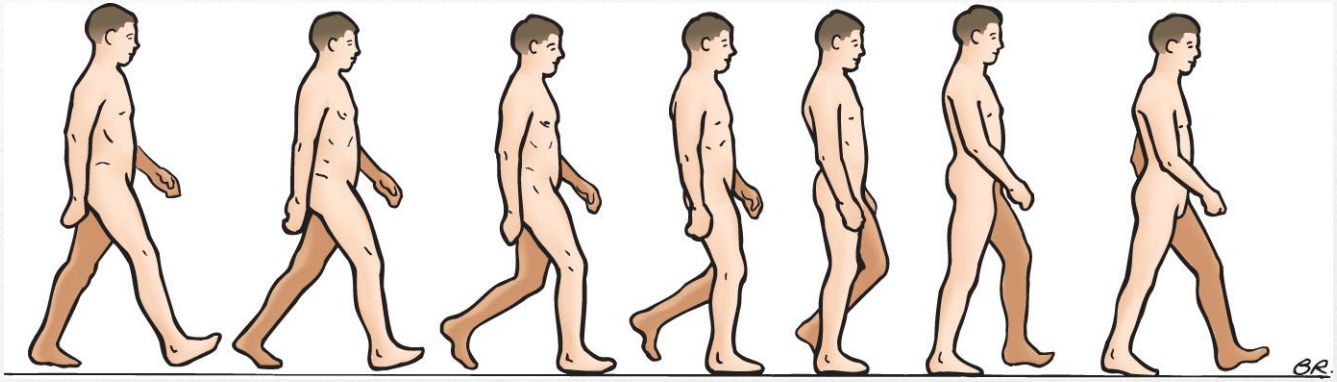
Watch client walk

Note the heel-to-toe foot placement.

The toes should point forward with each step.



Observe upper body



The upper body should be relaxed and fairly symmetric.

The head should face forward with the eyes level with the horizontal plane.

A natural arm swing should occur opposite the leg swing.

The rhythm and pace of the arm and leg swing should be similar.

Observe general appearance while walking:

- Head and trunk vertical, shoulders level
- Arms swing freely opposite leg swing
- Step length and timing even
- Entire body oscillates vertically
- Entire body moves rhythmically
- Heel strike: foot at right angle to leg
- Knee extended, not locked

i) Weight shifts forward in stance phase

j) Push-off: foot strongly plantar flexed

k) During leg swing, foot easily clears floor

l) Heel contacts floor first

m) Weight rolls to the outside of the arch

n) Arch flattens slightly in response to weight load

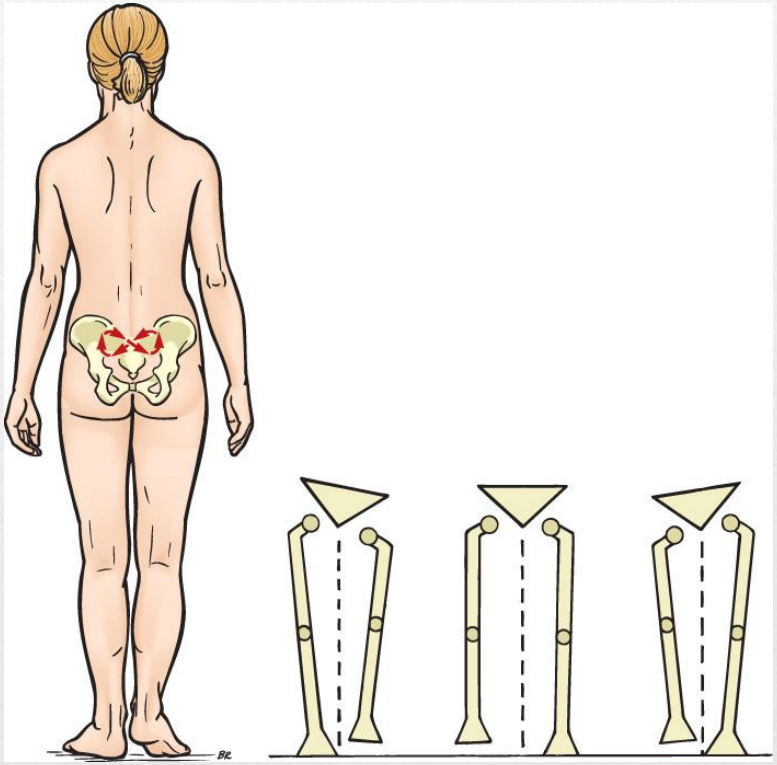
o) Weight shifts to ball of foot

Pelvis moves in side-lying figure eight

The movements that make up this sequence are transverse, medial, and lateral rotation.

The stability and mobility of the sacroiliac (SI) joints play very important roles in this alternating side, figure-eight movement.

If these joints are not functioning properly, the entire gait is disrupted.



Hips rotate in oval pattern

Knees move in a flexion and extension pattern opposite each other

Ankles rotate in an arc

Maximum dorsiflexion at end of stance phase and maximum plantar flexion at end of push-off are necessary

Gait Assessment

Focus on areas that do not move easily and areas that move too much.

Similar to postural correction:

- Soften areas with massage.
- Reset neuromuscular mechanism with muscle energy techniques, muscle lengthening, and stretches.

Teach the client slow lengthening and stretching procedures.

Intervention Guidelines

Look for areas that move inefficiently.

Pain causes tightening and alters normal relaxed flow.

Look for compensation and shifting movement patterns.

Amputation upsets the body's natural diagonal balance. Because the movements of the arm and leg are so intertwined, even a partial amputation of the arm can change one's gait

Assessment of Joint Range of Motion

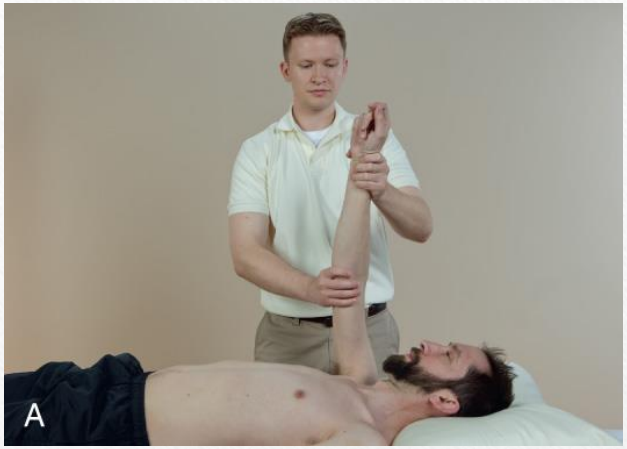
Active range of motion: client moves the joint through planes of motion

Passive range of motion: massage therapist moves the joint through planes of motion

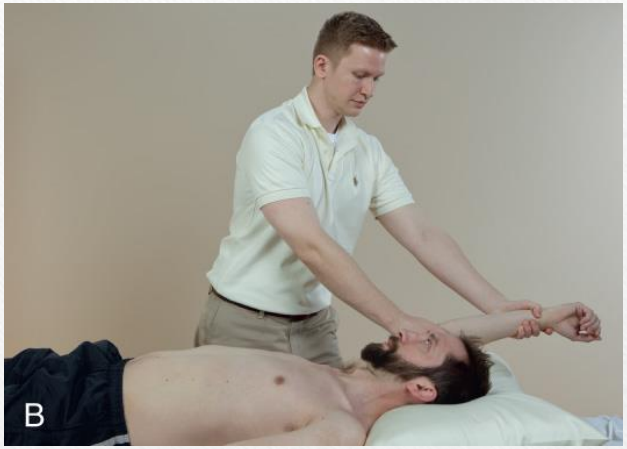
Measured in degrees

limitation in a joint? (Hypomobility)

excess movement? (Hypermobility)

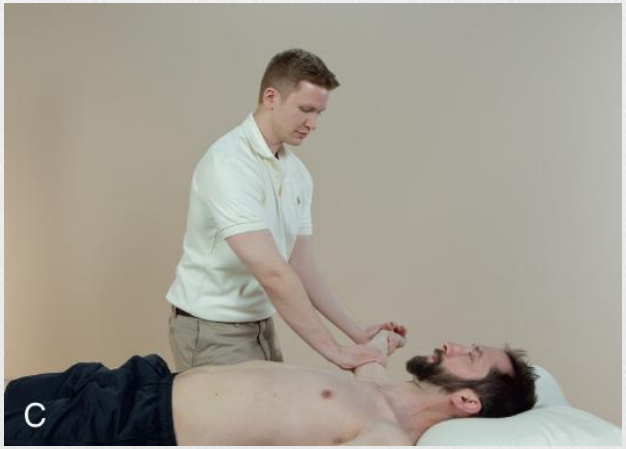


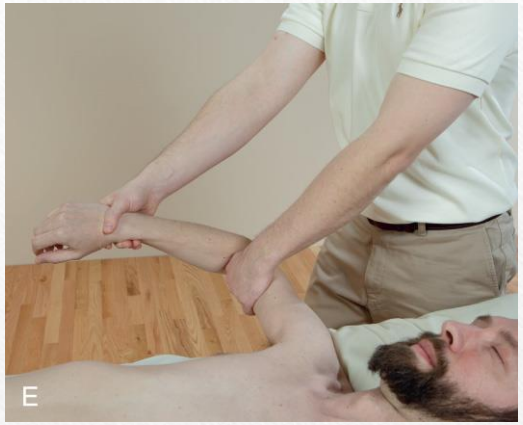
A, Flexion.



B, Extension.

C, Horizontal abduction.

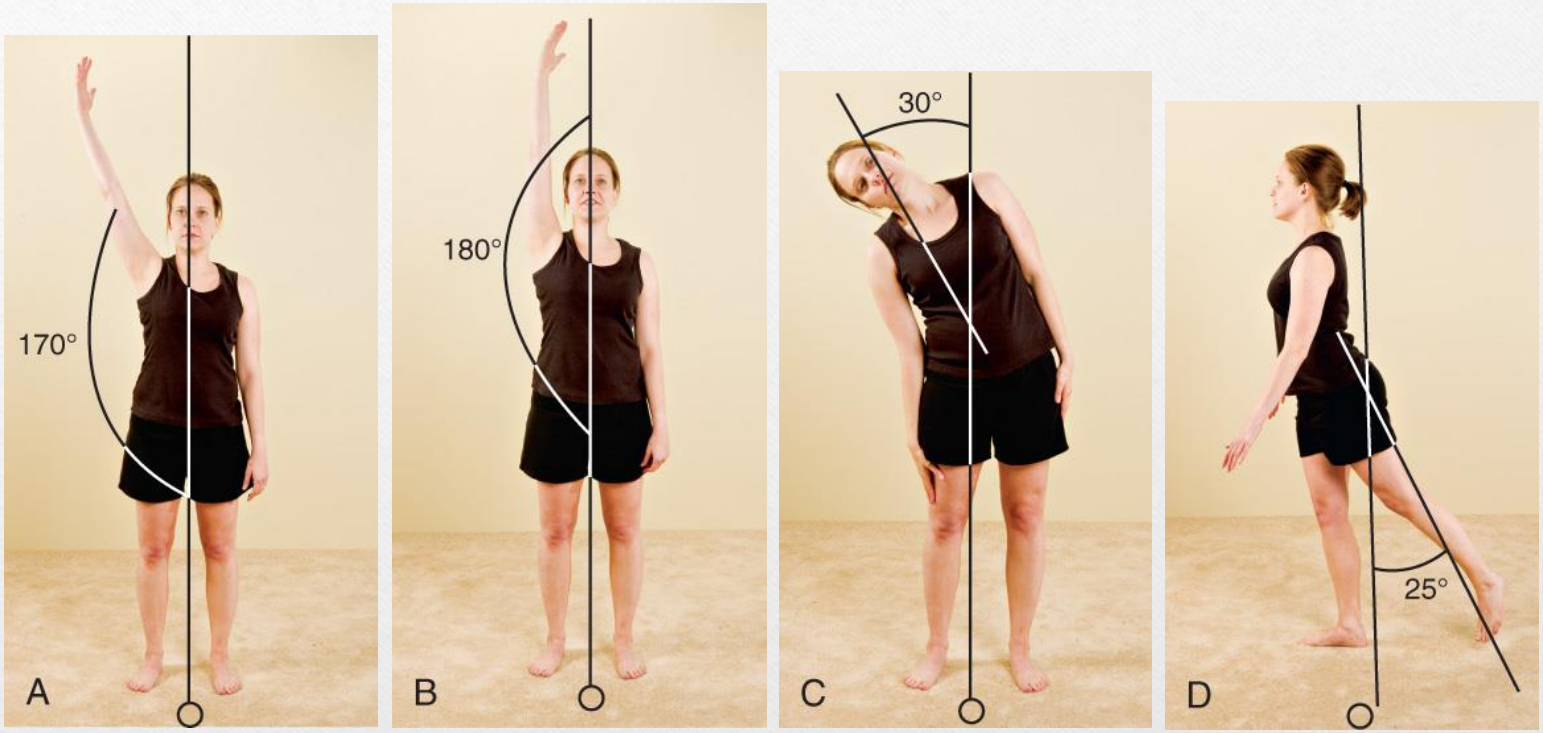




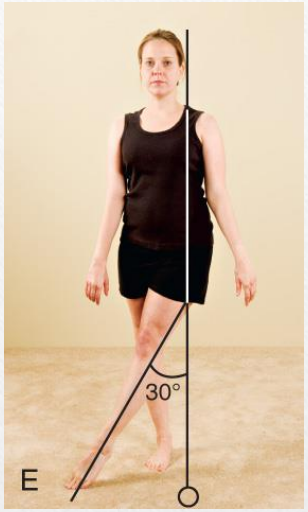
E, Internal/ medial rotation.

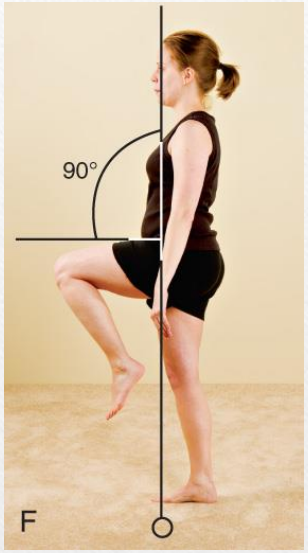
F, External/ lateral rotation.

Measuring Joint Range of Motion

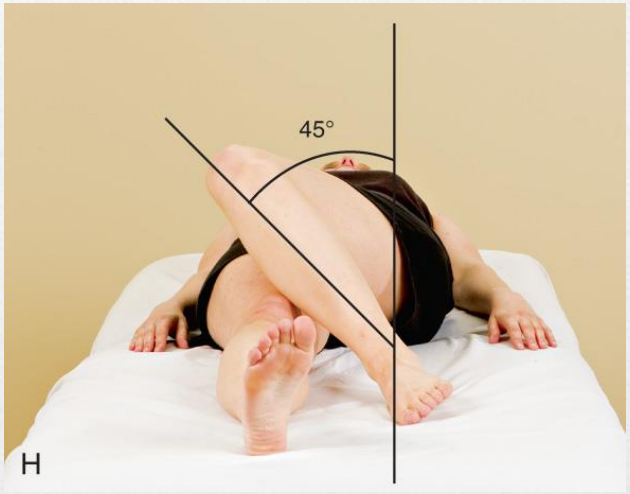


These photographs demonstrate the concept of measuring range of motion in degrees for some common movements of the neck and head.


30°
E


90°
F


10°
G


45°
H

Overpressure and End-Feel

Gradually apply pressure at end of passive range of motion

End-feel

Normal: painless

Abnormal: painful, or marked by edema

What is muscular, or tissue stretch, end-feel?

It occurs at the extremes of muscle stretch and has a feeling of increasing tension, springiness, or elasticity.

Assessment of Range of Motion

Active and passive range of motion can identify limits of movement.

Range of motion should improve with general massage.

Intervention guidelines:

Do not force an increase in range of motion.

An increase in range of motion can be a natural outcome of good massage application to the soft tissues of the body.

Basic Orthopedic Tests

Assess for bone, joint, ligament, and tendon injury

Identify areas of impingement

Help determine if referral is necessary

Reproduction of symptoms = positive test result

Most orthopedic tests assess stress areas to evaluate pain, joint play, and muscle extensibility.

Because of the strain involved during some orthopedic tests, care must be taken to avoid further injury.

If the client does not want a test performed, this is called an apprehension sign.

Axial compression test

Apley's scratch test

Tinel's test

Straight leg raising test

Anterior and posterior drawer tests

Talar tilt test

Trunk extension, flexion, and lateral flexion

Box 11-6 Orthopedic Assessment Tests

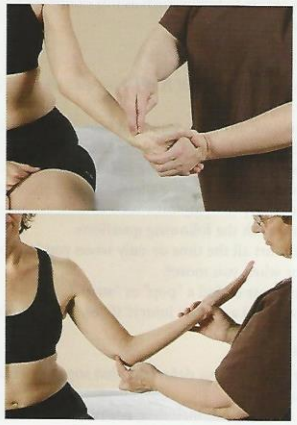
This box contains a few common orthopedic tests.

Axial Compression Test

- The client is either sitting or lying and you press down on the top of the client's head causing narrowing of the neural foramen and pressure on the facet joints, or muscle spasm.
- A positive test causes increased pain and indicates that there is some type of pressure on a nerve. *Refer client.*

Apley's Scratch Test

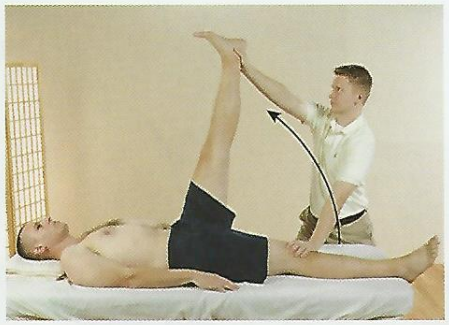
- The client is seated or standing. Ask the client reach over their head with one hand to scratch their back while keeping the other hand behind the back.
- Or, tell the client to touch the opposite scapula to test range of motion of the shoulder.
- Reaching over the head allows you to assess abduction and external rotation.
- Reaching behind the back allows you to assess adduction and internal rotation.
- Compare both sides for symmetry.
- If pain or limited range of motion there may be a rotator cuff tear or shoulder impingement (there may also be a potential for adhesive capsulitis or glenohumeral osteoarthritis). *Refer client.*



Tinel's Test

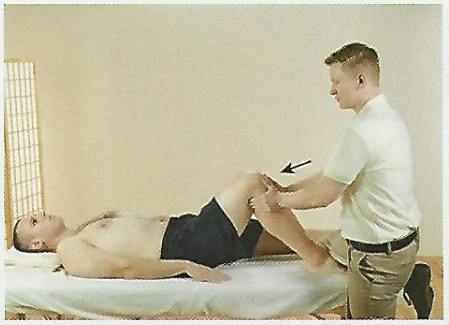
- Assesses for unlar nerve irritability.
- Assessment is performed at elbow and wrist.
- Place elbow flexion and wrist in extension.
- Tap at the cubital and/or carpal tunnel.
- A positive test produces paresthesias (numbing) or tingling along the distal course of the ulnar indicating irritability and or impingement of the ulnar nerve. *Refer client.*

Box 11-6 Orthopedic Assessment Tests—Cont'd



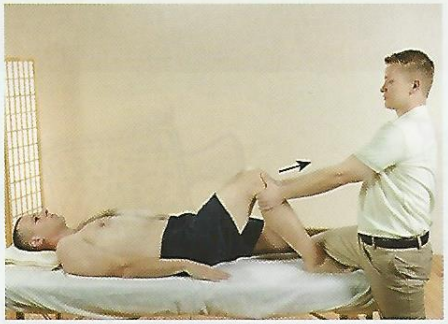
Straight Leg Raising Test

- With the knee extended and the client supine, the hip is flexed (with the leg straight).
- A positive test results in pain in the sciatic nerve pathway down the leg and suggests a disc herniation. *Refer client.*



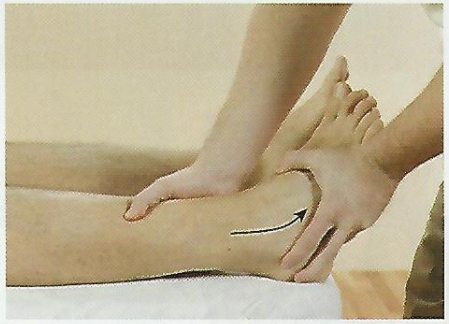
Posterior Drawer Test

- With the knee flexed approximately 90 degrees, push the proximal tibia posteriorly.
- Excessive movement indicates a tear of the posterior cruciate ligament. *Refer client.*



Anterior Drawer Test

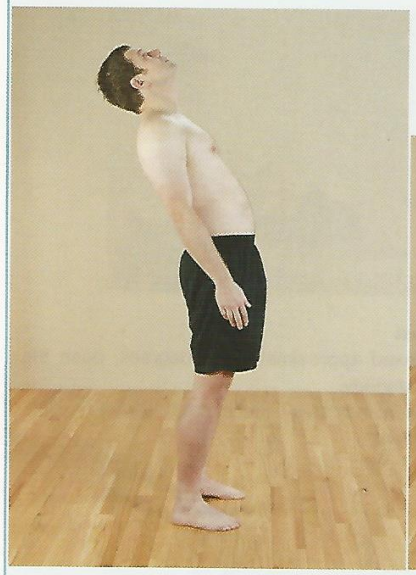
- The client reclines with the knee flexed to 90 degrees.
- Grasp the proximal tibia and pull forward.
- If the tibia displaces anteriorly, the anterior cruciate ligament may be injured. *Refer client.*

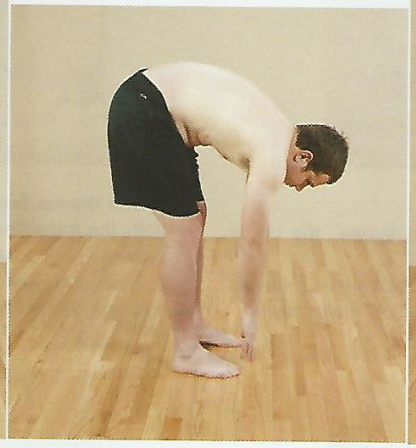


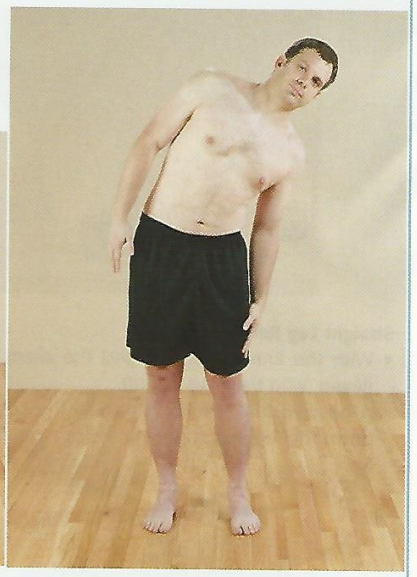
Talar Tilt Test

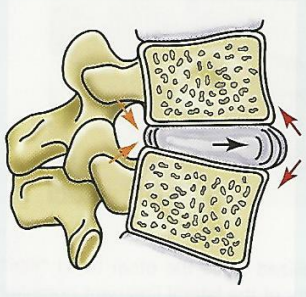
- The distal tibia is stabilized while the other hand "tilts" the talus to test the integrity of the lateral ligament complex.
- A positive sign would indicate injury such as a sprain. *Refer client.*

Box 11-6 Orthopedic Assessment Tests—Cont'd



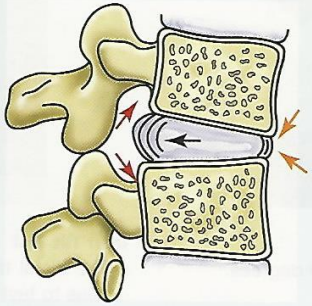






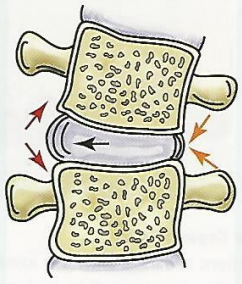
Compression
Tension

Trunk Extension—an anterior herniation in which the gel-like nucleus has pushed forward.



Compression
Tension

Trunk Flexion—a posterior herniation in which the gel-like nucleus has pushed backward.



Compression
Tension

Trunk Lateral Flexion—a lateral herniation in which the gel-like nucleus has pushed to the side.

Sequence for Joint Assessment

History:

1. Have you been injured? If yes, how and when did the injury happen?

2. Do you have any pain, impaired mobility or stiffness? If yes, where is it located?

Can you show me?

3. Do your joints feel and move evenly on both sides of your body? If no, please explain. Can you show me?

4. If an injury or symptoms such as stiffness are present, continue with the following questions.
5. Does it hurt all the time or only when you bump or press on it or when you move?
6. Did you hear or feel a “pop” or “snap”?
7. Have you had a similar injury? If yes, please explain.

Sequence for Joint Assessment

Observation

1. Is there any obvious deformity that suggests a fracture or dislocation?
2. Is the area swollen, including edema and effusion?
3. Is there any discoloration?
4. Compare injured and uninjured areas and identify changes.

When performing the following assessments, remember that pain is the indication of a pathologic condition—do not cause an increase in pain; only locate the source of the pain.

Palpation

1. Perform palpation on the uninvolved side first.
2. Palpate all bony landmarks.
3. Briskly tap the bone and ask the client whether an increased pain sensation was felt.
4. Palpate all ligament and tendon attachments.
5. Palpate all muscles that act on the area.
6. Palpate for edema and effusion.

The uninvolved area is "normal."

Is an increased pain sensation is felt when tapping the bone. If so, this may indicate a stress fracture. Avoid the area during the massage and refer the client.

Range of Motion

1. Perform active joint movement assessments to evaluate for changes in range of motion.

2. Perform a passive joint movement assessment and compare the range of motion to that seen with active movement assessment.

Manual Muscle Testing

1. Perform strength and neurologic testing on the normal side.

2. Perform strength and neurologic testing on the affected area. Do not cause additional pain or strain the injured area.

Specific Orthopedic Tests

Carefully perform appropriate orthopedic tests.

Intervention Guidelines: Joint Assessment

If no pain, stiffness, mobility issues noted, joint can be considered normal

General massage indicated

If pain with movement or palpation, or other positive test results

Caution indicated

Referral may be necessary

Once the cause of the pain has been identified, massage treatment plans can be developed.

Assessment by Palpation

Hands: our most versatile, exquisite assessment tool

Main considerations

- Ability to differentiate between types of tissue
- Ability to distinguish differences of tissue texture in same tissue types
- Ability to palpate through tissue layers from superficial to deep

As you become more familiar with your hands' and arms' abilities, you will begin to feel what is going on in your client's body without actually thinking about it consciously.

Mechanisms of Palpation

Reception phase – proprioceptors and mechanoreceptors receive stimulation from the tissue being palpated

Impulses transmitted through PNS and CNS to brain to be interpreted

It is essential that the massage therapist's entire self become sensitive to subtle differences in the client's body.

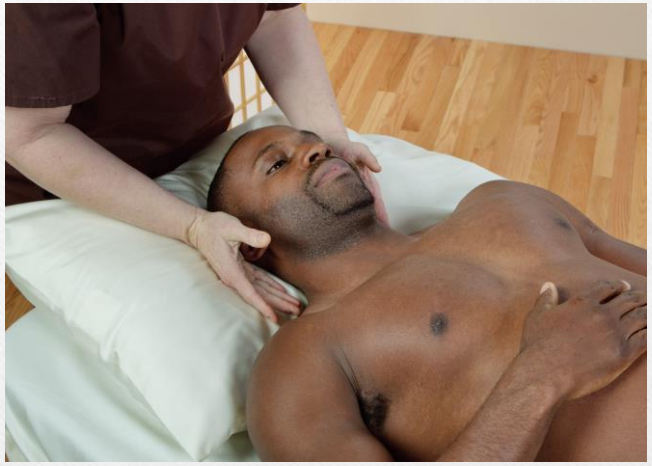
With palpation, what is going on must be felt and not thought about. Too much thinking shifts awareness away from kinesthetic input.

Near-Touch Palpation

Detect hot and cold areas

Use back of hand

Note temperature variations



Hot areas may be caused by inflammation, muscle spasm, or increased surface circulation. When the focus of intervention is to cool the hot areas, a method such as application of ice can be used.

Cold areas often are areas of diminished blood flow, increased connective tissue formation, or muscle flaccidity.

Heat can be applied to cold areas. Stimulation massage techniques increase muscle activity, heating up the area.

Connective tissue approaches soften connective tissue, help restore space around the capillaries, and release histamine, a vasodilator, to increase circulation. These approaches can warm a cold area.

Palpation of the Skin

Very light surface stroking

Is skin dry or damp?

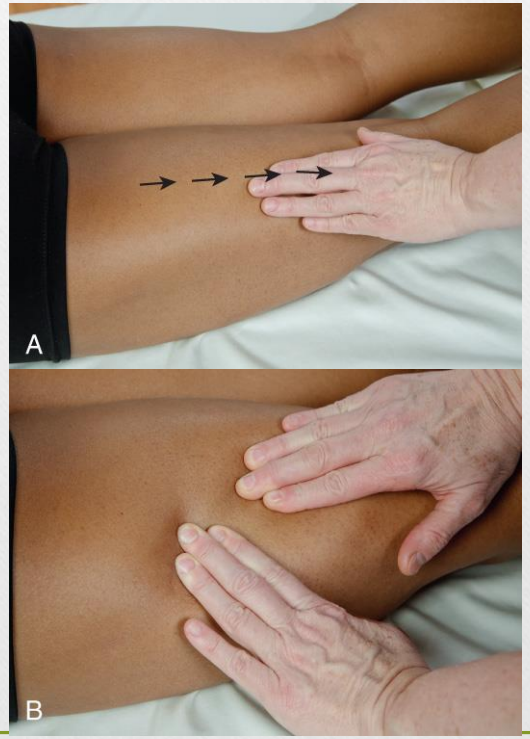
Observe color, moles and growths, and pilation

Compare elasticity

Assess for ease and bind

In the top image, skin drag assesses for hot/cold, wet/dry, and rough/smooth.

In the bottom image, skin stretch palpation assesses for local areas of ease and bind.



Intervention Guidelines: Skin

Dehydration test

Skin should be contained, hydrated, resilient, elastic, and even and have rich coloring. If the skin does not spring back into its original position after a slight pinch, this may be a sign of dehydration.

Intervention Guidelines: Skin

Note color changes

Note and avoid bruises except for simple lymphatic drainage

Note changes in lumps or moles; refer

Watch responses to indicate potential activity, such as trigger points

Dampness, goose bumps, etc.

The skin should have no blue, yellow, or red tinges.

Hair and Nails

Hair should be resilient and secure

No excessive hair loss during massage

Nails should be smooth

Note other signs of stress

E.g., hangnails, split skin

Vertical ridges can indicate nutritional difficulties, and horizontal ridges can be signs of stress caused by changes in circulation that affect nail growth. Clubbed nails may indicate circulation problems.

Palpation of the Superficial Connective Tissue

*Beginning **(A)** and end **(B)** for palpation assessment of superficial fascia for ease and bind mobility.*

***C**, Skin roll palpitation assesses for ease, bind, mobility, and pliability in the superficial fascia.*

Kneading involves rolling the skin. Kneading is important to massage therapists because it allows them to access the skin and the layer of connective tissues just under the skin.

Palpation of Vessels and Lymph Nodes

The figure on the left demonstrates palpation assessment of vessels for circulation. The vessels are distinct and feel like soft tubes. Pulses can be palpated, but the feel of the pulse is lost if the pressure is too intense.

The figure on the right demonstrates palpation assessment of lymph nodes. Lymph nodes usually are located in joint areas and feel like small, soft gel caps.

Enlarged lymph nodes may indicate local or systemic infection or more serious conditions. It is also important to refer the client to a physician if the person has unexplained and persistent edema. If any areas of bulging, mushiness, or constriction are noted in the vessels, the practitioner should refer the client to a physician

Palpation of Muscles

Corded fabric—muscle fiber has a direction

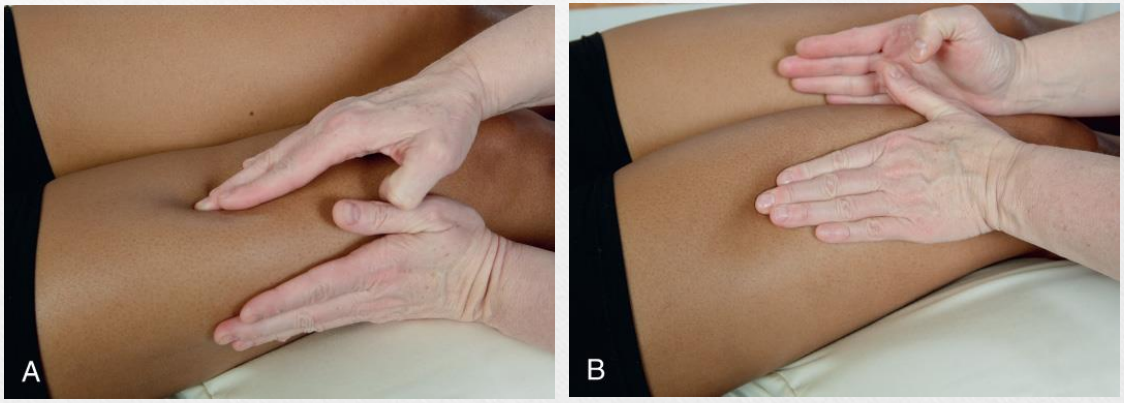
Muscles end at musculotendinous junction—site of many dysfunctions

Three or four layers present in any one area

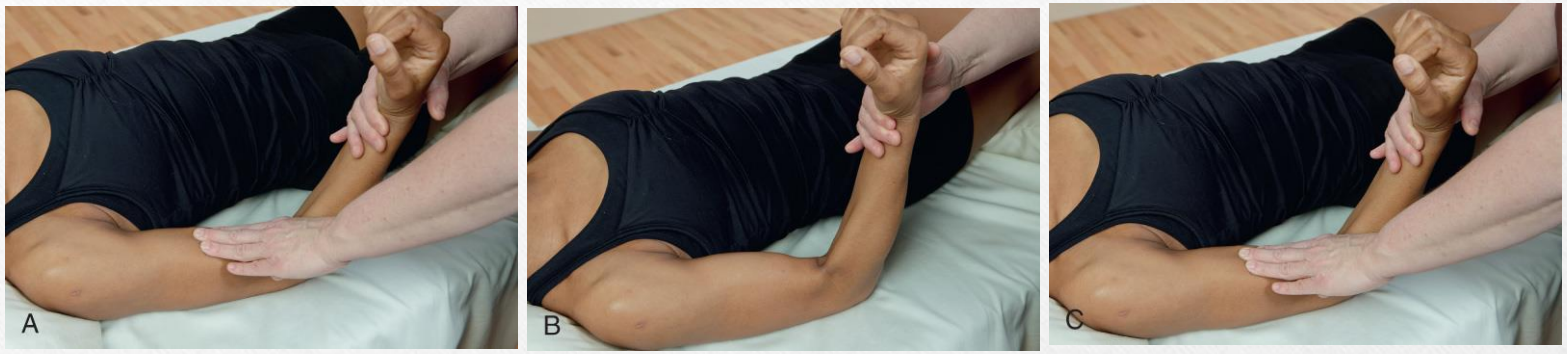
No adherence between layers

It is important to manipulate outer layers of muscle slowly and broadly in order to gain access to the deeper layers.

Palpation of Muscle and Sliding Assessment for Mobility



Palpation of Muscle



A, Contact the area. B, Have the client contract the muscles. C, Palpate the muscles as they contract.

Massage is effective at making tissues longer and more pliable; it is not very effective at making long tissues shorter.

Important target areas are the musculotendinous junction and the muscle belly, where the nerve usually enters the muscle.

The best intervention is a general full-body approach that is modified based on qualities of touch (e.g., depth, drag, and so on).

Palpation of Tendons

Tendons attach muscles to bones

Assess for stability, mobility, and pain

Tendons have a higher concentration of collagen fibers and feel more pliable and less ribbed than muscle. Tendons feel like duct tape.

Tendons should feel elastic and mobile. If a tendon has been torn (sprain), it may adhere to the underlying bone during the healing process.

Frictioning might help with inflammation of the tendons?

Palpation of Deep Fasciae

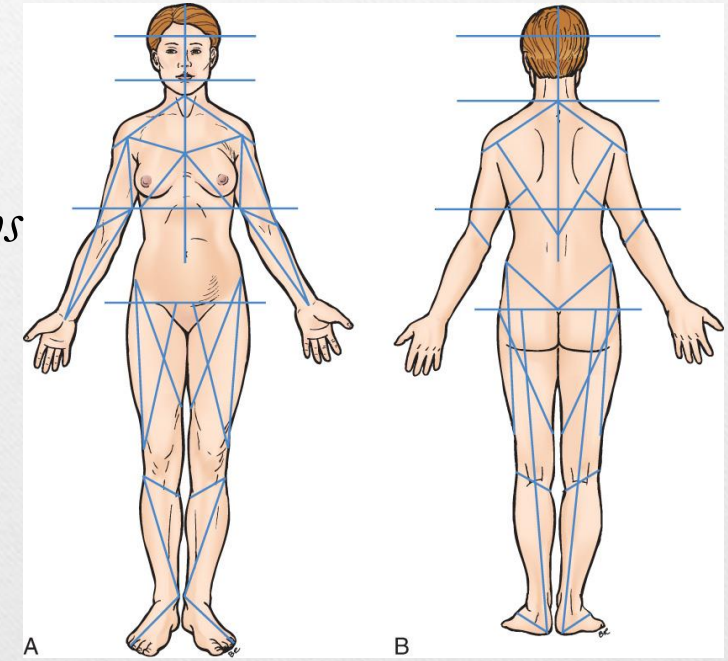
Fascial sheaths

Feel like sheets of plastic wrap and duct tape

Thin and fibrous

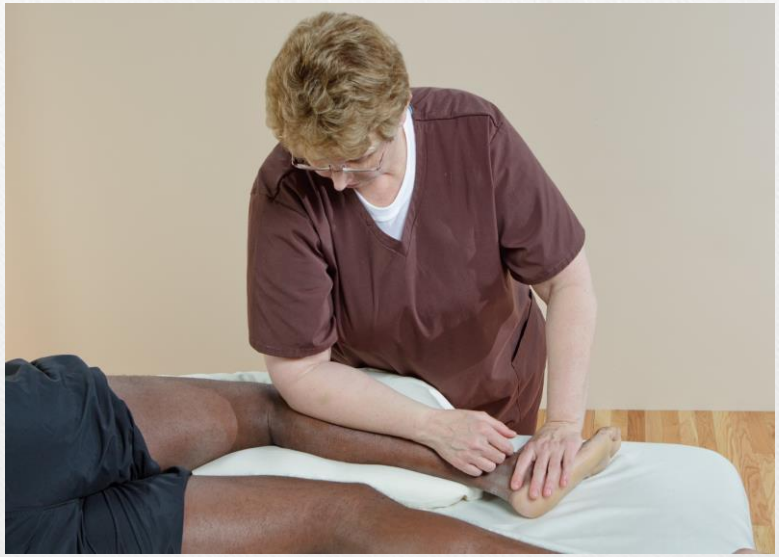
Problems arise if the tissues that are separated or stabilized by these sheaths become stuck to the sheath.

The massage therapist should not override the tissue or force the tissue into a corrective pattern. Instead, the tissue must be untangled or unwound gradually.



Intervention guidelines:

Palpation assesses for bind and mobility



If assessment indicates that the muscles are stuck to each other, kneading and gliding can be used to slide one muscle layer over the other.

Be sure to recommend proper fluid intake to clients, as it is an important element of connective tissue.

Palpation of Ligaments

Found around joints

Stretchy

Feel like bungee cords, though some are flat

Should be flexible enough for joint movement, but stable enough to provide stability

Do not mistake for tendon

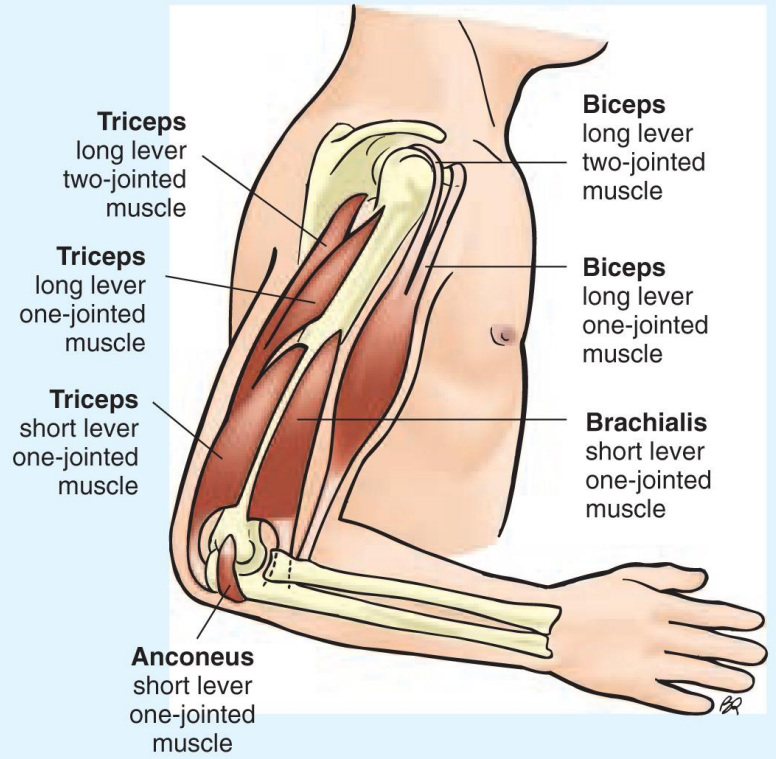
With the joint in a neutral position, if the muscles are isometrically contracted, the tendon moves but the ligament does not.

Palpation of Joints

Feel like hinges

Assessment

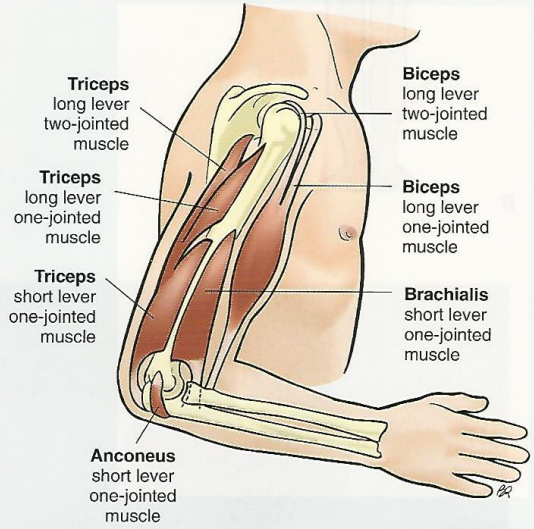
- Uses active and passive joint movements
- Palpation while in motion
  - End-feel
  - Fluid changes (effusion)



One- and two-joint muscles; functional short- and long-lever muscles.

End-feel is the perception of the joint at the limit of its range of motion; it feels either soft or hard.

Box 11-7 Joint Function



One- and two-joint muscles; functional short- and long-lever muscles.

For the most part, massage practitioners work with synovial (freely movable) joints. These joints are the focus of this text. The amount of joint movement depends on the bone structure, supportive elements of the ligaments, and arrangement of the muscles. Joints are designed to fit together in a specific way. For a joint to move, there must be a space between the bone ends. The bone ends must be smooth and lubricated to prevent friction. Also, the muscular elements must function properly, and the joint structure, including the cartilage, must be functional. Anything that interferes with these key elements interferes with joint function.

Balance is another key element in joint function. If the positional receptors in a joint relay information to the central nervous system indicating that damage to the joint may occur, motor activity (i.e., muscular action) is affected.

Joints are characterized as having one-joint muscles or two-joint muscles, depending on the basic configuration of the muscles around the joint. One-joint muscles are muscles that cross a single joint; they consist of short levers and long levers. Short levers initiate and stabilize movement. They often have the best mechanical advantage in joint movement, and they usually are located deep to the long levers. Long levers have the strength and pulling range to carry out the full range of motion of the joint pattern. They are superficial to the short levers and deep to the two-joint muscles. Two-joint muscles are muscles that cross two joints and coordinate movement patterns. They usually are the most superficial of the muscles. A noted exception to this is the psoas muscle.

When evaluating joint function, the massage professional is most concerned with pain-free, symmetric range of motion. Determining whether pain on movement is a muscle or tendon problem or a ligament or joint problem can be difficult. Because therapeutic massage deals with nonspecific soft tissue dysfunction, joint dysfunction is out of the scope of practice for massage professionals unless they are specifically supervised by a chiropractor, physician, or physical therapist.

It is important to be able to distinguish between the muscle and tendon components and the ligament and joint components in a restricted movement pattern. When in doubt, always refer suspected joint problems to a medical professional.

Muscle and tendon problems can be differentiated from ligament and joint problems in two ways:

- Pain on gentle traction usually indicates a soft tissue problem, such as a muscle or tendon condition; pain with gentle compression usually indicates a ligament or joint problem.
- If active range of motion produces pain and passive range of motion does not, the cause usually is a muscle or tendon problem. If both passive and active range of motion produce pain, the cause usually is a ligament or joint problem.

When massage practitioners work with joints, it is important that they distinguish between the *anatomic barrier* and the *physiologic barrier*. The anatomic barrier is the bone contour and the soft tissue (especially the ligaments) that serve as the final limit to motion in a joint. Beyond this motion limit, tissue damage occurs. The physiologic barrier is more of a nervous system protective barrier that prevents access to the anatomic barrier when damage to the joint could occur. A pathologic barrier exists when the movement is limited by some sort of injury, dysfunction, or inappropriate compensation pattern. The massage therapist must stay within the limits of the physiologic barrier to avoid possible hypermovement of a joint. Therapeutic massage may increase the range of motion of a jointed area by resetting the confines of the pathologic barrier.

Intervention Guidelines: Joints

Muscle energy methods and all massage manipulations can support ROM

Sustained improvement takes time

No direct massage of loose joints

Massage muscles around joints

Massage methods can help overcome pathologic barriers set in place by proprioceptive mechanisms, which may try to limit range-of-motion in an attempt to protect a traumatized joint.

Palpation of Bones

Feel like young tree trunks and branches

For the massage practitioner, it is important to be able to palpate the bony landmarks that indicate the tendinous attachment points for the muscles and to trace the bone's shape.

Palpation of Abdominal Viscera

Internal organs

Note referred areas of pain

Generally speaking, massage therapists should not apply deep massage to the abdomen. They may be able to identify the liver. Also, light-to-moderate stroking of the abdomen may aid the function of the large intestine

Palpation of Body Rhythms

Assess before and after massage:

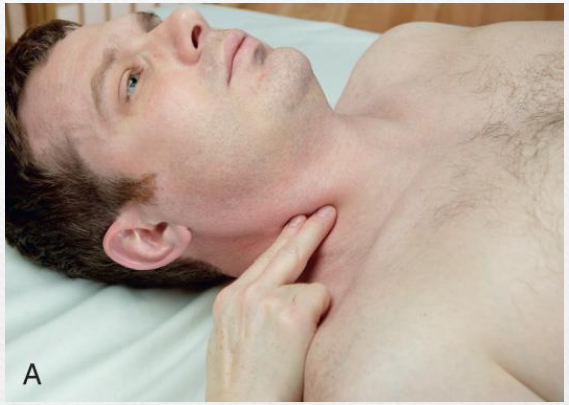
- Respiration
- Blood circulation
- Lymph circulation
- Craniosacral rhythm
- Breathing

An improvement in rate and evenness should be noticed after the massage.

Support a synchronized rhythmic function of the body by using rocking methods and a rhythmic approach, but do not superimpose an unnatural rhythm on the client.

The pulses should be balanced on both sides of the body.

Basic palpation of the movement of the blood is done by placing the fingertips over pulse points on both sides of the body and comparing for evenness.



A, Carotid pulse.
B, Brachial pulse.
C, Radial pulse.
D, Femoral pulse.)

Palpation of Body Rhythms

E, Popliteal pulse.
F, Dorsalis pulse.
G, Posterior tibial pulse

Assessment Procedures for Muscle Testing

Types of muscle testing

Strength testing checks for strength.

Neurologic muscle testing checks whether the neurologic interaction of muscles is working smoothly.

Applied kinesiology uses muscle strength or weakness as an indicator of body function.

Each of the methods of muscle testing focuses on a different area of muscle function.

Strength Testing

Determines a muscle's force of concentric contraction

Other applications

- Coordination of agonist and antagonist interaction
- Muscle testing and gait patterns
- Gait muscle testing: a powerful intervention tool

Massage therapists should repeat strength tests on similar muscles on the other side of the body to reduce the chance of injury.

Procedure for Strength Testing

Isolate muscle or muscle group as specifically as possible

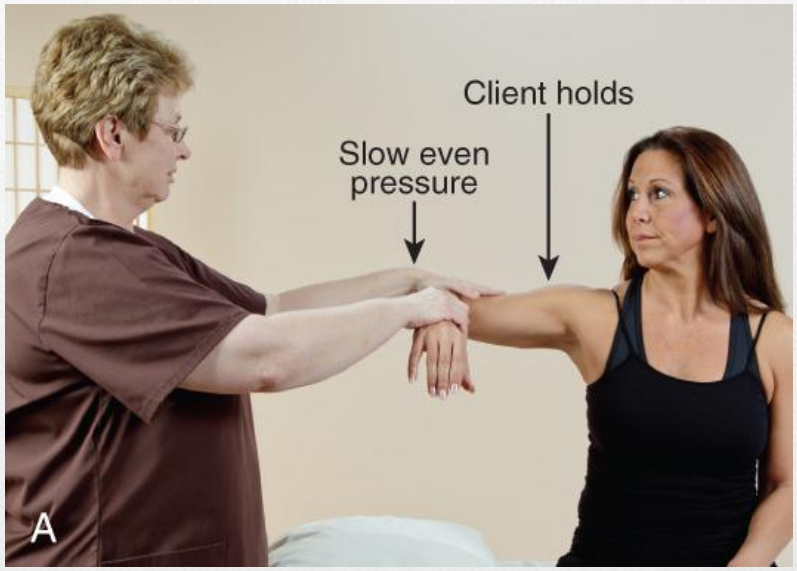
Apply counterpressure to pull or press muscle out of its isolated position while client holds or maintains contracted position

Sufficient force must be used to recruit a full response but not enough to recruit other muscles in the body

The preferred method is to isolate the muscle or muscle group by positioning the joint that the muscle acts on in the middle of the available range of motion.

Various assessment scales are used to describe the findings from strength testing, the most common being the numeric scale which grades the results on a scale of 1 (only a flicker of movement) to 5 (normal strength).

Procedures for Muscle Testing



Muscle strength is assessed by making the muscles hold against an imposed force.

1. *To ensure correct positioning and stabilization for the test, place the muscle group to be tested in the test position rather than having the client actively move it there.*

2. *Stabilize the rest of the body so that only the joint targeted for assessment will move in response to the muscle contraction.*

3. *Apply resistance near the distal end of the segment to which the muscle attaches.*

4. *Make sure the application of manual resistance to a part is never sudden or uneven (jerky). Apply resistance slowly and gradually, allowing it to build to the maximum tolerable intensity.*

Assessing the Coordination of the Agonist-Antagonist Interaction

Testing should reveal difference in pattern between the flexors, internal rotators, and adductors, and the extensors, external rotators, and abductors in an agonist/antagonist pattern

Groups should not be equally strong

Another muscle testing method used for assessment is to compare a muscle group's strength with its antagonist muscle group pattern.

Flexors, internal rotators, and adductors should show more muscle strength than extensors, external rotators, and abductors.

Muscle Testing of Gait Patterns

Gait has pattern for efficient movement

Strength imbalances common, resulting in:

- Increased motor tone (too strong)
- Inhibited muscle imbalances (unable to hold)

If any pattern is out of sync, gait, posture, and efficient function is disrupted

An understanding of gait provides the foundation for assessment and information for intervention.

It is helpful to break apart the gait cycle and look at the relationship of the arms and legs.

Neurologic Muscle Testing

Goal: locate the muscle interaction pattern

Muscle group interactions

Muscle firing patterns

- Reciprocal inhibition
- Synergistic dominance

Because only nervous system responses are being checked, the amount of force necessary is generally less than that of strength testing.

Postural (stabilizer) muscles

- Deliberate, slow, steady muscles that require time to respond

Phasic (mover) muscles

- Jump into action quickly and tire quickly
- Weaker in response to postural muscle shortening
- Occasionally become short

Postural muscles tend to shorten and have increased motor tone when under strain.

Musculotendinous junction problems are more common in phasic muscles.

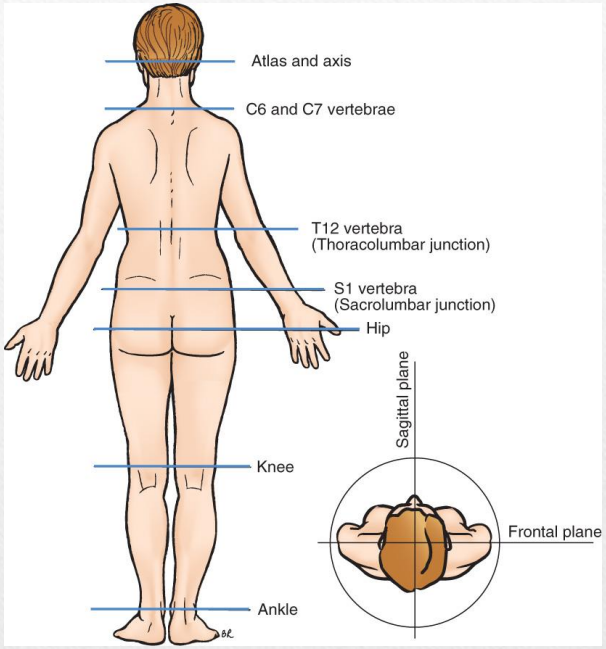
Kinetic Chain

Neurologic interaction patterns

Mechanisms of dysfunction

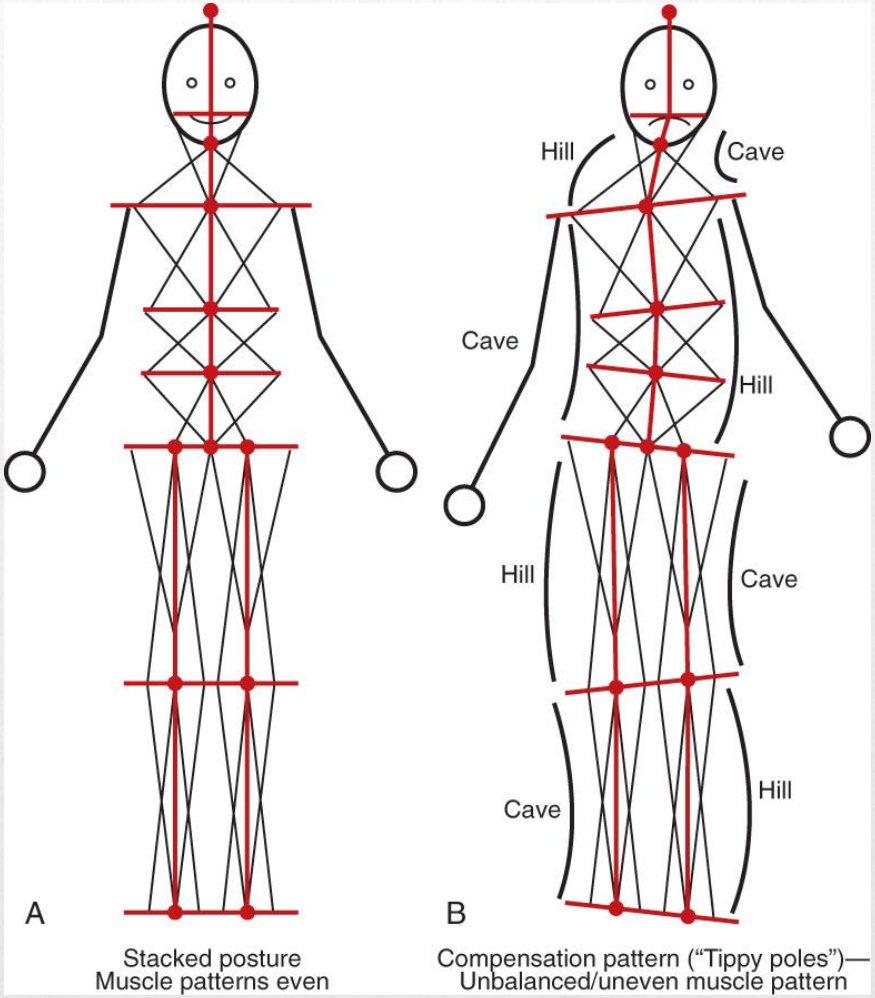
Postural influence

If a postural imbalance occurs in one of the body's four quadrants, it can throw things off in all the other quadrants.



Stacked Pole versus Tippy Pole

If one of the body's poles is tipped, other polls compensate, as in this diagram.



Kinetic Chain and Movement

Movement occurs in open or closed kinetic chain

Problems caused by:

- Joints are not mobile enough to function independently during open kinetic chain movement
- Joints cannot remain stable in closed kinetic chain movements

Assessment of a movement pattern as normal indicates that all parts are functioning in a well-orchestrated manner.

When a dysfunction is identified, the causal factors may arise from any one or a combination of these elements.

Functional Biomechanical Assessment

Performing a function assessment:

- Assessment evaluates multiple types of information
- Resistance applied slowly, smoothly, and firmly
- Stabilization is essential
- Muscles should be able to hold against appropriate resistance without strain or pain from the pressure and without recruiting or using other muscles

One of the earliest signs of dysfunction is inefficiency of movement.

Distortion Categories

First degree: shortening, weakening of some muscles

Second degree: moderate shortening, weakening; altered firing patterns occur

Third degree: clear shortening of postural muscles; increased postural and movement distortions result

It is very important to determine which muscles are shortened and which are inhibited to choose the appropriate therapeutic intervention.

Stages of Pathology

Stage 1: Functional tension

- A person tires more quickly than normal
- Some limitation of mobility

Stage 2: Functional stress

- Fatigue from moderate activity
- Discomfort, slight pain

Stage 3: Connective tissue changes

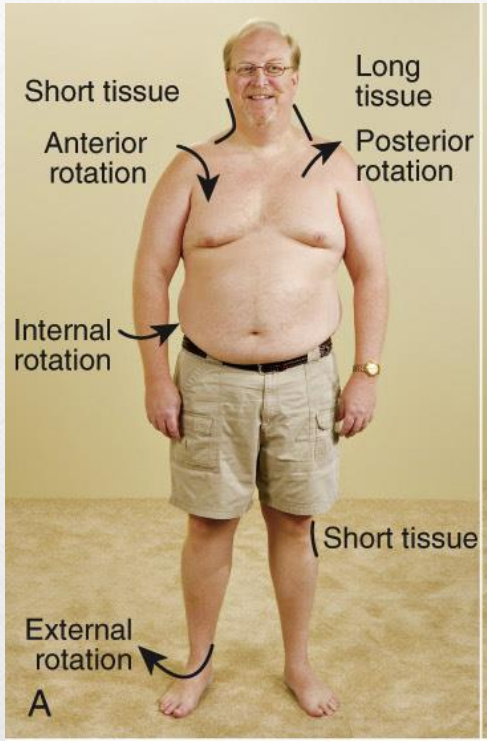
- Results from overloading
- Can lead to postural, visceral disturbances

Most Stage 1 pathologies can be treated by well-trained massage therapists.

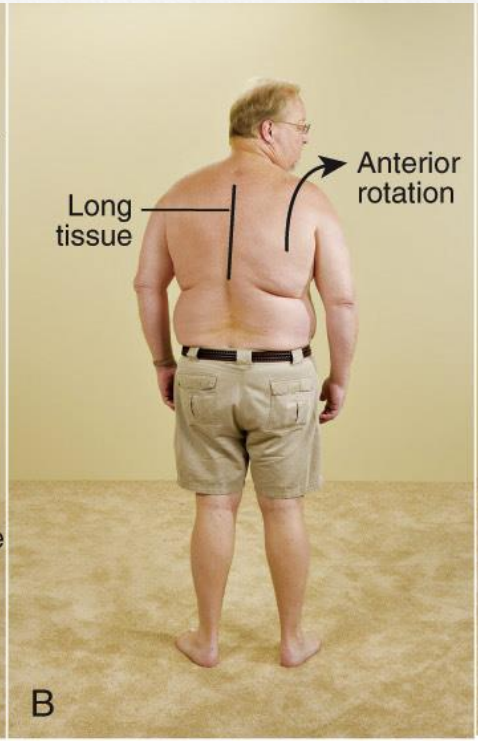
Stage 2 and 3 pathologies require referral and more training and supervision.

Dysfunction Patterns

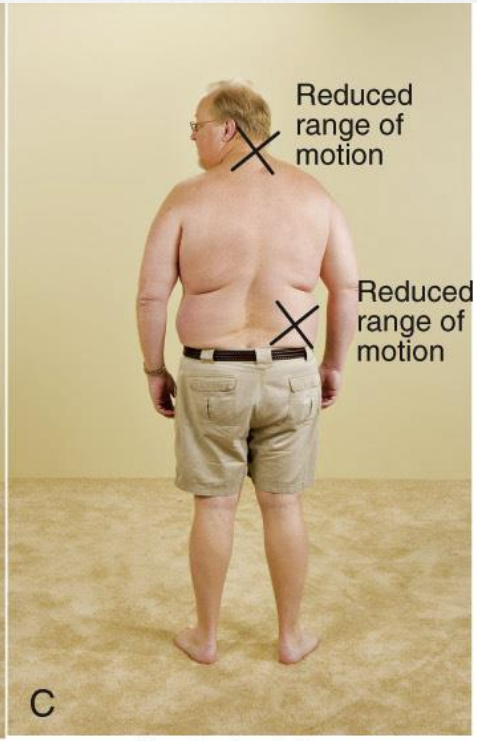
Postural and functional movement assessment is shown here and on the following slides.



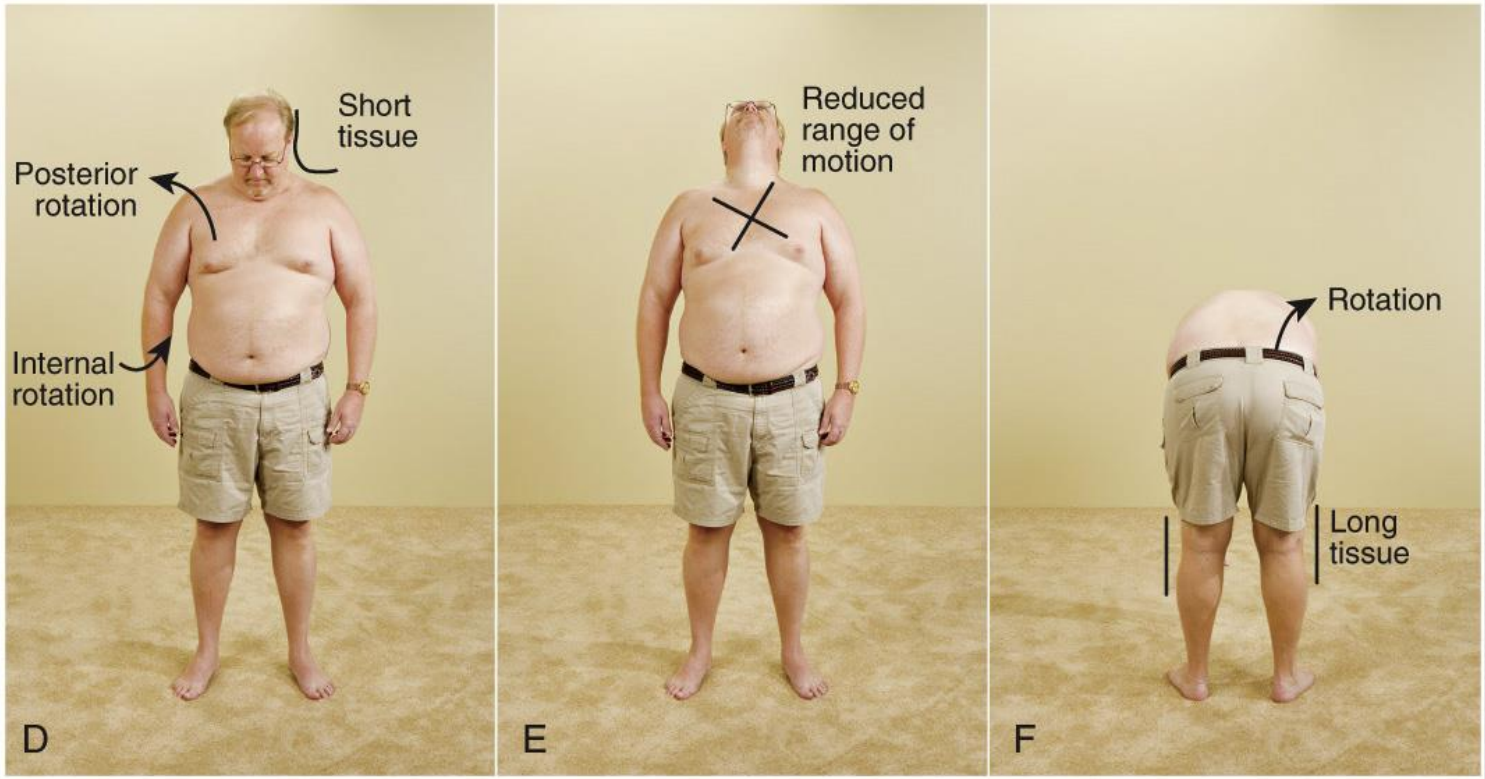
Standing posture



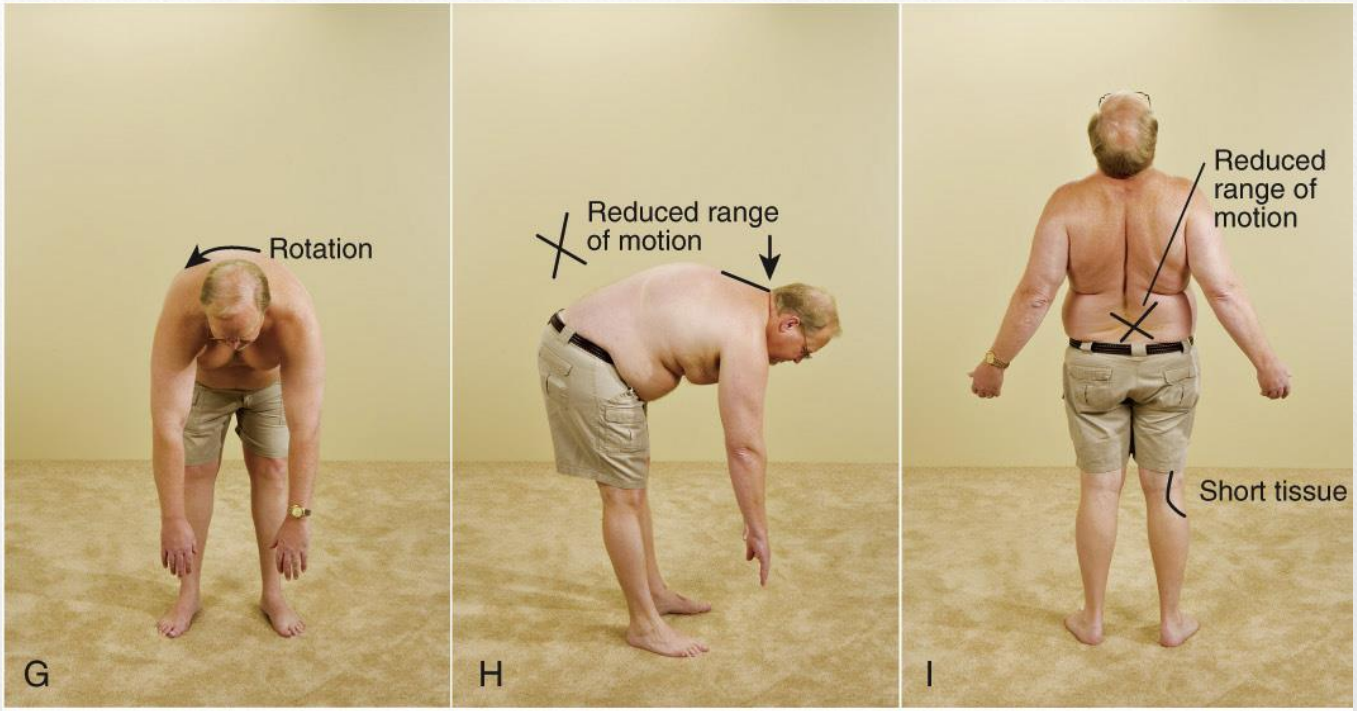
Cervical rotation



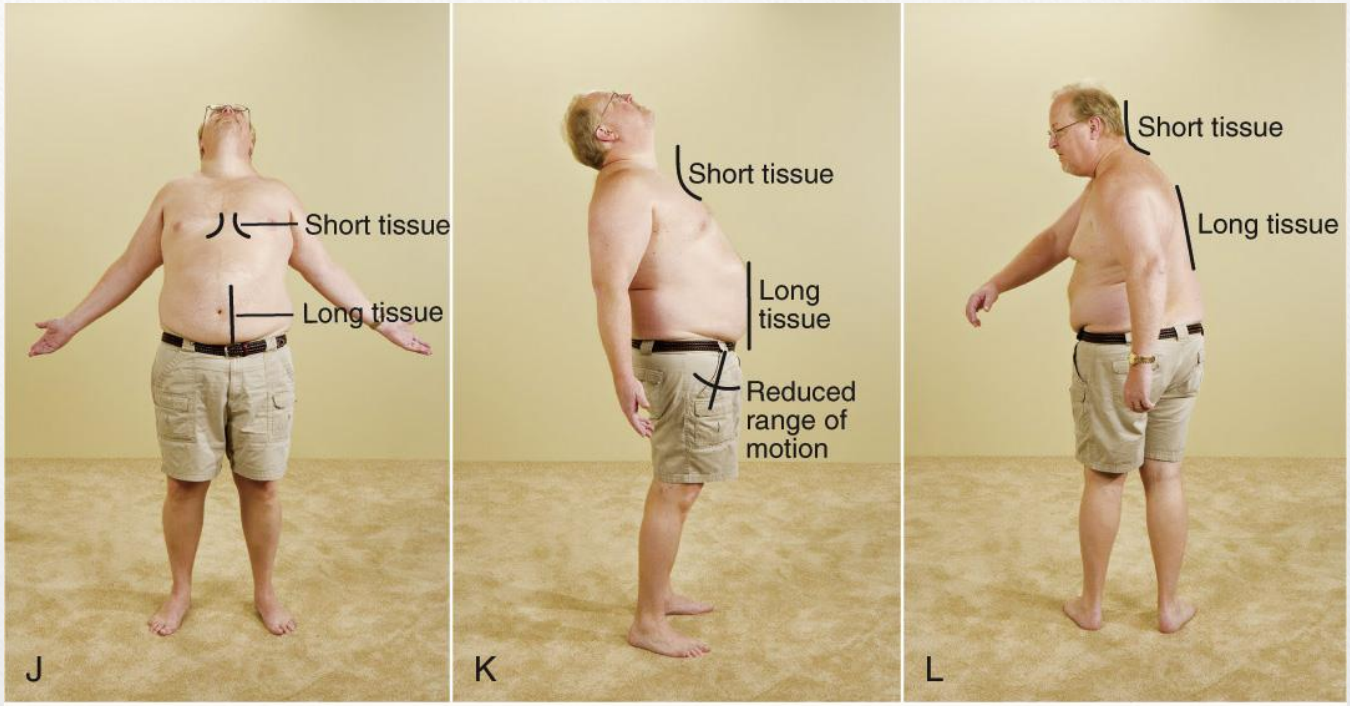
Cervical rotation



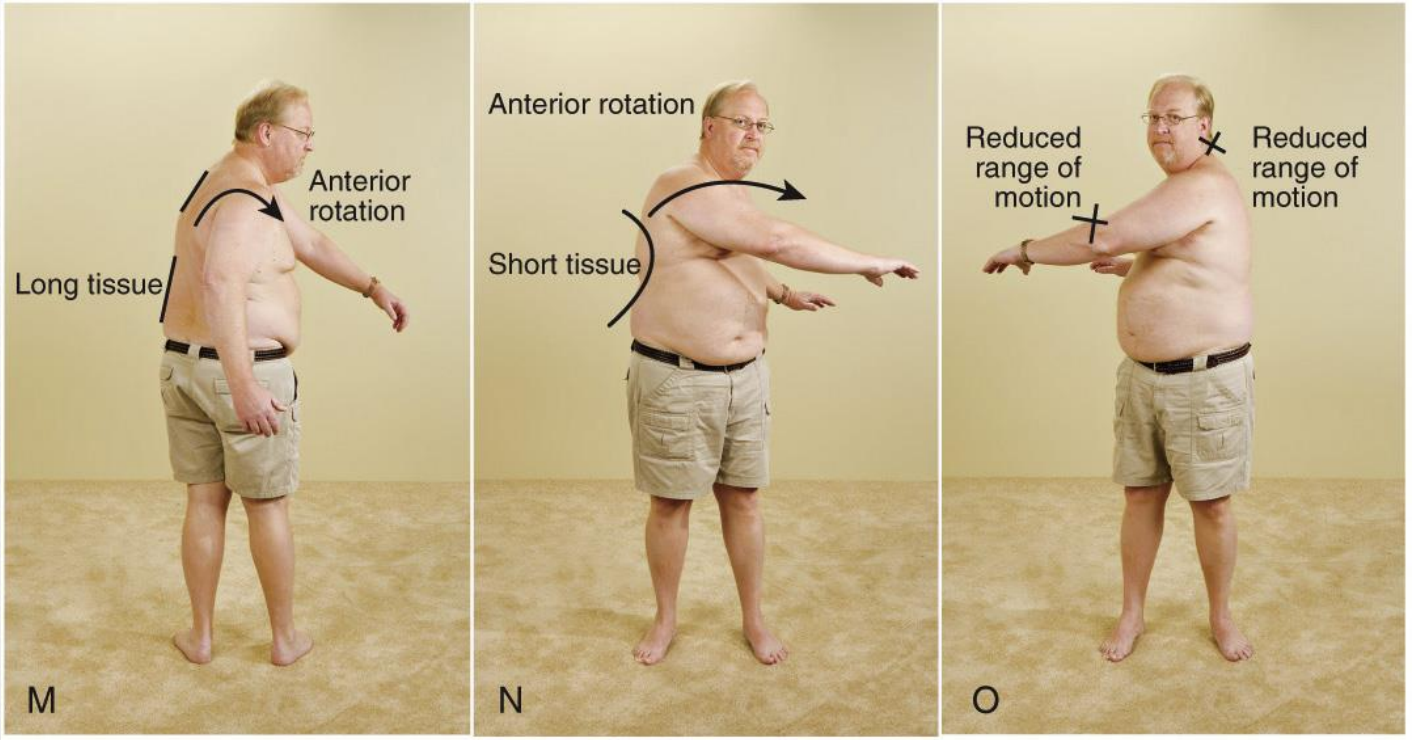
Cervical flexion | Cervical extension | Trunk flexion



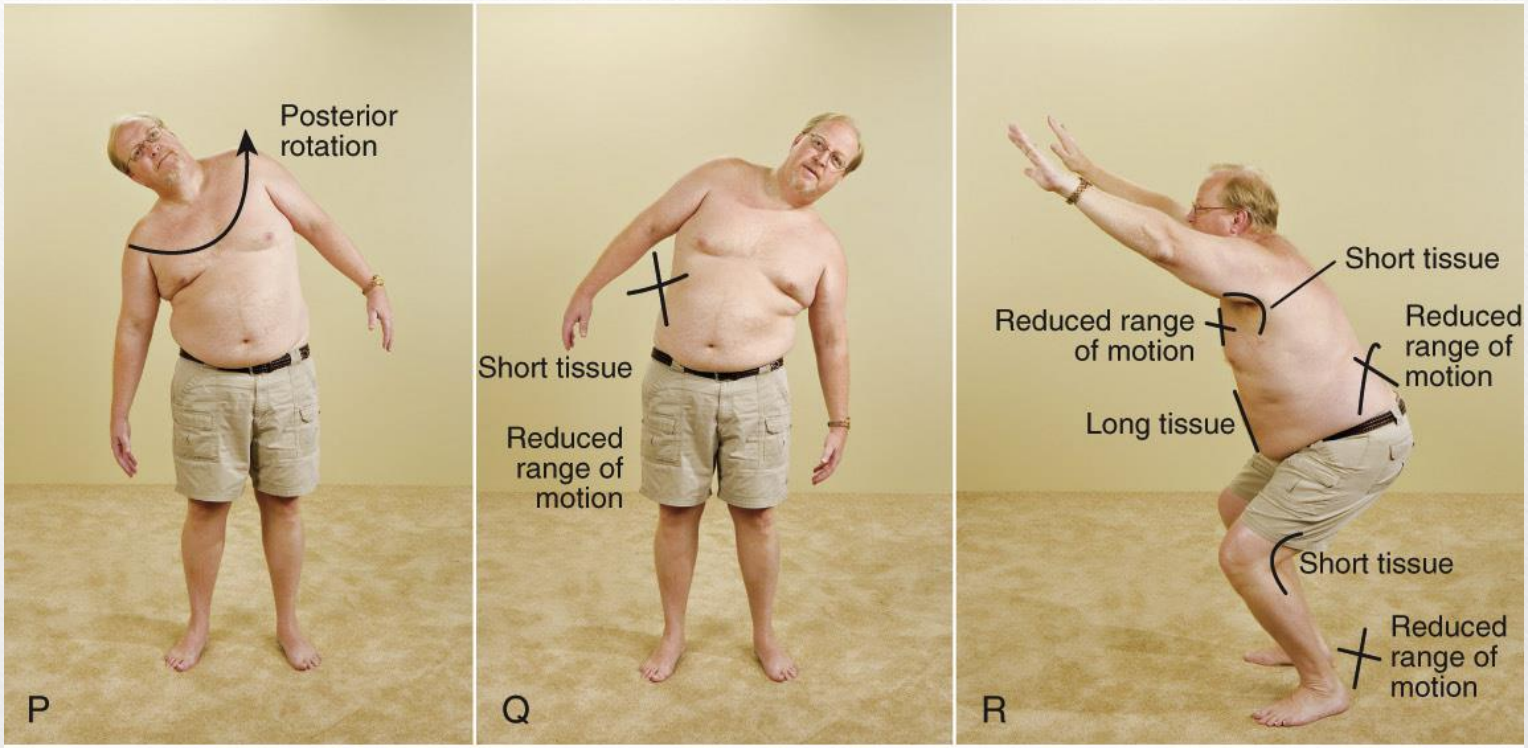
Trunk flexion | Trunk flexion | Trunk extension



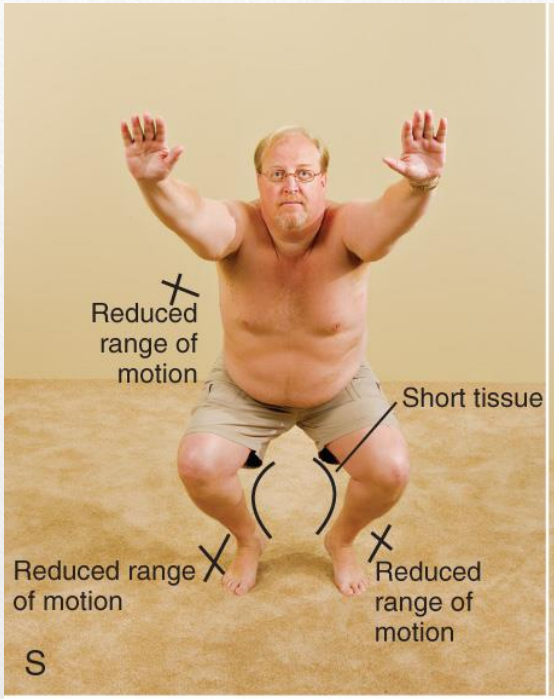
Trunk extension | Trunk extension | Trunk rotation



Trunk rotation | Trunk rotation | Trunk rotation



Lateral trunk flexion | Lateral trunk flexion | Squat assessment



Squat assessment

One-foot balance

One-foot balance

Intervention Guidelines: Biomechanical Assessment

Analyze

- Hypomobility and hypermobility
- Ability to hold against resistance
- Pain on passive and active movement
- Body-wide reflexive patterns

A plan based on efficient biomechanical movement focuses on reestablishing or supporting effective movement patterns.

For hypomobility, tension or shortening in the antagonist is a probable culprit.

If hypermobility is an issue, check for instability in a joint or muscle weakness in the fixation pattern.

Clinical Reasoning and Problem Solving

Use clinical reasoning and problem solving skills.

Pay attention to the order of priority given to aches and pains.

LISTEN to your client!

You must listen to your client. No textbook, class, or instructor can compare to the knowledge you will receive from listening carefully to your client.

Modify treatments to fit client.

Goals must be quantifiable and qualifiable.

Decisions are based on data gathered in the history taking and assessment.

Make sure your sessions are goal oriented and your goals describe specific desired outcomes.

Table 11-2 Stages of Tissue Healing and Appropriate Massage Interventions

	Stage 1 (Acute): Inflammatory Reaction	Stage 2 (Subacute): Repair and Healing	Stage 3 (Chronic): Maturation and Remodeling
Characteristics	Vascular changes Inflammatory exudate Clot formation Phagocytosis, neutralization of irritants Early fibroblastic activity	Growth of capillary beds into area Collagen formation Granulation tissue Fragile, easily injured tissue	Maturation and remodeling of scar Contracture of scar tissue Alignment of collagen along lines of stress forces (tensegrity)
Clinical signs	Inflammation Pain before tissue resistance	Decreased inflammation Pain during tissue resistance	Absence of inflammation Pain after tissue resistance
Massage intervention	(3 to 7 days after injury) *Main goal:* Protection • Control and support effects of inflammation • PRICE treatment (protection, rest, ice, compression, and elevation) • Promote healing and prevent compensation patterns • Passive movement midrange • General massage and lymphatic drainage with caution • Support for rest with full-body massage	(14 to 21 days after injury) *Main goal:* Controlled motion • Promote development of mobile scar • Cautious, controlled soft tissue mobilization of scar tissue along fiber direction toward injury • Active and passive, open and closed-chain range of motion (midrange) • Support for healing with full-body massage	(3 to 12 months after injury) *Main goal:* Return to function • Increase strength and alignment of scar tissue • Cross-fiber friction of scar tissue coupled with directional stroking along lines of tension away from injury • Progressive stretching and active and resisted range of motion (full range) • Support for rehabilitation activities with full-body massage

Table 11-3 Massage Approach During Healing

Acute Phase
• Manage pain
• Support
Subacute Phase (Early)
• Manage pain
• Support sleep
• Manage edema
• Manage compensation patterns
Subacute Phase (Later)
• Manage pain
• Support sleep
• Manage edema
• Manage compensation patters
• Support rehabilitative activity
• Support mobile scar development
• Support tissue regeneration process
Remodeling Phase
• Support rehabilitation activity
• Encourage appropriate scar tissue development
• Manage adhesions
• Restore firing patterns, gait reflexes, and neuromuscular responses
• Eliminate reversible compensation patterns
• Manage irreversible compensation patterns
• Restore tissue pliability

From Fritz S: *Sports and exercise massage: comprehensive care in fitness, athletics, and rehabilitation,* St Louis, 2006, Mosby.

As previously stated, specific protocols (recipes) or modalities for therapeutic intervention seldom work without modification, because each person is different. Protocols provide a model of how to begin a therapeutic process, but the massage professional must modify applications of methods based on the client's individual needs and circumstances. The ability to process information effectively in the development of a therapeutic plan is based on a clinical reasoning approach rather than protocols.

The ability to apply what is learned comes from a clinical reasoning/problem-solving process. Effective work with clients becomes a continual learning process of performing a premassage assessment, determining intervention procedures, analyzing their effectiveness through postmassage assessment, and recognizing progress made from session to session. Even in the most basic sessions with a client, when the goals are pleasure and relaxation, decisions must be made about the best way to encourage the body to respond to meet the particular client's goals.

After a history has been completed and an assessment performed, the information gathered is analyzed and interpreted. The next step is to make decisions about what to do and how to develop the process into a coordinated, effective plan for achieving the client's goals. This information was first presented in Chapter 4; now we put it all together.

As noted in Chapter 4, sessions with massage professionals are goal oriented. Goals describe desired outcomes. A primary reason for developing care/treatment plans is to set achievable goals and outline a general plan for reaching them. It is important to develop measurable, activity-based (functional) goals that are meaningful to the client. Goals must be *quantifiable* (measurable) and *qualifiable* (experiential; that is, what they can achieve for the client).

EXAMPLE

- Goal for massage is to increase pliability in burn-related scar tissue to allow increase in range of motion of the shoulder from 80 degrees of abduction to 100 degrees of abduction. *(Quantifiable)*
- The client will be able to reach above shoulder height. *(Qualifiable)*

Steps in Analysis Process

1. Review the facts.
2. Brainstorm the possibilities.
3. Consider the logical outcome of each possibility.
4. Consider how people would be affected by each possibility.

Creating the Care/Treatment Plan and Reassessment

Decision-making should occur in each session

Compare effectiveness from session to session

During massage, assessment and intervention intermingle

After the massage is complete, do a quick reassessment to see how the body has reacted to the manipulations you have applied.

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