Kinesiology in Action

Palpation Practice Activities

Use these practice activities for selected lessons in class, as a discussion board topic, or as a group activity. Consider having students view the palpation tutorial videos in the video library before practicing.

Lesson 3: Chest Wall and Temporomandibular Joint

ACTIVITY #1

- Palpate the structure just anterior to the external auditory meatus—the tragus.
- Now move just anterior to the tragus to palpate the mandibular condyle.
- Open and close your mouth to feel this structure move.
- See whether you can feel the difference between rolling and gliding.
    - Open slightly with your tongue on the roof of your mouth to feel rolling.
    - Protract or laterally deviate your mandible to feel gliding.
- From the condyle move inferiorly along the mandibular ramus until it changes direction at the angle of the mandible.
- While palpating the angle of the mandible, clench your teeth together.
    - Do you feel a muscle contract?
    - What muscle is it?

ACTIVITY #2

- Palpate the angled inferior border of your right and left rib cage. Move superiorly along the inferior border until they meet in the mid line. Here you will find the xiphoid process.
- Move superiorly to palpate the body of the sternum.
- Continue palpating superiorly along the sternum until you feel a horizontal line—the manubriosternal joint at the level of the second rib and then the manubrium above this joint.
- Put your hands on your upper chest above the nipple level. Take a deep breath to feel the rib's pump handle motion, which will feel like the ribs are elevating and moving anteriorly.
- Place your hands on your lateral rib cage near the lower half of your rib cage. Take a deep breath and notice the bucket handle motion of the ribs, which will feel like the ribs are elevating and moving laterally.

Lesson 4: The Shoulder Complex

Palpate each one of the rotator cuff muscles on a colleague.

Supraspinatus

- In prone, find the spine of the scapula.
- Roll superior into the supraspinatus fossa.
- Follow the supraspinatus under the acromion to the distal attachment at the greater tubercle of the humerus.
- Resist shoulder abduction to confirm.

Infraspinatus

- In prone, find the spine of the scapula.
- Roll inferior into the infraspinatus fossa.
- Follow the infraspinatus laterally to the greater tubercle of the humerus.
- Resist shoulder external rotation to confirm.

Teres minor

- In prone, with the arm over the side of the table, identify the inferior angle of the scapula and follow the lateral border superior toward the axilla.
- When at the superior portion of the lateral border of the scapula, slide lateral onto the infraspinatus.
- Resist shoulder external rotation to confirm.

Subscapularis

- In side-lying, flex the shoulder to 90 degrees.
- Slide your thumb into the axilla between the ribs and the scapula.
- Flex your thumb to ease into the subscapular fossa and palpate the subscapularis.
- Resist shoulder internal rotation to confirm.

Lesson 5: The Elbow Complex

- With your elbow in extension, identify the epicondyles of the humerus and the olecranon of the ulna. Note how the three structures are in a straight line.
- What happens to this alignment with elbow flexion? Why does this happen?
- Does the alignment of these structures change with pronation or supination? Why or why not?

Lesson 6: The Wrist and Hand Complex

ACTIVITY #1

Practice this sequence to palpate the carpal bones.

Proximal row—scaphoid, lunate, triquetrum, pisiform

- **Scaphoid:** Begin at the radial styloid and slide your finger distally and slightly posterior, reaching the hollow space between the extensor pollicis longus and brevis.
- **Lunate:** Slide laterally from the scaphoid onto the lunate; you will know you are on the lunate if you feel the bone move anteriorly with wrist extension.
- **Triquetrum:** Slide laterally again onto the triquetrum. You will know you are on the triquetrum if you are immediately distal to the ulnar styloid. If you abduct the wrist, the triquetrum protrudes, and when you adduct, the wrist it will disappear.
- **Pisiform:** Find the distal, medial joint line of the wrist and move slightly distal and onto the pea-shaped projection.

Distal row—trapezium, trapezoid, capitate, hamate

- **Trapezium:** Option 1: Locate the scaphoid and move distally along the first ray. Option 2: Identify the first metacarpal and move proximally onto the trapezium.
- **Trapezoid:** Option 1: Locate the scaphoid and move distally along the second ray. Option 2: Identify the second metacarpal and move proximal to the trapezoid.

- **Capitate:** Option 1: Locate the lunate and move distally along the third ray. Option 2: Identify the third metacarpal and move proximal to the capitate.
- **Hamate:** Option 1: Locate the triquetrum and move distally along the fourth and fifth rays. Option 2: Identify the space between the fourth and fifth metacarpals and move proximally onto the hamate. On the anterior surface, if you locate the pisiform, move slightly distal on an angle toward the index finger and onto the hook of the hamate.

ACTIVITY #2

Identify the medical epicondyle of the elbow. Now trace the path of each of the wrist flexor muscles.

Flexor carpi radialis

- With the forearm in supination, resist wrist flexion.
- Identify the most lateral tendon at the wrist; this is the flexor carpi radialis (FCR).
- Confirm that you are on the FCR by recruiting it to abduct the wrist.
- Now trace this tendon back to the medial epicondyle.

Palmaris longus

- With the forearm in supination, resist wrist flexion.
- Identify the second tendon from the lateral side of the wrist; this is the palmaris longus. (Take note that some people do not have a palmaris longus.)
- Trace this tendon back to the medial epicondyle.

Flexor digitorum

- With the forearm in supination, place your fingers in the middle of the wrist, just proximal to the joint line.
- Wiggle the fingers like you are playing the piano; the tendon that is moving is the flexor digitorum.
- Trace this tendon back to the medial epicondyle.

Flexor carpi ulnaris

- With the forearm in supination, resist wrist flexion.
- Identify the most medial tendon at the wrist; this is the flexor carpi ulnaris (FCU).
- Confirm that you are on the FCU by recruiting it to adduct the wrist.
- Trace this tendon back to the medial epicondyle.

Lesson 8: The Knee

Follow the path of each of the muscles.

Biceps femoris

- In prone, locate the ischial tuberosity and move distally. This is the common tendon of the hamstrings.
- On the lateral aspect of the posterior femur is the biceps femoris.
- Resist knee flexion while palpating laterally to confirm proper identification.

Semitendinosus

- In prone, locate the ischial tuberosity and move distally. This is the common tendon of the hamstrings.

- On the medial aspect of the posterior femur is the semitendinosus and semimembranosus. The semitendinosus is the more superficial of the two muscles and has a very long tendon.

Gracilis

- The gracilis is medial to the semitendinosus.
- The proximal attachment of the gracilis is the pubic tubercle; it blends in with the semitendinosus and sartorius to attach to the proximal, medial shaft of the tibia as a common tendon—the pes anserinus tendon.

Sartorius

- The sartorius is medial to the gracilis and wraps around from the anterior surface of the femur.
- It begins at the anterior superior iliac spine and blends with the semitendinosus and gracilis to attach to the proximal, medial shaft of the tibia as a common tendon—the pes anserinus tendon.

Semimembranosus

- In prone, locate the ischial tuberosity and move distally. This is the common tendon of the hamstrings.
- On the medial aspect of the posterior femur is the semitendinosus and semimembranosus. The semimembranosus is deep to the semitendinosus.

Lesson 9: The Ankle and Foot Complex

Practice palpating the five tarsals.

Navicular

- Identify the medial and lateral malleoli; the bone between the malleoli is the talus.
- Move medially and distally onto the navicular bone.
- Confirm that you are on the navicular by resisting plantarflexion and inversion.
- The navicular is the attachment of the posterior tibialis.

Cuboid

- The cuboid has six surfaces; it is similar to the hamate of the wrist.
- Identify the styloid process of the fifth metatarsal and follow the lateral border of the foot proximally onto the cuboid bone.

Medial cuneiform

- From the navicular bone, move distally along the medial border of the foot to the medial cuneiform.
- Confirm that you are on the medial cuneiform by continuing distal to the first metatarsal.

Intermediate cuneiform

- From the medial cuneiform, move laterally to the intermediate cuneiform.
- Confirm that you are on the intermediate cuneiform by continuing distal to the second metatarsal.

Lateral cuneiform

- From the intermediate cuneiform, move laterally to the lateral cuneiform.
- Confirm that you are on the lateral cuneiform by continuing distal to the third metatarsal.