

## Answers to Chapter Review Questions

### Chapter 3: Musculoskeletal System Conditions

#### Level 1: Receive and Respond

1. What is the best description of muscular dystrophy?
  - a. A genetic disorder that leads to the wasting of muscle tissue
  - b. A chronic pain syndrome characterized by trigger points
  - c. Involuntary contraction of voluntary muscle cells
  - d. Idiopathic thickening and shrinking of fascial sheetsANSWER: A
  
2. What kind of muscle spasm serves an important function in healing?
  - a. Splinting
  - b. Ischemic
  - c. Spastic
  - d. NutritionalANSWER: A
  
3. In which situation is massage therapy likely to have the best results?
  - a. Strain
  - b. Subluxation
  - c. Rupture
  - d. DislocationANSWER: A
  
4. What is the most reliable sign of early-stage osteosarcoma?
  - a. Pain with activity, and at rest
  - b. Nothing: this condition is silent in the early stage
  - c. Trouble breathing as tumors invade the lungs
  - d. A palpable mass on the primary affected bone, and others nearbyANSWER: B
  
5. What is the best description for Osgood-Schlatter disease?
  - a. A genetic disorder involving the degeneration of muscle tissue
  - b. A synonym for patellofemoral pain syndrome
  - c. Inflammation at the tibial tuberosity
  - d. A subtype of osteosarcomaANSWER: C
  
6. What is a synonym for hyperlordosis?
  - a. Widow's hump
  - b. Swayback

- c. Bamboo spine
  - d. Brittle bone disease
- ANSWER: B

7. What is a synonym for adhesive capsulitis?

- a. Jumper's knee
- b. Student's elbow
- c. Frozen shoulder
- d. Lockjaw

ANSWER: C

8. What serious condition can a Baker cyst mimic?

- a. Cellulitis
- b. ACL tear
- c. MRSA infection
- d. Deep vein thrombosis

ANSWER: D

9. Your client has excruciating pain at the base of the great toe. The skin is red, shiny, hot, and throbbing. What condition is probably present?

- a. Bunion
- b. Gout
- c. Hammertoe
- d. Morton neuroma

ANSWER: B

10. Which is the best description of osteoarthritis?

- a. A type of joint inflammation related to the accumulation of sharp crystals around synovial joints
- b. A type of joint inflammation related to autoimmune dysfunction
- c. A type of joint inflammation that is limited specifically to synovial joints
- d. A type of joint inflammation that can spread through the bloodstream to other joints

ANSWER: C

11. Which is the best description of patellofemoral pain syndrome?

- a. Chronic degeneration of the tissues that connects the quadriceps to the tibial tuberosity
- b. Wearing down of the cartilage on the posterior aspect of the patella
- c. Neuromuscular disorder involving trigger points in the quadriceps expansion
- d. A pouch develops at the posterior aspect of the popliteal fossa

ANSWER: B

12. This condition may involve bone fractures, pressure on nerve roots, and instability in the low back. What is it?

- a. Spondylosis
- b. Spondylolisthesis
- c. Spondylitis
- d. Spondylolysis

ANSWER: B

13. What is a common feature of spondylosis that distinguishes it from other types of arthritis?

- a. Bone spurs that can impinge on spinal nerve roots
- b. An inflamed capsular ligament at risk for rupture
- c. A close association with rheumatoid arthritis
- d. Absence of damage to the articular cartilage

ANSWER: A

14. What are common symptoms of temporomandibular joint disorder?

- a. Swollen tongue, inflamed lymph nodes, lockjaw
- b. Headaches, shooting pain down the arm, limited range of motion
- c. Locking of the joint, hypotonicity of the jaw muscles, weakness
- d. Bruxism, popping, ear pain

ANSWER: D

15. What is the best description of compartment syndrome?

- a. Pressure inside a tight fascial compartment can lead to tissue damage
- b. Constant percussive stress causes the periosteum to pull away from the tibia
- c. The tibialis posterior develops tears at the musculotendinous junction
- d. The byproducts of dying muscle but on what your are in the and but can't do it really will be great way to an toxic and more than mules paid at a pace that is a require me to throw \$600 and I hate that you can will hit a heavy refrain) when the accumulate in the kidneys and lead to renal failure

ANSWER: A

16. Match the following terms to their primary symptoms:

a. Ganglion cyst	(C)___ shooting pain between the all 3 <sup>rd</sup> and 4 <sup>th</sup> toes
b. Dupuytren contracture	(A)___ a painless bump, often on the hand or the foot
c. Morton neuroma	(B)___ the medial fingers curl into permanent flexion
d. Plantar fasciitis	(E)___ contracture of toe muscles leading to permanent deformity
e. Hammertoe	(D)___ pain on the bottom of the foot, just distal to the calcaneus

17. What does “herniated” mean?
- Strangulated small intestine
  - Enlarged diaphragmatic hiatus
  - Broken
  - Pushed through a hole or weak spot
  - ANSWER: D
18. Your client has electrical pain and weakness in the hand, especially at the thumb and lateral three fingers. What condition is probably present?
- Thoracic outlet syndrome
  - Carpal tunnel syndrome
  - Myofascial pain syndrome
  - Compartment syndrome
- ANSWER: B
19. Which muscles tend to be shortened in the context of thoracic outlet syndrome?
- Trapezius, rhomboids, splenius cervicis
  - Pectoralis major, latissimus dorsi, biceps
  - Pectoralis minor, scalenes, serratus anterior
  - Sternocleidomastoid, scalenes, external intercostals
- ANSWER: C
20. Your client has excruciating pain at the base of the great toe. The skin is thick and callused, and a large bump protrudes medially. What condition is probably present?
- Bunion
  - Gout
  - Hammertoe
  - Morton neuroma
- ANSWER: A
21. Which condition has subtypes called “student’s elbow”, “housemaid's knee”, and “tailor’s bottom”?
- Bunions
  - Bursitis
  - Baker cyst
  - Bone spurs

ANSWER: B

22. What condition is associated with the accumulation of trigger points?
- Fibromyalgia syndrome
  - Thoracic outlet syndrome
  - Myofascial pain syndrome
  - Compartment syndrome

ANSWER: C

Level 2: Application of Concepts

- Osteoporosis is more likely to affect trabecular bone than cortical bone. Explain why that increases the risk for bone fractures.
- Your 54-year old client has severe Schuermann's disease, with back pain and limited lung capacity. What are reasonable expectations for how massage might help?
  - He may experience temporary pain relief but no permanent changes
  - He may experience a reversal of his kyphosis and improved lung capacity
  - He may experience compression fractures of his vertebrae with any touch
  - He may experience exacerbation of his pain and muscle spasm due to neurologic insufficiency

ANSWER: A

- Your 16-year old, backpack-carrying client has hyperkyphosis with pain between her scapulae. Describe the benefits massage can offer her, and outline a treatment plan for your first session together.
- At the finish line of a marathon in hot, humid weather, your client limps to your table and complains of cramps. What is your best course of action?
  - Ice the affected calf while heating the unaffected calf
  - Stretch the affected calf and work on the muscular attachments
  - Recommend a hot bath followed by ice packs
  - Refer to the medical tent

ANSWER: B

- Your 75-year old physically active client had a successful hip replacement last year. What is the most important accommodation to make for him?
  - Don't use lubricant near his scar
  - Don't expect a normal range of motion at his hip

- c. Don't leave him alone to get on the table
  - d. Don't overdo the massage because he is probably taking painkillers
- ANSWER: B

6. Your client has a subluxated vertebra that he traces to a recent car wreck. What does this mean?

- a. You need to call an ambulance immediately
  - b. He needs permission from a doctor to work safely
  - c. He has an abnormally wide range of motion
  - d. He probably has some pain and loss of range of motion
- ANSWER: D

7. Your client has been diagnosed with Lyme disease. What extra hygienic measures do you need to take to prevent contracting this infection?

- a. None; Lyme disease is not contagious from human to human so normal hygienic measures are adequate
- b. Observe standard plus universal precautions against this blood-borne infection
- c. Isolate her linens to be either washed with bleach or discarded
- d. Wear gloves to protect yourself from potential contamination

8. Your client has a three-week-old ankle sprain. It is still painful, but not palpably hot or swollen. Is he a good candidate for massage?

- a. Yes, he can receive massage, but not on the ankle until the pain is resolved
  - b. No, he cannot receive massage until all risk of deep vein thrombosis has passed
  - c. Yes, he can receive massage within pain tolerance on the sore ankle
  - d. No, he cannot receive massage without a doctor's note
- ANSWER: C

9. Briefly explain how pes planus can lead to headaches.

10. Your client has been diagnosed with degenerative disc disease at the L<sub>4</sub>-L<sub>5</sub> disc. What accommodations is he likely to need?

- a. Extra bolsters to be sure he doesn't hyperextend his low back
  - b. Extra bolsters to be sure he doesn't flex his neck
  - c. A table-warmer so he doesn't get chilled
  - d. A step-stool to make getting on and off the table easier
- ANSWER: A

11. Your client reports that she has just started a new training program, and yesterday she ran 2 miles, almost all of it uphill. Today she has bilateral pain at the anterior and lateral aspects of her lower legs. What condition is probably present?
- Shin splints
  - Compartment syndrome
  - Stress fractures
  - Interosseous ligament sprain

ANSWER: A

12. Your client was in a motor vehicle accident two days ago, and has been diagnosed with whiplash. Name three possible associated injuries that must be ruled out before it is safe to proceed with massage.