

# Imaging Musculoskeletal Diseases

## Chapter 1

1. What is the classic form of shoulder instability, commonly caused by trauma?
  - a. Static instability
  - b. Basic instability
  - c. Complex instability
  - d. Dynamic instability
2. What type of lesion consists of a tear in the labrum?
  - a. Anterior lesion
  - b. Bankart lesion
  - c. Static lesion
  - d. Static lesion
3. A bony defect of the \_\_\_\_\_ is probably the most important factor for the development of an unstable glenohumeral joint.
  - a. Glenoid rim
  - b. Glenoid track
  - c. Glenoid lip
  - d. Glenoid band
4. Posterior instability of the glenohumeral joint is most prevalent in \_\_\_\_\_.
  - a. Young children
  - b. Young women
  - c. Young men
  - d. A & B
5. What type of labrum tear is referred to as a frayed free edge of the superior labrum?
  - a. Type 1
  - b. Type 2
  - c. Type 3
  - d. Type 4
6. True or false. SLAP tears appear on MR images as linear increased signals extending to the articular surface of the labrum between the 11:00 and 1:00 positions of the glenoid rim.
  - a. True
  - b. False
7. What is a related etiology for why labral tears occur in overhead throwing athletes?
  - a. Glenohumeral internal rotation deficit
  - b. Internal impingement
  - c. External impingement
  - d. A & B
8. What percentage of paralabral cysts are associated with a labral tear?
  - a. 75%
  - b. 80%
  - c. 85%
  - d. 90%
9. What is the most common labral variant?
  - a. Superior sublabral recess
  - b. Type 1
  - c. Type 2
  - d. Type 3

10. What percentage of patients have a partially unattached superior labrum between 11:00 and 1:00?
- a. 55%
  - b. 62%
  - c. 69%
  - d. 74%
11. Which of the following is a labral variant that can occur in the anterosuperior labrum?
- a. Sublabral foramen
  - b. Buford complex
  - c. Anterosuperior sublabral recess
  - d. All the above
12. The Buford complex variant is seen in \_\_\_\_\_ of individuals.
- a. 1-2%
  - b. 3-4%
  - c. 5-6%
  - d. 7-8%

## Chapter 2

13. What is the most flexible and movable synovial joint in the body?
- a. Hip
  - b. Knee
  - c. Shoulder
  - d. Elbow
14. The rotator cuff is organized in a \_\_\_\_\_ structure.
- a. Five-layer
  - b. Six-layer
  - c. Seven-layer
  - d. Eight-layer
15. Which of the following is a posterior rotator cuff tendon?
- a. Supraspinatus
  - b. Infraspinatus
  - c. Subscapularis
  - d. A & B
16. The \_\_\_\_\_ has the largest tendon with many fascicles.
- a. Supraspinatus
  - b. Subscapularis
  - c. Infraspinatus
  - d. Greater tuberosity
17. True or false. Bursal-side tears **are not** associated with subacromial and coracohumeral arch degenerative changes.
- a. True
  - b. False
18. What type of shoulder tear extends from the articular side to the bursal side?
- a. Partial tears
  - b. Tendinopathy
  - c. Full-thickness tears
  - d. Massive rotator cuff tears

19. A massive rotator tear is characterized by the involvement of two or more tendons and the retraction great than \_\_\_\_.
- 5 cm
  - 6 cm
  - 7 cm
  - 8 cm
20. Subscapularis tendon tears are more frequent than previously thought and have been found in more than \_\_\_\_ of reviewed cases.
- 15%
  - 20%
  - 25%
  - 30%
21. What MR plane is best to visualize a subscapularis tear?
- Sagittal plane
  - Coronal plane
  - Transverse plane
  - Sagittal followed by coronal plane
22. What is an important cause of shoulder pain in young adults and its cause is still unknown?
- Adhesive capsulitis
  - Calcified tendinopathy
  - Nerve denervation syndrome
  - Isolated greater tuberosity fractures

### Chapter 3

23. The elbow is made up of how many separate articulations with a common capsule?
- Two
  - Three
  - Four
  - Five
24. In MR of the elbow, which of the following provides a much-needed improvement in signal-to-noise ratio and improved image resolution?
- Higher field strength
  - Dedicated coils
  - Small field of view
  - A & B
25. Which of the following are part of the elbow joint?
- Humerus
  - Ulna
  - Radius
  - All the above
26. In elbow stress fractures the olecranon is involved in what percentage of cases?
- 96%
  - 97%
  - 98%
  - 99%

27. What is the most important ligament that stabilizes the elbow?
- a. Ulnar collateral ligament
  - b. Radial collateral ligament
  - c. Annular ligament
  - d. Lateral ulnar collateral ligament
28. Throwing athletes often develop a constellation of injuries known as the \_\_\_\_\_ overload syndrome.
- a. Maximum
  - b. Annular
  - c. Valgus
  - d. Bundle
29. What is the most common pattern of recurrent elbow instability?
- a. Ulnar collateral ligament tear
  - b. Posterolateral rotatory instability
  - c. Little league instability
  - d. T-sign instability
30. Tendon injuries are organized in which of the following classifications?
- a. Location
  - b. Acuity
  - c. Degree of injury
  - d. All the above

#### Chapter 4

31. What modality is used to evaluate the bones in the wrist?
- a. Radiography
  - b. CT
  - c. MRI
  - d. All the above
32. What is the most common fracture of the hand?
- a. Middle phalanx fracture
  - b. Distal phalanx fracture
  - c. Metacarpal fracture
  - d. Proximal phalanx fracture
33. What is a two-piece fracture of the base of the thumb metacarpal with intra-articular extension and dorsolateral displacement called?
- a. Bennet fracture dislocation
  - b. Mallet finger
  - c. Seymour fracture
  - d. Jersey finger
34. What is the most common carpal bone fracture?
- a. Triquetral fracture
  - b. Lunate fracture
  - c. Scaphoid fracture
  - d. Hook of hamate fracture
35. What carpal bone fracture may occur due to a direct trauma during sports or a fall?
- a. Triquetral fracture
  - b. Hook of hamate fracture
  - c. Lunate fracture
  - d. Scaphoid fracture

36. In the Mayfield classification of carpal instability, what stage is scapholunate dissociation?
- Stage 1
  - Stage 2
  - Stage 3
  - Stage 4
37. True or false. The articulations between the lunate and the surrounding four bones play the most important role in carpal stability.
- True
  - False
38. For a trigger finger injury, what modality can show real-time impingement of the tendon?
- MRI
  - US
  - Radiography
  - A & C
39. What are fibrous structures which wrap around the flexor tendon sheaths of the digits to form a supporting fibro-osseous tunnel?
- Pulleys
  - Rims
  - Strings
  - Gauges
40. What pulley is the most load-bearing and most commonly injured pulley?
- A1 pulley
  - A2 pulley
  - A3 pulley
  - A4 pulley

## Chapter 5

41. What additional condition for early-onset hip pain has been discovered?
- Development dysplasia
  - Femoroacetabular impingement
  - Osteoarthritis
  - Anatomical deformity
42. What modality is considered the first-line technique in the evaluation of hip pain?
- CT
  - MRI
  - Radiography
  - US
43. What modality should be used to evaluate a hip stress fracture?
- CT
  - MRI
  - US
  - Radiography
44. The initial phase of femoral head osteonecrosis (ON) includes which of the following?
- Cell death
  - Interruption of cell enzymes
  - Loss of cell metabolic activity
  - All the above

45. \_\_\_\_\_ imaging is the most sensitive method for detecting early ON.
- a. US
  - b. Radiography
  - c. CT
  - d. MRI
46. What type of fracture is of the femoral head, is a cause of marked mechanical hip pain, and typically occurs in the older, osteoporotic population?
- a. Subchondral insufficiency fracture
  - b. Femoral head osteonecrosis
  - c. Stress fracture
  - d. Microtrabecular fracture
47. True or false. Femoroacetabular impingement (FAI) is typically seen in young and athletic individuals who report hip or groin pain and present with reduced internal rotation of the hip joint.
- a. True
  - b. False
48. Patients with FAI are evaluated with \_\_\_\_\_ as the first step of the imaging workup.
- a. MRI
  - b. Radiographs
  - c. US
  - d. CT
49. What is considered a good first treatment option in patients with symptomatic FAI?
- a. Surgery
  - b. Steroid injection
  - c. Exercise therapy
  - d. Bed rest

## Chapter 6

50. In skeletally immature patients, what is a frequent “weak link”?
- a. Apophyseal physis
  - b. Myotendinous junction
  - c. Avulsions
  - d. Apophysitis
51. For anterior pelvis pain, what is the initial screening test of choice in many practices?
- a. Ultrasound
  - b. MRI
  - c. Radiography
  - d. CT
52. What modality has become a frontline tool in many practices to image anterior pelvis pain?
- a. Sonography
  - b. MRI
  - c. CT
  - d. A & B
53. Which of the following is a strength of sonography in evaluating chronic groin pain?
- a. Point-of-care evaluation
  - b. Dynamic assessment
  - c. Guiding percutaneous injections
  - d. All the above

54. What modality is better able to show soft tissue edema than sonography?,
- CT
  - MRI
  - Radiography
  - PET
55. Which of the following is not a category describing groin pain in athletes?
- Pubic
  - Abductor
  - Inferior
  - Inguinal
56. What is a cartilaginous joint supported by four capsular ligaments?
- Pubic symphysis
  - Sacroiliac joint
  - Hip joint
  - Knee joint
57. Imaging evaluation for true inguinal and femoral hernias is best performed by \_\_\_\_\_.
- Sonography
  - Radiography
  - CT
  - MRI
58. What syndrome is generally caused by abnormalities involving the abductor tendons?
- Proximal ITB syndrome
  - Partial abductor syndrome
  - Trochanteric pain syndrome
  - Gluteus medius syndrome
59. The sacrum typically has \_\_\_\_\_ fused segments in adults.
- Two
  - Three
  - Four
  - Five
60. Both traumatic fractures and \_\_\_\_\_ fractures occur in the sacrum.
- Complex
  - Stress
  - Convolutated
  - Variable
61. True or false. With acute trauma to the sacrum or coccyx, it has been recommended that radiography be eliminated.
- True
  - False

## Chapter 7

62. The menisci are composed of which of the following?
- Anterior horn
  - Body
  - Posterior horn
  - All the above

63. Discoid meniscus is \_\_\_\_\_ times more common than the lateral meniscus.
- a. 5 times
  - b. 10-20 times
  - c. 15 times
  - d. 20-25 times
64. In young patients with acute injuries \_\_\_\_\_ meniscal tears are common.
- a. Posterior
  - b. Anterior
  - c. Lateral
  - d. Inferior
65. What is the accuracy of MR in diagnosing a meniscal tear when using arthroscopy?
- a. 50-60%
  - b. 65-70%
  - c. 75-80%
  - d. 90-95%
66. What is a direct MR sign of an ACL tear?
- a. Focal ligamentous discontinuity
  - b. Diffuse or focal signal intensity abnormality
  - c. Mass-like appearance
  - d. All the above
67. Partial tears account for what percentage of all ACL injuries?
- a. 30%
  - b. 40%
  - c. 50%
  - d. 60%
68. What grade classification is an MCL partial tear?
- a. Grade I
  - b. Grade II
  - c. Grade III
  - d. Grade IV
69. In the posterolateral corner, what ligament is a thickening of the posterior joint capsule and has a Y shape?
- a. Fabellofibular ligament
  - b. Popliteofibular ligament
  - c. Arcuate ligament
  - d. Popliteus tendon

## Chapter 8

70. Ankle tendons are most commonly imaged with which modality?
- a. MRI
  - b. Radiography
  - c. US
  - d. A & C
71. There are \_\_\_\_\_ ankle/foot tendon compartments.
- a. Two
  - b. Three
  - c. Four
  - d. Five



72. The Achilles tendon is \_\_\_\_\_ located.
- Anteriorly
  - Posteriorly
  - Inferiorly
  - Laterally
73. What is the most common class of bone injuries diagnosed on imaging?
- Dislocation
  - Compound fracture
  - Stress fracture
  - Convuluted fracture
74. True or false. The most important ligament is the Lisfranc ligament which is found along the medial aspect of the midfoot.
- True
  - False
75. What is the preferred imaging modality to evaluate plantar plate pathology?
- Radiography
  - CT
  - MRI
  - US
76. Which of the following is a main structure of the lateral collateral ligament complex of the ankle?
- Anterior talofibular ligament (ATFL)
  - Calcaneofibular ligament (CFL)
  - Posterior talofibular ligament (PTFL)
  - All the above
77. Approximately \_\_\_\_\_ of all ankle sprains result in damage to the lateral ligamentous complex.
- 75%
  - 80%
  - 85%
  - 90%

## Chapter 9

78. What is the first challenge when interpreting a postoperative MRI examination of the knee?
- Recognition that prior surgery has occurred
  - Quality scan
  - Proper positioning
  - Recognition of anatomy
79. Most ACL tears are managed with \_\_\_\_\_.
- Exercise therapy
  - Bed rest
  - Graft reconstruction
  - Crutches
80. On MRI, tendon grafts are avascular and will appear dark on all pulse sequences for the first \_\_\_\_\_ months.
- 1-2
  - 3-4
  - 5-6
  - 7-8

81. After ACL repair, postoperative stiffness affects approximately \_\_\_\_ of patients, more commonly women.
- a. 2%
  - b. 3%
  - c. 4%
  - d. 5%
82. True or false. Primary meniscus repair using suture, darts, or other anchors is the preferred treatment for menisci that have the potential to heal.
- a. True
  - b. False
83. What is one of the most commonly performed arthroscopic procedure?
- a. Knee arthroscopy
  - b. Shoulder arthroscopy
  - c. Hip arthroscopy
  - d. Elbow arthroscopy
84. What is the most common rotator cuff procedure?
- a. Rotator cuff repair
  - b. Rotator cuff debridement
  - c. Rotator cuff steroid injection
  - d. A & B
85. Which of the following is an abnormal finding after rotator cuff repair?
- a. Discreet gap within the tendon
  - b. Tendon retraction
  - c. New regions of tendon delamination
  - d. All the above
86. To make a confident diagnosis of a residual or recurrent superior labral tear, if conventional MRI is inconclusive, what can be performed to better assess the status?
- a. MR arthrography
  - b. Ultrasound
  - c. Radiography
  - d. CT
87. True or false. An abnormal finding following instability surgery includes absence of the soft tissue prominence along the anterior inferior glenoid rim.
- a. True
  - b. False

## Chapter 10

88. The majority of soft tissue tumors (STT) are \_\_\_\_.
- a. Cancerous
  - b. Aggressive
  - c. Benign
  - d. Superficial
89. In the initial evaluation of STT, what is often underestimated, but can provide highly valuable information and should be routinely part of the workup of STT?
- a. Radiographs
  - b. Lab work
  - c. Biopsy
  - d. Staging

90. In soft tissue sarcoma (STS), which **is not** a key MRI imaging feature that helps predicts its behavior and potentially impact surgical management?
- Patient age
  - Site
  - Size
  - Depth
91. What is considered the mainstay treatment for STS?
- Minimally invasive surgical resection
  - Chemotherapy
  - Radiation therapy
  - Wide surgical resection
92. When evaluating extremity bone tumors, accurate characterization relies heavily on the \_\_\_\_\_ appearance.
- MRI
  - Radiographic
  - US
  - CT
93. When radiographs confirm the presence of an aggressive or indeterminate bone lesion in the extremity or pelvis, what is the modality of choice for further imaging evaluation?
- CT
  - PET/CT
  - MRI
  - US
94. Which of the following is one of the three most common types of primary bone sarcoma?
- Osteosarcoma
  - Ewing sarcoma
  - Chondrosarcoma
  - All the above
95. True or false. When treating osteosarcoma and Ewing sarcoma radiation is usually reserved for locations where complete surgical resection is difficult or impossible.
- True
  - False

## Chapter 11

96. Which of the following is considered an inflammatory arthritis?
- Rheumatoid arthritis
  - Spondylarthritis
  - Osteoarthritis
  - A & B
97. What is an example of an inflammatory arthritis associated with joint inflammation?
- Rheumatoid arthritis
  - Osteoarthritis
  - Psoriatic arthritis
  - Gout
98. What is a condition associated with the buildup of uric acid in the body?
- Rheumatoid arthritis
  - Psoriatic arthritis
  - Gout
  - Spondylarthritis

99. Which of the following **is not** an area that requires attention when reviewing a radiograph to diagnose joint disease?
- Length of the bone between the joints
  - Joint space between bones
  - Appearance of the bones forming the articulation
  - Alignment of the bones at the joint
100. What is an early feature of disease in the inflammatory arthritides and may be due to synovitis, joint effusion, and/or soft tissue edema?
- Inflammation
  - Soft tissue swelling
  - Pain
  - Stiffness
101. What is the hallmark of OA and represents new bone forming around the site of the cartilage degeneration?
- Osteoporosis
  - Osteopenia
  - Osteophytes
  - Osteomyelitis
102. Which of the following modalities is less commonly used in arthritis imaging?
- MRI
  - US
  - NM
  - CT
103. What is identified on ultrasound as a discontinuity of the bone surface?
- Erosions
  - Pitting
  - Rimming
  - Speckling
104. The ability of \_\_\_\_\_ to directly image articular cartilage and demonstrate cartilage loss and cartilage defects is one of the great advantages of this modality over other imaging techniques.
- CT
  - MRI
  - US
  - Radiographs
105. Which of the following is a characteristic of osteoarthritis?
- Cartilage thinning
  - Joint space loss
  - Soft tissue swelling
  - All the above
106. Erosive OA is usually confined to the \_\_\_\_\_.
- Hands
  - Feet
  - Ankles
  - Hips
107. What part of the spine is affected by osteoarthritis?
- Cervical
  - Thoracic
  - Lumbar
  - A & C

108. Joint space narrowing in \_\_\_\_\_ tends to be more uniform than in osteoarthritis.
- a. Gout
  - b. Rheumatoid arthritis
  - c. Osteoporosis
  - d. Psoriatic arthritis
109. What imaging modality is used to detect subclinical synovitis in the early stages of RA?
- a. Ultrasound
  - b. Radiography
  - c. MRI
  - d. A & C

## Chapter 12

110. Yellow bone marrow is also called \_\_\_\_\_ marrow.
- a. Hematopoietic
  - b. Heavy
  - c. Fatty
  - d. Large
111. Red marrow contains approximately \_\_\_\_\_ water.
- a. 10%
  - b. 20%
  - c. 30%
  - d. 40%
112. Bone marrow and related disorders are best assessed using \_\_\_\_\_.
- a. MRI
  - b. CT
  - c. US
  - d. PET
113. A MRI-based method that generates water and fat images is known as \_\_\_\_\_.
- a. Chemical shift imaging
  - b. Water-fat imaging
  - c. Dixon method
  - d. All the above
114. The amount of bone in the skeleton at any moment is entirely dependent on the peak bone base attained during the \_\_\_\_\_ decade of life, and on the balance between bone resorption and formation.
- a. First
  - b. Second
  - c. Third
  - d. Fourth
115. What is the most common metabolic bone disease in Western countries?
- a. Osteopenia
  - b. Osteoporosis
  - c. Osteomyelitis
  - d. Osteosarcoma
116. At 1 year after hip fracture, \_\_\_\_\_ of patients are unable to walk independently.
- a. 40%
  - b. 50%
  - c. 60%
  - d. 70%

117. True or false. The main radiographic features of generalized osteoporosis include the disappearance of the trabecular network and cortical thinning.
- a. True
  - b. False
118. Spontaneous vertebral fractures predominantly involve the thoracolumbar spine and never occur above what level?
- a. T3
  - b. T4
  - c. T5
  - d. T6

### Chapter 13

119. What percentage of C2 fractures involve the odontoid process?
- a. 39%
  - b. 44%
  - c. 55%
  - d. 59%
120. What is the most common cause of C2 fractures?
- a. Motor vehicle accident
  - b. Diving accident
  - c. Football accident
  - d. Skiing accident
121. What fracture is commonly called the “hangman’s fracture”?
- a. Type I
  - b. Type II
  - c. Traumatic spondylolisthesis
  - d. Type III
122. Mid to lower cervical spine injuries represent \_\_\_\_\_ of cervical spine fractures.
- a. 55%
  - b. 65%,
  - c. 68%
  - d. 70%
123. Referencing the Subaxial Injury Classification and Scoring system, a neurologic status score of 1 indicates which of the following?
- a. Intact
  - b. Root injury
  - c. Complete cord injury
  - d. Incomplete cord injury
124. The \_\_\_\_\_ vertebrae are relatively immobile as they are stabilized by a ring formed by the spine, ribs, and sternum.
- a. T1-T5
  - b. T1-T7
  - c. T1-T10
  - d. T1-T-12
125. 78% of white women older than \_\_\_\_\_ have at least one thoracic compression fracture.
- a. 60 years
  - b. 70 years
  - c. 80 years
  - d. 90 years

126. Spondylolysis is a stress fracture of the bony arch connecting the upper and lower facet joints and occurs primarily at the \_\_\_\_\_ and \_\_\_\_\_ levels.
- a. L1, L2
  - b. L2, L3
  - c. L4, L5
  - d. L5, S1

#### Chapter 14

127. True or false. Ligaments and muscles bridge vertebral segments but **do not** allow flexion, extension, tilt, or rotation.
- a. True
  - b. False
128. Which of the following is not a degenerative process?
- a. Osteosarcoma
  - b. Cartilage wear in the joints
  - c. Vascular ingrowth into the disc
  - d. Herniation of discs
129. A \_\_\_\_\_ may be seen as a defect in the annulus, containing soft tissue material.
- a. Herniation
  - b. Fold
  - c. Tear
  - d. Scar
130. What is it called when the spinal canal is rendered too narrow due to disc or joint disease for normal blood supply to reach neural structures?
- a. Spinal instability
  - b. Spinal stenosis
  - c. Spinal fusion
  - d. Spinal decompression
131. What modality is the ideal method of assessing complex fractures and detecting destructive tumors?
- a. MRI
  - b. Radiographs
  - c. CT
  - d. PET
132. What inflammatory disease of the spine primarily affects the cervical spine?
- a. Osteoarthritis
  - b. Psoriatic arthritis
  - c. Gout
  - d. Rheumatoid arthritis
133. Inflammation of the vertebral body is known as \_\_\_\_\_.
- a. Spondylitis,
  - b. Myelitis
  - c. Discitis
  - d. Osteoarthritis
134. What is the most important spinal complication in ankylosing spondylitis?
- a. Osteoporosis
  - b. Fracture
  - c. Instability
  - d. All the above

135. What is a systemic granulomatous disease of unknown cause that has been shown to affect nearly every body system?
- a. Crystal deposition disorder
  - b. CPPD
  - c. Sarcoidosis
  - d. HA

## Chapter 15

136. Of the routes for the introduction of infection around the body, which one occurs from puncture wounds or penetrating trauma?
- a. Hematogenous
  - b. Direct implantation
  - c. Direct spread
  - d. Indirect spread
137. What is characterized in the early stages by joint effusion?
- a. Septic arthritis
  - b. Osteomyelitis
  - c. Osteoarthritis
  - d. Osteoarthritis
138. What is the imaging modality of choice for evaluating infection?
- a. CT
  - b. Radiographs
  - c. MRI
  - d. Nuclear medicine
139. Imaging infection, what is seen as the replacement of normal fat signal in subcutaneous tissue on T1-weighted images?
- a. Osteomyelitis
  - b. Cellulitis
  - c. Osteoarthritis
  - d. Discitis
140. Patients with joint effusion and clinical suspicion of \_\_\_\_\_ should undergo image-guided aspiration of the fluid.
- a. Osteomyelitis
  - b. Osteoporosis
  - c. Septic arthritis
  - d. Osteoarthritis
141. What percentage of osteomyelitis of the foot and ankle is a result of contiguous spread through the skin?
- a. 87%
  - b. 90%
  - c. 93%
  - d. 95%
142. What bacteria causes most hematogenous musculoskeletal infections?
- a. Staphylococcus aureus
  - b. Staphylococcus epidermidis
  - c. Gram-positive cocci
  - d. Staphylococcus haemolyticus



143. True or false. Chronic renal failure can lead to the resorption of bone at the joints and enthesial attachments, as well as the intervertebral discs.
- a. True
  - b. False

## Chapter 16

144. What is an effective imaging method for the evaluation of upper extremity sports injuries?
- a. CT
  - b. Radiography
  - c. Ultrasound
  - d. MRI
145. A linear transducer of greater than \_\_\_\_\_ is preferred to image superficial soft tissue abnormalities.
- a. 9 MHz
  - b. 10 MHz
  - c. 11 MHz
  - d. 12 MHz
146. The \_\_\_\_\_ is the most commonly imaged tendon group using ultrasound.
- a. Bursa
  - b. Rotator cuff
  - c. Glenohumeral
  - d. Transverse
147. In the wrist and hand, one ligament that is ideally assessed with ultrasound is the \_\_\_\_\_.
- a. Anterior radiocarpal ligament
  - b. Radial collateral ligament
  - c. Ulnar collateral ligament of the thumb
  - d. Inferior collateral ligament
148. For athletic injuries, diagnostic ultrasound is used daily as a \_\_\_\_\_ to confirm injury and guide treatment.
- a. Barometer
  - b. Stethoscope
  - c. Tool
  - d. Indicator
149. What percentage of symptomatic athletes experiencing groin pain had an inguinal hernia?
- a. 85%
  - b. 89%
  - c. 91%
  - d. 93%
150. In the ankle, what is a commonly affected tendon, especially in runners?
- a. Flexor hallicus longus tendon
  - b. Flexor digitorum tendon
  - c. Achilles tendon
  - d. Peroneal tendon
151. Diagnostic ultrasound may be used to assess muscle tears \_\_\_\_\_ hours after injury.
- a. 3
  - b. 4
  - c. 5
  - d. 6

## Chapter 17

152. Causes of muscle pathology include which of the following?
- Traumatic
  - Autoimmune
  - Infectious
  - All the above
153. What grade of muscle strain is a 10-50% fiber disruption?
- Grade 1
  - Grade 2
  - Grade 3
  - Grade 4
154. Muscle hernias are most commonly seen in the \_\_\_\_\_.
- Lower extremity
  - Upper extremity
  - Lumbar spine
  - Cervical spine
155. What is the infarction of skeletal muscle called?
- Inclusion body myositis
  - Myonecrosis
  - Inflammatory myopathy
  - Polymyositis
156. In compartment syndrome, elevated pressure reduces \_\_\_\_\_ to muscles.
- Venous blood flow
  - Nerve signals
  - Arterial blood flow
  - Stimulation
157. True or false. Infarcted muscle can be salvaged.
- True
  - False
158. What refers to the dysfunction of skeletal muscle and encompasses a spectrum of diseases?
- Dystrophy
  - Syndrome
  - Myopathy
  - Edema
159. What is an aggressive bacterial infection that spreads rapidly between muscle the compartment along deep fascial planes and subcutaneous fat?
- Necrotizing fasciitis
  - Denervation
  - Myositis
  - Parsonage-Turner syndrome

## Chapter 18

160. What is the main peripheral nerve abnormality that leads to referral for imaging?
- Tumors
  - Trauma
  - Perineural fibrosis
  - Entrapment

161. Peripheral nerve abnormalities are best imaged by what modality?
- Ultrasound
  - MRI
  - CT
  - A & B
162. Peripheral nerves range in diameter from \_\_\_\_.
- 1 to 10 mm
  - 1 to 15 mm
  - 1 to 20 mm
  - 1 to 25 mm
163. What is the most common nerve entrapment?
- Carpal tunnel syndrome
  - Herniated disc
  - Peroneal nerve entrapment
  - Ulnar tunnel syndrome
164. More than \_\_\_\_ of peripheral nerve tumors are benign.
- 85%
  - 90%
  - 92%
  - 95%
165. What is the most common benign nerve sheath tumor?
- Intraneural lipoma
  - Intraneural ganglia
  - Schwannoma
  - Neurofibroma
166. Perineural fibrosis is nearly always related to all of the following **except** \_\_\_\_.
- Prior radiation
  - Prior Infection
  - Prior Surgery
  - Prior trauma
167. True or false. The most common site of post-radiation perineural fibrosis is the brachial plexus.
- True
  - False

## Chapter 19

168. The term juvenile osteochondritis dissecans (JOCD) applies to patients between the ages of \_\_\_\_ and \_\_\_\_ years.
- 3, 5
  - 7, 9
  - 10, 15
  - 16, 18
169. JOCD of the lower extremity is most frequently found in the \_\_\_\_.
- Femoral condyles
  - Talar dome
  - A & B
  - Epiphyseal cartilage

170. True or false. Acute traumatic chondral injuries are significantly less common than meniscal and anterior cruciate ligament injuries in the immature knee.
- True
  - False
171. During what time do avulsion injuries in children most frequently happen?
- Puberty
  - Adolescence
  - Young adulthood
  - A & B
172. Traction apophysitis at the Achilles tendon calcaneal insertion is termed \_\_\_\_\_.
- Sever's disease
  - Meyer's disease
  - McKeever disease
  - Slatter disease
173. In the Meyers and McKeever classification, what does Type III indicate?
- Nondisplaced
  - Posteriorly hinged attachment
  - Completely displaced
  - Comminuted or rotated fragment
174. The physis is also call the \_\_\_\_\_.
- Cartilage plate
  - Growth plate
  - Muscle plate
  - Tendon plate
175. In the Salter-Harris classification of growth plate fractures, what does Type II indicate?
- Fracture confined to the physis
  - Involves the physis and metaphysis
  - Extends from the epiphysis into the epiphysis
  - Obliquely orient fracture

## Chapter 20

176. Which of the following is not a unique feature of the pediatric musculoskeletal system?
- Anatomical differences
  - Physiological differences
  - Psychological differences
  - Age differences
177. What is one of the most common musculoskeletal pathologies in the newborn?
- Developmental dysplasia of the hip
  - Osteogenesis imperfecta
  - Hypophosphatasia
  - Hyperparathyroidism
178. What imaging technique is the first choice in infants younger than 6-9 months of age with suspicion of developmental dysplasia of the hip?
- Radiography
  - MRI
  - CT
  - Ultrasound

179. What is the most common cause of hip pain or limping in children under the age of 10?

- a. Perthes disease
- b. Developmental dysplasia
- c. Transient synovitis
- d. Femoral epiphysis

180. Transient synovitis requires which of the following treatments?

- a. Physical therapy
- b. Rest
- c. Analgesics
- d. B & C

181. Perthes disease typically occurs between what ages?

- a. 2-4 years
- b. 5-8 years
- c. 9-11 years
- d. 12-15 years

182. Juvenile idiopathic arthritis encompasses \_\_\_\_\_ subsets of aseptic arthritis.

- a. Five
- b. Six
- c. Seven
- d. Eight

183. Benign pediatric bone tumors include which of the following?

- a. Osteochondroma
- b. Nonossifying fibroma
- c. Osteoid osteoma
- d. All the above

## Part Two

### Hip Fracture: The Choice of Surgery

184. True or false. The aim of hip fracture surgery is to allow immediate mobilization with full weight-bearing.

- a. True
- b. False

185. The AO/OTA classification system for trochanteric fractures divides the area into \_\_\_\_\_ types of severity.

- a. 7
- b. 8
- c. 9
- d. 10

186. What percentage of hip fractures are subtrochanteric fractures?

- a. 3%
- b. 5%
- c. 7%
- d. 9%

187. Which of the following is a major strategy for treating hip fractures?
- Prosthesis
  - Osteosynthesis
  - Traction
  - A & B
188. What has been the Gold Standard for treating trochanteric fractures for decades?
- Sliding hip screws
  - Parallel implants
  - Intramedullary nail
  - Prosthesis
189. What involves a metal femoral head replacement attached by a stem seated in the shaft cavity?
- Parallel implants
  - Prosthesis
  - Sliding hip screws
  - Intramedullary nails
190. In undisplaced femoral neck fractures, around \_\_\_\_\_ of the undisplaced fractures are treated with parallel screws or pins.
- One-eighth
  - One-fourth
  - One-half
  - Three quarters
191. Trochanteric fractures may be complicated by a non-union or mechanical collapse in what percentage of patients?
- 1-5%
  - 1-7%
  - 1-10%
  - 1-12%

## Post-operative Management

192. What percentage of patients are fully independent and with a low level of comorbidity prior to hip fracture?
- 10%
  - 15%
  - 17%
  - 20%
193. Shortening the time in bed after hip fracture surgery reduces which of the following complications?
- Thrombosis
  - Pneumonia
  - Respiratory failure
  - All the above
194. What is a useful tool for monitoring basic mobility during hospitalization?
- Combined Ambulation Score
  - Common Ambulation Score
  - Cumulated Ambulation Score
  - Constant Ambulation Score

195. With suitable rehabilitation programs addressing critical issues in the post-operative phase, almost \_\_\_\_\_ of patients who were able to walk before fracture achieve the ability to walk within the first two post-operative days.
- 75%
  - 80%
  - 85%
  - 90%
196. Which of the following is not a factor that may contribute to post-operative hypotension?
- Anemia due to acute blood loss
  - Dehydration secondary to poor oral intake of fluids
  - Post-operative pain
  - The effects of anesthetic agents
197. What is a strategy for preventing post-operative hypotension?
- Medication adjustment
  - Fluid management
  - Bed rest
  - A & B
198. What percentage of patients with hip fractures have a hemoglobin level below the population normal upon admission?
- 30%
  - 40%
  - 50%
  - 60%
199. During the postoperative period, what is the most common cause of death?
- Respiratory failure
  - Cardiac failure
  - Sepsis
  - All the above
200. What is a common complication that affects about one-third of older patients with hip fractures in the perioperative period?
- Low blood pressure
  - Respiratory failure
  - Delirium
  - Weight loss

## Rehabilitation Following Hip Fracture

201. Recovery after hip fracture starts \_\_\_\_\_.
- After surgery
  - Upon admission
  - During rehabilitation
  - At home

Questions 202 to 206 match the appropriate rehabilitation team element for the following definitions.

202. Identifying what can be improved and what cannot.
- Assessment
  - Goal-setting
  - Treatment
  - Evaluation

203. Intervening to improve medical and functional problems.
- a. Assessment
  - b. Goal-setting
  - c. Treatment
  - d. Evaluation
204. Identification of problems to be addressed.
- a. Assessment
  - b. Goal-setting
  - c. Treatment
  - d. Evaluation
205. Reviewing the effectiveness of interventions.
- a. Assessment
  - b. Evaluation
  - c. Treatment
  - d. Planning
206. Organizing support services.
- a. Assessment
  - b. Planning
  - c. Goal-setting
  - d. Treatment
207. In Western nations approximately \_\_\_\_ of patients move to a residential care facility following hip fracture.
- a. 10-20%
  - b. 25-30%
  - c. 35-40%
  - d. 45-50%
208. What patients appear to be at particular risk of poor outcomes after hip fracture?
- a. Male patients
  - b. People living in supported accommodation
  - c. Those with dementia
  - d. All the above
209. According to one prospective study, delirium remained in \_\_\_\_ of patients one month after a fracture.
- a. 28%
  - b. 32%
  - c. 35%
  - d. 37%

Questions 210 to 213 match the category of care with the key element of a typical rehabilitation pathway.

210. Ensure progress in recovery of the pre-fracture level of independence.
- a. Frailty
  - b. Activities of daily living
  - c. Mobility
  - d. Medications
211. A review of all medication should be undertaken on admission.
- a. Frailty
  - b. Mobility
  - c. Activities of daily living
  - d. Medications



212. Consider conducting an assessment of activities of daily living.

- a. Mobility
- b. Activity of daily living
- c. Frailty
- d. Medication

213. Strategies to prevent and treat delirium

- a. Medication
- b. Cognitive and mental status
- c. Mobility
- d. Frailty