



AMREF INTERNATIONAL UNIVERSITY

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF REHABILITATION MEDICINE

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

END OF TRIMESTER EXAMINATIONS JANUARY TO APRIL 2024

UNIT CODE: PHT 314

UNIT NAME: MUSCULOSKELETAL 2 (UPGRADING)

DATE: 19TH APRIL 2024

TIME: 6PM-8PM

INSTRUCTIONS

1. All students will have two (2) hours to complete the examination
2. Attempt all questions as per the instruction
3. It is the student's responsibility to report any page and number missing in this paper.
4. Check that the paper is complete
5. Total number of pages is 15 including the cover.
6. Read through the paper quickly before you start.
7. Upon finishing the exam paper, on submission, the message 'Your examination has been submitted' will appear.

TOTAL: _____/50

PERCENT: _____/100%

POINTS EARNED TOWARDS FINAL GRADE _____/70

1. Your patient comes in and presents with low back pain with radiating right leg pain down to their toes. Upon your neuro screen you note that this patient's L5 and S1 dermatomes are diminished on the right side and L5 and S1 myotomes are decreased strength on the right side. According to the clinical practice guidelines for the lumbar spine, would you recommend this patient gets imaging of their lumbar spine?
 - A. Yes, they have severe, progressive neurological deficits
 - B. No, better to treat a few sessions and see if it gets better
 - C. Yes any person with low back pain and radiating pain should get imaging
 - D. No this person does not need any imaging

2. What would an X-ray show if a patient has a CAM impingement in their hip?
 - A. The rim of the socket is too big and overhanging
 - B. The ball is aspherical or too big for the socket
 - C. The X-ray looks normal as it is a muscular reason for the impingement only
 - D. The X-ray looks like it has inflammation in the hip and that is what is causing the impingement

3. If you want to assess internal rotation and adduction of the femur, what order of assessment would be most appropriate (easiest to hardest)?
 - A. Squat, SL stance, Step up, Step down
 - B. SL stance, Squat, Step down, step up
 - C. Squat, Step up, step down, SL stance
 - D. Step up, Step down, SL stance, Squat

4. A patient arrives for physical therapy with pain in right hip, with numbness and tingling down the anterior thigh. You determine through testing that this patient has lateral femoral cutaneous syndrome. Based on this diagnosis and nerve distribution what nerve test would you want to perform during your assessment?

- A. Well Leg Raise
- B. Straight Leg raise
- C. Prone knee Bend Nerve Test
- D. You do not need to perform a nerve test because the diagnosis shows it is not coming from the lumbar spine

5. What is a common movement fault for Labral Tear?

- A. Anterior glide of hip joint
- B. Posterior glide of hip joint
- C. Bent Knee fall out
- D. Excessive lumbar spine flexion

6. A patient arrives for physical therapy with pain on right lateral hip. She has pain with palpation to the greater trochanter, as well as laying on that side. Her symptoms are consistent with which of the following diagnoses?

- A. Grade 2 Hip Flexor strain
- B. Grade 1 Hip Adductor strain
- C. Trochanteric bursitis
- D. Labral tear

7. Please use patient from #14 for this question: What muscle/tendon is commonly tight for this diagnosis causing abnormal rubbing on the greater trochanter?

- A. Quadriceps
- B. Gluteus Maximus
- C. Hip Adductors
- D. TFL/IT band

8. A patient comes into physical therapy with a 2 year history of pain on right posterior hip. Has been on and off for the past 2 years. If sitting and driving for long periods starts to feel tingling in the right leg down to hamstring. Which cluster of tests below is appropriate to diagnose this person with piriformis syndrome?
- A. FAIR test, Piriformis palpation, piriformis length test at 90 degrees
 - B. Scour test, Click test, FADIR
 - C. <40 years old, (+) prone instability test, Aberrant movement, SLR > 90 deg
 - D. Anterior Drawer, Lachman and Pivot Shift test
9. What is a common movement fault for piriformis syndrome?
- A. Anterior glide
 - B. Internal rotation and Adduction of the femur
 - C. Quadriceps dominance with squat
 - D. Pronation of feet
10. A patient comes into your clinic and presents with anterior right knee pain, primarily when squatting or descending stairs. During a step down functional assessment demonstrates internal rotation and adduction of femur that is causing right knee dynamic valgus. With this functional movement, what muscles would you want to MMT to confirm weakness?
- A. TFL and Quadriceps Strength
 - B. Gluteus Maximus and Gluteus Medius Strength
 - C. Paraspinal and Abdominal Strength
 - D. Calf Strength
11. What is included in the “Unhappy Triad”?
- A. PCL tear, Meniscus tear, LCL tear
 - B. MCL tear, Meniscus tear, LCL tear
 - C. PCL tear, ACL tear, LCL tear, MCL tear

D. ACL tear, Meniscus tear, MCL tear

12. Your patient comes in with right low back pain. Upon your evaluation you notice decreased mobility and pain on the right side with lumbar AROM extension and lateral flexion to the right side. At this point what diagnosis and ICF category would you put this person in?

- A. Diagnosis: Disc Herniation, ICF: Low back pain with Mobility deficit
- B. Diagnosis: Disc Herniation, ICF: Low back pain with related leg pain
- C. Diagnosis: Stenosis, ICF: Low back pain with radiating leg pain
- D. Diagnosis: Facet Joint Restriction, ICF: Low back pain with Mobility deficit

13. Which of the following are ACL special tests?

- A. FAIR test, Piriformis palpation, piriformis length test at 90 deg
- B. Scour test, Click test, FADIR
- C. <40 years old, (+) prone instability test, Aberrant movement, SLR > 90 deg
- D. Anterior Drawer, Lachman and Pivot Shift test

14. Which of the following is a concerning subjective complaint for a meniscus tear that may likely lead to surgery?

- A. Locking
- B. Pain
- C. Swelling
- D. Tightness in quads

15. Which is the most specific special test for a meniscus tear?

- A. Thessaly's Test
- B. McMurray's Test
- C. Lachman's Test
- D. Joint Line Pain with palpation

16. What is the common mechanism of injury for an LCL tear/sprain?
- A. Repetitive internal rotation and adduction of femur
 - B. Quadriceps dominance
 - C. Direct trauma to the medial knee/Varus trauma
 - D. Repetitive excessive pronation of foot
17. What 3 muscles are involved with pes anserine bursitis?
- A. Sartorius, Semitendinosus (HS) and Gracilis
 - B. Psoas, Semimembranosus (HS) and Gracilis
 - C. TFL, Psoas and Rectus Femoris
 - D. Calf, anterior tib, patellar tendon
18. What is the appropriate ICF category for Knee Osteoarthritis?
- A. Knee pain with mobility impairments
 - B. Knee Pain with Movement Coordination Impairments
 - C. Patellofemoral Pain
 - D. Knee Pain with Muscle Power Deficits
19. A patient comes into your clinic after being in a car accident 1 week ago. He states that upon impact his knee hit the dashboard. Since the accident his knee has been swollen and notes increased instability in his knee. When examining his functional movement, you notice excessive dynamic valgus at his knee due to internal rotation and adduction of femur. What would be an appropriate special test to use for this patient?
- A. Valgus Test
 - B. McMurray's Test
 - C. Anterior Drawer Test
 - D. Posterior Drawer test

20. A patient comes into your clinic with lateral knee pain. Pain is reproduced with squatting and with ascending or descending stairs. With both of these activities you note dynamic valgus at knee (internal rotation and adduction of femur). There has been no acute injury, but started feeling it after a long run 3 weeks ago. Pain has slowly increased since then with running so has stopped running. You perform a Varus stress test which is negative. You perform Ober's test, which is positive. Lastly, there is tenderness to palpation at distal IT band. What is this patient's likely diagnosis?

- A. LCL sprain/tear
- B. Patellofemoral pain syndrome
- C. IT band syndrome
- D. Patellar tendonitis

21. Patient reports numbness and tingling from behind her knee down into her calf. Pain is worsened by sitting with legs crossed, but is better sitting with legs flat on the floor. Upon your functional exam you notice decreased dorsiflexion during gait. You perform a repetitive extension exam, and the patient reports no change in pain/numbness. What is the likely diagnosis for this patient?

- A. Common Peroneal Neuropathy
- B. Lateral Femoral Cutaneous Nerve
- C. Disc herniation of lumbar spine
- D. Calf strain

22. What are the Ottawa Ankle Rules?

- A. Lateral and Medial Malleolar Pain, Inability to weight bear 4 steps, Pain in the midfoot, Tenderness at 5th and tenderness at navicular
- B. Indirect fibular stress, Direct medial malleolar stress, midfoot and hindfoot compression
- C. Lateral and Medial Malleolar Pain only
- D. Midfoot and Hindfoot compression only

23. Same patient as in question #2: What assessment would be most appropriate in determining which segment in the lumbar spine is causing decreased mobility?
- A. Thomas Test
 - B. Lumbar Unilateral and Central Pas
 - C. Marcher's Test
 - D. Hip PROM
24. Your patient has decreased right ankle dorsiflexion noticed in functional assessment of squat and gait. You measure her ankle dorsiflexion in prone with full knee extension and dorsiflexion measures to 2 degrees dorsiflexion. You then measure her ankle dorsiflexion in prone with knee flexed to 90 degrees, and dorsiflexion measures to 10 degrees dorsiflexion. What does this tell you?
- A. The talocrural joint is stiff
 - B. The knee extension ROM is limited
 - C. Gastrocnemius and Soleus stiffness
 - D. Both the talocrural joint and the gastrocnemius and soleus are stiff
25. What type of strengthening is necessary for proper rehabilitation of achilles tendonitis?
- A. Any type of strengthening, it just needs to get stronger
 - B. No stretching and necessary, stretching is more appropriate
 - C. Concentric strengthening
 - D. Eccentric strengthening
26. What is the primary movement fault of Posterior Tibialis tendonitis?
- A. Insufficient Plantarflexion
 - B. Excessive Pronation
 - C. Internal rotation and Adduction of the femur due to hip weakness

D. Insufficient 1st MTP extension

27. Where is pain located with Posterior Tibialis tendonitis?

- A. Posterior to the medial malleolus
- B. Posterior to the lateral malleolus
- C. Talocrural joint or anterior ankle
- D. In the calf primarily (posterior lower leg)

28. A patient arrives for physical therapy with left anterior ankle pain while walking. What assessments would you use to confirm a diagnosis of Anterior Tibialis Tendonitis?

- A. Palpation, MMT, and stretch the Anterior Tibialis all with pain
- B. PROM will be limited in all directions with a hard end feel
- C. MMT of Gluteus Maximus
- D. It is probably not Anterior Tibialis Tendonitis because it usually does not hurt at the anterior ankle

29. What is the appropriate ICF category for an Inversion Ankle Sprain?

- A. Ankle Pain with Muscle Power Deficits
- B. Ankle and Foot Pain with Mobility Deficits
- C. Heel Pain
- D. Ankle Stability and Movement Coordination Impairment

30. A patient arrives to physical therapy with pain at her right posterior ankle over Achilles Tendon. During your functional movement exam this patient demonstrates insufficient dorsiflexion during gait and with squatting on her right side. Upon palpation you notice a bump over her Achilles tendon, and pain with palpation. The patient also has pain at the Achilles tendon with stretching and contracting the gastrocnemius/soleus complex. Please select the appropriate diagnosis and ICF category for this patient below.

- A. Diagnosis: Posterior Tibialis Tendonitis, ICF: Ankle Pain with Muscle Power Deficits
- B. Diagnosis: Achilles Tendonitis, ICF: Ankle Pain with Muscle Power Deficits
- C. Diagnosis: Ankle Osteoarthritis, ICF: Ankle and Foot Pain with Mobility Deficits
- D. Diagnosis: Achilles Tendonitis, ICF: Heel Pain

31. What ligaments are affected with an Inversion Ankle Sprain?

- A. Distal Tib Fib Syndesmosis
- B. Anterior Cruciate and Posterior Cruciate Ligaments
- C. ATFL and Calcaneofibular Ligaments
- D. Deltoid ligaments

32. Please select the appropriate special test for Plantar Fasciitis:

- A. Anterior Drawer Test
- B. Squeeze Test
- C. Windless Test
- D. There is no special test for plantar fasciitis

33. True/False: Plantar Fasciitis is a sign of too much motion in the foot:

- A. True
- B. False

34. What scenario would you use Overpressures for the lumbar spine?

- A. When you do AROM and they feel pain in their low back
- B. When you do AROM and they feel pain in their low back and radiating pain to a LE
- C. When you do AROM and they feel no reproduction of their pain
- D. When you do AROM and the start to feel weakness

35. What nerve is involved with Morton's Neuroma?
- A. Intermetatarsal Plantar Nerve
 - B. Peroneal Nerve
 - C. Baxter's Nerve
 - D. Medial Calcaneal Nerve
36. A patient arrives for physical therapy with chronic heel pain. This patient notes that when she is walking a lot (about 30-40 minutes) she starts to get numbness/tingling in the foot and heel and has to stop. Patient does not have reproduction of pain with palpation at the medial calcaneal tubercle, but does have reproduction of pain with palpation to Abductor Hallucis. What is this patient's diagnosis and ICF category?
- A. Diagnosis: Morton's Neuroma, ICF: Ankle and Foot Radiating Pain
 - B. Diagnosis: Plantar Fasciitis, ICF: Heel Pain
 - C. Diagnosis: Tarsal Tunnel Syndrome, ICF: Heel Pain
 - D. Diagnosis: Plantar Neuropathy, ICF: Ankle and Foot Radiating Pain
37. USE THE CASE IN QUESTION 41 ABOVE TO ANSWER THE FOLLOWING: Which nerve would you want to assess with the straight leg raise test?
- A. Peroneal nerve
 - B. Medial Calcaneal Nerve
 - C. Tibial Nerve
 - D. Sural Nerve
38. USE THE CASE IN QUESTION 41 ABOVE TO ANSWER THE FOLLOWING: What positioning of the foot would allow you to assess this nerve?
- A. Plantarflexion and Inversion of ankle, then take them into a SLR test
 - B. Dorsiflexion and Inversion of ankle, then take them into a SLR test

- C. Dorsiflexion and Eversion of the ankle, then take them into a SLR test
- D. Dorsiflexion, then take them into a SLR test

39. What is an asterisk sign?

- A. A painful movement or activity you can retest after your treatment to see if your treatment has improved their symptoms
- B. Something that does not hurt so you can go back to it to improve symptoms when they get flared up
- C. A painful activity, but you do not want to retest it ever because it is painful
- D. Always involves squatting with every diagnosis

40. What grade for reflexes would demonstrates “normal, typical reflex”?

- A. 0
- B. 1+
- C. 2+
- D. 3+

41. If you want to assess internal rotation and adduction of the femur, what order of assessment would be most appropriate (easiest to hardest)?

- A. Squat, SL stance, Step up, Step down
- B. SL stance, Squat, Step down, step up
- C. Squat, Step up, step down, SL stance
- D. Step up, Step down, SL stance, Squat

42. If you want to improve knee extension, what direction accessory glide of the tibia would you perform?

- A. Posterior glide
- B. Anterior glade
- C. Medial glide
- D. Lateral glide

43. How many weeks post ACL repair surgery is the graft healed and you can progress to more dynamic stabilization and single limb exercises?
- A. Week 4
 - B. Week 6
 - C. Week 8
 - D. Week 16
44. After an ACL repair, what testing is necessary before returning to playing their sport?
- A. Hop testing
 - B. Quad strengthening isolation Testing
 - C. Gluteal strengthening isolation Testing
 - D. Static single limb squat Testing
45. If a patient has an anterior rotated innominate on the right side, which muscles would you activate for an isometric mobilization to correct?
- A. Isometric contraction of the Transversus Abdominis
 - B. Isometric Contraction of Hip extensors on the left and Hip flexors on the right
 - C. Isometric Contraction of the Hip extensors and the right and Hip flexors on the left
 - D. Isometric Contraction of Hip extensors on the right and Transversus Abdominis
46. Why is categorizing diagnoses in the ICF categories important?
- A. ICF creates practice guidelines. It creates a type of language for PT clinicians, instructors, students, etc. in order to know the functional limitations of the patient separate from their diagnosis.

- B. It's not important if you know the diagnosis
 - C. Because it's easier to inform the patient without telling them their diagnosis
 - D. It tells you what is exactly weak or strong on the person
47. A patient arrives for physical therapy with low back pain and right leg pain. She reports pain in both low back and leg worsening with sitting long periods, and any flexed position. Upon observation you see the below picture. What diagnosis and ICF category would you put this patient in?
- A. Diagnosis: Disc Herniation, ICF: Low back pain with Mobility deficit
 - B. Diagnosis: Disc Herniation, ICF: Low back pain with related leg pain
 - C. Diagnosis: Stenosis, ICF: Low back pain with radiating leg pain
 - D. Diagnosis: Facet Joint Restriction, ICF: Low back pain with Mobility deficit
48. Same patient as #6: Given the above observation, what would be the most beneficial assessment/treatment to start with?
- A. Prone on Pillows
 - B. Prone on bed progressing to prone on elbows
 - C. Standing lumbar extension
 - D. Lateral shift correction
49. If you see a patient lying supine and they demonstrate excessive extension, what test would this cue you to use (see picture below)?
- A. Thomas Test
 - B. Piriformis length Test
 - C. SI Distraction Test
 - D. Marcher's Test
50. You have a patient that arrives with complaints of right groin pain and stiffness. Patient reports no clicking or popping in Subjective. Upon examination you note decreased right hip AROM and PROM, end feels are

hard, and accessory mobility is very limited. What diagnosis and ICF category would you put this patient in?

- A. Diagnosis: Disc Herniation, ICF: Low back pain with related leg pain
- B. Diagnosis: Right Hip Labral Tear, ICF: Hip pain with Stability Impairment
- C. Diagnosis: Right Hip OA, ICF: Hip pain with Mobility deficits
- D. Diagnosis: Right Hip OA, ICF: Hip pain with Movement Coordination deficits

AMMU