



## Questions

1. If a magnetic resonance image (MRI) correctly identifies 95% of patients as positive for anterior cruciate ligament tears, then the MRI is:

- A. Sensitive
- B. Specific
- C. Significant
- D. Stable

The correct answer is:

- A. This is the correct answer. A test that is sensitive will correctly identify the true positives. With high sensitivity, a test that is negative will likely mean that you can rule OUT the condition because positives are so reliable.
- B. Specificity is the % of true negatives identified. With high specificity, a test that is positive will rule IN the condition because the negatives are so reliable.
- C. Statistically significant would mean the result is likely NOT due to chance.
- D. Stable would mean the result does not fluctuate.

2. A 20 year old male soccer player presents with a Grade II right lateral ankle sprain upon evaluation. What are the characteristics of a Grade II ankle sprain?

- A. Partial tear of the lateral ligament complex with mild joint instability, moderate intra-capsular swelling and tenderness, and some loss of ROM and joint function
- B. Complete rupture of the anterior talofibular ligament, calcaneofibular ligament, and capsule with mechanical joint instability; severe intra/extra-capsular swelling, ecchymosis, tenderness and inability to weight-bear.
- C. Stretch of the lateral ligament complex with no macroscopic tear or joint instability, little swelling or tenderness
- D. Partial tear of the syndesmosis, creating generalized swelling and tenderness throughout the ankle joint complex; inability to bear weight, severe ecchymosis, and mortise widening.

The correct answer is:

- A. This is the correct answer. This describes a Grade II lateral ankle sprain.
- B. This describes a severe or Grade III lateral ankle sprain.
- C. This describes a mild or Grade I lateral ankle sprain.
- D. This describes a “high” ankle sprain, or Syndesmosis sprain.



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3. An 11 year old male presents to the physical therapy clinic with signs of hypertonicity related to cerebral palsy. The boy has significant shortening of the left sternocleidomastoid muscle, creating a severe torticollis to the right. This has led to a pressure ulcer forming on his right ear from contact with the wheelchair headrest. The MOST appropriate course of action is to:

- A. Begin a course of active-assisted range of motion exercises, focusing on the upper extremities and creating a home program to improve shoulder active range of motion.
- B. Inform the patient's family that the child should not be in a wheelchair to prevent the formation of any more pressure ulcers and decrease pain associated with torticollis.
- C. Inform the primary care provider of the child and request him/her to order an oral prescription of Baclofen because the child has developed a tolerance for the current dosage.
- D. Begin a course of passive range of motion stretches, focusing on the neck, and instruct the patient's family on proper positioning and wheelchair adjustments to decrease the likelihood of future ulcers.

The correct answer is:

- A. This is a distractor option that does not address torticollis or ear ulceration. While shoulder range of motion exercises may not be harmful or cause problems, it certainly won't solve this one.
- B. This will solve the ulceration problem, but when does a physical therapist ever put a patient on bed rest? This is not the MOST appropriate course of action.
- C. Getting an increase dosage of Baclofen may be part of the solution, but there are several issues with this item. If the patient is affected enough to develop ulceration from positioning, he likely won't be able to tolerate oral Baclofen (he will have to receive it intrathecally). Also, Baclofen use does not generally create tolerance to the drug requiring higher doses.
- D. This is the MOST correct answer. It is straightforward in describing a course of action that focuses on treating the hypertonic neck muscles, but also addresses positioning and family/patient education.



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4. A patient with a stroke affecting the right middle cerebral artery has difficulty walking, especially over uneven surfaces. Which of the following describes the MOST appropriate initial treatment to improve the patient's ability to walk over uneven surfaces?

- A. Place a single point cane in the patient's left hand and train him to use a step-to gait pattern.
- B. Place a single point cane in the patient's right hand and train him to use a step-to gait pattern.
- C. Fit the patient with a 4-wheeled walker and instruct him to use a 4-point gait pattern.
- D. Fit the patient with axillary crutches and instruct him to use a 4-point gait pattern.

The correct answer is:

- A. This answer is correct except for the hand placement. With a stroke in the right MCA, the patient's left side will be affected, requiring the cane to be in the right hand.
- B. This is the correct answer. The question indicates that the patient has difficulty with uneven surfaces, implying that even surfaces are not as difficult. Thus using a SPC with a swing-to gait pattern would be the most correct initial treatment.
- C. This answer is a distractor. You cannot use a 4-wheeled walker to create a 4-point gait pattern.
- D. Axillary crutches would be a possibility; however, the 4-point gait pattern is typically used for individuals with a very low tolerance of ambulation and would not be ideal for traversing uneven terrain. Also, it is not specified, but stroke patients often have both the lower extremity and upper extremity affected, making it difficult to negotiate axillary crutches.

5. A physical therapist evaluating a 66 year old female who has a history of severe head trauma following a motor vehicle accident. The patient has difficulty with rapid alternating movements while performing neurologic testing. The BEST term to describe this specific impairment is:

- A. Ataxia
- B. Dysmetria
- C. Dysarthria
- D. Dysdiadochokinesia

The answer is:

- A. Ataxia is a global term comprising inaccuracy and decomposition of movement. Although this encompasses many forms of movement impairments, it is too general to describe difficulty with rapid alternating movement.
- B. Dysmetria is defined as a decreased ability to judge distance and range.
- C. Dysarthria is defined as a motor impairment involving the muscles used in speech and breathing.
- D. This is the correct answer. By definition, dysdiadochokinesia is an impairment specifically involving rapid alternating movements, such as pronating and supinating one's hands quickly.



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6. A 79 year old female presents to outpatient rehabilitation services 6 weeks following a CVA with right hemiplegia. She complains of right shoulder pain working on functional upper extremity movements and has severe shoulder pain when practicing bed mobility activities such as rolling and scooting. On examination, it is observed that the humeral head is inferiorly displaced. Which of the following would be the MOST appropriate for her condition?

- A. Transcutaneous Electrical Nerve Stimulation (TENS)
- B. Functional Electrical Stimulation (FES)
- C. Short Wave Diathermy (SWD)
- D. Interferential Current (IFC) Stimulation

The correct answer is:

- A. TENS is a powerful modality that will treat pain in many individuals. This woman does complain of pain, but the impairment of an inferiorly displaced humeral head is also mentioned. TENS will have little effect on this displacement.
- B. FES is the correct answer. Using FES to help elevate her shoulder will treat the displacement and ideally eliminate the source of pain.
- C. SWD is a pain relief modality that is not used often.
- D. IFC is another form of TENS, and will not help much with the displaced humeral head.

7. A 30 year old male presents to outpatient rehabilitation with numbness and tingling on the 4th and 5th fingers of the left hand consistent with nerve entrapment symptoms. Upon further examination, it is noted that the patient has normal sensation on the dorsum of the hand on the ulnar side. Where is the MOST likely source of nerve entrapment?

- A. Guyon's Canal
- B. Carpal Tunnel
- C. Cubital Tunnel
- D. 1st Rib

The correct answer is:

- A. Guyon's Canal is the correct answer. The ulnar nerve provides the sensory innervation for the 4th and 5th digits, narrowing the answer to either the Cubital Tunnel or Guyon's Canal. The ulnar nerve has a dorsal cutaneous branch that innervates the dorsum of the hand. Because dorsal sensation is intact, the nerve must be trapped at Guyon's Canal.
- B. The median nerve passes through the Carpal Tunnel and does not innervate the 4th and 5th digits.
- C. Entrapment at the Cubital tunnel would not typically leave any sensation on the dorsum of the hand on the ulnar side.
- D. Thoracic Outlet Syndrome would have entrapment at the 1st rib, but sensation loss would occur in a similar manner to entrapment at the Cubital tunnel.



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8. A 45 year old male presents to the burn unit with partial thickness burns over the entire right arm, left arm, front of head, and front of chest. Approximately what percentage of his body is burned?

- A. 31.5%
- B. 36%
- C. 40.5%
- D. 45%

The answer is:

This question requires knowledge of the rule of nines: entire right arm = 9%, entire left arm = 9%, front of head = 4.5%, front of chest = 18%. Total = 40.5%, correct answer is c.

9. A patient presents to the inpatient rehabilitation unit who has suffered a vertebro-basilar CVA and has difficulty depressing the eye from an adducted position. Which cranial nerve is the MOST likely cause of this impairment?

- A. CN I
- B. CN II
- C. CN III
- D. CN IV

The answer is:

Cranial nerve testing for ocular movements is performed using the “H” pattern to assess tracking movements. Difficulty adducting and depressing the eye is indicative of Trochlear nerve involvement (CN IV).

10. A 59 year old male patient is being evaluated for left shoulder pain. The patient reports that his shoulder pain is closely associated with activity, including stress at work. The patient reports that at worst, the pain radiates into his neck, and he feels shortness of breath which subsides with rest. What would the MOST appropriate intervention be?

- A. Begin passive range of motion exercises within the pain free range of motion.
- B. Postpone treatment and refer the patient to his physician for further evaluation.
- C. Apply modalities to the shoulder and instruct the patient on activity modification.
- D. Begin the patient with rotator cuff exercises within the pain reduced range of motion and instruct patient on activity modification.

The correct answer is:

- A. PROM is an excellent treatment for sore shoulders, but the patient is presenting with signs and symptoms consistent with cardiac distress, not musculoskeletal pain.
- B. This is the most appropriate initial action. The patient is having signs of cardiac distress that would be worsened with activity.
- C. This is not appropriate considering the above information.
- D. The pain is not originating from the rotator cuff, thus this would be a poor choice.



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11. A 35 year old patient with a complete T5 spinal cord injury is working on supine to sit transfers on the mat table when he suddenly appears flushed and complains of his heart pounding. Upon examination, his blood pressure is 180/100 and he has a pounding headache. The most appropriate INITIAL course of action is:

- A. Lay the patient supine and notify the patient's physician.
- B. Sit the patient up and notify the patient's physician.
- C. Allow the patient to rest longer between sets of activity.
- D. Initiate core strengthening exercises to maintain intraabdominal pressure.

The correct answer is:

- A. This is not correct because putting the patient in supine will exacerbate the autonomic dysreflexia.
- B. This is the correct answer. By sitting the patient up, you decrease the blood pressure in the head and mitigate the effects of the dysreflexia.
- C. This is incorrect considering that autonomic dysreflexia is a life-threatening condition
- D. Also incorrect.

12. A 21 year old female patient presents with neck pain and stiffness that has gradually worsened over the last two weeks. Upon examination, the patient is noted to have pain with left side bending with left rotation and reports pain on the left at the C5-6 junction. Hypomobility is also noted with right side-gliding of C6. Which of the following techniques will be most appropriate to decrease pain?

- A. Closing technique for the mid-thoracic spine.
- B. Closing manipulation in extension for C5-C6
- C. Gapping manipulation in flexion for C5-C6.
- D. Flexion/opening manipulation for mid-thoracic spine

The answer is:

- A. The cervical spine “closes” with side-bending and ipsilateral rotation (i.e. “closed” with left SB and left rot.). Manipulating the thoracic spine for neck pain is a common treatment strategy, however the specific issues noted in the question require more than just a nonspecific t-spine manip.
- B. This is the correct answer. The hypomobility is noted at C6 with right side-gliding and pain with left SB and rotation.
- C. This would be the treatment if the pain were on the right with the left SB and rotation. (Difficulty “opening” the right C5-6 facet joint.
- D. Refer to #1. Not the MOST appropriate manipulation, however this could be used as an adjunct to #2.



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13. A 22 year old female presents to the clinic with a chief complaint of knee pain following a twisting injury while playing soccer 5 days ago. The patient's knee is swollen significantly and is unable to jump or run. What special test would be the MOST appropriate to diagnose the injury?

- A. Lachman's test
- B. Posterior drawer test
- C. Active Lachman's test
- D. External Rotation Recurvatum Test

The correct answer is:

- A. This is the most correct answer. The overwhelming majority of injuries to female soccer players is to the ACL, especially with a running/twisting injury and swelling. In addition, the Lachman's test is validated well by multiple studies.
- B. PCL's are an issue with twisting injuries, but not to the extent that ACL's are.
- C. Active Lachman's test has not had near the validation that the plain-vanilla Lachman's test has.
- D. Good test, but not the MOST appropriate.

14. A geriatric patient with "walking" pneumonia and a history of recent falls is receiving physical therapy for general strengthening. What part of this person's treatment is affected MOST by his lung condition?

- A. Decreased stamina/tolerance of activity
- B. Inability to participate in endurance type activities
- C. Diminished tidal volumes
- D. Lower oxygen saturation with moderate activity

The correct answer is:

- A. This is the correct answer. Having a "walking" pneumonia and history of falls indicates a decreased tolerance of activity/stamina will likely slow therapy the most.
- B. This is related to number 1, but the patient's treatment will focus on easy endurance type activities. The patient will be able to participate some.
- C. Diminished tidal volume will be a part of the issue, but can be monitored and controlled with coaching.
- D. This is related to number 3, but will not be the MOST affected portion because it will be difficult for this patient to perform much moderate intensity activity.



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15. A patient complains of pain in the right hip while she is ambulating. Upon examination, you notice that the patient has a significant drop of the left hip while in midstance on the right leg. The MOST appropriate treatment for this impairment would be:

- A. Standing hip abduction of the left leg.
- B. Standing hip abduction of the right leg.
- C. Standing flexion of the left leg.
- D. Standing flexion of the right leg.

The correct answer is:

- A. This is the most correct answer. The patient is demonstrating a Trendelenburg gait with the weakness on the right hip abductors. The trick (and this is very true in the clinical world) is that while standing on the involved hip and abducting the opposite, you are loading the right hip (closed-chain) more than the left hip (open chain). Thus you are MORE effective at strengthening the right hip abductors by using the closed chain exercise.
- B. Good, but this open chain activity for the right hip abductors is not as appropriate as a closed-chain activity.
- C. Not directly related to the impairment.
- D. Same as (c).

16. A patient presents to the clinic with signs of lethargy and mild dizziness. The patient's resting blood pressure is 100/70. Which of the following is MOST likely to cause this decrease in blood pressure?

- A. Lisinopril
- B. Prednisone
- C. Sertraline
- D. Metformin

The correct answer is:

- A. This is the correct answer. Lisinopril is an ACE inhibitor and is used primarily for the treatment of hypertension.
- B. This is used to treat inflammatory diseases and is typically not associated with decreases in blood pressure.
- C. Sertraline treats depression and is typically not associated with decreases in blood pressure.
- D. Metformin controls blood sugar in Type II Diabetes and is not typically associated with decreases in blood pressure.





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17. A patient presents to the clinic with right shoulder pain and complains of difficulty reaching overhead, with pain especially from 60-120 degrees of shoulder flexion. Which special test would be MOST informative for this set of symptoms?

- A. Neer Test
- B. Empty Can Test
- C. Crossover Test
- D. Push Off Test

The correct answer is:

- A. This is the correct answer. The Neer Test is a test for subacromial impingement and is typically associated with the painful arc.
- B. The Empty Can Test assesses supraspinatus pathology.
- C. The Crossover Test checks for AC Joint pathology
- D. The Push Off Test assesses strength and integrity of the subscapularis, one of the rotator cuff muscles.

18. A patient is in the inpatient rehabilitation unit for a total knee replacement. While reviewing the case, you note that the patient has been diagnosed with an infection of Methicillin-resistant Staphylococcus aureus (MRSA) and is in an isolation room. What is the MOST appropriate action to take to prevent contamination?

- A. Don gown, mask, gloves, and respirator before entering the room, wash hands after.
- B. Limit therapy sessions to less than 15 minutes and limit contact during treatment.
- C. Don gloves when in contact with the patient and wash hands after.
- D. Wash hands before and after contact with the patient, but do not touch the patient.

The correct answer is:

- A. This is the most conservative of precautions that is used for droplet precautions, especially the mask. MRSA requires contact precautions.
- B. This is not appropriate.
- C. Hand washing and gloves are the MOST appropriate. If you anticipate extensive contact, donning a gown would also be appropriate for Contact Precautions.
- D. This is not appropriate.



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19. A 32 year old female presents to the clinic complaining of left shoulder pain. The patient's symptoms include pain with reaching and limited motion in all planes. The patient's symptoms have been progressively worsening over the last month. What would be the MOST effective initial treatment?

- A. Refer the patient to their primary care provider for intracapsular corticosteroid injections.
- B. Begin gentle progressive stretching exercises with the focus on increased active range of motion.
- C. Initiate rotator cuff strengthening exercises, focusing on external rotation.
- D. Instruct the patient on Codman pendulum exercises and apply a moist heat pack.

The correct answer is:

- A. While corticosteroid injections can be a helpful to achieve short term results, there is little evidence they have long term effects.
- B. This is the most correct answer. An effective treatment program for adhesive capsulitis should use gentle progressive stretching as the primary treatment.
- C. This is not appropriate considering the symptoms of adhesive capsulitis.
- D. This is not appropriate.

20. While treating a patient for cardiac rehab, a physical therapist relies on the Borg RPE scale. The Borg rating of perceived exertion scale (RPE) is MOST representative of which type of data scale?

- A. Nominal
- B. Ordinal
- C. Cardinal
- D. Marginal

The correct answer is:

- A. Nominal scales are used to indicate categories that are not higher or lower (example: race, gender, etc.)
- B. Ordinal scales are used to represent data that is comparatively higher or lower than other data. This is the most correct answer.
- C. Cardinal scales are used when there is an absolute zero and are quantitative. Age and weight are good examples of these.
- D. Not related.



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21. A physical therapist is trying to determine which special test to use for an examination and is researching the statistical values of each. What is the MOST important statistical attribute a special test must have to effectively limit Type I errors?

- A. Sensitivity
- B. Specificity
- C. Positive likelihood ratio
- D. Negative likelihood ratio

The correct answer is:

- A. High sensitivity effectively limits type II errors (False negatives). In essence, high sensitivity indicates that if the test is negative, you can effectively rule out the condition, with very few false negatives.
- B. High specificity effectively limits type I errors (False Positives). High specificity indicates that if the test is positive, you can effectively rule IN the condition with very few false positives.
- C. Positive likelihood ratios indicate likelihood that a positive test is accurate. This does relate to Type I errors, however the calculation to create the LR+ uses the raw sensitivity and specificity and is used to compare one test to another in the likelihood of accurate positives.
- D. Negative likelihood ratios indicate likelihood that a negative test is accurate. This relates to Type II errors, and is calculated in a similar way to positive likelihood ratios.

22. A physical therapist is evaluating a 50 year old patient with a generally swollen right leg. The patient does not report any trauma to the leg and describes the swelling as increasing gradually over the last 12 months. The swelling is non-pitting, primarily below the knee. The leg is not red or hot, and the patient indicates that his leg just feels “heavy.” What is the MOST likely origin of the swelling?

- A. Systemic infection
- B. Chronic inflammation
- C. Congestive heart failure
- D. Lymphedema

The correct answer is:

- A. Swelling from a systemic infection would not be insidious over 12 months (thus acute) and would be associated with redness and hotness.
- B. Swelling from chronic inflammation would likely be associated with some type of trauma or pain, and is not the MOST appropriate response.
- C. Congestive heart failure can cause swelling, but is more likely to be pitting and more generalized.
- D. Lymphedema is the correct answer. This condition is typically associated with a “heaviness” that appears gradually and usually involves non-pitting edema.



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23. A physical therapist is evaluating a patient with pain that radiates throughout his lower extremities. The patient has significant foot drop while ambulating and complains of numbness and tingling extending from the great toe up to the knee along the anterior leg. What is the MOST likely pathology underlying these symptoms

- A. Sciatic nerve entrapment
- B. Deep peroneal nerve inflammation
- C. Tibial nerve entrapment
- D. L5 nerve root entrapment

The answer is:

- A. Sciatic nerve entrapment can occur and cause symptoms radiating down the posterior leg. Foot drop is not common with this condition.
- B. Deep peroneal nerve inflammation can lead to drop foot; however the deep peroneal nerve only innervates a small portion of the dorsum of the foot, thus eliminating this choice.
- C. Tibial nerve entrapment would affect the posterior leg, extending to the heel. Motor loss would be present in the plantarflexors.
- D. This is the correct answer. Tibialis anterior weakness and sensory loss along the anterior leg below the knee are the most common signs of L5 nerve root entrapment.

24. A patient has right leg pain and displays redness and swelling throughout the foot and ankle distal to the knee that has developed over the last 3 days. The patient reports no trauma and complains of a deep ache in the calf musculature. What is the MOST appropriate initial treatment?

- A. Refer to physician to further examination.
- B. Elevate the lower extremity and apply an ice modality.
- C. Instruct the patient on range of motion exercises and begin a home exercise program.
- D. Perform instrument assisted manual soft tissue mobilization to decrease the swelling.

The correct answer is:

- A. This is the correct answer. Symptoms of a DVT include redness and swelling combined with a deep ache. Suspected DVT's should be ruled out before beginning treatment.
- B. While this may help alleviate some of the symptoms, applying an ice pack in elevation is not the MOST appropriate initial treatment.
- C. Again, this may help with swelling, but is not the MOST appropriate treatment.
- D. This could dislodge the DVT which could travel and create a pulmonary embolism. This is contraindicated until diagnostic ultrasound can rule out any DVT's.



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25. A patient with cystic fibrosis is receiving postural drainage and percussion for the right lung's middle lobe. What is the MOST appropriate patient position?

- A. Supine on a wedge with the left shoulder elevated on pillows with the head lower than the pelvis.
- B. Supine on a wedge with the right shoulder elevated on pillows with the head lower than the pelvis.
- C. Prone with the right shoulder elevated on pillows and the head on the same plane as the pelvis.
- D. Prone with the left shoulder elevated on pillows and the head on the same plane as the pelvis.

The correct answer is:

- A. This is the drainage position for the left lingular lobe.
- B. This is the correct position and is most appropriate for the right middle lobe.
- C. This is the drainage position for the right posterior lower lobe.
- D. This is the drainage position for the left posterior lower lobe.

26. A patient is being evaluated by a physical therapist for a diabetic ulcer that penetrates the subcutaneous tissue, extending into the subcutaneous fat and fascia but without any gangrene or osteomyelitis present. The physical therapist wishes to document the severity of the ulcer. What is the MOST appropriate objective measure of the wound?

- A. Measure the depth and shape of the ulcer and classify it as a Grade 2 ulcer on the Wagner Ulcer Grade Classification System.
- B. Measure the depth and shape of the ulcer and classify it as a Grade 3 ulcer on the Wagner Ulcer Grade Classification System.
- C. Measure the depth and shape of the ulcer and classify it as a Grade 4 ulcer on the Wagner Ulcer Grade Classification System.
- D. Measure the depth and shape of the ulcer and classify it as a Grade 5 ulcer on the Wagner Ulcer Grade Classification System.

The correct answer is:

- A. This is the correct answer. As a physical therapist, you should always document depth and shape of the ulcer. Grade 2 on the Wagner Scale is defined as a deep ulcer penetrating into the subcutaneous tissue, but without gangrene. The Wagner scale is commonly used to classify diabetic ulceration.
- B. Grade 3 is defined as a wound extending into the bone and tendon with osteomyelitis present.
- C. Grade 4 is defined as a wound with a small (size of 1 digit) amount of gangrene.
- D. Grade 5 is defined as a wound with a large amount of gangrene, indicating the need for amputation of the involved limb.



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27. A physical therapist is evaluating a patient with ulceration on the lower extremity. The leg is apparently swollen and red upon examination. The wound is irregularly shaped and feels hot to the touch. Which of the following grouping of symptoms is MOST consistent with this type of ulceration?

- Ulceration is on the lateral leg, pulseless, cool, and painful.
- Ulceration is medial leg, shows permanent blanching, and is painless.
- Ulceration is upon bony prominences, shows non-blanchable redness at the perimeter of the wound, and has a pink appearance.
- Ulceration is upon the bony prominence, began as a small scrape or blister several months ago, with a concomitant diagnosis of diabetic neuropathy.

The correct answer is:

- These are the most common symptoms of arterial insufficiency ulcers.
- This is the correct answer. Venous insufficiency ulcers are typically less painful than arterial ulcers.
- These are symptoms common to pressure ulcers.
- These are symptoms consistent with diabetic ulceration.

28. A physical therapist is performing a treadmill exercise stress test using the Bruce protocol. During stage 3 of the test, the P wave increases in height and the S-T segment begins to become significantly upsloping. What is the MOST appropriate course of action?

- Stop the test and refer patient to a physician.
- Lower the stage back to stage 2 and monitor for improved electrocardiographic indicators.
- Continue with the test without any modification, monitoring for symptoms of cardiac distress.
- Discontinue the test, and monitor the patient's vital signs for 10 minutes.

The correct answer is:

- The Bruce Protocol for an exercise stress test involves using a 12-lead ECG monitor to evaluate the amount of stress placed on the heart. You would stop the test if there was S-T elevation or depression, or the signs of a number of other ECG signs wave increases and S-T upsloping are normal responses to a stress test.
- This is not appropriate for the Bruce Protocol.
- This is the correct answer. Both of these signs are normal responses to the stress test.
- If the patient requested to stop, this would be the appropriate action. Because it is not mentioned in the question, this is NOT the most appropriate course of action.



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29. A patient is receiving cardiac rehab and has a heart rate of 110 during moderate intensity exercise. The patient reports a 16 on the Borg RPE scale. Which class of heart medications is MOST likely present?

- A. Beta Blockers
- B. Angiotensin-Converting Enzyme (ACE) Inhibitors
- C. Calcium Channel Blockers
- D. Angiotensin II Receptor Blockers

The correct answer is:

- A. This is the correct answer. Beta blockers work on the beta-adrenergic receptors to decrease sympathetic responses to stress, primarily the heart rate. The Borg Scale should represent Heart Rate divided by 10. Thus there is a disparity in heart rate and exertion, indicating a blunted heart rate.
- B. ACE inhibitors block the angiotensin-converting enzyme to prevent vessel constriction during sympathetic responses to stress, primarily blood pressure.
- C. Calcium channel blockers work on the heart musculature to decrease the force of contraction, as well as decreasing the vasoconstrictive smooth muscle in the arteries. The primary response is decreased blood pressure.
- D. Angiotensin II Receptor Blockers do not prevent the angiotensin I to angiotensin II conversion; rather, they block the receptors of angiotensin II and have an effect similar to the ACE inhibitors.

30. A 12 year old male athlete is being evaluated by a physical therapist. The patient reports pain with running and has a sharp pain over the patellar tendon, particularly on the tibial tubercle. Which of the following disorders is MOST likely present?

- A. Legg-Calvé-Perthes' disease
- B. Chondromalacia patellae
- C. Osgood-Schlatter disease
- D. Pes anserine bursitis

The correct answer is:

- A. Legg-Calvé-Perthes' disease is characterized by loss of blood supply to the head of the femur and subsequent bone death. The cause is often unknown and typically occurs in boys from 4-10 years old.
- B. Chondromalacia patellae are characterized by cartilage loss or disturbance underneath the patella. This is evinced by pain with knee motion, but not a painful tibial tubercle.
- C. This is the correct answer. Osgood-Schlatter disease is characterized by a painful bump over the tibial tubercle and pain with sporting activities. This is most common in young children who are very active in sports, particularly males.
- D. Pes anserine bursitis is characterized by pain at the insertion of the sartorius, gracilis, and semitendinosus, which is medial to the tibial tubercle by 3-4 cm.



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31. A patient is recovering from a broken tibia and has just been instructed to discontinue use of a walking boot. The patient demonstrates excessive pronation and complains of pain and instability in the ankle while ambulating. Which of the following is the MOST appropriate treatment?

- A. Begin a single leg standing program and advance to eccentric calf strengthening as tolerated.
- B. Begin with open-chain exercises and progress to closed-chain strengthening of the ankle as tolerated.
- C. Begin with closed-chain exercises and progress to open-chain strengthening of the ankle as tolerated.
- D. Begin a strengthening program involving primarily ankle evertors, progressing as tolerated.

The correct answer is:

- A. This is a good answer, but not the MOST correct.
- B. This is the correct answer. Progressive strengthening of the ankle will be the MOST appropriate treatment.
- C. This answer is backwards and not the most appropriate.
- D. This may be a part of the program, but is not the most appropriate treatment for ankle weakness after discontinuing a walking program.

32. A patient reports pain around the anterior aspect of the calcaneus extending toward the 2nd metatarsal head. The patient has the most pain when first standing up after waking which gradually lessens throughout the day. The patient has recently begun a walking program. Which of the following disorders is MOST likely present?

- A. Medial deviation of the 1st metatarsal
- B. Plantar fasciitis
- C. Metatarsalgia
- D. Tarsal tunnel syndrome

The correct answer is:

- A. A bunion or medial deviation of the 1st metatarsal presents with pain over the medial side of the head of the 1st metatarsal.
- B. This is the correct answer. Plantar fasciitis is typically associated with pain at the anterior portion of the calcaneus and increased symptoms with the first steps of the day that gradually decreases.
- C. Metatarsalgia is pain localized under the ball of the foot, typically under the head of the first metatarsal.
- D. Tarsal tunnel syndrome presents with numbness and pain throughout the first 3 toes secondary to the tibial nerve being compressed.





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33. A physical therapist is evaluating a patient with back pain. The patient reports having pain that has increased steadily over the last 2 months and is constant and unremitting. The pain radiates into both lower extremities. The patient also feels marked weakness throughout the right lower extremity. What is the MOST appropriate initial treatment?

- Discontinue treatment and refer patient to primary care physician for further testing.
- Begin a program of core strengthening, focusing on transversus abdominis training and progressing toward a long term stabilization program.
- Instruct the patient in appropriate lower extremity exercises to improve leg strength, focusing on the right leg.
- Initiate piriformis stretching as tolerated and instruct the patient in self mobilization techniques to improve mobility throughout the lumbar spine.

The correct answer is:

- This is the correct answer. Constant pain without any relation to position is a key indicator of spinal cancer.
- This would be appropriate for individuals with poor core strength and signs of hypermobility in the lumbar spine.
- This would be appropriate for signs of weakness.
- This would be appropriate for signs of piriformis syndrome.

34. After working for several hours as a mechanic, a patient describes sharp elbow pain over the origin point of the common extensor tendon of the wrist extensors. The pain is alleviated with rest. Which of the following disorders is MOST likely present?

- Medial epicondylitis
- Lateral epicondylitis
- Anconeus tendonitis
- Olecranon bursitis

The correct answer is:

- Medial epicondylitis presents with pain on the medial elbow over the flexor tendons.
- This is the correct answer. Pain is typically over the extensor tendons, especially on the insertion point of the lateral epicondyle. Repetitive motions involving mechanic work are also among common causes of lateral epicondylitis (tennis elbow).
- The anconeus assists in extension of the elbow and would present with pain over the olecranon process.
- Olecranon bursitis would present with pain and swelling over the olecranon process.



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35. A patient presents with rheumatoid arthritis and finger pain. The 2nd digit has a flexed metacarpophalangeal joint, hyperextended proximal interphalangeal joint, and a flexed distal interphalangeal joint. Which of the following is the MOST accurate description of the position?

- A. Swan neck deformity
- B. Boutonniere deformity
- C. Mallet finger deformity
- D. De Quervain syndrome

The correct answer is:

- A. This is the correct answer.
- B. Boutonniere deformity is just opposite of the Swan Neck
- C. Mallet finger involves just flexion of the DIP joint.
- D. De Quervain syndrome is tenosynovitis of the extensor pollicis brevis and abductor pollicis longus as they pass under the fascial sheath that covers the two tendons.

36. A physical therapist examines a patient and determines that the patient has a positive Active Compression test (O'Brien's Test). Which of the following pathologies is MOST implicated?

- A. Rotator cuff tear
- B. Biceps tendonitis
- C. Superior labral tear
- D. Acromioclavicular joint sprain

The correct answer is:

- A. RTC tears are indicated by tests such as the drop arm test, external rotation lag sign, and belly press test.
- B. This is indicated by tests such as Yergason's Test.
- C. This is the correct answer. The O'Brien's test is MOST indicative of SLAP tears.
- D. AC joint sprains are indicated by tests similar to the Cross-over test.

37. While examining a patient's lumbar x-ray films, a physical therapist notices that the L5 vertebra is displaced anteriorly on sacrum by approximately 50% of the vertebral body. How will this MOST affect physical therapy if the patient is being treated for low back pain?

- A. Emphasize core strengthening, especially in spine neutral
- B. Begin progressive gluteal and quad strengthening to assist the lumbopelvic fascia
- C. Avoid extension activities, especially in standing
- D. Add progressive external oblique training as tolerated to assist proper spinal alignment

The correct answer is:

- A. This is a great consideration, but not the MOST important of the choices.
- B. Good consideration, but not the MOST important of the choices.
- C. This is the correct answer. Extension activities will exacerbate any pain from this spondylolisthesis.
- D. Good consideration, but not the MOST important of the choices, very similar to #1.



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38. A physical therapist is treating a patient with cervical pain. The patient reports that the pain occurs with most movements and feels “stiff” with active range of motion. What is the MOST appropriate course of action?

- A. Refer to primary care physician for further testing.
- B. Initiate thoracic spine thrust manipulation.
- C. Instruct the patient on cervical spine stabilization exercises and issue a home exercise program.
- D. Initiate an upper extremity exercise routine to improve scapular and cervical range of motion and progress as tolerated.

The correct answer is:

- A. This is not appropriate as there are no red flags mentioned in the question
- B. This is the most appropriate action. Increasing amounts of literature suggest that for hypomobility of the neck, thrust manipulation of the thoracic spine can provide short-term improvements in patients with mechanical neck pain.
- C. The cervical spine is stiff and needs more mobility, not necessarily more stabilization, although postural activities could also benefit the patient. Of the choices presented, this is not the MOST appropriate.
- D. This is not the most appropriate initial action.

39. A patient has just undergone a total hip replacement via a posterior surgical approach. Which of the following combinations of movements of the hip are MOST important to avoid?

- A. Extension, medial rotation, and abduction.
- B. Extension, external rotation, and adduction.
- C. Flexion, medial rotation, and adduction.
- D. Flexion, external rotation, and abduction

The correct answer is:

The most correct answer is 3-flexion, medial rotation, and adduction. These are the standard precautions to avoid dislocation with a THA that used a posterior surgical approach.



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40. A patient who has suffered a cutting injury to the entire left half of the spinal cord at the T8 level is being examined by a physical therapist. Which of the following impairments would be MOST apparent on the ipsilateral lower extremity?

- A. Loss of pain and temperature sensation
- B. Loss of movement and light touch sensation
- C. Loss of peripheral smooth muscle control
- D. Loss of coordination and accuracy.

The correct answer is:

- A. This would be lost on the contralateral lower extremity due to the decussation of these sensory afferent fibers.
- B. This is the correct answer. These pathways decussate in the brain stem.
- C. This is not correct at all since arterial smooth muscle relies wholly on adrenergic receptors.
- D. This would be caused by an injury at the cerebellar level.

41. A patient with Guillain-Barré syndrome has bilateral lower extremity weakness. Which of the following descriptions BEST represents the underlying cause of this disease?

- A. Lower motor neuron demyelination
- B. Cerebellar tumor formation
- C. Vagal nerve axonotmesis
- D. Amyloid plaque formation

The correct answer is:

- A. This is the correct answer. Guillain-Barré syndrome is a lower motor neuron disease where the myelin sheath is destroyed, thus eliminating nerve conduction.
- B. This would result in ataxia and uncoordinated movements.
- C. This would result in loss of vagal control and would be trouble.
- D. This is the common symptom of Alzheimer's disease.

42. A physical therapist is examining a patient with a cervical spinal cord injury and observes that the patient is able to press up from the wheelchair using elbow extensors. Which spinal level MUST be intact to perform this maneuver?

- A. C4
- B. C5
- C. C6
- D. C7

The correct answer is:

- A. The C4 myotome is shoulder shrugging.
- B. The C5 myotome is bicep and elbow flexion
- C. The C6 myotome is wrist flexion.
- D. This is the correct answer. The C7 myotome is elbow and wrist extension, which would allow the patient to perform a press up from the chair.



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43. A physical therapist is treating a patient with a diabetic ulcer on the calf, just superior to the medial malleolus. The wound is discharging heavy amounts of purulent drainage. Which type of dressing will be MOST effective for this wound?

- A. Calcium Alginate
- B. Hydrocolloid
- C. Silicon gel sheeting
- D. Hydrogel

The correct answer is:

- A. This is the correct answer. Alginates are very absorptive and are indicated for heavily draining wounds.
- B. Hydrocolloids also absorb, but are used for low to medium amounts of drainage.
- C. Silicon gel sheeting is used to decrease the progression of keloid scarring.
- D. Hydrogels are primarily for dry wounds and help create a moist healing environment.

44. A physical therapist is performing cranial nerve testing on a patient with a suspected cerebrovascular accident and wishes to examine the Hypoglossal Nerve motor function. Which of the following will MOST effectively test this nerve's motor function?

- A. Instruct the patient to follow an H pattern and observe for impaired tracking.
- B. Instruct the patient to shrug the shoulders and turn the head against mild resistance.
- C. Instruct the patient to stick out the tongue and move it side to side against resistance.
- D. Instruct the patient to shut the eyes tightly and show the teeth and observe for asymmetry.

The correct answer is:

- A. This is the test for motor function of the CN IV Trochlear Nerve. Impairment would be noted in adduction and depression of the eye.
- B. This is the test for CN XI Accessory Nerve. Impairment would be noted in weakness or asymmetry.
- C. This the correct answer. A positive test would include weakness or asymmetry in tongue movement.
- D. This is the test for CN VII Facial Nerve. Impairment would be noted in weakness or asymmetry of the facial musculature.



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45. A patient reports experiencing pain at the right inferior border of the scapula. The physical therapist suspects the origin is referred pain. Which internal organ would MOST likely refer pain to this area?

- A. Stomach
- B. Kidney
- C. Gallbladder
- D. Ureter

The correct answer is:

- A. The stomach would refer to the left side of the rib cage and could extend to the inferior angle of the left shoulder blade.
- B. The kidney would refer pain to the region of the posterior 11-12th ribs.
- C. This is the correct answer. Pain can extend around the ribs to the inferior angle of the right shoulder blade.
- D. The ureter would refer pain along the inguinal crease.

46. A physical therapist chooses to use therapeutic ultrasound for deep heating of the quadriceps muscle. Which set of ultrasound parameters will be MOST effective at increasing the temperature of tissue 3.0 centimeters deep?

- A. 1.0 MHz, 1.5 W/cm<sup>2</sup>, 50% duty cycle
- C. 3.0 MHz, 1.5 W/cm<sup>2</sup>, 100% duty cycle
- D. 1.0 MHz, 1.5 W/cm<sup>2</sup>, 100% duty cycle
- E. 3.0 MHz, 1.5 W/cm<sup>2</sup>, 50% duty cycle

The most correct answer is:

3. 1.0 MHz, 1.5 W/cm<sup>2</sup>, 100% duty cycle will be the most effective at heating this deep tissue.

47. A patient reports feeling a frequent need to urinate and often leaks urine before reaching the bathroom. Which type of incontinence is MOST likely present?

- A. Stress incontinence
- B. Urge incontinence
- C. Overflow incontinence
- D. Functional incontinence

The correct answer is:

- A. Stress incontinence occurs when abdominal pressure increases and causes urine to leak.
- B. This is the correct answer. Often called overactive bladder, this incontinence is characterized by frequent and sudden urges that cause urine leaks.
- C. Overflow incontinence occurs when the bladder voids inefficiently and causes frequent leaks.
- D. Functional incontinence is caused by a secondary impairment that slows the individual in reaching the bathroom.



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48. A patient displays signs of shakiness, slowness of movement, and rigidity. Which of following BEST represents the origin of this condition?

- A. Brain stem sclerae
- B. Substantia nigra cell death
- C. Spinal cord demyelination
- D. Temporal lobe amyloid plaques

The correct answer is:

- A. This is indicative of multiple sclerosis.
- B. This is the correct answer. The dopamine producing cells in the substantia nigra of the basal ganglia die and reduce ability to initiate volitional movement.
- C. This could also be a sign of multiple sclerosis or other demyelinating diseases such as Transverse Myelitis.
- D. This is a sign of Alzheimer's Disease.

49. A patient presents to a physical therapist for rehabilitation in a standard wheelchair following a T12 spinal cord injury. The patient demonstrates excellent functional wheelchair mobility. What is the MOST appropriate technique to transfer the patient from the wheelchair to the mat table?

- A. Sliding board
- B. 2 person lift
- C. Dependent transfer
- D. Squat pivot transfer

The correct answer is:

- A. This is the correct answer. To promote independence and long term compensation techniques, a sliding board should be used.
- B. This would work if the recovery was complicated. Because it is not mentioned in the question, this is not the MOST appropriate technique.
- C. Again, if there were complications, this would work, but it is not the MOST appropriate technique.
- D. This would be challenging, and not the MOST appropriate technique.



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50. A physical therapist is treating an individual recovering from a total knee replacement. The therapist desires to make an objective measure regarding the functional ambulation status of this individual. Which of the following devices would be MOST useful?

- A. Goniometer
- B. Treadmill
- C. Stopwatch
- D. Stairs

The correct answer is:

- A. This will measure motion, but not functional status.
- B. There are several possibilities for non-standardized tests, but this would not be as good as the 6 minute walk test or timed up and go test.
- C. This is the correct answer. A stopwatch for the TUG or 6 MWT would be MOST useful. These are excellent tests in determining function in a community ambulator.
- D. Again, not as good as number 3.

51. A physical therapist is treating a patient with ulnar nerve entrapment at the cubital tunnel. Which muscle would MOST likely be weak from this type of pathology?

- A. Flexor digitorum superficialis
- B. Flexor carpi radialis
- C. Flexor pollicis longus
- D. Flexor carpi ulnaris

The correct answer is:

- A. This is innervated by the median nerve.
- B. This is innervated by the median nerve.
- C. This is innervated by the median nerve.
- D. This is the correct answer. The ulnar nerve innervates the flexor carpi ulnaris and the medial half of the flexor digitorum profundus.





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52. Upon examination, a physical therapist notes weakness in the dorsiflexors of a patient with peripheral neuropathy. Which type of gait abnormality is MOST likely present?

- A. Antalgic gait
- B. Steppage gait
- C. Trendelenburg gait
- D. Festinating gait

The correct answer is:

- A. This means a painful gait, which is primarily noted by decreased stance time on the painful LE.
- B. This is the correct answer and is characterized by the patient lifting the knee higher to compensate for a lack of dorsiflexion.
- C. This is a gait where there is a contralateral hip drop during stance phase and is caused by weak hip abductors.
- D. This is a gait abnormality that is associated with Parkinsonism and is characterized by very small, rapid steps which appear progressively more unsteady.

53. A patient is recovering from a myocardial infarction and presents to an outpatient physical therapy clinic for cardiac rehabilitation. Which of the following is an absolute indication to cease exercising?

- A. Cyanosis
- B. Significant fatigue
- C. RPE >15 on the Borg scale
- D. Rise in systolic BP of 15 mmHg

The correct answer is:

- A. This is the correct answer. Cyanosis indicates poor perfusion.
- B. Fatigue is a normal response to exercise.
- C. RPE > 15 is a relative indication to stop.
- D. This is a normal response to exercise.

54. A patient presents to the clinic with coronary artery disease. Which of the following risk factors is MOST important to educate the patient about?

- A. Age
- B. Gender
- C. Obesity
- D. Physical inactivity

The correct answer is:

- A. This is a non-modifiable risk factor for heart disease.
- B. This is a non-modifiable risk factor for heart disease.
- C. This is the correct answer. Educating the patient about how obesity worsens other risk factors will be the MOST important.
- D. This is related to number 3, but is more easily modifiable. Obesity is more important.



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55. A patient with chronic obstructive pulmonary disease has difficulty breathing while exercising. Which of the following medications is MOST likely to help the patient more easily breathe while exercising?

- A. Amlodipine
- B. Carvedilol
- C. Digoxin
- D. Salbutamol

The correct answer is:

- A. This is a calcium channel blocker used to decrease the force of heart contraction.
- B. This is a beta blocker used to suppress heart rate.
- C. This is a cardiac glycoside used to improve the contractility of the heart.
- D. This is the correct answer. Fast acting  $\beta_2$ -agonists assist in bronchodilation.

56. Which of the following arterial blood gas values is MOST indicative of respiratory alkalosis?

- A. PaO<sub>2</sub> 80 mmHg
- B. PaO<sub>2</sub> 100 mmHg
- C. PaCO<sub>2</sub> 25 mmHg
- D. PaCO<sub>2</sub> 45 mmHg

The correct answer is:

- A. This is a normal PaO<sub>2</sub> value (bottom end)
- B. This is a normal PaO<sub>2</sub> value (top end)
- C. This is the correct answer. PaCO<sub>2</sub> levels are typically between 35-45 mmHg. With decreased PaCO<sub>2</sub>, the pH of the blood increases, causing alkalosis.
- D. This is a normal PaCO<sub>2</sub> value (top end)

57. A physical therapist is treating a patient who reports having AIDS. What is the MOST appropriate method to prevent transmission of the disease?

- A. Wear gloves and mask when treating the patient
- B. Treat the patient in a private room to avoid exposure to other patients
- C. Avoid contact with bodily fluids and clean equipment before and after treatment.
- D. Ask the patient to wear gloves and mask during treatment.

The correct answer is:

3. This is the correct answer. According to the CDC, casual contact with hands and surfaces is not a method of transmission. All bodily fluids should be avoided and equipment should be cleaned on a regular basis.



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58. A patient is being treated for difficulty with overhead activities and subacromial bursitis. Which of the following strengthening activities will be MOST helpful?

- A. Scapular retraction exercises
- B. Shoulder flexion exercises
- C. Shoulder shrugging exercises
- D. Shoulder rotation exercises

The correct answer is:

- A. This would strengthen the shoulder retractors, including the rhomboids and trapezius.
- B. This would strengthen the deltoid and biceps primarily.
- C. This would strengthen the scalenes and trapezius.
- D. This is the correct answer. Shoulder rotation, especially external rotation, is the MOST helpful at strengthening the rotator cuff, which will be the MOST helpful at treating subacromial bursitis.

59. A football player reports receiving a blow to the head 4 days ago. He reports having a constant headache, is sensitive to light, and feels slightly dizzy. What is the MOST appropriate initial course of action?

- A. Stop treatment and refer to a physician.
- B. Assess symptoms and perform cognitive and balance testing.
- C. Begin an exercise routine to prepare the patient to return to play.
- D. Document the symptoms and proceed with sport specific conditioning drills.

The correct answer is:

- A. This is the most appropriate action. It will be important to coordinate care with the physician.
- B. It is very important to involve the physician first in any concussion management. Document well the symptoms and use standardized assessments to generate a plan for return to play. Involve the physician in the return to play protocol.
- C. This is not appropriate. It is critical to assess the symptoms of the concussion and create a gradual return to play protocol.
- D. This is not appropriate.



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60. A five year old boy presents to a physical therapist for evaluation. The patient has had weakness and difficulty walking for 2 years that has progressively worsened. The boy appears to be developing multiple joint contractures and shows signs of muscular wasting. What is the MOST likely origin of his impairments?

- A. Muscular dystrophy
- B. Legg-Calvé-Perthe's disease
- C. Chacot-Marie-Tooth Disease
- D. Cerebellar insufficiency

The correct answer is:

- A. This is the correct answer. Muscular dystrophy typically affects young boys, soon after they learn to walk. The symptoms named are all signs of muscular dystrophy.
- B. Legg-Calvé-Perthe's disease is when the head of the humerus doesn't receive enough blood and dies.
- C. This is a progressive neurological disease that begins with loss of muscle and sensation of the extremities, usually the feet.
- D. This is a disease that creates weakness and uncoordinated movement, but is not typically associated with the symptoms described.

61. A patient with second and third degree burns to the face and neck is receiving treatment by a physical therapist. Which of the following complications will be MOST significant during rehabilitation?

- A. Hypertrophic scarring
- B. Respiratory distress
- C. Joint contractures
- D. Nutritional deficiencies

The correct answer is:

- A. This is a possible complication, but not the MOST significant.
- B. This is the correct answer. Burns to the face and neck can cause high levels of edema and respiratory distress, requiring intubation and surgical interventions.
- C. This is a possible complication, but not the MOST significant.
- D. Again, a possible complication due to inability to eat, but not the MOST significant.



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62. A patient with a decubitus ulcer over the sacrum presents for wound care to a physical therapist. The wound extends through the cutaneous tissue and has subcutaneous fat visible at the bottom of the wound. Which of the following stages is the BEST classification of the wound?

- A. Stage I
- B. Stage II
- C. Stage III
- D. Stage IV

The correct answer is:

- A. According to the National Pressure Ulcer Advisory Panel, Stage I is a nonblanchable spot over a bony prominence.
- B. Stage II is a partial thickness skin breakdown, extending into the dermal layers.
- C. This is the correct answer. Stage III is a full thickness skin breakdown, with subcutaneous fat visible.
- D. Stage IV is a full thickness skin breakdown with bone, muscle, or tendon exposed.

63. A patient has had a full-thickness burn to the right arm. Which of the following is the MOST effective treatment to prevent hypertrophic scarring?

- A. Compression bandage
- B. Antibiotic ointment
- C. Position optimization
- D. Appropriate splint use

The correct answer is:

- A. This is the correct answer. Compression wraps and pressure garments, combined with scar massage, are the most common interventions to prevent hypertrophic scarring.
- B. This will help maintain a clean, moist environment, but is not the MOST effective at preventing hypertrophic scarring.
- C. This is appropriate to use to prevent joint contractures.
- D. This is appropriate to use to prevent joint contractures.



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64. A patient receiving physical therapy status post 10 weeks after an elbow fracture for a significant flexion joint contracture. The patient's physician states the fracture is well-healed. Which of the following is the MOST appropriate initial intervention to improve range of motion?

- A. Grade II and III joint mobilizations
- B. Progressive active-assisted range of motion to elbow joint.
- C. Progressive stretching and passive range of motion to elbow joint.
- D. Progressive resisted active range of motion exercises to elbow joint.

The correct answer is:

- A. This is the correct answer. Joint mobilizations will be quite effective initially to improve range of motion, especially for contracted joint tissue.
- B. This is not the MOST appropriate intervention.
- C. Stretching and passive range of motion will be a great adjunct to improve range of motion.
- D. This is not the MOST appropriate answer.

65. A patient has just undergone anterior cruciate ligament reconstruction and presents for physical therapy seven days after surgery. Which of the following treatments will be MOST effective at speeding recovery?

- A. Progressive active range of motion exercises
- B. Isometric quadriceps strengthening
- C. Resisted hamstring curls
- D. Progressive increased weight bearing

The correct answer is:

- A. This is important, but not the MOST important.
- B. This is the correct answer. Numerous studies indicate that maintaining quadriceps function after knee surgery speeds recovery. This is the best initial treatment of the choices given, although extension stretching would also be a good one.
- C. This is not appropriate for immediate treatment.
- D. Important, but not the MOST important.



## النقابة الفلسطينية العامة للعلاج الطبيعي – القدس

PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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66. A patient with a middle cerebral artery vascular lesion has difficulty raising his arm. Which of the following synergy patterns is MOST likely present in the patient's involved upper extremity during elevation?

- A. Scapular retraction, humeral abduction, elbow flexion, wrist supination
- B. Scapular retraction, humeral adduction, elbow extension, wrist supination
- C. Scapular protraction, humeral abduction, elbow flexion, wrist supination
- D. Scapular protraction, humeral adduction, elbow extension, wrist supination

The correct answer is:

- A. This is the correct answer. The typical flexion synergy pattern in patients after a stroke includes scapular retraction, humeral abduction, elbow flexion, wrist supination, and wrist and finger flexion.
- B. Incorrect
- C. Incorrect
- D. Incorrect

67. A patient recovering from a stroke is being evaluated by a physical therapist. The patient is able to voluntarily elevate his arm through the synergy pattern without difficulty, but is unable to move out of the synergy pattern. Spasticity is still present. Which of the following Brunnstrom stages BEST describes this pattern?

- A. Stage 1
- B. Stage 2
- C. Stage 3
- D. Stage 4

The correct answer is:

- A. Stage 1 is characterized by flaccidity and no voluntary movement on the affected side.
- B. Stage 2 is characterized by the development of spasticity and obligatory synergies that occur from the result of external stimuli.
- C. Stage 3 is characterized by continued spasticity and limited voluntary movement through the synergy pattern.
- D. This is the correct answer. The scale continues to Stage 6 where no spasticity occurs and normal movement is reestablished.



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PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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68. A physical therapist is treating a patient with shoulder pain and weakness. The patient reports increased pain with overhead activities and displays superior humeral head translation during shoulder elevation. Which of the following interventions is MOST likely to correct the problem?

- A. Scapular retraction exercises in closed chain position
- B. Rotator cuff strengthening exercises in open chain position
- C. Tricep extension exercises in closed chain position
- D. Resisted scapular elevation exercises (shrugging) in open chain position.

The correct answer is:

- A. This is a postural control exercise and will not be the BEST intervention for rotator cuff weakness.
- B. This is the correct answer. Rotator cuff strength is critical to depress the humeral head during shoulder flexion.
- C. This will address elbow extension weakness, as well as scapular stability. Not the BEST answer.
- D. This will address postural control and is not the BEST intervention.

69. A patient reports feeling dizzy and lightheaded upon standing. The patient reports that the condition has been worsening over time and that he commonly sees dark spots when changing positions. Which of the following conditions is MOST likely present?

- A. Benign paroxysmal positional vertigo
- B. Meniere's disease
- C. Orthostatic hypotension
- D. Transient ischemic attack

The correct answer is:

- A. The question is very brief and does not describe any complicated symptoms. BPPV is characterized by dizziness lasting about 1 minute following head position changes, such as stooping or turning.
- B. Meniere's disease is a fluid imbalance in the inner ear. This can cause persistent dizziness and lightheadedness.
- C. This is the correct answer. A sudden drop in blood pressure upon standing is the most common effect of this condition.
- D. A TIA causes stroke-like symptoms and is not related to position changes.





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70. A physical therapist is treating a patient who had open heart surgery 2 weeks ago to perform a coronary artery bypass. Which of the following BEST describes a precaution following this surgery?

- A. Limit left lower extremity to 50% weight bearing
- B. Limit shoulder flexion to less than 90 degrees bilaterally
- C. Limit cervical rotation less than 45 degrees bilaterally
- D. Limit upper extremity lifting to less than 10 pounds

The correct answer is:

- A. This is incorrect.
- B. This is incorrect.
- C. This is incorrect.
- D. This is the correct answer. After an open heart surgery, typically there is a lifting limit placed on the upper extremities to decrease the stress on the sternum.

71. During a physical therapy examination, the physical therapist notes pain and tenderness just inferior to the medial malleolus following what the patient reports as a sprained ankle. Which of the following structures is MOST likely sprained?

- A. Anterior talofibular ligament
- B. Posterior talofibular ligament
- C. Calcaneofibular ligament
- D. Deltoid ligament

The correct answer is:

- A. This is the most common sprain and is located just inferior and anterior to the lateral malleolus.
- B. This is located just inferior and posterior to the lateral malleolus
- C. This is inferior to the lateral malleolus.
- D. This is the correct answer. The deltoid ligament is a beefy ligament located just inferior to the medial malleolus and is commonly injured in eversion sprains.



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72. A patient with chronic obstructive pulmonary disease is instructed to perform pursed lip breathing. Which of the following is the MOST appropriate reason for performing this type of breathing?

- A. Increase total lung volume to ease the exchange of air
- B. Create back-pressure in the airways to ease airflow
- C. Decrease the tidal volume to ease air exchange
- D. Decrease the amount of breaths required to exchange air

The correct answer is:

- A. Total lung volume is the total amount of available lung volume and is not affected by breathing technique.
- B. This is the correct answer. Creating back-pressure inflates the alveoli to more easily exchange air.
- C. This is not correct.
- D. This is not correct.

73. A patient in the intensive care unit has a Swan-Ganz catheter. What is the PRIMARY purpose of this type of catheter?

- A. Introduce pharmaceuticals via a portal in a peripheral vein.
- B. Introduce pharmaceuticals directly into the inferior vena cava or right atrium.
- C. Monitor blood pressure and detect heart failure.
- D. Collect urine into a receptacle to be discarded.

The correct answer is:

- A. This is a peripheral intravenous line (PIV).
- B. This is a central intravenous line, which could include a Peripherally Inserted Central Catheter (PICC).
- C. This is the correct answer. A Swan-Ganz catheter is a diagnostic tool.
- D. This is a Foley catheter, used for urine collection.



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74. A patient in the intensive care unit is in a coma and has a pressure relief turning schedule that requires a change in position every 2 hours. The physical therapist on duty notices that the patient's position has not changed for 8 hours. Which of the following is the MOST appropriate course of action?

- A. Immediately notify the physician and document the event in the patient's chart.
- B. Immediately notify nursing staff and review the importance of pressure offloading.
- C. Immediately turn the patient and document the offloading in the patient's chart.
- D. Proceed with routine patient care and document the event in the patient's chart.

The correct answer is:

- A. While the physician should be a part of the plan of care, this is not the MOST appropriate action.
- B. This is the correct answer. Rotation schedules can easily be forgotten, and nursing staff members are a critical component of the routine.
- C. This would be appropriate only if combined with notifying the nursing staff.
- D. This is not the MOST appropriate answer.

75. A patient is being treated for neck and shoulder pain by a physical therapist. The physical therapist notes that the patient has a forward head, rounded shoulders posture that cannot be corrected with active movement. Which of the following interventions is MOST likely to correct the problem?

- A. Initiate cervical flexor and extensor strengthening and progress as tolerated.
- B. Perform thrust manipulation to the midthoracic spine and apply modalities as needed.
- C. Initiate pectoralis minor stretching and scapular retractor strengthening and progress as tolerated.
- D. Initiate cervical traction to reduce the stress on the cervical spine and begin a program of active range of motion movements for the cervical and thoracic spine.

The correct answer is:

- A. This is not correct.
- B. This is appropriate for cervical stiffness and pain, but does not address the forward head posturing.
- C. This is the correct answer. Pectoralis minor tightness combined with scapular retractor weakness contributes to the forward head posturing.
- D. This is not correct.

76. A patient reports pain in the knee while descending stairs. The pain increases with knee flexion, especially at approximately 30 degrees of flexion. Which of the following disorders is MOST likely present?

- A. Meniscal tear
- B. Patellofemoral pain syndrome
- C. Semitendinosus sprain
- D. Gastrocnemius sprain

The correct answer is:

- A. The history of a meniscal tear typically involves “locking” or “catching” of the knee in various degrees of flexion. This is not the MOST appropriate answer.
- B. This is the correct answer. The question describes pain at approximately 30 degrees of flexion with eccentric loading, the point of the greatest compression of the patella into the femur.
- C. This would not be degree specific and would likely be associated with increased pain while ascending stairs.
- D. This would not be degree specific and would likely be associated with increased pain while ascending stairs.

77. A patient notes pain in the area highlighted with a star (see photograph) while grasping the thumb in ulnar deviation. Which disorder is MOST likely present?

- A. Carpal Tunnel syndrome
- B. Ganglion Cyst pain
- C. Wartenburg’s syndrome
- D. De Quervain syndrome



The correct answer is:

- A. This would be distinguished by pain in the first three digits and would not necessarily be position dependent.
- B. This would be a localized pain that would increase with direct pressure of the cyst. This is not the MOST likely disorder.
- C. This is a superficial radial nerve entrapment that causes numbness of the anatomical snuffbox throughout the dorsum of the hand and would not be motion dependent.
- D. This is the correct answer. Eichhoff’s test (pictured) will reproduce the symptoms of pain near the styloid process of the radius.



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78. A patient appears to have a positive Patrick's Test. Which of the following joints is MOST likely to have pathology present?

- A. Hip
- B. Ankle
- C. Shoulder
- D. Elbow

The correct answer is:

- A. This is the correct answer. Patrick's Test (or the FABER Test) is used to rule in hip or SI joint pathology. The other answers are not the MOST likely sources of the positive test.

79. A patient is being treated for temporomandibular joint dysfunction. The patient describes that his jaw will not open and feels like it is blocked. What is the MOST appropriate treatment?

- A. Inferior glide of the temporomandibular joint.
- B. Lateral glide of the temporomandibular joint.
- C. Superior glide of the temporomandibular joint.
- D. Posterior glide of the temporomandibular joint.

The correct answer is:

- A. This is the most correct answer. If the TMJ is locked closed, likely the mandibular condyle needs to descend inferiorly to relocate onto the bicondylar disc.
- B. This is not the MOST appropriate treatment as lateral glides will not help relocate the mandibular condyle.
- C. This is going to be a challenge translating the mandibular condyle into the mandibular fossa.
- D. This will also be challenging.

80. A patient experiences a positive Dix-Hallpike Test upon examination, including ageotropic nystagmus and severe dizziness indicating a posterior semicircular canal disturbance. Which of the following interventions is MOST likely to correct the problem?

- A. Vestibular desensitization exercises
- B. Grade II mobilization to the cervical spine
- C. Instruction to avoid positions that provoke symptoms
- D. Epley Maneuver to the involved side

The correct answer is:

- A. This would be the treatment for conditions other than Benign Paroxysmal Positional Vertigo that is described in the question. For other conditions that cause vertigo (such as Meniere's Disease, neuroma, stroke, etc.), desensitization would be appropriate.
- B. This would be a possible treatment if the vertigo were cervical in origin, but is not the MOST appropriate intervention.
- C. This would also be helpful, but will not be MOST likely to correct the problem.
- D. This is the correct answer. The Epley Maneuver is used to treat BPPV, primarily when the disturbance is in the posterior semicircular canal.



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81. A patient is experiencing numbness and paresthesia on the scalp, forehead, upper eyelids, and nose. Which of the following disorders is the MOST likely origin of the sensory disturbance?

- A. C2 spinal nerve root impingement
- B. Bell's Palsy of the facial nerve
- C. Trigeminal nerve lesion
- D. Vestibulocochlear neuroma

The correct answer is:

- A. C2's dermatome is the posterior skull near the external occipital protuberance.
- B. This condition would result in facial paralysis to one side of the face, not a sensory disturbance of the forehead.
- C. This is the correct answer. The trigeminal nerve (CN V) has 3 branches that innervate the face. The specific branch mentioned is the V1 ophthalmic nerve.
- D. This would be characterized by dizziness and loss of hearing, not facial numbness.

82. A patient who has received a heart transplant is undergoing cardiac rehabilitation with a physical therapist. Which of the following descriptions BEST represents the cardiovascular effects that occur when this person begins exercising?

- A. No initial change in heart rate followed by a gradual increase after several minutes.
- B. Immediate increase in heart rate that gradually stabilizes after several minutes.
- C. No initial change in heart rate followed by a gradual decrease after several minutes.
- D. Immediate decrease in heart rate that gradually stabilizes after several minutes.

The correct answer is:

- A. This is the correct answer. After a heart transplant, there is no longer any sympathetic innervation to the heart, blunting the effect of exercise on heart rate. After several minutes of activity, the heart will then respond to circulating catecholamines and increase gradually.
- B. This is opposite of what will happen.
- C. This is not correct.
- D. This is not correct.



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83. A physical therapist is evaluating a patient after a stroke. The physical therapist asks the patient to demonstrate how to brush his teeth, but the patient takes the toothbrush and begins brushing his hair. Which of the following conditions BEST represents the patient's impairment?

- A. Ataxia
- B. Aphasia
- C. Abulia
- D. Apraxia

The correct answer is:

- A. Ataxia is a lack of coordination of movement.
- B. Aphasia is the inability to produce or understand language.
- C. Abulia is the impairment of will or initiative to carry out an action
- D. This is the correct answer. Apraxia is defined as a lack of the ability to carry out purposeful movement. This is commonly manifested by the confusion of objects with their purposes, such as the described brush example.

84. A physical therapist is evaluating a patient with back pain. The examiner performs the Straight Leg Raising Test and determines that the test is positive. Which of the following conditions is MOST likely present?

- A. Lumbar facet osteoarthritis
- B. Herniated nucleus pulposus
- C. Slipped capital femoral epiphysis
- D. Vascular intermittent claudication

The correct answer is:

- A. This would be characterized by centralized back pain with movement and would typically NOT have a positive straight leg raising test.
- B. This is the correct answer. Herniated discs can pinch the lumbar nerve roots as they exit the spinal column. This is the MOST likely condition present.
- C. This is a childhood disorder characterized by the femoral head slipping off the femoral neck due to fracture of the epiphysis and typically occurs in males.
- D. This is a condition involving arterial insufficiency to the tissues. This is tested through the Treadmill Test for intermittent claudication.



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PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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85. A female patient is being examined by a physical therapist. The patient has a decreased heart rate, poor muscle tone, and recent unexplained weight gain and water retention. The patient also reports general feelings of fatigue and depression. Which of the following conditions is MOST likely present?

- A. Hyperthyroidism
- B. Hypothyroidism
- C. Hyperglycemia
- D. Hypoglycemia

The correct answer is:

- A. Hyperthyroidism is characterized by weight loss, anxiety, and general “speeding up” of body systems.
- B. This is the correct answer. Hypothyroidism is a general “slowing down” of body systems and is more common in women than in men.
- C. Hyperglycemia is most commonly distinguished by polydipsia, polyuria, and polyphagia.
- D. Hypoglycemia is characterized by pallor, shakiness, and tachycardia.

86. While examining a pregnant patient, a physical therapist notices a dark line down the center of the rectus abdominis. Which of the following conditions is MOST likely present?

- A. Diastasis rectus
- B. Inguinal hernia
- C. Linea nigra
- D. Preeclampsia

The correct answer is:

- A. This is a condition where the rectus abdominis separates and can result in a hernia. This would be most evident by a palpable chasm of the abs.
- B. This is a prolapse of the bowel through the inguinal ring.
- C. This is the correct answer. The dark line is caused by increase melanocyte-stimulating hormone.
- D. This is a condition of pregnancy that is characterized by high blood pressure and increased protein in the urine.





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87. A pregnant patient is being treated for low back pain. When placing the patient supine on the plinth, which of the following positions is MOST appropriate?

- A. Supine with pillows under the left hip.
- B. Supine with pillows under the right hip.
- C. Supine with the head slightly elevated.
- D. Supine with the feet slightly elevated.

The correct answer is:

- A. This is not correct.
- B. This is the correct answer. The inferior vena cava travels along the right side of the spinal column. Because it is a low pressure system, the venous blood can be occluded by the weight of the fetus. Thus, care must be taken to decrease the pressure on the inferior vena cava in supine.
- C. This is not the MOST appropriate.
- D. This is not the MOST appropriate.

88. Which of the following is the MOST common complication following anterior cruciate ligament reconstruction?

- A. Hip abduction weakness
- B. Knee flexion weakness
- C. Knee range of motion deficit
- D. Decreased patellar mobility

The correct answer is:

- A. This is an impairment following surgery, but is not the MOST common complication.
- B. This is an impairment following surgery, but is not the MOST common complication.
- C. This is the correct answer. Arthrofibrosis following ACL repair is the MOST common complication.
- D. This is not the MOST common complication.



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89. A patient has just undergone an isolated posterior cruciate ligament reconstruction. Which of the following is the MOST correct description of the primary function of the posterior cruciate ligament?

- A. Restrains posterior translation of the tibia
- B. Restrains anterior translation of the tibia
- C. Restrains valgus forces on the knee joint
- D. Restrains varus forces on the knee joint

The correct answer is:

- A. This is the correct answer. The PCL restrains posterior translation and external rotation of the tibia.
- B. This is the function of the ACL.
- C. This is the function of the MCL.
- D. This is the function of the LCL.

90. A physical therapist is reviewing a journal article about rehabilitation following below-knee amputations. Which of the following would be considered the STRONGEST evidence?

- A. Expert Opinion
- B. Case-control series
- C. Randomized controlled trials
- D. Systematic reviews

The correct answer is:

- A. This is a level V and not the STRONGEST evidence.
- B. This is a level IV and not the STRONGEST evidence.
- C. This is a level II and not the STRONGEST evidence.
- D. This is the correct answer. Systematic reviews of randomized controlled trials are considered the strongest evidence. ("Evidence-Based Everything," by A. Moore, H. McQuay, & J. A. M. Gray (Eds.), 1995, Bandolier, 1(12), p. 1. Copyright 1995 by Bandolier.)



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91. A patient has undergone a below-knee amputation. What is the MOST important clinical consideration in preparing to use a prosthesis?

- A. Ambulation endurance
- B. Hip range of motion
- C. Stump maturity
- D. Psychological health

The correct answer is:

- A. This is important, but is not the MOST important in preparation for a prosthesis.
- B. This is also not the MOST important issue to consider.
- C. This is the correct answer. The stump must have a stabilized girth and stable integument to allow for a good prosthesis fit and loading.
- D. This is not the MOST important, but is a consideration in preparing for a prosthesis.

92. A patient is being examined by a physical therapist for shoulder pain. The individual reports that the pain is located in an area around the acromion and has been gradually increasing over the last 3 months. The patient has limited passive motion in external rotation, internal rotation, and flexion, and complains of severe pain with all three motions. Which of the following disorders is MOST likely present?

- A. Subacromial bursitis
- B. Acromioclavicular joint lesion
- C. Scapulothoracic hypomobility
- D. Adhesive capsulitis

The correct answer is:

- A. This would have pain with extreme flexion and internal rotation, but would not limit passive range of motion.
- B. This would more commonly have pain with cross-body movements and is not the MOST likely disorder.
- C. This would not necessarily limit passive motion of the glenohumeral joint.
- D. This is the correct answer. The scenario describes a capsular pattern that generally progresses over the course of several months. The lack of passive motion is also a key factor.



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93. A patient is recovering from a Grade II hamstring tear. Which of the following BEST describes this type of injury?

- A. Mild pain or tightness in the hamstring muscle, especially when stretched or contracted.
- B. Burning pain immediately after injury, inability to walk, and significant bruising over the hamstring.
- C. Immediate pain with injury, painful with stretching, and significant bruising over the hamstring.
- D. Severe pain over the anterior leg, especially with deep knee flexion, with significant bruising over the quadriceps.

The correct answer is:

- A. This is characteristic of a grade I hamstring injury.
- B. Grade III hamstring tears usually involve deep muscle bleeding and a lump of muscle where the muscle has pulled loose of the insertion.
- C. This is the correct answer. This is characteristic of a grade II hamstring injury, which involves a partial tear of the muscle.
- D. This is characteristic of a grade II quadriceps injury.

94. A physical therapist is treating a patient who is recovering from a lateral ankle sprain. The physical therapist wishes to improve the patient's ability to sense joint position while walking and running. Which of the following treatments will be MOST effective at accomplishing these goals?

- A. Therapeutic exercise to strengthen the ankle eversion muscles, using elastic tubing and ankle weights.
- B. Therapeutic exercise to strengthen the ankle inversion muscles, using elastic tubing and ankle weights.
- C. Proprioceptive training drills, using unstable and compliant surfaces.
- D. Gait training drills, focusing on the terminal stance and preswing phases of gait.

The correct answer is:

- A. This is a general strengthening activity used to improve the strength of the ankle stabilizers. This is not the MOST correct answer.
- B. This is a general strengthening activity used to improve the strength of the ankle stabilizers. This is not the MOST correct answer.
- C. This is the correct answer. Proprioception is a key part of ankle rehabilitation and is used to improve the patient's ability to sense joint position and adapt to various surfaces.
- D. This is a treatment used to improve gait kinematics and is not the MOST correct answer.



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95. A patient with a forward head/rounded shoulders posture is being examined by a physical therapist. The therapist notes that the patient's scapulae will not retract, even during passive range of motion testing. Which of the following is the MOST likely cause of the patient's poor posture?

- A. Tight pectoralis minor
- B. Weak scapular retractors
- C. Tight posterior scalene muscle
- D. Weak rotator cuff musculature

The correct answer is:

- A. This is the correct answer. The pectoralis minor attaches to the scapula and prevents retraction if the muscle is tight.
- B. This would be a cause of poor posture if the patient had the available range of motion. As stated in the question, passive motion testing revealed limited ROM, thus indicating tightness was the culprit.
- C. This is not correct
- D. This is not correct.

96. A 19 year old female patient is being evaluated by a physical therapist. The patient reports weakness and generalized fatigue despite frequent and strenuous exercise. The patient has lost a significant amount of weight in the last month and states that she is hopeful that physical therapy will help her reduce her body mass index. Which of the following conditions is MOST likely present?

- A. Hyperthyroidism
- B. Lung cancer
- C. Attention deficit hyperactivity disorder
- D. Anorexia nervosa

The correct answer is:

- A. This would have the weight loss, but not as drastic as described, and would not include fixation on body mass index.
- B. This would have the rapid weight loss, but not the fixation on body mass index or strenuous exercise.
- C. This would create restlessness, but may not include the weakness and generalized fatigue. This is not the MOST correct answer.
- D. This is the correct answer. Strenuous exercise, weight loss, BMI fixation, and weakness are all symptoms of anorexia nervosa.



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97. A patient is receiving treatment from a physical therapist for low back pain. The patient has hypermobility with posterior-anterior glides on L3. The patient denies radiculopathy or pain in the lower extremities. Which of the following treatment options will be MOST appropriate?

- A. Lumbar manipulation
- B. Lumbar stabilization
- C. Intermittent lumbar traction
- D. Direction specific lumbar exercises

The correct answer is:

- A. Hypomobility would be the greatest indication to manipulate.
- B. This is the correct answer. Where there is hypermobility in the lumbar spine and no radiculopathy, stabilization will be the most appropriate treatment.
- C. This would be indicated if there were peripheral symptoms with no centralization.
- D. This would be indicated if there was a distinct directional preference with centralization occurring.

98. A patient is being evaluated by a physical therapist. The patient reports that he has difficulty with his balance, especially in low light conditions such as parking garages and movie theaters. Which of the following conditions on the Clinical Test of Sensory Integration on Balance (CTSIB) would the patient have the MOST difficulty with?

- A. Condition 1
- B. Condition 2
- C. Condition 5
- D. Condition 6

The correct answer is:

- A. Condition 1 tests visual and proprioceptive systems.
- B. Condition 2 tests proprioceptive systems.
- C. This is the correct answer. Condition 5 eliminates vision and proprioception and would MOST resemble dark movie theaters and parking garages. This is most indicative of a vestibular system difficulty.
- D. This is close, but the visual conflict would more accurately resemble movements in a crowd or among moving objects, testing the vestibular system.



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99. A female patient is having difficulty with stress urinary incontinence and is seeking treatment from a physical therapist. Which of the following treatment options will be MOST effective at decreasing the bouts of incontinence?

- A. Perineal strengthening exercises
- B. Limit fluid intake to 8 oz. every 4 hours
- C. Instruct the patient to avoid stressful situations
- D. Luteal strengthening exercises

The correct answer is:

- A. This is the correct answer. By supporting the pelvic floor, bouts of stress incontinence will decrease. Exercises such as “Kegel’s” will be the MOST effective.
- B. This will decrease fluid, but will likely cause dehydration.
- C. This will help some, but is not a long term solution.
- D. This will help with generalized strengthening, but will not be the MOST effective.

100. A physical therapist is treating an individual with residual quadriceps weakness following a knee surgery. Which of the following electrical stimulation modalities will be MOST effective at increasing quadriceps strength?

- A. Interferential current
- B. Transcutaneous electrical nerve stimulation
- C. Neuromuscular electrical nerve stimulation
- D. Iontophoresis

The correct answer is:

- A. This is a modality to treat pain.
- B. This is a modality to treat pain and will not be the MOST effective at increasing quad strength.
- C. This is the correct answer. NMES, such as Russian, will be the MOST effective at improving quadriceps strength.
- D. This is a modality to treat pain and swelling over a localized area.



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101. A physical therapist is treating an 8 year old patient with a history of a ventriculoperitoneal shunt. After several minutes of moderate exercise, the patient begins to perspire and has a heart rate of 120 beats per minute. Which of the following is the MOST appropriate immediate course of action?

- A. Continue the activity, closely monitoring symptoms
- B. Immediately have the child sit down and monitor vital signs for 5 minutes
- C. Refer the patient to a physician for shunt evaluation
- D. Decrease the activity load until the patient's heart rate is less than 100 beats per minute and continue the exercise

The correct answer is:

- A. This is the correct answer. A heart rate of 120 beats/min with perspiration is a normal response to moderate intensity exercise.
- B. This is not correct.
- C. This would be correct if signs of intracranial pressure began to appear, such as headache, ataxia, and loss of coordination.
- D. This is not correct.

102. A male adolescent patient who has sustained a blow to the head during a high school football game is being evaluated on the sideline by a physical therapist. The patient is exhibiting signs and symptoms of a concussion, but is awake and oriented. What is the MOST appropriate initial course of action?

- A. Immediately transport the patient to the emergency room.
- B. Remove the player from the game and perform sideline concussion testing.
- C. Monitor the patient on the sideline and return him to play if the symptoms subside.
- D. Remove the player from the game and instruct his parents to have him sleep as soon as possible.

The correct answer is:

- A. This would be appropriate if the patient had signs of intracranial bleeding or severe symptoms.
- B. This is the most appropriate. Most concussions do not require an emergency room visit, but must be monitored by a trained professional.
- C. An adolescent player should not return to play the same day if he has had a concussion.
- D. A player should be removed from play and have his symptoms monitored for several hours after returning home to insure there is no intracranial bleeding.





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103. A physical therapist is evaluating a patient who has been referred to physical therapy for a Hill-Sach's lesion. Which of the following is the MOST likely mechanism of injury to produce such a lesion?

- A. Posterior hip dislocation
- B. Anterior shoulder dislocation
- C. Plantar flexion and dislocation of the ankle
- D. Posterior dislocation of the ulna on the olecranon

The correct answer is:

- A. This would create a lesion of the hip labrum.
- B. This is the correct answer. A Hill-Sach's lesion is most likely to occur with anterior shoulder dislocation which creates a divot in the cortex of the humeral head.
- C. This would most likely result in an ATFL rupture, among other things.
- D. This would injure the capsule around the elbow.

104. A 65 year old patient reports developing shoulder pain over the last 3 months that is exacerbated by overhead activities. The patient displays poor posture and has rotator cuff musculature that is 25% weaker on the involved upper extremity. Which of the following is MOST likely the source of the pain?

- A. Primary impingement
- B. Secondary impingement
- C. Biceps tendinopathy
- D. Anterior capsule instability

The correct answer is:

- A. This would be likely due to the patient's age (bone spurs forming under the acromion process). However, the information given indicates otherwise.
- B. This is the most correct answer. Worsening with overhead activity and rotator cuff weakness are both important signs of secondary impingement.
- C. Biceps tendinopathy is indicated by pain with active elbow and shoulder flexion.
- D. This could be present, but is not the MOST correct answer.



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105. While ambulating, a patient reports that she is frequently tripping and is afraid of falling. The patient does not appear to have any gross deficits of strength. Which of the following interventions is MOST likely to correct the problem?

- A. Train the patient to circumduct the hip during the terminal swing phase of gait.
- B. Instruct the patient to allow the knees to flex to 40 degrees with the loading response phase of gait.
- C. Train the patient to allow the ankle to plantarflex more fully with the preswing phase of gait.
- D. Instruct the patient to increase dorsiflexion of the ankle during the swing phase of gait.

The correct answer is:

- A. This is not correct and would be a sign of hip and knee weakness.
- B. This would help the patient during a limbo contest, but would not correct the frequent tripping.
- C. This would give the patient more spring in her step, but would likely increase plantarflexion during swing phase.
- D. This is the correct answer. Keeping the toes up would most likely reduce the risk of falls among the choices given.

106. A physical therapist is treating a patient who has undergone an arthroscopic medial meniscus repair two weeks ago. Which of the following is the MOST important consideration during rehabilitation?

- A. Avoid full extension of the knee
- B. Avoid full flexion of the knee
- C. Encourage full weight bearing
- D. Encourage gastrocnemius strength

The correct answer is:

- A. This is incorrect because achieving full extension soon after surgery is critical to long term outcomes.
- B. This is the correct answer. Deep knee flexion will shift the menisci posteriorly and will disturb the repair site. Most protocols call for limited weight bearing and flexion for about 6-10 weeks.
- C. Most protocols limit weight bearing at this stage.
- D. This would not be the MOST important consideration.



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107. A patient is 6 weeks status post anterior cruciate ligament reconstruction. Which of the following is the MOST important treatment consideration?

- A. The graft reaches its weakest point at this phase.
- B. Use passive range of motion to improve knee flexibility.
- C. Inflammation and swelling should be actively managed.
- D. Decreased quadricep strength limits ambulation in both time and distance.

The correct answer is:

- A. This is the correct answer. The most dangerous point of rehabilitation is approximately 6 weeks when the graft is remodeling.
- B. This would be important, but not the MOST important since ROM and flexibility is typically acceptable by 6 weeks.
- C. Inflammation should also be managed, but will be less of an issue by 6 weeks typically.
- D. Decreased quad strength is a consideration, but not to the point of limiting ambulation significantly. Typically, patient is not engaging in aggressive treadmill protocols at 6 weeks, thus not the MOST important.

108. A 30 year old patient is recovering from an ankle fracture has instructions from the physician to ambulate with partial weight bearing on the involved extremity. Which of the following assistive devices would be MOST appropriate for this patient to facilitate ambulation?

- A. Single point cane
- B. Four wheeled-walker
- C. Lofstrand crutches
- D. Knee scooter

The correct answer is:

- A. This would not give enough support to be stable with partial weight bearing precautions.
- B. This could work, but would not be stable enough for partial weight bearing.
- C. This is the correct answer. Forearm or Lofstrand crutches offer the ability to bear weight through the upper extremities without irritating the axillae.
- D. This would be correct for a non-weight bearing protocol.



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109. Which of the following BEST represents a handicap on the International Classification of Functioning, Disability, and Health?

- A. Biomechanical abnormality of the human organism
- B. Abnormality of a tissue, organ, or body system
- C. Inability to participate in a task or participate in an activity considered normal for a human being.
- D. Disadvantage that prevents fulfillment of a role that is normal.

The correct answer is:

- A. This is the definition of a disease on the ICF.
- B. This is the definition of impairment.
- C. This is the definition of a disability.
- D. This is the definition of a handicap and is the correct answer.

110. To be considered eligible to receive Home Health Care Services that are covered by Medicare, which of the following conditions MUST be satisfied?

- A. The patient's home is greater than five miles from a physician's office or primary health care provider.
- B. The patient requires considerable effort to leave the home.
- C. The patient has no family or caregiver immediately available to assist with activities of daily living.
- D. The patient requires adult day care.

The correct answer is:

- A. This would be a consideration, but not the MOST correct answer.
- B. This is the correct answer, and is the wording used by Medicare.
- C. This is a consideration, but not a requirement.
- D. This is not the correct answer. A patient may require adult day care but may or may not need home health.



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111. A patient is being treated for flexor hallucis longus tendonitis. Which of the following modalities will be MOST useful in decreasing pain and speeding recovery?

- A. Topical menthol
- B. Iontophoresis
- C. Transcutaneous electrical nerve stimulation
- D. Ultrasound

The correct answer is:

- A. This is the active ingredient in Biofreeze and can help with decreasing pain, but is not the BEST answer.
- B. This is the correct answer. Iontophoresis used properly drives anti-inflammatory medication into the swollen tissues, speeding recovery and decreasing pain.
- C. This decreases pain, but is not the MOST correct answer.
- D. This has shown little effect in speeding the recovery of injuries.

112. A patient has had poorly controlled type II diabetes and is being treated for a diabetic foot ulcer on the inferior portion of the heel. The ulcer has a seropurulent discharge and exudes a foul odor. The patient is unable to ambulate without applying direct pressure to the wound site. Which of the following interventions will be MOST important in speeding the recovery of the wound?

- A. Instruct the patient on the importance of glucose monitoring and diabetes control.
- B. Instruct the patient to offload the pressure point and use bulky dressing to absorb the exudate.
- C. Begin whirlpool therapy to assist in nonspecific wound debridement.
- D. Begin sharp debridement of wound bed, carefully removing areas of thickened callus and eschar.

The correct answer is:

- A. This is the correct answer. Maintaining good diabetic control is critical to improving circulation and decreasing the patient's propensity for further wounds.
- B. This is a part of the treatment plan, but not the MOST important initial course of action.
- C. This can aid in eschar debridement, but is not the MOST important of the choices presented.
- D. This is a very viable treatment option, but not the correct answer.



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113. During an initial evaluation by a physical therapist, a patient reports that he has undergone a total knee arthroplasty 2 weeks ago. Which of the following medications will MOST affect the initial physical therapy intervention?

- A. Warfarin
- B. Simvastatin
- C. Omeprazole
- D. Hydrochlorothiazide

The correct answer is:

- A. This is the correct answer. Warfarin is one of the most common anticoagulants and is used frequently after a total joint replacement for the first several weeks. The patient will require frequent blood tests and his diet will require close supervision.
- B. This is a cholesterol-lowering medication and will not affect physical therapy intervention the MOST.
- C. This is an acid blocker and will not affect physical therapy intervention the MOST.
- D. This is a diuretic and will not affect physical therapy intervention the MOST.

114. A male patient in the intensive care unit is being treated for multiple trauma injuries after a motor vehicle accident. A physical therapist is reviewing the most recent lab results. Which of the following would be the GREATEST indication to postpone therapy until consulting with the attending physician?

- A. Venous O<sub>2</sub> saturation 40%
- B. Hemoglobin A1C 5.1 %
- C. White Blood Cell Count 10,000 cells/mL
- D. Hematocrit 29%

The correct answer is:

- A. This is a normal value for venous oxygen
- B. This is a normal A1C
- C. This is a top/borderline normal WBC
- D. This is the correct answer. A low hematocrit will likely lead to lightheadedness and will interfere with physical therapy intervention.



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115. Compared to an individual who lives a sedentary lifestyle, a physically fit person usually demonstrates a different physiological profile. The following are the characteristic features of Improved endurance except:

- A. Greater muscle strength
- B. Better adaptation of circulation and respiration to effort
- C. Lower blood pressure on exercise
- D. Lower pulse rate on exercise

Answer: A- Greater muscle strength is a characteristic feature of physically fit individual, but it is not a characteristic feature of improved endurance. Options B, C, and D are characteristic features of improved endurance

116. Which of the following activities **MUST** be performed by a licensed physical therapist?

- A. Implement components of patient interventions
- B. Modification of the plan of care
- C. Make modifications to patient interventions
- D. Document progress made by the patient

The correct answer is:

- A. This can be performed by a PTA or aid.
- B. This is the correct answer. The overarching plan of care must be created and modified only by the supervising physical therapist.
- C. This can be done on a limited basis by PTA's.
- D. This is done by PT's and PTA's.

117. Which of the following **BEST** describes an attribute of managed care (such as a health maintenance organization)?

- A. Providers share the financial risk
- B. Provides enrollees with freedom of choice
- C. Minimal emphasis on health promotion
- D. Limited internal cost controls

The correct answer is:

- A. This is the correct answer. Providers agree with the HMO to treat patients according to the HMO guidelines in exchange for a steady stream of patients.
- B. This is an attribute of a fee for service model.
- C. This is an attribute of a fee for service model.
- D. This is an attribute of a fee for service model.



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118. A female patient with swelling, redness, and pain in the leg is suspected of thrombophlebitis. There are three factors, called Virchow's triad, associated with thrombophlebitis or venous thrombosis. The Virchow's triad consists of the following except:

- A. Stasis of blood
- B. Blood vessel damage
- C. Occlusion
- D. Coagulation of blood is increased

Answer: C– Occlusion is not a part of the Virchow's triad. In thrombophlebitis, vessel damage stimulates the clotting cascade, which causes the aggregation of platelets at the site of damage. The aggregation is aggravated by increased blood stasis.

119. During which stage of development does a child begin standing briefly without support?

- A. 8-9 months
- B. 10-11 months
- C. 12-15 months
- D. 16-24 months

The correct answer is:

- A. The child will stand supported in this phase.
- B. This is the correct answer.
- C. The child begins walking without support at this phase.
- D. The child will begin walking upstairs and downstairs.

120. According to the Glasgow Coma Scale, which of the following scores would be MOST indicative of a mild brain injury?

- A. Less than 4
- B. 5 to 8
- C. 9 to 12
- D. 13 to 15

The correct answer is:

- A. This indicates coma.
- B. This indicates coma in 90% of patients.
- C. This is a moderate brain injury
- D. This is the correct answer and corresponds to a mild brain injury.





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121. A patient presents with an incomplete spinal cord lesion after sustaining a cervical hyperextension injury in a motor vehicle accident. Motor loss that is greater in the upper extremities than the lower extremities, with very limited sensory impairments. Which type of spinal cord injury is MOST likely present?

- A. Brown-Sequard's Syndrome
- B. Posterior Cord Syndrome
- C. Cauda Equina Syndrome
- D. Central Cord Syndrome

The correct answer:

- A. This is an incomplete lesion where half of the spinal cord is severed.
- B. This is an incomplete lesion that affects pain sensation, proprioception, and two-point discrimination.
- C. This is an injury that occurs below L1 and usually results in loss of bowel or bladder function.
- D. This is the correct answer. Central cord syndrome damages the spinothalamic tract, corticospinal tract, and dorsal columns.

122. A patient who has severe swelling of the right lower extremity presents to the clinic with a dehiscence wound on the lateral shin. Which of the following BEST describes a dehiscence type wound?

- A. An injury that has a deep hematoma of the underlying tissue, usually caused by trauma.
- B. Irregularly bordered wound, typically caused by blunt trauma.
- C. A shallow wound with ulceration in a circular pattern, typically caused by prolonged pressure.
- D. An injury in which a wound ruptures along a surgical suture, typically from trauma to the wound.

The correct answer is:

- A. This is a contusion type wound.
- B. This is a laceration type wound.
- C. This describes a decubitus ulcer.
- D. This is the correct answer. Dehiscence is the term used to describe a wound splitting open along a surgical suture site.



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123. A patient is in the intensive care unit following a motor vehicle accident. While treating the patient, a physical therapist notes that the patient appears unusually lethargic and complains of a headache. Upon reading the most recent lab results, the therapist notes that the patient has hyperkalemia and an increase in creatinine levels. Which of the following conditions is MOST likely present?

- A. Acute prostatitis
- B. Acute renal failure
- C. Urinary tract infection
- D. Hematuria

The correct answer is:

- A. This is caused by an infection of the prostate and is similar to other serious infections with fevers and chills.
- B. This is the correct answer. Acute renal failure can be caused by trauma after a motor vehicle accident and will result in hyperkalemia and increased creatinine levels.
- C. This is another form of infection that will have symptoms such as burning with urination and frequent urinations.
- D. This is the presence of blood in the urine and is indicative of urinary tract infections, kidney stones, trauma, etc.

124. A patient has weakness, low blood pressure, hyperpigmentation of the skin, and decreased amounts of cortisol and aldosterone. Which of the following conditions is MOST likely present?

- A. Conn's Syndrome
- B. Cushing's Syndrome
- C. Addison's Disease
- D. Graves Disease

The correct answer is:

- A. This is an aldosterone-producing adrenal carcinoma that produces increased amounts of aldosterone.
- B. This is a disease of increased cortisol, caused by a tumor of the pituitary gland.
- C. This is the correct answer. Addison's disease is commonly caused by adrenal destruction, typically by autoimmune pathways.
- D. This a hyperthyroid disorder caused by autoimmune pathways.



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125. A patient being treated by a physical therapist has peripheral artery disease. Which of the following values would be MOST indicative of this condition?

- A. Ankle-Brachial Index greater than 1.00
- B. Ankle-Brachial Index less than 0.90
- C. Blood pH lower than 7.35
- D. Blood pH greater than 7.45

The correct answer is:

- A. This is a normal reading for the ABI.
- B. This is the correct answer. ABI values less than 0.90 indicate PAD.
- C. This is a sign of metabolic/respiratory acidosis.
- D. This is a sign of metabolic/respiratory alkalosis.

126. Which of the following heart sounds is MOST indicative of closure of the mitral valve?

- A. S1
- B. S2
- C. S3
- D. S4

The correct answer is:

- A. This is the correct answer. S1 is created from the closure of the mitral and tricuspid valves during ventricular systole.
- B. S2 is created from the closure of the pulmonary and aortic semilunar valves at the beginning of diastole.
- C. This is an irregular heart sound caused by the oscillation of blood reverberating on the ventricles.
- D. This is an irregular heart sound due to reduced ventricular compliance and is indicative of a failing left ventricle.



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127. A physical therapist is treating a patient for hip pain and wishes to position the iliofemoral joint in close packed position. Which of the following BEST describes this position?

- A. Full extension and medial rotation
- B. 30 degrees of flexion, full medial rotation
- C. 30 degrees of flexion, 30 degrees of abduction, slight external rotation
- D. Full Flexion and external rotation

The correct answer is:

- A. This is the correct answer. Closed pack position is where joint surfaces have the greatest amount of contact area.
- B. This is incorrect.
- C. This is the open packed position for the iliofemoral joint.
- D. This is incorrect.

128. A physical therapist is treating a patient who has suffered a stroke using primarily postural control activities, movement sequencing, and key therapeutic handling techniques. Which of the following BEST describes the treatment model being used?

- A. Proprioceptive neuromuscular facilitation
- B. Neuro-developmental treatment
- C. Rood's sensorimotor learning
- D. Hierarchical reflex theory

The correct answer is:

- A. This is a technique using a balanced control of agonist and antagonist muscles. Kombat, Knott, and Voss developed the PNF system.
- B. This is the correct answer. Karl and Berta Bobath used NDT to control initiation and sequencing control constructs.
- C. Rood's method involves sensory integration to move independent of a reflex stimulus.
- D. This is the theory that all motion is hierarchical and that higher centers control or inhibit lower centers.



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129. A patient who is recovering from a traumatic brain injury following a motor vehicle accident is exhibiting signs of bizarre behavior that is nonpurposeful and incoherent. The patient is uncooperative and displays a short and selective attention span. Which level on the Rancho Los Amigos cognitive functioning scale BEST describes the state of this patient?

- A. Level III
- B. Level IV
- C. Level V
- D. Level VI

The correct answer is:

- A. This is the localized response stage where the patient inconsistently follows simple motor commands.
- B. This is the correct answer. This is the confused and agitated stage.
- C. This is the confused/nonagitated stage where commands are followed, but still not purposeful.
- D. This is the confused/appropriate response stage There is no carry-over of information, but the patient behaves appropriately in familiar settings.

130. A patient with myasthenia gravis is being treated for weakness and difficulty walking. Which of the following BEST describes the character of the disorder?

- A. Lower motor neuron disease
- B. Upper motor neuron disease
- C. Bulbar palsy
- D. Pseudobulbar palsy

The correct answer is:

- A. This is the correct answer. Myasthenia Gravis is a disorder attacking the postsynaptic neuromuscular junction and is a lower motor neuron disease.
- B. This is characterized by spasticity and increase in tone.
- C. This is a lower motor neuron disease attacking the CN 9,10,11,12, resulting in difficulty speaking and swallowing.
- D. This is an upper neuron disease creating the inability to control facial movements such as chewing and speaking.



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131. When taking goniometric measurements of medial rotation of the shoulder, where should the moveable arm of the goniometer be aligned?

- A. Parallel with the humerus toward the coracoid process.
- B. Parallel with the humerus toward the acromion process.
- C. Parallel to the ulna toward the ulnar styloid process.
- D. Parallel to the radius toward the 2nd metacarpal.

The correct answer is:

- A. Incorrect.
- B. Incorrect.
- C. This is the correct answer. The olecranon is the axis of rotation and the moveable arm should be in line with the ulna, using the ulnar styloid process as a reference.
- D. Incorrect.

132. A physical therapist is examining a patient for signs of carpal tunnel syndrome. Which of the following is the appropriate posture for performing the Phalen Test?

- A. Seated, elbows in full flexion
- B. Seated, elbows in full extension
- C. Seated, wrists in full flexion
- D. Seated, wrists in full extension

The correct answer is:

- A. Incorrect
- B. Incorrect
- C. This is the correct answer. Phalen's maneuver is performed seated with wrists in full flexion.
- D. This is reverse Phalen's test.

133. A physical therapist is examining a patient's shoulder flexion passive range of motion. Which of the following should occur first during the goniometric measurement?

- A. Align the goniometer
- B. Locate via palpation the appropriate anatomical landmarks
- C. Read and record the measurement after moving the distal segment
- D. Make a clinical estimate of the range of motion

The correct answer is:

- A. #3 out of the 4 options provided
- B. #2 out of the 4 options provided
- C. #4 out of the 4 options provided
- D. This is the correct answer. Of the options provided, this is the first action that should occur.



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134. With neurologic testing, a patient is having difficulty sensing vibratory stimuli. Which of the following joint receptors is MOST likely affected?

- A. Pacinian corpuscles
- B. Golgi-Mazzoni corpuscles
- C. Ruffini endings
- D. Free nerve endings

The correct answer is:

- A. This is the correct answer. Pacinian corpuscles are used primarily to detect vibration and acceleration.
- B. These detect joint compression.
- C. These detect joint stretching.
- D. These cutaneous nerve endings essentially detect pain.

135. A physical therapist is mobilizing a patient's glenohumeral joint to improve passive range of motion. The therapist provides a large amplitude oscillation to the limits of available motion. Which of the following grades of mobilization is being provided?

- A. Grade II
- B. Grade III
- C. Grade IV
- D. Grade V

The correct answer is:

- A. Large amplitude oscillations, but not to end of range
- B. This is the correct answer.
- C. Small amplitude oscillations at the end of range.
- D. High velocity, low amplitude thrust past the end of range.

136. Which of the following would align with a plumb line in proper postural alignment?

- A. Anterior to the coronal suture
- B. Posterior to the lateral malleolus
- C. Center of the iliofemoral joint
- D. Vertebral bodies of the lumbar spine

The correct answer is:

- A. Posterior to the coronal suture
- B. Anterior of the lateral malleolus
- C. Posterior to the iliofemoral joint
- D. This is the correct answer.



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137. A patient with an above knee prosthetic limb is displaying lateral trunk bending toward the involved lower extremity while ambulating. Which of the following would be the MOST likely cause of this gait abnormality?

- A. Socket is too small
- B. Prosthetic limb is too long
- C. Poor suspension
- D. Medial wall too high

The correct answer is:

- A. This would cause circumduction of gait, among other things, because the stump would not fit down into the prosthetic properly.
- B. This would also cause circumduction to allow for advancement.
- C. This would cause vaulting of the gait because the stump would not be stable in the bottom of the socket.
- D. This is the correct answer. The patient would lean toward the affected side to prevent the medial wall from pressing uncomfortably along the medial thigh.

138. A physical therapist is testing reflexes in the upper extremity. Which of the following spinal nerve roots is BEST tested with the brachioradialis reflex?

- A. C4
- B. C5
- C. C6
- D. C7

The correct answer is:

- A. This does not typically have a reflex test.
- B. This is tested with the biceps reflex.
- C. This is the correct answer.
- D. This is tested with the triceps reflex.

139. A patient is experiencing numbness and tingling along the S1 nerve root dermatome. Which of the following BEST describes the innervation area of this dermatome?

- A. Lateral aspect of the calcaneus
- B. Anterior and medial thigh
- C. Dorsum of the foot
- D. Medial malleolus

The correct answer is:

- A. This is the correct answer.
- B. This is the dermatome for L2
- C. This is the dermatome for L5
- D. This is the dermatome for L4.





## النقابة الفلسطينية العامة للعلاج الطبيعي – القدس

PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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140. A patient has suffered a stroke that is affecting the thalamus, hypothalamus, and pituitary gland. Which of the following regions of the brain was MOST affected?

- A. Telencephalon
- B. Mesencephalon
- C. Metencephalon
- D. Diencephalon

The correct answer is:

- A. This is the cerebrum, including the outer lobes of the brain.
- B. This is the midbrain, and contains the substantia nigra and other motor control pathways.
- C. This is the pons and cerebellum region of the brain.
- D. This is the correct answer and contains the following structures: thalamus, hypothalamus, posterior pituitary gland, and pineal gland.

141. Which of the following structures will lead to ipsilateral impairments when damaged?

- A. Corticospinal tract
- B. Parietal lobe
- C. Cerebellar lobe
- D. Spinothalamic tract

The correct answer is:

- A. This tract decussates and travels down the contralateral side.
- B. Information from the parietal lobe decussates and travels down the contralateral side.
- C. This is the correct answer. Damage to one cerebellar lobe will produce ipsilateral impairments.
- D. This tract decussates and courses up the contralateral side.

142. A physical therapist is evaluating the soundness of Cranial Nerve XI. How would the therapist position the patient to best evaluate this nerve?

- A. Prone
- B. Supine
- C. Sidelying
- D. Sitting

The correct answer is:

Cranial Nerve XI (spinal accessory) innervates the sternocleidomastoid and trapezius muscles. It is tested in the sitting position by resisting shoulder shrugging.



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143. A patient in the intensive care unit is receiving treatment for heart failure. Which of the following characteristics is MOST indicative of left-sided heart failure?

- A. Dyspnea
- B. Anasarca
- C. Ascites
- D. Hepatomegaly

The correct answer is:

- A. This is the correct answer. Left sided heart failure leads to swelling in the lungs as the blood “backs up.”
- B. This is a symptom of right-sided heart failure. Anasarca is generalized swelling.
- C. This is a symptom of right-sided heart failure. Ascites is abdominal swelling.
- D. This is a symptom of right-sided heart failure.

144. A patient has just received the results of a recent blood test. Which of the following blood chemistry values would be the cause for greatest concern?

- A. Triglycerides 110 mg/dL
- B. Total cholesterol 120 mg/dL
- C. HDL cholesterol 100 mg/dL
- D. LDL cholesterol 90 mg/dL

The correct answer is:

All values are normal except for the HDL cholesterol, which is out of the normal parameters of 40-80 mg/DL.

145. During an exercise stress test, a patient begins to display large, irregular ECG signals that are turbulent and asynchronous. Which of the following conditions is MOST likely present?

- A. Premature ventricular contraction
- B. Ventricular fibrillation
- C. Ventricular tachycardia
- D. Ventricular asystole

The correct answer is:

- A. This would be indicated by random QRS complexes interspersed throughout normal electrical activity.
- B. This is the correct answer. Ventricular fibrillation is a medical emergency.
- C. This would be indicated by an ECG beat frequency of greater than 100 beats/minute.
- D. This is the absence of electrical activity in the heart and is bad news.



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146. A research article describes the mildly increased risk of heart disease for individuals exposed to a particular pharmacological agent compared to a control group. What would the expected odds ratio be for the study group?

- A. 1.1
- B. 1.0
- C. 0.9
- D. 0.05

The correct answer is:

- A. This is the correct answer. An odds ratio describes the probability of a condition being present after exposure to a condition compared to the probability of having the condition without exposure. An odds ratio  $>1$  indicates that the risk is greater after the exposure.

147. Which of the following treatment parameters would be MOST appropriate for a patient receiving intermittent lumbar traction for a diagnosis of multifidus muscle spasms?

- A. 30 minutes, 10% body weight traction
- B. 30 minutes, 25% body weight traction force
- C. 30 minutes, 50% body weight traction force
- D. 30 minutes, 75% body weight traction force

The correct answer is:

- A. This would possibly be a treatment for muscle spasms, but is insufficient to affect the lumbar spine significantly.
- B. This is the correct answer. A force of approximately 25% of body weight would produce the desired effects for treating muscle spasms.
- C. This is the amount of force required to cause vertebral foraminal separation.
- D. This is just too much.

148. A patient with a complete C5 spinal cord injury is preparing to perform therapeutic exercises on the floor. Which of the following lifts would be MOST appropriate to use to transfer the patient to the floor?

- A. Slide board transfer
- B. Dependent squat pivot lift
- C. Hoyer lift
- D. Two person lift

The correct answer is:

- A. This is used between surfaces of the same level.
- B. This is used to transfer a patient from chair to chair of the same level.
- C. This is a hydraulic lift, used especially for obese patients.
- D. This is the correct answer. With a person at the legs and one at the torso, the two therapists transfer the patient up or down.



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149. After sustaining a large superficial partial-thickness burn wound, a patient seeks wound care from a physical therapist. What would be the MOST accurate estimation of wound healing time?

- A. 1-3 days
- B. 2-5 days
- C. 6-20 days
- D. 15-30 days

The correct answer is:

- A. This is the time required for an extremely minor superficial burn.
- B. This is the typical time required for a superficial burn.
- C. This is the correct answer. Without serious complication, the wound will most likely heal within 3 weeks.
- D. This would be correct for a deep partial-thickness burn.

150. A physical therapist is examining a patient with shoulder pain that has gradually worsened over the past month. The therapist suspects that the patient has adhesive capsulitis. Which of the following end-feels is MOST likely present with this diagnosis?

- A. Hard
- B. Soft
- C. Empty
- D. Firm

The correct answer is:

- A. This is typical of bone spurs and fractures.
- B. This is common in edematous joints.
- C. This is common in exceedingly painful joints.
- D. This is the correct answer. When the capsule shrinks and sticks, the end-feel becomes very firm.

151. A patient is being evaluated by a physical therapist for a possible sprain of the anterior talofibular ligament. Which of the following special tests will BEST confirm this diagnosis?

- A. Talar tilt test
- B. Anterior drawer test
- C. Ottawa 2-step test
- D. Thompson Test

The correct answer is:

- A. This will indicate a torn calcaneofibular ligament.
- B. This is the correct answer.
- C. This will rule out fracture and is used as a common screening.
- D. This is a test for Achilles tendon rupture.



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152. A patient is asked to flex their shoulder to 90 degrees with the forearm in full supination. The examiner places resistance downward against the flexed arm. Which structure BEST represents what the examiner testing?

- A. Acromioclavicular joint pathology
- B. Rotator cuff pathology
- C. Anterior deltoid pathology
- D. Biceps tendon pathology

The correct answer is:

- A. This is tested with the crossover test.
- B. This is tested with external rotation lag sign or resisted external/internal rotation/supraspinatus.
- C. This could be involved, but is not the best answer.
- D. This is the correct answer.

153. A patient has just undergone a procedure to remove an air pocket from the lung that has resulted from several years of COPD. What is the term for this type of procedure?

- A. Lobectomy
- B. Pneumonectomy
- C. Sleeve lobectomy
- D. Bullectomy

The correct answer is:

- A. This is a procedure to remove an entire lobe of the lung.
- B. This is the removal of an entire lung.
- C. This is a type of lobe removal that spares the removal of the entire lobe by resecting the bronchus.
- D. This is the correct answer. Bullae are air pockets in the lung that form from tissue destruction as a result of cancer, COPD, emphysema, etc.



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154. A patient with cystic fibrosis is receiving segmental breathing treatment. Which of the following BEST describes this treatment?

- A. Instruct the patient to breathe in deeply followed by breathing out through puckered lips.
- B. Have the patient exhale completely, and then steadily inhale through an incentive spirometer.
- C. Have the patient inhale deeply, and then assist exhalation with firm pressure applied to the chest wall.
- D. Instruct the patient to breathe with the diaphragm by using tactile cues to inhibit accessory muscles and facilitate the diaphragm.

The correct answer is:

- A. This is the description for pursed-lip breathing.
- B. This is the description for sustained maximal inhalation with a feedback device.
- C. This is the correct answer. Segmental breathing requires manual assistance from the therapist to facilitate full exhalation of the targeted segments.
- D. This is the description for diaphragmatic breathing.

155. A physical therapist is evaluating a patient for general deconditioning when the patient reports that he requires a Ventolin (albuterol) inhaler. Which of the following BEST describes the effects of the inhaler?

- A. Decrease mucus secretion viscosity.
- B. Block the effects of histamine and decrease congestion.
- C. Stabilize mast-cells and reduce inflammatory bronchoconstriction.
- D. Relieve bronchospasm and cause smooth muscle relaxation.

The correct answer is:

- A. This is a mucolytic agent, such as Pulmozyme or Mucosil.
- B. This is an antihistamine such as Benadryl or Allegra.
- C. This is an anti-inflammatory such as Zflo or Pulmicort.
- D. This is the correct answer. Albuterol rescue inhalers are used to cause bronchodilation through smooth muscle relaxation.



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156. An elderly patient with severe dementia in a skilled nursing facility is being evaluated by a physical therapist. Which of the following activities will be MOST important in creating a treatment plan?

- A. Gait training with the focus on transfers.
- B. General strengthening and balance activities.
- C. Progressive resistance training for the major muscle groups.
- D. Focus on the use of an assistive device for all gait activities.

The correct answer is:

- A. This is an important part, but not the MOST important part.
- B. This is the correct answer. Due to the dementia, information will have very little carryover. Thus she will benefit from gross strengthening and balance activities the most.
- C. This is almost as good as option 2, but does not have the balance component, which is essential to prevent comorbidities like hip fractures or head injuries from a fall.
- D. Although an assistive device will be used during activities, there is very likely little carryover due to the dementia. Thus this is not the MOST important consideration.

157. A patient who has suffered a stroke is having difficulty walking due to an extensor synergy in the lower extremity. Which of the following will be MOST beneficial initial intervention to improve the patient's ability to walk?

- A. Fit the patient with an ankle-foot orthosis.
- B. Begin training with a single Lofstrand crutch to maintain balance.
- C. Practice moving the patient out of the synergy pattern to assist in limb advancement.
- D. Begin weight shifting exercises to encourage weight-bearing through the involved lower extremity.

The correct answer is:

- A. This is the correct answer. By fitting the patient with an AFO, this will allow the patient to begin ambulation and neuromuscular reeducation sooner.
- B. This is not the most appropriate initial intervention.
- C. This is a great intervention for a stroke patient, but probably not the best initial one.
- D. This is a great intervention for a stroke patient, but probably not the best initial one.



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158. A patient with schizophrenia is receiving physical therapy treatment for a rotator cuff injury sustained from a recent fall. Which of the following will be the MOST important consideration in treating this individual?

- A. Begin a structured routine with little variation in a predictable environment.
- B. Assure the patient that he is safe in therapy and avoid group settings.
- C. Begin the patient with several low intensity exercises that increase heart rate.
- D. Remain calm and speak softly throughout the treatment session.

The correct answer is:

- A. This is an important consideration.
- B. This is the correct answer. Patients with schizophrenia are commonly apprehensive about group settings and have frequent hallucinations and delusions. It is best to treat these individuals as privately as possible to avoid anxiety/fear.
- C. This will assist in the treatment.
- D. This is also very important. Many questions on the NPTE make you choose among several “right” answers to pinpoint the BEST answer.

159. A patient is having difficulty raising her arm over her head. The physical therapist hypothesizes that the scapulohumeral rhythm is impaired. Which of the following BEST represents the normal combination of movements that will result in full shoulder flexion?

- A. Glenohumeral flexion 80°; scapulothoracic upward rotation 80°.
- B. Glenohumeral flexion 100°; scapulothoracic upward rotation 60°.
- C. Glenohumeral flexion 100°; scapulothoracic upward rotation 80°.
- D. Glenohumeral flexion 120°; scapulothoracic upward rotation 60°.

The correct answer is:

- D- This is the correct answer. There is typically a 2:1 glenohumeral:scapulothoracic ratio of movement that will achieve full shoulder flexion.





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160. A patient is struggling to regain full motion in the thoracic spine following a motor vehicle accident, and appears to have a capsular restriction. Which of the following BEST represents the capsular pattern for the thoracic spine (listed in order of most limited to least limited)?

- A. Equal lateral flexion and rotation, extension
- B. Equal flexion and extension, side flexion
- C. Equal flexion and rotation, extension
- D. Equal extension and side flexion, rotation

The correct answer is:

- A. This is the correct answer. Capsular patterns in the thoracic spine affect the zygapophyseal joints as they articulate on both sides of the vertebrae.

161. A patient is receiving physical therapy treatment for weakness and difficulty transferring following an above-knee amputation approximately 4 weeks ago. Which of the following will be the MOST important initial treatment to improve gait mechanics?

- A. Have the stump fitted for a custom prosthesis
- B. Begin performing progressive sidelying hip abduction exercises
- C. Perform prone hip extension stretching
- D. Initiate progressive well-leg strengthening

The correct answer is:

- A. This will be important, but the stump will continue to change size and shape for months following the amputation.
- B. This will be a good part of rehab, but not the MOST important initial consideration.
- C. This is the correct answer. Prone hip stretching will prevent a hip flexion contracture and allow for appropriate gait mechanics in the months to come.
- D. This will be a good part of rehab, but not the MOST important initial consideration.

162. A patient in physical therapy wishes to document his decrease in body fat. Which of the following methods would be MOST accurate in tracking the changes in percentage of body fat?

- A. Body mass index
- B. Anthropometry
- C. Hydrostatic weighing
- D. Bioelectrical Impedance Analysis

The correct answer is:

- A. This is a calculation based on height and weight and is not very accurate.
- B. This is a decent, inexpensive method, but relies on several factors that may not be accurate.
- C. This is the correct answer. Using Archimedes' principle, water displacement, and a scale, this is the gold standard for body composition measurements.
- D. This is convenient and inexpensive, but is also variable depending hydration status and electrode placement.



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163. A patient with congestive heart failure is having great difficulty with activities of daily living. Which of the following cardiac factors is MOST likely the cause of such difficulty?

- A. Preload
- B. Afterload
- C. Stroke volume
- D. Heart rate

The correct answer is:

- A. This is the end-diastolic pressure and drives blood into the atria.
- B. This is the correct answer. High diastolic blood pressure does not allow the blood to be pumped efficiently out of the heart, thus creating the great difficulty.
- C. This is somewhat correct. If stroke volume x heart rate (cardiac output) is sufficient, all is well. This is often a problem in patients with congestive heart failure. Of the given choices, this is not the BEST answer.
- D. This is somewhat correct. If stroke volume x heart rate (cardiac output) is sufficient, all is well. This is often a problem in patients with congestive heart failure. Of the given choices, this is not the BEST answer.

164. A physical therapist is treating a 12-month old child who has been diagnosed with Down Syndrome. The parents report that the child still has not begun to stand or attempt to walk with help, but is able to sit upright without support. Which of the following will be the BEST initial treatment to help the child begin walking?

- A. Begin by working on dynamic sitting balance to encourage core control.
- B. Initiate simple weight bearing activities, such as unsupported standing or catching a ball while standing.
- C. Place the child prone over a small ball and encourage the patient to use her legs to turn toward the therapist.
- D. Practice crawling activities up/down small steps to progress crawling stability in preparation for walking.

The correct answer is:

- A. This would be correct if you were attempting to progress sitting activities.
- B. This is not the best INITIAL treatment, as the patient has not begun any attempt to stand or walk.
- C. This is the correct answer. The patient requires very simple weight bearing activities, and placing the child on a ball with her feet on the floor will encourage her to use her feet to direct her body.
- D. This would be correct if the primary deficit were difficulty crawling.



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165. A 5-year old patient with cerebral palsy appears to tire quickly while playing at school. The fatigue affects the lower extremities more than the upper extremities and limits the child's ability to play games with his cohorts. According to the ICF model created by the World Health Organization, which of the following categories does this child's fatigue fit under?

- A. Body function and structure
- B. Disability
- C. Participation
- D. Personal factors

The correct answer is:

- A. This is the correct answer. The fatigue fits under body function.
- B. The child's difficulty running/walking would fit in this category.
- C. The child's difficulty playing at school would fit in this category.
- D. The child's age and attitude would fit in this category.

166. A patient with a body mass index of 34.9 is being treated for generalized weakness and difficulty walking. Which of the following will be MOST important when creating a therapeutic exercise routine for this patient?

- A. Use recumbent and low impact drills to minimize jarring forces.
- B. Monitor heart rate and blood pressure throughout treatment.
- C. Add both strength and endurance activities to promote weight loss.
- D. Instruct the patient to maintain a Borg RPE less than 13 during endurance activities.

The correct answer is:

- A. This is a great consideration when treating obese patients, but of the choices is not the MOST important.
- B. This is also a great way to monitor response to activity, but does not facilitate a long-term exercise program, which will be critical for the morbidly obese. Because the question does not mention an acute heart condition or high blood pressure, this will not be as important as #4 for the long-term management of obesity.
- C. This is a great way to promote weight loss, but does not address the exercise prescription for the patient.
- D. This is the MOST correct answer. The Borg scale was created to correlate fatigue and exertion to approximate heart rate (thus 13 on the scale would be  $13 \times 10 = 130$  for the heart rate). For a long term intervention, combined with a home exercise program, instruction on the Borg RPE will be MOST important.



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167. A patient with type II diabetes is coming to the physical therapy clinic for treatment after a total knee replacement. Which of the following will be most important when treating this individual with therapeutic exercise?

- A. Include activities for large muscle groups to improve glucose absorption.
- B. Encourage the patient to eat more than ½ hour before the therapy session.
- C. Add appropriate exercises as tolerated, focusing on knee extension.
- D. Instruct the individual to bring small snacks to eat throughout the session.

The correct answer is:

- A. This is important for glucose absorption, but is not the MOST important among the choices.
- B. This is the correct answer. If the patient eats ½ hour before treatment, the insulin response combined with the exercise induced glucose absorption will likely cause hypoglycemia.
- C. If the glucose is well controlled, this is an excellent choice. But if the glucose is not controlled, the patient will not tolerate activity well.
- D. This is a good suggestion for the patient, but will be secondary to choice #2.

168. A 79 year old patient is receiving physical therapy for weakness and difficulty walking. Which of the following test results would BEST indicate that the patient is at a significant fall risk?

- A. Tinetti Performance Oriented Mobility Assessment Score = 24
- B. Timed Up and Go test = 21 seconds
- C. Berg Balance Scale = 45
- D. 6 Minute Walk Test = 530 meters

The correct answer is:

- A. The Tinetti POMA score is from 0-28 with a score less than 19 indicating a high fall risk.
- B. This is the correct answer. The TUG test is a timed test where less than 10 seconds is normal and higher than 20 seconds in community dwelling elderly indicates a high fall risk.
- C. The Berg Balance Scale is a poor predictor of falls, but a score of 21-40 indicates a lower mobility score.
- D. This is a slightly above average score for a community dwelling septuagenarian.

169. A patient with an adrenal medulla adenoma is being examined by a physical therapist. Which of the following metabolic symptoms would be MOST likely present when assessing the patient's resting vital signs?

- A. Decreased respiration rate and decreased heart rate
- B. Decreased respiration rate and increased heart rate
- C. Increased respiration rate and increased heart rate
- D. Increased respiration rate and decreased heart rate

The correct answer is:

C- An adenoma would most likely cause hypertrophy of the adrenal medulla and thus an overproduction of epinephrine and norepinephrine, increasing respiration rate and heart rate.



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170. A patient is having difficulty achieving full knee extension after arthroscopic surgery. The patient appears to have difficulty with the “screw-home” mechanism. Which of the following BEST describes the action of the screw-home mechanism?

- A. The tibial plateau rotates medially during the final 10 degrees of extension.
- B. The tibial plateau rotates medially during the final 20 degrees of extension.
- C. The tibial plateau rotates laterally during the final 10 degrees of extension.
- D. The tibial plateau rotates laterally during the final 20 degrees of extension.

The correct answer is:

D- This is the correct answer.

171. A patient is being examined for elbow/wrist pain which has been worsening for the last few weeks. The patient reports that he is losing strength in his thumb and is unable to perform a “tip to tip pinch grip” with the involved hand. Which of the following conditions is MOST likely present?

- A. Anterior interosseous nerve syndrome
- B. Carpal tunnel syndrome
- C. De Quervain’s disease
- D. Ulnar impaction syndrome

The correct answer is:

- A. This is the correct answer. The AIN innervates the flexor pollicis longus and lateral flexor digitorum profundus. This results in 1st and 2nd digit paralysis.
- B. This is an entrapment of the median nerve in the carpal tunnel and would result in thenar weakening and paresthesias throughout the lateral hand.
- C. This is a tenosynovitis of the abductor pollicis longus and extensor pollicis brevis.
- D. This is a radiologic finding of the ulna impacting the TFCC or ulnar carpus and the eventual degeneration of those structures.



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172. A physical therapist is evaluating a 65 year old patient who complains of progressive weakness that first began 1 year ago. The patient reports increasing fatigue, diminished muscle mass, and generalized muscle pain. MRI and lab tests are negative for irregularities. Which of the following conditions is MOST likely present?

- A. Multiple Sclerosis
- B. Post-polio syndrome
- C. Acute inflammatory demyelinating polyneuropathy
- D. Charcot-Marie-Tooth disease

The correct answer is:

- A. This would be primarily diagnosed by sclerae on an MRI.
- B. This is the correct answer. Post-polio syndrome is a progressive weakness and fatigue that affects people who had poliomyelitis approximately 15-30 years earlier. There are no lab tests or imaging to confirm this diagnosis.
- C. This is a progressive weakness, beginning in the distal portions of the extremities and moving proximally.
- D. This is a progressive genetic disorder that gradually affects the myelin sheath of peripheral nerves, and typically begins with drop foot and lower leg weakness.

173. A patient is being examined by a physical therapist and is asked to raise both arms up to 90 degrees abduction, 90 degrees external rotation, and 90 degrees elbow flexion. The patient is then asked to open and closed the hands for 3 minutes. Which of the following special tests is being performed?

- A. Adson's Maneuver
- B. Roos Test
- C. Wright Test
- D. Cozen's Test

The correct answer is:

- A. This is done by palpating the pulse while the patient is sitting with hands in lap and rotating the head toward the affected side.
- B. This is the correct answer. A positive would be a reproduction of symptoms after several minutes.
- C. This is performed with arm in extension and abduction. The examiner palpates the pulse at the wrist.
- D. This is a test for tennis elbow, performed by resisting wrist extension in full elbow flexion.



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174. A 12 year old boy with spina bifida occulta is receiving physical therapy for bilateral leg weakness and difficulty walking. Which of the following will be the MOST important consideration when developing a plan of care for this patient?

- A. Train the patient in the use of appropriate adaptive equipment.
- B. Provide training to upper body muscles to promote independence.
- C. Provide exercises to increase tone in the legs and become as independent as possible.
- D. Train the patient to use crutches to allow for more active participation in socially appropriate activities.

The correct answer is:

- D- Increasing tone in flaccid legs and promoting independence is the MOST important consideration.

175. A physical therapist is treating a patient who has had a suffered from a major stroke has increased sympathetic nervous activity. Which of the following signs will be MOST likely present?

- A. Constricted pupil size
- B. Increased peristalsis
- C. Decreased renin production
- D. Dilated bronchioles

The correct answer is:

- D- This is the correct answer. The other options are all opposite of SNS signs.

176. A patient is having difficulty maintaining his balance during static standing, especially in crowded environments. Which of the following balance strategies is the most active during this activity?

- A. Ankle strategy
- B. Hip strategy
- C. Suspensory strategy
- D. Stepping strategy

The correct answer is:

- A. This is the correct answer. The ankle strategy is most used during simple standing activities.
- B. This is a more dynamic balance strategy for higher level activities or poorer balance.
- C. This is a “surfer” position used in high-level activities.
- D. This is a strategy that is used when the COG moves beyond the BOS.



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177. When using the parallel bars for gait training, what is the appropriate adjustment of height that will optimize stability and security for the patient?

- A. A height that allows for elbow flexion of approximately 0 degrees.
- B. A height that allows for elbow flexion of approximately 10 degrees.
- C. A height that allows for elbow flexion of approximately 15 degrees.
- D. A height that allows for elbow flexion of approximately 20 degrees.

The correct answer is

D. This is the correct answer. Having elbow flexion of approximately 20 degrees will allow optimal stability while ambulating.

178. Which of the following is the BEST reason for pregnant women to avoid high intensity exercise?

- A. Decreased cardiac output
- B. Decreased oxygen availability
- C. Morphological changes to the abdominal muscles
- D. Preferential blood flow to working muscles

The correct answer is:

- A. This is a consideration, especially for supine activities.
- B. This is due to more blood flowing to the splanchnic beds and uterus.
- C. This is especially important during the 3rd trimester and for high IMPACT activities.
- D. This is the correct answer. Preferential blood flow to working muscles during high intensity activity can be detrimental to the fetus.

179. Which of the following is the greatest implication to physical therapy due to the long-term use of Lithobid (lithium) for the treatment of a bipolar disorder?

- A. Intense mood swings
- B. Vertigo
- C. Osteoporosis
- D. Myolysis

The correct answer is:

D. Osteoporosis is a major side effect of long term lithium use. Care must be taken to improve bone mass and avoid traumatic forces to the bones.





## النقابة الفلسطينية العامة للعلاج الطبيعي – القدس

PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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180. When treating a patient with Human Immunodeficiency Virus (HIV), which of the following is the MOST important consideration?

- A. Thoroughly disinfect all surfaces touched by the individual.
- B. Treat the patient in a private room and avoid contact with other patients.
- C. Use protective equipment when in contact with blood products.
- D. Reduce workloads and use primarily low-impact drills to avoid stress on weight-bearing joints.

The correct answer is:

- A. This should be a common practice for ALL individuals entering the clinic.
- B. This is not necessary since HIV is not transmitted via air or touch.
- C. This is the correct answer. Infection happens primarily through blood products.
- D. This is not necessary.

181. A 40 year old female patient receiving treatment in the therapy gym begins to have a great increase in pain in her left arm which she describes as an “intense burning.” The arm also swells, turns slightly blue, and is extremely sensitive. The pain does not subside, despite several days’ rest. Which of the following is the MOST likely source of the pain?

- A. Myocardial infarction
- B. Systemic Lupus Erythematosus
- C. Rheumatoid arthritis
- D. Reflex sympathetic dystrophy

The correct answer is:

- A. Pain in the left arm is a possible sign of an MI, but the localized pain, swelling, and discoloration indicate something else.
- B. This is a connective tissue disorder that is characterized by a rash across the face and nose, and also includes seizures and joint pain.
- C. This is an autoimmune disorder that affects articular cartilage, synovia, and tendons.
- D. This is the correct answer. The cause is unclear, but it is related to chronic regional pain syndrome, commonly in women 35-50 years old.



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182. Which of the following BEST describes a Chopart amputation?

- A. A transtibial amputation.
- B. Removal of the ankle joint just proximal the malleoli.
- C. Amputation of the metatarsals.
- D. Disarticulation at the midtarsal joint.

The correct answer is:

- A. This is a transtibial amputation or BKA.
- B. This is a Syme's amputation.
- C. This is a transmetatarsal amputation.
- D. This is the correct answer. The calcaneus and talus are left intact, but the midtarsals are removed.

183. A patient is having difficulty with heel cord tightness while walking. During ambulation, what is the normal range of motion for ankle plantar flexion?

- A. 0-5 degrees
- B. 0-10 degrees
- C. 0-15 degrees
- D. 0-20 degrees

The correct answer is:

- D. This is the correct answer.

184. According to the Rancho Los Amigos gait terminology, when does terminal swing phase begin?

- A. At the point of toe off of the reference foot.
- B. When the contralateral tibia is perpendicular to the ground.
- C. When the reference tibia is perpendicular to the ground.
- D. At the point of toe off of the contralateral foot.

The correct answer is:

- A. This is the beginning of initial swing.
- B. This is the beginning of terminal stance
- C. This is the correct answer.
- D. This is the beginning of midstance.



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185. What is a normal age-related changes seen in the respiratory system?

- A. Increased tidal volume (TV).
- B. Decreased tidal volume (TV).
- C. Decreased residual volume (RV).
- D. Decreased vital capacity.

The correct answer is:

D. This is the correct answer decreased vital capacity. Residual volume increases with increased age. Tidal volume remains the same with age. Also, the strength of the diaphragm and other respiratory muscles decreases.

186. In the daily SOAP note documentation of a physical therapy treatment session, which of the following categories will contain the patient's complaints?

- A. Subjective
- B. Objective
- C. Assessment
- D. Plan

The correct answer is:

- A. This is the correct answer. The patient's subjective reports and complaints are documented here.
- B. This is where one would document the activities performed/modified or common tests and measures.
- C. This is where one would communicate the assessment of the progress of the patient.
- D. This is where one would document the future plans for the patient, including course of treatment and duration.

187. Which of the following cervical spine joints is primarily responsible for the flexion and extension of the cranium that occurs when a person is nodding "yes?"

- A. Atlanto-occipital joint
- B. Atlanto-axial joint
- C. C2-3 zygapophyseal joint
- D. C3-4 zygapophyseal joint

The correct answer:

- A. This is the correct joint. The AO joint is a flexion/extension joint.
- B. The AA joint is a rotational joint.
- C. This is a flexion/extension/rotation joint, but not primarily responsible for the nod.
- D. This is a flexion/extension/rotation joint, but not primarily responsible for the nod.



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188. A patient reports pain with movement involving the sartorius muscle. Which of the following choices BEST represent the primary actions of the sartorius muscle?

- A. Knee extension and hip medial rotation
- B. Knee extension and hip lateral rotation
- C. Knee flexion and hip medial rotation
- D. Knee flexion and hip lateral rotation

The correct answer is:

d- This is the correct answer. The sartorius is primarily responsible for knee flexion and hip lateral rotation.

189. While auscultating a patient's lungs, the therapist note a harsh, high-pitched wheezing sound emanating from the patient's upper bronchi during inspiration. Which of the following abnormal breath sounds is MOST likely present?

- A. Stridor
- B. Wheeze
- C. Crackle
- D. Rhonchi

The correct answer is:

- A. This is the correct answer. Stridor can be a medical emergency and indicates obstruction of the upper airways. It is typically high-pitched.
- B. This is a continuous coarse whistling sound and is variable in pitch.
- C. This is a rattling noise indicating a popping open of airways.
- D. This is a low-pitched sound, much like snoring. This term has been phased out of pulmonary auscultation because of its similarity to wheezing.

190. What is the appropriate ratio of chest compressions to rescue breaths for infants during single rescuer cardiopulmonary resuscitation (CPR)?

- A. 15 compressions: 2 breaths
- B. 20 compressions: 2 breaths
- C. 25 compressions: 2 breaths
- D. 30 compressions: 2 breaths

The correct answer is:

d- This is the correct answer. 30:2 for 1 rescuer and 15:2 for 2 rescuers.



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191. A 15 year old cheerleader reports inability to perform handstands or other aggressive upper extremity activities. Which of the following BEST describes the defining characteristic of glenohumeral multidirectional instability?

- A. History of traumatic subluxation
- B. Rotator cuff weakness less than 85% of the uninvolved upper extremity
- C. Inability to flex shoulder above 100 degrees without symptoms
- D. Gross symptomatic instability in more than one direction

The correct answer is:

- A. This is a possible historical factor, but is not the root cause MDI.
- B. This can also be associated with MDI, but is not the BEST defining characteristic.
- C. This is not the defining characteristic.
- D. This is the correct answer. Because MDI is caused by hyperlaxity of the GH joint capsule, symptomatic instability is the key characteristic.

192. A patient is being evaluated after a knee injury, and the examiner chooses to use the Reverse Pivot-Shift Test? Which of the following structures is BEST tested with this special test?

- A. Anterior Cruciate Ligament
- B. Posterior Cruciate Ligament
- C. Medial Collateral Ligament
- D. Lateral Collateral Ligament

The correct answer is:

b. This is the correct answer. The plain vanilla pivot shift test uses medial rotation of the leg, and the Reverse uses lateral rotation

193. While evaluating a patient with a suspected Morton's neuroma, which of the following differential diagnoses will be MOST important to rule out before continuing with treatment?

- A. Calcaneal bone spur
- B. Tarsal tunnel syndrome
- C. Anterior talofibular ligament sprain
- D. Achilles tendon paratenonitis

The correct answer is:

b. This will be the most important to rule out since the symptoms of tarsal tunnel syndrome can cause numbness and tingling over the plantar aspect of the foot, similar to that of the Morton's Neuroma. The other options do not have signs that mimic the pain or area of Morton's Neuroma.



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194. While treating a patient who has undergone a medial meniscus strain, the physical therapist wishes to advance the patient to aquatic running. If the water level is even with the patient's mid-chest, which of the following BEST describes the percentage of body weight loaded through the lower extremities?

- A. 10 %
- B. 25%
- C. 50%
- D. 75%

The correct answer is:

2. This is the correct answer. When the water is at chest level, the lower extremities will experience approximately 25% body weight.

195. Which of the following BEST describes the symptoms of anterior compartment syndrome of the lower leg?

- A. Exercised-induced shin pain
- B. Night pain associated with homoplastic osteoma
- C. Acute anterior pain and paresthesia secondary to trauma
- D. Exertional pain directly on the tibia secondary to stress fracture

The correct answer is:

- A. This is the primary sign for anterior shin splints.
- B. This is the sign of a tumor.
- C. This is the correct answer. Trauma, acute swelling, and paresthesias are signs of the medically emergent anterior compartment syndrome.
- D. This is the sign of a tibial stress fracture.

196. When treating a geriatric patient with osteoporosis, which of the following will be MOST important to include in a treatment plan to improve bone density?

- A. Treadmill with high incline
- B. Lumbar flexion resistance training
- C. Seated rowing machine
- D. Leg press resistance training

The correct answer is:

- A. Adding incline is not recommended for bone density training. Plus, this will be very difficult for many geriatric patients.
- B. This activity has a high risk for vertebral compression fractures.
- C. This activity has a high risk for vertebral compression fractures.
- D. This is the correct answer. Progressive leg press training is an appropriate weight-bearing activity for patients seeking to improve bone density.



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197. After sustaining a traumatic brain injury, a patient presents to physical therapy with symptoms consistent with damage to the amygdala, hippocampus, and thalamic nuclei. Which of the following symptoms will MOST likely be present in this individual?

- A. Impaired fine motor skills, including ataxia
- B. Disrupted vision, hearing, and sensation to the face/tongue
- C. Hemiparesis, with the upper extremity more affected than the lower extremity
- D. Lack of behavior control and memory difficulties

The correct answer is:

- A. This would result from damage to the cerebellum.
- B. This would result from damage to the occipital and temporal lobes, as well as the cranial nerves.
- C. This would result from a stroke affecting the parietal lobe.
- D. This is the correct answer. The limbic system has a primary function of emotion control and memory storage.

198. A patient receiving physical therapy for a recent shoulder injury demonstrates a 2+/5 manual muscle test for shoulder flexion. Which of the following BEST describes the amount of motion this patient can perform?

- A. The patient is able to complete more than  $\frac{1}{2}$  of the available range of motion against gravity.
- B. The patient is able to complete less than  $\frac{1}{2}$  of the available range of motion against gravity.
- C. The patient is able to complete the available range of motion with gravity eliminated.
- D. The patient is able to complete less than  $\frac{1}{2}$  of the available range of motion with gravity eliminated.

The correct answer is:

- A. This describes a 3-/5.
- B. This is the correct answer.
- C. This describes a 2/5.
- D. This describes a 2-/5.

199. A physical therapist is examining a patient who is recovering from a motor vehicle accident that injured the left forearm. The patient appears to have damaged the posterior interosseous nerve. Which of the following motions will be MOST impaired?

- A. Wrist radial deviation
- B. Wrist ulnar deviation
- C. Wrist flexion
- D. Wrist extension

The correct answer is:

D. This is the correct answer. The wrist extensors are primarily controlled by the posterior interosseous nerve (a branch of the radial nerve).



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200. A patient is recovering from a total knee replacement and reports that he has taken his prescribed OxyContin (oxycodone) 2 hours prior to the session. Which of the following BEST represent the side effects of this type of medication?

- A. Ulcer formation and gastrointestinal distress
- B. Headaches and migraines
- C. Impaired cognitive function
- D. Elevated blood pressure

The correct answer:

- A. These are common side effects of NSAIDS.
- B. These are common side effects of antirheumatic agents.
- C. This is the correct answer. Opioids cause a general slow-down of function, both cognitively and physiologically.
- D. This is common side effect of corticosteroids.

201. The BEST INITIAL intervention to improve functional mobility in an individual with a stable humeral neck fracture is:

- A. Active resistive range of motion (ROM).
- B. Isometrics for all shoulder musculature.
- C. Pendulum exercises.
- D. Heat modalities.

The Correct Answer: C

This individual will typically be immobilized with a sling for a period of 6 weeks. After 1 week, the sling should be removed to have the patient perform pendulum exercises to prevent shoulder stiffness.

Incorrect Choices:

Resistive exercises including isometrics are not indicated during this early period. Heat modalities may be effective in reducing pain but do not improve mobility.





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PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

202. A patient with unilateral spondylolysis at L4 is referred for physical therapy. The patient complains of generalized lower back pain when standing longer than 1 hour. Interventions for the subacute phase should include strengthening exercise for the:

- A. Abdominals working from neutral to full flexion.
- B. Multifidi working from neutral to full extension.
- C. Abdominals working from full extension to full flexion.
- D. Multifidi working from full flexion back to neutral.

Correct Answer: D

Performing strengthening exercises to the multifidi from flexion to neutral will not stress the pars defect.

Incorrect Choices:

Abdominal strengthening will

not provide the segmental stability needed with this condition. Lumbar extension beyond neutral and rotation will tend to aggravate the condition in the early stages of rehabilitation.

203. A PT receives a referral for a young child that had been swung around while being held from the wrists. The referral reads, "Functional disuse following nursemaid's elbow." The original injury consisted of:

- A. Superior subluxation of the ulna from the annular ligament.
- B. Inferior subluxation of the ulna from the annular ligament.
- C. Superior subluxation of the radial head from the annular ligament.
- D. Inferior subluxation of the radial head from the annular ligament.

Correct Answer: D

The inferior subluxation

of the radial head from the annular ligament typically occurs with a forceful

longitudinal pull of the forearm in a child. It is also known as "baby sitter's elbow."

Incorrect Choices:

The ulna is not subluxed from the humerus with this condition, and the subluxation is not superior.



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204. An infant demonstrates that the asymmetrical tonic neck reflex (ATNR) is NOT obligatory when he/she can turn the head:

Choices:

- A. To both sides and open the hand.
- B. To one side and look at the extended arm on that side.
- C. To one side and bring the opposite hand to mouth.
- D. And bring the hand to mouth on the same side.

Correct Answer: D

ATNR causes extension of upper extremity on the side the head is turned toward. Bringing the hand to the mouth would not be possible with an obligatory reflex.

Incorrect Choices:

The other choices do not correctly define actions that are limited with an obligatory ATNR. The ATNR is a total upper extremity response and not limited to hand opening or simply looking at the hand.

205. A patient recovering from traumatic brain injury (TBI) demonstrates difficulties in feeding resulting from an unstable posture while sitting. The therapist determines that modification is necessary to ensure optimal function. The FIRST body segment or segments that the therapist would align is/ are the:

- A. Pelvis .
- B. Head.
- C. Lower extremities.
- D. Trunk.

Correct Answer: A

Modification of the pelvic position in a neutral posture promotes good lumbar and trunk alignment. Many postural problems are correctable by aligning the pelvis first and achieving a stable base.

Incorrect Choices:

Modifying the position of the head, trunk or lower extremities may be necessary but only after achieving a stable base.



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206. In neural tension testing, what position will BEST bias the tibial nerve?

- A. Straight leg raise with dorsiflexion and eversion.
- B. Straight leg raise with dorsiflexion and inversion.
- C. Straight leg raise with plantarflexion and eversion.
- D. Straight leg raise with plantarflexion and inversion.

Correct Answer: A

A straight leg raise with dorsiflexion and eversion will best bias the tibial nerve. This is the optimal position for neural tissue provocation of the tibial nerve. Neural tension techniques are used to decrease adverse mechanical tension on the nerves. Peripheral nerves can often become trapped within the tissues, where there can be a pull on the nerve with movement. This technique frees up the nerve so that it can slide in its sheath.

Incorrect Choices:

Straight leg raise with dorsiflexion and inversion and straight leg raise with plantarflexion and inversion will best bias the sural nerve and peroneal (fibular) nerve, respectively. Straight leg raise with plantarflexion and eversion will not isolate a specific nerve.

207. During a postural screen for chronic shoulder pain, the therapist observes excessive internal rotation of the shoulders and winging of the scapula during overhead motion. Intervention should focus on:

- A. Strengthening of pectoral muscles and stretching of upper trapezius.
- B. Strengthening of upper trapezius and stretching of pectoral muscles.
- C. Strengthening middle and lower trapezius and stretching of pectoral muscles.
- D. Strengthening of rhomboids and stretching of upper trapezius.

Correct Answer: C

Abnormal posture that produces excessive internal rotation of the shoulders may result in chronic shoulder impingement syndrome due to a loss of scapular stability with overhead motion. Shoulder pain is likely to continue until a balance between anterior and posterior trunk musculature is achieved. The anterior chest muscles (pectorals) are shortened and need stretching and posterior trunk muscles (middle and lower trapezius) are stretched and need strengthening.

Incorrect Choices:

The pectoralis major and minor need to be stretched not strengthened. Stretching of the upper trapezius will not change this condition.



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208. A computer specialist is unable to work because of weakness and altered sensation in the dominant right hand. The patient complains of pain and tingling of the thumb, index finger, long finger, and radial half of the ring finger. The therapist observes thenar weakness and atrophy. Strength, reflexes, and sensation are within normal limits throughout the remainder of the right upper extremity. The therapist determines these signs and symptoms are characteristic of:

- A. Pronator teres syndrome.
- B. Cervical root compression.
- C. Ulnar nerve compression.
- D. Carpal tunnel syndrome.

Correct Answer: D

The pattern of motor and sensory loss corresponds to the median nerve distribution in the hand. The most likely cause is carpal tunnel syndrome.

Incorrect Choices:

Pronator teres syndrome (also a median nerve problem) produces similar deficits along with involvement of the flexors of the wrist and fingers. Cervical root compression would also produce proximal deficits in strength and sensation. Ulnar nerve compression (ulnar nerve palsy) would produce motor deficits of the flexor carpi ulnaris and medial half of the flexor digitorum profundus, resulting in claw hand. Sensory loss is to the ulnar side of the hand and/or arm.



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209. An elderly patient presents with a stage III decubitus ulcer on the plantar surface of the right foot. After a series of conservative interventions with limited success, the therapist chooses to apply electrical stimulation for tissue repair. The BEST choice for electrical current in this case is:

- A. Low-volt biphasic pulsed current.
- B. High-volt monophasic pulsed current.
- C. Medium-frequency burst current.
- D. Medium-frequency beat current.

Correct Answer: B

Because high-volt pulsed current is a monophasic, unidirectional current, the unidirectional current would produce a therapeutic effect at the active (treatment) electrode. A negative charge (polarity) should be applied for a bactericidal effect or a positive charge given to promote wound healing.

Incorrect Choices:

A biphasic current, which alternates the polarity, would tend to negate the treatment effects. Russian (burst) and interferential (beat) are medium-frequency biphasic currents. Interrupted currents ( $> 0.5$  second interruption) are also not used for tissue healing.

210. A patient with a transtibial amputation is learning to walk using a patellar tendon-bearing (PTB) prosthesis and is having difficulty maintaining knee stability from heel-strike to foot-flat. The muscles that are MOST likely weak are the:

- A. Knee extensors.
- B. Back extensors.
- C. Hip flexors.
- D. Knee flexors.

Correct Answer: A

The knee extensors (quadriceps) are maximally active at heel-strike (initial contact) to stabilize the knee and counteract the flexion moment.

Incorrect Choices:

Erector spinae, gluteus maximus, and hamstrings contribute to core stability (trunk and pelvis) and assist in counteracting the flexion moment from heel-strike to foot-flat. Hip flexors contribute to initiate swing (acceleration to midswing), whereas knee flexors (hamstrings) decelerate the momentum of the swinging leg (midswing to deceleration).



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PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

211. A patient presents with insidious onset of pain in the jaw that is referred to the head and neck regions. As best as the patient can recall, it may be related to biting into something hard. Cervical ROM is limited in flexion by 20 degrees, cervical lateral flexion limited to the left by 10 degrees. Mandibular depression is 10 mm with deviation to the left, protrusion is 4 mm, and lateral deviation is 15 mm to the right and 6 mm to the left. Based on these findings, the diagnosis for this patient would be:

- A. Capsule-ligamentous pattern of temporomandibular joint (TMJ) on the left.
- B. Weak lateral pterygoids on the left.
- C. Weak lateral pterygoids on the right.
- D. Cervical spine and TMJ capsular restrictions on the left.

Correct Answer: A

The capsule-ligamentous pattern of the TMJ is limitation on opening, lateral deviation greater to the uninvolved side, and deviation on opening to the involved side. Normal parameters for TMJ measures are 25 to 35 mm functional and 35 to 50 mm normal; normal protrusion is 3 to 6 mm, and normal lateral deviation is 10 to 15 mm.

Incorrect Choices:

Weakness of the lateral pterygoids presents as deviation on protrusion to the opposite side of the muscle weakness. A capsular pattern of the cervical spine presents as side flexion and rotation, equally limited, and extension.

212. A patient with anterior knee pain has increased adduction and internal rotation at the hip when performing a squat. The potential cause of this compensatory movement is decreased strength of the:

- A. Knee flexors and extensors.
- B. Hip and knee flexors.
- C. Hip adductors and internal rotators.
- D. Hip abductors and external rotators.

Correct Answer: D

Decreased strength of the hip abductors and external rotators are common findings in patients with anterior knee pain. Weakness is often demonstrated during a squat with increased hip adduction and internal rotation due to the poor eccentric control of these muscles.

Incorrect Choices:

Weakness of the knee flexors and extensors would not significantly affect hip mechanics during a squat. Weakness of the hip and knee flexors would not affect the squat as the hip and knee flexion are controlled eccentrically by the hip and knee extensors. Weakness of the hip adductors and internal rotators would not create this compensatory movement; rather, the opposite may occur.



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213. Which of the following gastrointestinal sources of pain can refer to the shoulder?

- A. Esophageal pain.
- B. Spleen or diaphragmatic pain.
- C. Colon or appendix pain.
- D. Gallbladder pain.

Correct Answer: B

Spleen or diaphragmatic pain can refer to the shoulder.

Incorrect Choices:

Esophageal pain can refer to the mid-back, head, or neck. Colon or appendix pain can refer to the lower back, pelvis, or sacrum. Gallbladder pain can refer to the mid-back and scapular regions.

214. A patient presents with decreased motion at the occipitoatlantal joint (OA). The PT wants to use the principles of coupled motions that occur in that area of the spine during manual therapy techniques. In order to improve OA mobility, when the occiput is side bent to the right, the therapist should mobilize C1 into:

- A. Flexion.
- B. Extension.
- C. Rotation to the right.
- D. Rotation to the left.

Correct Answer: D

Given the rules of coupled movement in the upper cervical spine, when the occiput is side bent into one direction, C1 rotates into the opposite direction. Side bending and rotation occur in the same direction from C2 to C7 regardless if the spine is in flexion or extension.

Incorrect Choices:

The other choices do not represent opposite directions or coupled movement from a right side bend of the occiput at C1.



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PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

215. A patient recovering from stroke has been using a bilateral exerciser (UBE) to strengthen muscles in the affected right upper extremity. The patient is now experiencing burning pain in the shoulder that worsens when the limb is touched or moved. Paresthesias and pitting edema in the dorsum of the hand are also present along with painful and diminished ROM of the wrist and fingers. The therapist's BEST course of action is to:

- A. Discontinue exercise and use ice for pain relief.
- B. Switch to interval exercise and lower the resistance on the UBE.
- C. Discontinue UBE exercise and splint the hand and wrist until pain and swelling disappear.
- D. Discontinue UBE exercise and initiate elevation, massage, and active assistive ROM.

Correct Answer: D

This patient presents with the classic signs and symptoms of early-stage complex regional pain syndrome (CRPS), type I (reflex sympathetic dystrophy). Interventions are chosen to quiet the sympathetic nervous system and promote pain relief. Edema can be successfully managed with a combination of elevation, massage, and compression bandaging. Restoring ROM (AROM) is also important in the treatment of CRPS.

Incorrect Choices:

Immobilization through splinting is contraindicated because the joints will stiffen with lack of ROM. Ther-motherapy is more beneficial than cryotherapy for pain relief because there is no accompanying sympathetic nervous system stimulation as there is with cold. Altering the exercise prescription while continuing with resistive exercise can worsen the problem

216. When performing the Thomas test, the patient's thigh does not touch the table, indicating limited hip extension. The amount of limited hip extension does not change when the ipsilateral knee is extended. What is the range-limiting muscle?

- A. Tensor fascia lata.
- B. Biceps femoris.
- C. Iliopsoas.
- D. Rectus femoris.

Correct Answer: C

The iliopsoas is a one joint hip flexor muscle and will limit hip extension regardless of the amount of knee flexion.

Incorrect Choices:

The tensor fascia lata and rectus femoris are two joint muscles that flex the hip and extend the knee. Passive knee extension would allow for further hip extension in both of these muscles. The biceps femoris, a hamstring muscle, is a hip extensor and will not limit hip extension.





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PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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217. A therapist is examining a 24-month-old child and observes that the child can sit independently, creep in quadruped, pull-to-stand, and cruise sideways, but not walk without support. The therapist concludes that this child is exhibiting:

- A. Normal cephalocaudal motor development.
- B. Delay in achieving developmental milestones.
- C. Normal gross motor development.
- D. Slow maturation that is within normal limits.

Correct Answer: B

The 12- to 18-month-old child should be ambulating. At 24 months, lack of ambulation is indicative of developmental delay. Other developmental milestones include sitting at 6 months and creeping, pull-to-stand, and cruising at 8 to 9 months.

Incorrect Choices:

These findings are indicative of abnormal motor milestones (normal cephalocaudal motor development, normal gross motor development, slow maturation within normal limits) . In fact, 24 months represents considerable delay in ambulation.



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218. A patient complains of waking up several times at night from severe "pins and needles" in the right hand. On awakening, the hand feels numb for half an hour and fine hand movements are impaired. The therapist's examination reveals sensory loss and paresthesia in the thumb, index, middle, and lateral half of the ring finger and reduced grip and pinch strength. Some thenar atrophy is present. Based on these examination findings, the MOST appropriate diagnosis is:

- A. Thoracic outlet syndrome (TOS).
- B. Ulnar nerve entrapment.
- C. Carpal tunnel syndrome.
- D. Pronator teres syndrome.

Correct Answer: C

Carpal tunnel syndrome is the result of compression of the median nerve under the flexor retinaculum at the wrist. It is characterized by thenar atrophy and sensory loss. Symptoms are worse at night and include burning, tingling, pins and needles, and numbness into the median nerve sensory distribution (palmar and dorsal thumb, index, middle, and lateral half of the ring finger).

Incorrect Choices:

TOS is a neurovascular compression syndrome caused by compression of nerves and/or vessels in the neck. It is characterized by brachial neuritis with or without vascular and vasomotor disturbances in the upper extremity. Electrophysiological studies indicate proximal and not distal compression. Ulnar nerve entrapment typically presents with nocturnal numbness and sensory loss in the little finger and half of the ring finger. The palm is typically not affected. Pronator teres syndrome arises from compression of the median nerve at the elbow with radiation into the radial aspect of the hand. Pronation is possible but weak (not evident in this case). Numbness extends into the median nerve distribution. With passage of time, atrophy of the thenar muscles will occur.



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219. Following a hip fracture that is now healed, a patient presents with weak hip flexors (2/5). All other muscles are within functional limits. During gait, the therapist expects that the patient may walk with:

- A. Forward trunk lean.
- B. A circumducted gait.
- C. Excessive hip flexion.
- D. Backward trunk lean.

Correct Answer: B

Circumduction is a compensation for weak hip flexors or an inability to shorten the leg (weak knee flexors and ankle dorsiflexors). Hip hiking can also compensate for an abnormally long leg (lack of knee flexion and dorsiflexion).

Incorrect Choices:

Excessive hip flexion is a compensation for foot drop. Forward trunk lean and backward trunk lean are stance phase deviations that compensate for quadriceps weakness and gluteus maximus weakness, respectively.

220. A patient presents with a complaint of severe neck and shoulder pain of 2 days' duration. The patient reports falling asleep on the couch watching 1V and has been stiff and sore since. There is tenderness of the cervical muscles on the right, with increased pain upon palpation. Passive ROM is most limited in flexion, then side-bending left, and then rotation left, and active extension. Side-bending right and rotation right are also painful. Based on these examination findings, the patient's diagnosis is:

- A. Cervical radiculopathy.
- B. Facet syndrome.
- C. Cervical strain.
- D. Herniated disc.

Correct Answer: B

A facet syndrome presents with localized pain.

Incorrect Choices:

Cervical radiculopathy presents with arm pain in the dermatomal distribution and increased pain by extension and rotation or side flexion. Cervical strain presents with pain on activity or when the muscle is on stretch. Cervical disc herniation has a dermatomal pain distribution with an increase of pain on extension, and pain on flexion may either increase or decrease (most common)



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121. A physical therapist is gross manual testing the trunk of a female patient who has a history of stroke. The patient, in prone position, moves into the direction of trunk extension with her hands behind the ears. Trunk extension includes the following muscles except:

- A. Interspinales
- B. Erector spinae
- C. Rectus abdominis
- D. Semi spinalis thoracis

Answer: C—Rectus abdominis is a trunk flexor. Interspinales, erector spinae, semispinalis thoracis, intertransversarii, and multifidi, are classified as trunk extensors. A patient who is able to perform trunk extension with the hands behind the ears is a normal result. A poor result is characterized by moving into the direction of trunk extension as the arms follow.

122. The ankle and the foot are complex structures that work together during gait to provide balance as the body walks over an uneven ground. The ankle joint is responsible for the following:

- A. Lateral adjustments
- B. Stability
- C. Forward motion
- D. Medial adjustments

Answer: B – The ankle joint is responsible for forward motion and stability. The foot joints are responsible for medial and lateral adjustments. At heel strike, the initial contact occurs at the posterior-lateral heel. At mid stance, the weight of the body is behind the metatarsal heads. At toe off, the weight is mainly over the first and second metatarsal heads.

123. A patient is referred to the clinic for a cardiac rehabilitation program. The history of the patient reveals a diagnosis of myocardial infarction, involving the left coronary artery. This artery divides into two major arteries: the left anterior descending artery and the circumflex artery. The left descending artery supplies which of the following:

- A. Lateral surfaces of the left ventricle.
- B. Sino atrial nodes.
- C. Anterior ventricular wall.
- D. Right atrium

Answer: C- The left anterior descending artery supplies the anterior ventricular wall. Option A is supplied by the circum flex artery. Options B and D are supplied by the right coronary artery.



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124. A physical therapist asks a female patient suspected of S1 nerve root compression to try walking on her toes. This test aims to check for muscle weakness. Walking on toes aims to tests which of the following muscles of the lower extremity?

- A. Flexor digitorum longus
- B. Sartorius
- C. Semimembranosus
- D. Flexor digitorum brevis

Answer: A– Walking on toes tests the flexor digitorum longus muscle. This muscle also assists in foot inversion. Sartorius flexes, laterally rotates, and abducts the hip joint. Semimembranosus flexes and medially rotates the knee joint. Flexor digitorum brevis flexes the proximal interphalangeal joints.

125. A patient who has had a stroke is assessed by the physical therapist before starting a course of physical therapy. On assessment, the patient demonstrates contralateral weakness, contralateral sensory loss of the toes, foot and leg, and inability to make decisions. Urinary incontinence is also noted. The artery that was most likely affected is:

- A. Internal carotid artery
- B. Vertebral artery
- C. Anterior cerebral artery
- D. Middle cerebral artery

Answer: C–The anterior cerebral artery was most likely affected. A stroke in the internal carotid artery injury is manifested by aphasia, apraxia, and homonymous hemianopia. As troke in the vertebral artery is characterized by numbness and weakness of the face, dysphagia, and facial pain, a stroke in middle cerebral artery is manifested by stupor, drowsiness, and global aphasia.



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126. A single nerve root can supply more than one peripheral nerve. Because of this, if pressure is applied to one nerve root, the distribution of sensation or motor function is exhibited in more than one peripheral nerve distribution. If the L5 is compressed, which of the following is most likely reported by the patient?

- A. Low back pain that radiates to the upper buttock, to the back of the thigh, and to the back of the leg
- B. Medial knee pain
- C. Hypoesthesias in front of the thigh
- D. Hypoesthesias in the fifth and lateral half of the fourth toes

Answer: A – If L5 is compressed, low back pain radiating to the upper buttock, to the back of the thigh, and to the back of the leg reported by the patient. Compression of L5 may affect the sciatic nerve. Option B is manifested by irritation of the saphenous nerve, which is supplied by L3 and L4. Option C is manifested by irritation of the femoral nerve, which is supplied by L2, L3, and L4. Option D is manifested by lateral plantar nerve, which is supplied by S1 and S2.

227. Assessment of a 3-month-old child reveals a palpable clunk when the left hip is reduced in and out of the acetabulum. The child is suspected of developmental dysplasia of the hip with subluxation. Which of the following statements most accurately describes a subluxation?

- A. It refers to antenatal dislocation of the hip.
- B. It describes the ability to subluxate the hip with passive movements.
- C. It involves incomplete contact between the articular surface of the femoral head and the acetabulum.
- D. It refers to complete absence of contact between the articular surface of the femoral head and acetabulum.

Answer: C – Subluxation is the incomplete contact between the articular surface of the femoral head and acetabulum. Option A refers to teratologic dislocation. Option B refers to instability. Option D describes dislocation of the hip.



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228. The cerebral cortex, the outer gray layer of the brain, is mainly responsible for conscious activities of the cerebrum. The cerebral cortex consists of four lobes. The Wernicke's area for sensory and speech is located in which lobe?

- A. Frontal
- B. Occipital
- C. Parietal
- D. Temporal

Answer: D–The Wernicke's area for sensory and speech is located in the temporal lobe. The Broca's area for speech is located in the frontal lobe. The visual area is found in the occipital lobe. Interpretation of touch, pressure, pain, and temperature occurs in the parietal lobe.

229. There are 31 pairs of spinal nerves that branch off from the spinal cord. In the cervical region, the spinal nerves exit (1) the vertebra. In the thoracic region, the spinal nerves exit (2) the vertebra. In the lumbar region, the spinal nerves exit (3) the vertebra.

- A. 1-above; 2-above; 3-above
- B. 1-above; 2- below; 3-above
- C. 1-above; 2- below; 3- below
- D. 1- below; 2-above; 3-above

Answer: C–In the cervical spine, the spinal nerves exit above the vertebra. However, the C8 exits below the C7 vertebra. The spinal nerves exit below their equivalent vertebrae. For example, the T5 spinal nerve exits through the foramen in the fifth thoracic vertebra.

230. The pain distribution of trigeminal neuralgia follows the sensory distribution of the fifth cranial nerve, which typically radiates to the maxillary branch. The maxillary branch is one of the fifth cranial nerve's three branches. This branch supplies sensation to the head? Which area of

- A. Front of the head
- B. Lower jaw
- C. Bottom lip
- D. Side of the nose

Answer: D–The maxillary branch supplies the side of the nose. The front of the head is supplied by the ophthalmic branch. The lower jaw and bottom lip are supplied by the mandibular branch. The maxillary branch runs through the cheek, upper jaw, on top of the lips, teeth, and gums.



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231. A football player who complains of burning pain in the supraclavicular area that radiates down to the arm is diagnosed with Grade II peripheral nerve injury. Grade II is classified as axonotmesis. Which of the following accurately describes axonotmesis?

- A. It involves axonal damage and Wallerian degeneration; the Schwann sheath is intact.
- B. It involves nerve function disruption due to demyelination; the axonal integrity is intact.
- C. It involves axonal and Schwann sheath damage; the nerve damage is permanent.
- D. It involves disruption of nerve function without axonal damage; remyelination occurs within 3 weeks.

Answer: A– Axonotmesis involves axonal damage and Wallerian degeneration, with intact supporting structures. In this type of injury the internal structure is preserved, so recovery is still achievable. Option B refers to grade I nerve damage, or neuropraxia. Option C refers to grade III nerve damage or neurotmesis.

232. A patient demonstrates loss of muscle strength in all four extremities due to a spinal cord injury. Which of the following is accurately derived from the finding?

- A. The injury in the spinal cord involves the first lumbar segment.
- B. The patient's abdominal muscle strength is intact.
- C. The injury involves a segment below the first thoracic spinal nerve.
- D. The injury involves one of the cervical spinal nerves.

Answer: D– A patient with tetraplegia most likely has an injury affecting the cervical spinal nerves. In addition to paralysis of the four extremities, the abdominal muscles are also affected, causing weakness in breathing and inability to cough effectively. An injury involving a thoracic segment causes paraplegia.





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233. A 25-year-old female gave birth to a male new born with talipes equinovarus involving the right foot. In most cases of club foot deformities, which of the following is most commonly involved?

- A. Toes
- B. Foot in step
- C. Ankle
- D. Lateral malleolus

Answer: C– The ankle is most commonly involved in clubfoot deformities. The ankle is composed of seven tarsal bones, forming a group of bones called the tarsus. It consists of the talus, calcaneus, navicular, cuboid, intermediate cuneiform, medial cuneiform, and the lateral cuneiform.

234. The brain stem consists of three areas: midbrain, medulla oblongata, and pons. The medulla oblongata is composed of all afferent and efferent tracts. It is also the center for various physiological mechanisms. The following are controlled by the medulla oblongata except:

- A. Blood vessel diameter
- B. Breathing
- C. Visual reflex
- D. Swallowing

Answer: C – Visual reflex is controlled by the midbrain. Options A, B, and D are controlled by the medulla oblongata. Breathing is also assisted by the pons. Sneezing, vomiting and heart rate are also controlled by the medulla oblongata.

235. The following muscles in the lower extremities allow adduction of the hip joint except:

- A. Adductor magnus
- B. Pectineus
- C. Gluteus medius
- D. Gracilis

Answer: C–Gluteus medius is a hip internal rotator. Adductor magnus, pectineus and gracilis are hip abductors. To test for the strength of the hip adductors, the therapist asks a patient to lie on the right side with the lower extremities and the lumbar spine straight. The therapist holds the upper leg in abduction and asks the patient to move the extremity upward from the table without flexing, rotating, and extending the hip.



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236. Movements during ambulation are the result of several factors, including those produced by the muscles. Muscles are essential for acceleration, deceleration, and shock absorption. Which of the following is true about the muscles involved with gait kinetics?

- A. Acceleration is the result of the muscle's eccentric activity.
- B. The greatest amount of muscle activity is required during the first 10% of the stance phase and last 10% of the swing phase.
- C. The times of least muscle activity are during periods of acceleration and deceleration.
- D. Locomotion requires continuous muscle activity as it involves movements from one location to another.

Answer: B—The greatest amount of muscle activity occurs during the first 10% of the stance phase and last 10% of the swing phase. Inactivity occurs during the mid-stance and the swing phase. Based on the information given, locomotion does not require continuous muscle activity. Acceleration is the result of the muscle's concentric activity; deceleration is the result of muscle's eccentric activity. The greatest amount of muscle activity occurs during acceleration and deceleration.

237. The obturator nerve, the largest nerve formed from the anterior divisions of the lumbar plexus, provides sensory innervation to the skin and fascia over the distal 2/3 of the thigh. This peripheral nerve is derived from the following nerve roots except:

- A. L4
- B. L3
- C. L2
- D. L1

Answer: D—The obturator nerve is not derived from L1. It is derived from L2, L3, and L4. When any of these nerve roots is compressed, irritation of the obturator nerve may occur.



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238. The anterior deltoid originates from the lateral margin and superior surface of the acromion. It inserts into the deltoid tuberosity of the humerus. Which of the following is the correct action of the anterior deltoid?

- A. It medially rotates, adducts and extends the glenohumeral joint.
- B. It stabilizes the head of the humerus in the glenoid fossa.
- C. It flexes the shoulder joint.
- D. It flexes the glenohumeral joint and rotates the spine medially.

Answer: D– The anterior deltoid flexes the glenohumeral joint and rotates the spine medially. Option A is the action of the latissimus dorsi. Option B is the action of the Subscapularis. Option C is the action of the biceps.

239. The mechanism of recovery after a stroke comes in two stages. The first stage of recovery occurs within the first three to six months. The second stage occurs after this time period. Which of the following changes are expected within the first three to six months after a stroke?

- A. Development of new synaptic connections.
- B. Neuronal network changes.
- C. Recovery of partially injured neurons.
- D. Exposure of previously latent functional pathways.

Answer: C– Recovery of partially damaged ischemic neurons occurs within the first three to six months after a stroke. Resolution of local edema, augmentation of local circulation, and the destruction of local toxins are expected within the first six months of stroke. The second stage of recovery involves neuroplasticity which includes changes of structural and functional neuron organization.



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240. A patient who complains of fatigue, difficulty swallowing, and weakness is diagnosed with myasthenia gravis. The physical therapist, who is teaching the patient with various conservation methods, understands that this condition is most likely caused by which of the following?

- A. Insufficient secretion of acetylcholine.
- B. Insufficient dopamine levels.
- C. Demyelination of the neurons.
- D. Inflammation of the arachnoid and piamater of the central nervous system.

Answer: A– Myasthenia gravis is caused by insufficient of secretion of acetylcholine, which causes a defect in the transmission of signals at myoneural junctions. Parkinson’s disease is caused by insufficient secretion of dopamine levels, causing dysfunction of the extra pyramidal system. The cause of multiple sclerosis is unknown, but its development is thought to be influenced by an autoimmune disease. Multiple sclerosis symptoms are caused by demyelination of the neurons.

241. A distant runner has a transient episode of complete motor paralysis with minimal sensory involvement in the left lower extremity. The patient’s history includes a recent compartment syndrome injury, which is believed to be strongly associated with the patient’s symptoms at consult. The patient’s acute nerve injury is most likely caused by which of the following mechanisms?

- A. Mechanical injury
- B. Stretch injury
- C. Crush and percussion injury
- D. Penetrating trauma

Answer: C–Compartment syndrome is a crush and percussion injury. Compartment syndrome injuries cause increased pressure in the surrounding tissue. This pressure compresses the supply of arterial blood of the nerve, increasing the nerve’s risk for ischemic cell damage. An example of mechanical injury is tourniquet paralysis. Stretch injuries may be caused by severe blows to a nerve and traction. An example of penetrating trauma is stab wound lacerations.



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242. Injuries heal by secondary intention, which involves large wound separations, or by primary intention, which involves smaller wound separations. Although the process of healing does not have clear-cut delineations, clinicians recognize that healing occurs in three phases: inflammation phase, proliferation phase, and remodeling phase. Which of the following occurs during the inflammation phase?

- A. Wound contraction
- B. Increased proteoglycans
- C. Increased extra cellular collagen synthesis
- D. Neutrophil migration

Answer: D– Neutrophil migration occurs during the inflammation phase. Within 5 to 6 hours of injury, neutrophils are released to remove the debris from the injured site. These cells are replaced by the monocytes and macrophages. Wound contraction occurs during the remodeling phase. Increased proteoglycans and extracellular collagen synthesis occur during the proliferation stage.

243. Female patient complaining of low back pain, leg pain, and weakness in the leg and foot is diagnosed with lumbar disk herniation. Lumbar disk herniation is best described by which of the following statements?

- A. It involves localized bulging of the disk with annular fiber damage.
- B. It involves injury to the cortico spinal tracts.
- C. Involves synovial hypertrophy and chronic inflammation of the facet joints.
- D. It involves narrowing of the spinal canal.

Answer: A– Lumbar disk herniation involves slipping of the intervertebral disk through annulus into the spinal. Option B describes a spinal cord injury. Option C describes arthritis. Option D refers to lumbar stenosis.



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244. The rotator cuff is a group of muscles and tendons that depress the humeral head against the glenoid. The rotator cuff consists of the following muscles except:

- A. Infraspinatus
- B. Subscapularis
- C. Supraspinatus
- D. Serratus anterior

Answer: D– The Serratus anterior stabilizes the scapula against the chest wall. The rotator cuff consists of the Infraspinatus, Subscapularis, supraspinatus and teres minor. The Infraspinatus and teres minor muscles support external rotation. The Subscapularis allows internal rotation. The supraspinatus abducts the arm at the shoulder.

245. The modalities for the application of cold and heat are used in various clinical conditions. It is essential that a physical therapist take advantage of these modalities to manage and prevent certain disorders and injuries. Which of the following indicates accurate differences between the effects of heat and those of cryotherapy?

- A. Heat therapy decreases muscle spasm; cold therapy increases muscle spasm.
- B. Heat therapy induces decreased tissue metabolism; cold therapy increases tissue metabolism.
- C. Heat therapy reduces spasticity caused by an upper motor neuron lesion; cold therapy decreases spasticity.
- D. Heat therapy sustains increased muscle contraction; cold therapy about 27°C decreases the ability of muscles to sustain contraction.

Answer: C – Heat therapy reduces spasticity, where as cold therapy decreases spasticity caused by lesions affecting the upper motor neurons. Heat therapy and cold therapy decreases muscle spasm. Heat increases tissue metabolism; cold decreases tissue metabolism. Heat therapy decreases the ability of muscles to sustain contraction; cold therapy about 27°C increases muscle contraction.



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246. Joints, also known as articulations, are regions where two or more bones meet. They are classified in to three types: diarthrosis, amphiarthrosis, and synarthrosis. This classification is based according to their function. Which of the following joints is an amphiarthrosis?

- A. Shoulder joint
- B. Hip joint
- C. Vertebral joint
- D. Skull sutures

Answer: C—A vertebral joint is an amphiarthrosis, or a slightly movable joint. The shoulder joint and the hip joint are diarthrosis, or freely immovable joints. Skull sutures are a synarthrosis, or immovable joint.

247. A therapeutic exercise program usually consists of three steps that have to be followed sequentially to be effective. The first step of the program consists of exercises that aim to regain flexibility and range of motion. Although flexibility and range of motion exercises are commonly interchanged, there are technical differences to consider. Which of the following accurately describes flexibility?

- A. It refers to the amount of movement possible at a given joint.
- B. It refers to the mobility and length to which muscles can extend.
- C. It is affected by strength and mobility of the joint capsule
- D. It refers to the maximum force that a muscle or group of muscles can exert.

Answer: B— Flexibility refers to the mobility and length to which a muscle can extend. Inflexibility indicates that a muscle, not a joint, has impaired mobility. Options A and C refer to range of motion. Option D refers to muscle strength.



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248. Cryotherapy has the main effect of cooling the tissues. Although the techniques of using ice or cold applications for treatment differ, the physiological responses to cryotherapy are consistent. The following are the physiological responses to cold therapy during the first 15 to 20 minutes of cold exposure except:

- A. Decreased tissue stiffness
- B. Decreased circulation
- C. Decreased arthrokinetic muscle inhibition
- D. Decreased muscle spasms

Answer: A– Cold therapy increases tissue stiffness. Cold therapy may also cause decreased temperature, tissue destruction, increased or decreased inflammation, decreased muscle spasm, and a lower metabolism.

249. The shoulder is the most mobile joint in the body but because of its wide range of movements, it is one of the most commonly injured. The shoulder consists of the humerus, glenoid, scapula, clavicle, acromion, and four other joints. Which of the following is the most commonly dislocated joint in the shoulder?

- A. Acromioclavicular joint
- B. Sternoclavicular joint
- C. Scapulothoracic joint
- D. Glenohumeral joint

Answer: D– The Glenohumeral joint is the most commonly injured joint in the body. This joint consists of the capsular and ligamentous constraints that surround the musculature and the glenoid labrum. Because of the lack of bony stability the Glenohumeral joint is at risk of injuries.





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250. Low back pain is frequently caused by lumbar disk disease, which is influenced by aging and degenerative cascade. What is the nomenclature specific to lumbar disk disease that involves breaking off of the disk fragment from the nucleus pulposus?

- A. Disk bulge
- B. Disk protrusion
- C. Disk sequestration
- D. Disk extrusion

Answer: C– Disk sequestration is the separation of the disk fragment from the nucleus pulposus in a disk bulge, the annular fibers are intact. Protrusion of the disk involves localized bulging of the disk with damaged annular fibers. Disk extrusion involves an extended bulge with destroyed annular fibers; the disk is intact.

251. A female patient complains of moderate joint pain and morning stiffness lasting longer than 30 minutes. The patient has active Rheumatoid factor. The patient is diagnosed with rheumatoid arthritis. This musculoskeletal disorder is best described by which of the following statements?

- A. It is a degenerative disorder of the joints caused by wear and tear.
- B. It is an age-related metabolic disease.
- C. It is a chronic systemic inflammatory disease due to an immune complex disorder.
- D. It is a degenerative joint disease that mainly affects the weight-bearing joints.

Answer: C– Rheumatoid arthritis is a chronic systemic inflammatory disease due to an immune complex disorder. In contrast to osteoarthritis, this type of arthritis mainly affects the smaller joints, such as the interphalangeal joints. Options A and D describe osteoarthritis. Option B describes osteoporosis.



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252. Strains and sprains are among the most commonly reported musculoskeletal injuries. These injuries account for about 50% of work-related injuries. Sprains and strains are commonly interchanged, but they are two different injuries. Which of the following statements accurately describes these injuries?

- A. Strain involves an injury to aligament that is surrounding a joint.
- B. Sprain is characterized by increased pain with joint motion.
- C. Sprain causes increased pain with isometric contraction of the muscle.
- D. Strain can cause joint instability.

Answer: B – Sprain is characterized by increased pain with joint motion. Sprain involves a ligament injury. Because of this, sprains can cause instability of the joints. Strain is caused by a stretching injury to a muscle. It is manifested by increased pain with isometric contraction of the affected muscle.

253. The shoulder is able to maintain great mobility with limited stability due to the static stabilizers, which maintain congruity and dynamic stabilizers, which create compressive force at the Glenohumeral joint. Which of the following is a static stabilizer?

- A. Labrum
- B. Serratus anterior
- C. Supraspinatus
- D. Rhomboids

Answer: A– The labrum is a static stabilizer. Static stabilizers include the bony structures, the Glenohumeral ligaments, and the joint capsule. The rotator cuff muscles are the following: Infraspinatus, supraspinatus, Subscapularis, and teres minor. The scapular stabilizers rhomboids and serratus anterior are dynamic stabilizers.



## النقابة الفلسطينية العامة للعلاج الطبيعي – القدس

PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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254. When utilizing heat modalities, the physical therapist considers the different conductivity properties of each tissue type. Which of the following tissues has the highest thermal conductivity?

- A. Muscle
- B. Skin
- C. Adipose tissue
- D. Cortical bone

Answer: B– The skin has the highest thermal conductivity. The thermal conductivities of the tissues mentioned are the following: skin–0.94; cortical bone–0.80; muscle – 0.64; and adipose tissue – 0.19. Thermal conductivity is the material's stability to conduct heat.

255. Female patient reveals that there are times when her hands usually fall asleep. On history taking, the patient says that things usually slip from her fingers, without her noticing. The numbness is usually severe at night. Carpal tunnel syndrome is considered. The physical therapist understands that this condition is caused by a damaged:

- A. Radial nerve
- B. Ulnar nerve
- C. Median nerve
- D. Axillary nerve

Answer: C– Carpal tunnel syndrome is caused by a damaged median nerve. This nerve runs through the carpal tunnel. High pressure within the carpal tunnel can damage the median nerve. This condition is more common in females. Whites have the highest risk of developing CTS.



## النقابة الفلسطينية العامة للعلاج الطبيعي – القدس

PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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256. Exercise is an essential part of anterior shoulder dislocation rehabilitation program as it can have a positive effect on muscular tissue and muscular strength. A physical therapist gradually initiates a group of exercises that involve constant velocity of shoulder movement with variable resistance. The resistance is given throughout the muscle action to allow maximum tension. This type of exercise is classified as:

- A. Isokinetic
- B. Isometric
- C. Isotonic
- D. Endurance exercise

Answer: A– Isokinetic exercises involve constant velocity of movement with variable resistance employed throughout the muscle action. This type of exercise allows maximum tension throughout the range of motion to encourage motor recruitment. Isometric exercise involves constant joint position given in variable resistance without changing muscle length. Isotonic exercise is composed of a dynamic exercise that combines constant load with uncontrolled speed of movement. Endurance exercise increases a muscle's ability to maintain or repeat a contraction within a period of time.

257. Formation of thrombus and its manifestations are related to an inflammatory process. When thrombus develops, inflammation occurs. The inflammatory process causes the thickening of the vein wall. Which of the following types of venous thrombosis is associated with vein inflammation caused by an invasive procedure?

- A. Varicose veins
- B. Thrombophlebitis
- C. Phlebitis
- D. Phelothrombus

Answer: C–Phlebitis involves vein inflammation caused by an invasive procedure, such as insertion of intravenous lines. Varicose veins are manifested by distention and protrusion of veins. Thrombophlebitis is a thrombus associated with inflammation. Phelothrombus a thrombus without an inflammation



## النقابة الفلسطينية العامة للعلاج الطبيعي – القدس

PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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258. Most cases of lumbar disk herniation are associated with the natural aging of the spine. Experts believe that disk herniation is mainly caused by the drying out and weakening of the intervertebral disks. The following factors increase an individual's risk for disk herniation except:

- A. Frequent heavy lifting using the back muscles.
- B. Constant spinal rotation, bending, or pulling
- C. Female gender.
- D. Being overweight.

Answer: C – Males, especially between 30 and 50 years, are more likely to develop a herniated disk. Frequent heavy lifting using the back muscles, constant spinal rotation, bending, or pulling, and being overweight may increase the risk for this condition. Other factors that may increase the risk include sedentary lifestyle, frequent driving, and smoking.

259. A physical therapist is assessing the skin of an elderly patient who is recently referred for physical therapy. Understanding the normal age-related changes of the integumentary system, an elderly patient is at risk of the following conditions except:

- A. Extra vasculature of blood into the skin and mucus membranes after a minor injury.
- B. Heat exhaustion
- C. Skin infections
- D. Increased wound healing rate

Answer: D-Wound healing rate decreases with aging. In addition to thinner, less protected and inelastic skin with decreased layer of fat, blood vessel changes and lowered immunity may slow down the process of healing. Wounds in the elderly may heal 4 to 5 times more slowly than in younger individuals. When healing is delayed, the risk for pressure ulcers or infections increases. The elderly are also at risk for easy bruising, mainly due to thinner, inelastic and reduced fat tissues. The number of sweat glands decreases with aging, causing the elderly to sweat less. This change makes the elderly inefficient in regulating their body temperature in hot weather.



## النقابة الفلسطينية العامة للعلاج الطبيعي – القدس

PALESTINIAN GENERAL SYNDICATE FOR PHYSICAL THERAPY JERUSALEM

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260. A 55-year-old non-athletic and healthy patient is referred for an exercise program. For beginners, a good target heart rate should be 60% of the maximum heart rate. What is the correct target heart rate during exercise for the patient?

- A. 165
- B. 175
- C. 105
- D. 99

Answer: D–The target heart rate for the patient during exercise is 99. The target heart rate is obtained by using the following formula:

- a.  $220 - \text{age} = 220 - 55 = 165$
- B.  $165 \times 0.60 = 99$