M_OrthopaedicPQ (200+ Questions) - Quiz Questions with Answers

1.

Following a right total elbow arthroplasty, the patient's arm is in a sling and a long-arm posterior splint with the elbow at 90 degrees of flexion. Which position in bed is likely to be the most comfortable for the patient, who must keep the right arm elevated?

Side-lying to the right

Side-lying to the left

Supine with the head flat

Supine with the head partially elevated

Explanation:

Following a right total arthroplasty (or any surgery on the elbow or shoulder), usually the most comfortable position for the patient is supine with the head of the bed partially elevated and the arm elevated and resting on one or two pillows. This position prevents strain on the arm muscles. After an arthroplasty, the patient must avoid using the arm in any way in the early postoperative period. The patient should use the other hand to grasp a trapeze to change position. If the patient turns to the nonoperative side, the arm must be well supported with pillows and secured.

2.

A 70-year-old patient with metastatic prostate cancer to the vertebral column complains of increasing back pain and weakness in the legs as well as bladder and bowel dysfunction. The most likely cause is

a tumor-induced vertebral fracture.

spinal cord compression.

metastases to the bowel and bladder.

pelvic metastases.

Explanation:

Patients with metastatic prostate cancer are at risk for spinal cord compression as metastasis to the vertebral column is common. All patients should be educated about the signs and symptoms of spinal cord compression as it is a clinical emergency. Emergent treatment with radiotherapy, corticosteroids, and surgical decompression may be necessary to avoid paralysis. Indications of spinal cord compression include increasing back and radicular pain, weakness of the legs, difficulty ambulating, unstable gait, sensory loss, and bowel or bladder dysfunction.

3.

Twenty-four hours after experiencing a fracture of the distal femur, a patient exhibits changed mental status with confusion and personality changes. The patient appears restless and agitated and expresses anxiety. Which of the following complications should the nurse suspect?

Pulmonary embolism

Fat embolism

Hypovolemic shock

Compartment syndrome

Explanation:

The symptoms experienced by the patient listed in the question are consistent with fat embolism, so the physician should be notified immediately as this is a life-threatening emergency. Typically, early signs of fat embolism relate to increasing hypoxia, so patients exhibit altered mental status and personality changes. Patients may be very restless and agitated. As the condition deteriorates, patients may exhibit tachycardia, dyspnea, tachypnea, and chest pain. Patients may develop a petechial rash on the neck, chest, conjunctiva, and axilla and may become pale and cyanotic.

4.

After a fracture is stabilized, rehabilitation should begin

immediately.

in 24 hours.

in 48–72 hours.

after 1 week.

Explanation:

Rehabilitation should begin immediately after a fracture is stabilized to help the patient regain and maintain function. The patient should begin with muscle-setting and isometric exercises so that muscle tone is not lost during recovery. The patient should actively participate in the plan of care and should be encouraged to perform whatever activities of daily living are possible. The nurse should assist the patient to perform both active and passive range-of-motion exercises.

5.

A patient with a long-leg cast and no weight-bearing is using crutches with a three-point gait. The patient must be able to ascend and descend six steps to get in and out of his apartment. Which of the following is the correct first action the patient should take in descending stairs from the landing?

Lower the affected foot to the first lower step.

Lower the unaffected foot to the first lower step.

Place one crutch on first lower step.

Place both crutches on first lower step.

Explanation:

From a standing position on the landing with the weight supported by both crutches and the unaffected leg, the steps to descending are:

Lower both crutches to the first lower step, while supporting weight on the unaffected leg.

Supporting the weight on the crutches, lower the affected leg to the first lower step.

Move the unaffected leg to the lower first step (with the crutches and the affected leg).

Note that if a handrail is available, the patient can hold both crutches in one hand and grasp the handrail with the other hand.

6.

Which of the following fractures poses the greatest risk of hypovolemic shock?

Humerus

Tibia

Clavicle

Femur

Explanation:

Because bones are very vascular, a fracture may result in hemorrhage (internal or external), especially if blood loss is substantial immediately after the fracture occurs. The patient is at greatest risk if fractures occur in the long bones, especially the femur. Other fractures that pose a risk of hypovolemic shock include fractures of the pelvis, thorax, and vertebrae. Patients with any type of major fracture should be monitored carefully for signs of hypovolemic shock.

7.

Compartment syndrome and Volkmann's ischemic contracture are particular risks with fractures of the

proximal humerus.

proximal radius.

distal humerus.

distal radius.

Explanation:

Distal humerus fractures may result in compression or injury to the ulnar, radial, or median nerve, and this fracture is especially susceptible to development of compartment syndrome and

Volkmann's ischemic contracture, which causes a flexion contracture of the hand and wrist, resulting in a claw-like appearance with evidence of cyanosis in the fingers and lack of a radial pulse. Extending the fingers passively is difficult and painful because of the contracture. Surgical repair may improve appearance and function.

8.

Following open reduction of a fracture, a patient develops sudden chest pain, tachycardia, dyspnea, tachypnea, rales, and cyanosis. Which of the following is the first action the nurse should carry out?

Place the patient in the semi-Fowler's position, and administer oxygen.

Take vital signs.

Return to the nursing desk, and telephone the physician.

Ring the call bell for assistance.

Explanation:

The nurse should attend to the patient's immediate dyspnea and hypoxia by placing the patient in the semi-Fowler's position and administer oxygen as these symptoms suggest a pulmonary embolism. Then, the nurse should take the patient's vital signs and notify the physician, who will likely order tests, such as arterial blood gases, electrocardiogram, and spiral computed tomography. The patient may receive a number of medical treatments, including intravenous infusions, dobutamine for hypotension, cardiac monitoring, analgesia to relieve pain and anxiety (usually morphine), and anticoagulation therapy. In some cases, a percutaneous venous filter may be placed.

9.

A frail and debilitated 75-year-old male patient has nonunion of a fracture of the left proximal humerus after 6 months. Which treatment method does the nurse anticipate initially?

Open reduction and internal fixation

Casting

External fixation

Electrical stimulation

Explanation:

Electrical stimulation is a noninvasive method of treating nonunion and malunion of fractures. It is especially useful for older adults who may not tolerate surgical procedures as well. There are a number of different electrical stimulation devices approved by the Food and Drug Administration, but they may involve the placement of electrodes on both sides of a fracture for treatments or placement of a flat coil or circular coil around a limb. The electrical stimulators may be placed over casts or splints. Portable devices have a signal generator and battery attached. Treatment duration varies but is often at least 12 weeks.

10.

A patient fell while riding a bicycle and received a Colles' fracture of the right wrist. The patient's hand is painful, warm, moist, and purplish in color. Which of the following nerves may be damaged?

Median nerve

Radial nerve

Ulnar nerve

Palmar digital nerve

Explanation:

Sudeck's atrophy, which presents with a painful, warm, moist, and purplish hand because of vasodilation of superficial vessels, results from damage to the median nerve that, in turn, causes hyperemia and is a complication of a Colles' fracture. The hand should be carefully monitored because the result of Sudeck's atrophy is stiffness in the hand resulting from bone destruction. The sensory branch of the radial nerve may also be damaged, resulting in paresthesia/anesthesia of the thumb and radial side of the hand, but the symptoms usually subside within a few weeks.

11.

A patient with a nondisplaced fracture of the radius underwent a closed reduction with application of a long-armed cast. Which of the following exercises to the affected limb is most important in the postsurgical period?

Isometric exercises

Finger flexion and extension

Pendulum

Range-of-motion exercises to the shoulder

Explanation:

Because the long-arm cast limits mobility, the patient should be advised to do finger flexion and extension exercises at least every 2 hours to improve circulation and reduce edema. The arm should be elevated for the first 24–48 hours or until edema subsides. Healing for radial fractures is prolonged, usually requiring about 12 weeks. Patients who are discharged home

immediately after the cast is applied must be advised of signs of neurovascular compromise and the importance of cast elevation.

12.

A patient with a fractured vertebra is experiencing severe muscle spasms. Which of the following treatments is likely to offer the most relief?

Cold to the fractured area

Opioid analgesia

Positional changes

Heat to the fractured area

Explanation:

Muscle spasms are a common complaint of patients with fractured vertebrae, and the treatment that may provide the most relief is to apply heat to the fractured area as this improves circulation and relaxes the muscles. Pain increases on movement and weight-bearing. Patients may also be prescribed muscle relaxants to help alleviate muscle spasms. Unstable fractures usually require immediate surgery to prevent further neurological deficits; however, stable fractures can usually be treated conservatively.

13.

A patient is recovering from multiple fractures and other injuries incurred in an automobile accident; recovery is expected to take 10–15 weeks. Discharge planning should begin

when the discharge date is set.

1 week before discharge.

immediately.

1 week after admission.

Explanation:

While the patient's needs may become more evident over time, discharge planning should begin immediately because the process of rehabilitation may be lengthy and the patient may have many issues that need to be resolved, including financial hardships because of the inability to work, changes in family dynamics, and disturbance of body image. Family members may be actively involved in discharge planning as well. The patient or family may need early referral to social services and other support services.

14.

A patient has undergone surgical repair of a fractured hip. Which of the following exercises is most important in the immediate postoperative period?

Generalized range-of-motion (ROM) exercises

Foot pedaling and circling

Isometric exercises

ROM exercises and leg lifts of the unaffected leg

Explanation:

In the immediate postoperative period, the exercise that is most important is foot pedaling and circling, which can be done with both feet, as this helps to increase circulation and prevent a deep vein thrombosis (DVT), while mobility is limited. A DVT is the most common complication that occurs after surgery for a fractured hip. Fluid intake to at least 2500 mL/day is also essential to prevent dehydration, which increases the risk of a DVT because of hemoconcentration.

15.

A 76-year-old patient is scheduled for surgical repair of a fractured hip. Which of the following information is of primary importance in the preoperative period?

Health history

Advance directive

Support system (e.g., family, friends)

Emotional status

Explanation:

In the preoperative period for a patient scheduled for surgical repair of a fractured hip, the most important information is derived from a health history. Older adults often have other health conditions, such as heart failure, arthritis, hypertension, osteoporosis, and diabetes, which may impact healing or put patients at increased risk. The physician needs a complete history as well as a list of all prescribed and over-the-counter medications that the patient is taking.

16.

A patient begins to ambulate after surgical repair of a hip fracture. Which type of footwear is most appropriate to use when ambulating with a walker?

Soft slipper

Sandal

Backless, slip-on shoe

Firm walking shoe

Explanation:

When ambulating with a walker, patients should wear low-heeled, firm, walking shoes and should avoid shoes that might drag on the floor, slip, or slide off of the foot, such as sandals, slippers, and backless shoes. If the patient is unstable, a gait belt can be used. When walking, the patient should advance the walker and the affected leg at the same time, followed by the unaffected limb. The nurse should make sure that the patient is not advancing the walker too far for a comfortable step and not leaning forward while walking.

17.

A 19-year-old wrestler experienced a "bucket-handle" medial meniscal tear in the left knee and underwent arthroscopic meniscal repair. How long should the recovery period take before the patient can return to wrestling?

4–6 weeks

2–4 months

4–6 months

6–8 months

Explanation:

Following an arthroscopic meniscal repair, the patient can expect to return to sports activities in 4–6 months. Rehabilitation efforts may vary, depending on the type of tear and the extent of damage to the joint, but the patient usually begins with the leg elevated to reduce postoperative edema and then begins ambulation with limited weight-bearing and flexion. Most patients use crutches for up to 4 weeks. The patient should avoid prolonged periods of standing for the first 10 days to prevent edema.

18.

In which of the following positions should the hip be maintained during the immediate postoperative period after surgical repair of a hip fracture with insertion of a femoral head prosthesis?

Internal rotation

External rotation

Abduction

Adduction

Explanation:

After surgical repair of a hip fracture with a femoral head prosthesis, the hip should be maintained in a slightly abducted position with a pillow between the legs to prevent adduction and internal rotation, which may result in dislocation of the prosthesis. The hip should also not be flexed beyond 90 degrees, so the patient needs to sit in firm chairs and use an elevated toilet seat. Patients should be advised to avoid crossing the legs or putting on own shoes and stockings without an adaptive device (e.g., a stocking helper).

19.

The sleeping position that may relieve discomfort for patients with chronic low back pain is

lying on the abdomen.

side-lying with the hips and knees flexed.

leaning forward and keeping the knees straight.

sitting in a chair with the hips higher than knees.

Explanation:

Chronic low back pain may be relieved by lying on the side with hips and knees flexed. If sleeping on the back, a 10-inch pillow should be placed under the knees to flex the hips and knees. Patients should keep the knees higher than the hips when sitting in a chair and place one foot on a step stool if standing for a prolonged period. Patients should avoid leaning forward without flexing the knees, lifting heavy weights, lifting any items above the level of the elbows, and sleeping on the abdomen or back with the legs straight.

20.

Which of the following statements about the positioning of a patient in the acute stage of a stable vertebral fracture is correct?

The patient may sit upright to 90 degrees.

The patient may have the head elevated only to 45 degrees.

The patient may have the head elevated only to 30 degrees.

The patient has no limitations on sitting.

Explanation:

During the acute stage of a vertebral fracture, the patient is placed on bed rest and should avoid both sitting upright and twisting. The head of the bed may be elevated only to 30 degrees. The spine should be maintained in good alignment, so the patient should be taught to logroll when turning from side to side. Heat may be applied to the fracture area to relieve pain and muscle spasms. Some patients may also have skin traction.

21.

A physician has ordered that a patient with an unstable pelvic fracture have a Foley catheter inserted into the bladder. Which of the following procedures should be performed before insertion of the Foley?

Urinalysis

Cystoscopy

Intravenous pyelogram

Retrograde urethrogram

Explanation:

About 33% of patients with unstable pelvic fractures have injury to the urethra, so before a Foley catheter is inserted into the bladder, a retrograde urethrogram should be completed. Other tests, such as a cystogram or intravenous pyelogram, may be ordered if indicated. Unstable fractures also put the patient at increased risk of hemorrhage and various other internal injuries, so a thorough examination of the perineal area and a rectal examination should also be completed before catheter placement.

22.

A 26-year-old woman who frequently wore high heels heard a "pop" while running and experienced pain at the back of the heel, finding it difficult to walk. The Thompson test shows that plantar flexion is absent. Which of the following diagnoses does the nurse suspect?

Achilles tendinitis

Achilles rupture

Achilles bursitis, retrocalcaneal

Achilles bursitis, tendo calcaneal

Explanation:

Switching from high heels to athletic shoes may stress the Achilles tendon. Running on hills, jumping, and sudden increases in training or activities may also damage the Achilles tendon. The Thompson test is used to evaluate a ruptured Achilles tendon:

Place the athlete in the prone position with the knee of the leg flexed to 90 degrees and the foot relaxed.

First squeeze the gastrocnemius muscle of the uninjured leg and then the gastrocnemius muscle of the injured leg, causing it to contract and the foot to flex, noting the degree of response for comparison.

If plantar flexion is absent, this indicates a ruptured tendon.

23.

A patient has cervical disk herniation at C6–C7 with pain and stiffness in the neck and shoulders but no paresthesia. The nurse expects the initial treatment to be

bed rest for 24–48 hours.

cervical traction.

corticosteroid injection.

discectomy.

Explanation:

Treatment for cervical disk herniation usually begins with bed rest for 24–48 hours to reduce the stress on the cervical disks from gravity and from the weight of the head. Bed rest also helps to reduce swelling around the nerve, often reducing pain. Additionally, the patient may need to wear a cervical collar. In some cases, the patient may be placed in cervical traction or receive nonsteroidal anti-inflammatory drugs or corticosteroids to reduce inflammation. Warm, moist compresses may help reduce pain and muscle spasms.

24.

A 58-year-old woman has been diagnosed with fibromyalgia after experiencing 6 months of generalized pain in her muscles and joints. Which of the following lifestyle modifications is indicated to help reduce symptoms?

Quitting work

Reducing stress

Stopping exercise

Dropping club memberships and other activities

Explanation:

The most important lifestyle modification for a patient with fibromyalgia is to reduce stress, both physical and emotional. However, the patient should be encouraged to continue to be involved in activities and work, although she needs to learn to pace herself and conserve energy. While exercise may aggravate symptoms initially, the patient should build tolerance over time with routine exercises, such as stretching, which may help reduce symptoms. Relaxation exercises should also be encouraged.

25.

A patient with a mild cervical disk injury has been prescribed a soft cervical collar. To select the appropriate size, the nurse must take which of the following measurements?

Neck circumference and measurement from the sternal notch to the mandible

Neck circumference only

Neck circumference and measurement from the shoulder to the base of the ear

Neck circumference and measurement of the chin to the base of the ear

Explanation:

When fitting a soft foam cervical collar, the nurse should measure the neck circumference (especially important for sized collars although less important if using a universal collar). The second measurement is from the sternal notch to the mandible—either the base of the mandible or the tip of the mandible, depending on the manufacturer's guidelines. If a measurement falls between two standard sizes, such as 3.25 inches with the standard sizes of 3 inches or 3.5 inches, then the patient should always receive the smaller rather than larger size.

26.

A patient has undergone a microscopic lumbar discectomy for a herniated disc and is to be discharged the day after surgery. During discharge planning, the nurse should advise the patient to avoid any bending and lifting for

1 week.

4–6 weeks.

3–4 months.

6 months.

Explanation:

The patient should be advised to avoid bending and lifting for 4–6 weeks after a microscopic lumbar discectomy. Patients are usually able to walk within a few hours of surgery and can drive within 7–14 days. Physicians may recommend physiotherapy for 6–8 weeks after surgery. Patients are often able to resume light work within 2–4 weeks but must avoid strenuous work that involves lifting or manual labor.

27.

A patient is scheduled for a posterior lumbar fusion because of severe degenerative disk disease. In which of the following positions will the patient likely be placed during surgery?

Prone and flat

Reverse Trendelenburg

Face down in a kneeling position

Side-lying

Explanation:

During surgery for a posterior lumbar fusion, the patient is usually positioned face down in a kneeling position. The special operating table allows positioning without pressure on the abdomen. This position minimizes blood loss and allows the surgeon good visualization and access to the surgical site. The incision is made vertically along the midline of the lower back. The vertebrae are exposed, and bone spurs are removed. A foraminotomy may be done if necessary, to remove pressure on the

nerves. Bone grafts from the pelvis are fixed into place with instrumentation.

28.

A patient is scheduled for a percutaneous discectomy of a herniated lumbar disk (L4–L5). Preoperatively, the most important preparation for the patient is learning

bowel and bladder management.

logrolling techniques.

pain management.

range-of-motion exercises.

Explanation:

Prior to surgery, the patient scheduled for repair of a herniated lumbar disk should receive a demonstration and practice of the logrolling technique that will be used postsurgically. The patient may also be instructed in methods of sitting up (lying on one side and pushing the torso straight up into sitting position without twisting or turning). The patient should also practice deep-breathing and coughing exercises. Pain management and necessary exercises are usually included in postsurgical education.

29.

A 74-year-old woman is evaluated for kyphosis. Which of the following curvatures is the minimum considered diagnostic for kyphosis?

10–15 degrees

20–30 degrees

30–40 degrees

40–50 degrees

Explanation:

The thoracic spine has a normal curvature of 20–40 degrees, so any curvature above that is considered diagnostic for kyphosis. Patients typically complain of back pain with kyphosis, which may result from poor posture, congenital abnormalities, or damage to the vertebrae from rheumatoid arthritis, osteoporosis, osteoarthritis, trauma, or paralytic disorders. As kyphosis develops, the patient may develop increased lordosis as the spine compensates. With severe kyphosis, patients may develop compromised respiratory function.

30.

A patient with cervical spondylosis has developed bone spurs and begins to complain of weakness in both legs with muscle spasticity, which suggests

an infection.

spinal compression.

injury to the lumbar vertebrae.

herniated cervical disk.

Explanation:

One of the most severe complications of cervical spondylosis is spinal stenosis. This occurs when bone spurs form around the nerves, resulting in a narrowing and compression of the spine. When this occurs, damage to the nerves can result in weakness of both the arms and the legs as well as sense of position. The reflexes in the lower limbs may become hyperactive, and muscle spasticity may occur, making ambulation difficult. The only effective treatment is surgery.

31.

A 35-year-old man has been diagnosed with ankylosing spondylitis. When educating the patient about self-care, the nurse should stress that

prolonged bed rest will worsen symptoms.

high-impact exercises may help strengthen joints.

patients should use at least two pillows when sleeping.

patients should limit activities.

Explanation:

With ankylosing spondylitis, prolonged bed rest or sitting will worsen symptoms; for example, patients are often quite stiff on arising in the morning with symptoms receding after the patient is active. While there is no cure for ankylosing spondylitis, nonsteroidal anti-inflammatory drugs, especially indomethacin, may reduce discomfort. If ineffective, immunosuppressive drugs may be necessary. Patients should be advised to remain as active as possible, sleep without a pillow (which may increase kyphosis), avoid high-impact exercises (swimming is a good alternative), use correct posture, and do stretching and deep-breathing exercises.

32.

A 50-year-old woman has developed adult scoliosis, resulting in one hip being higher than the other, causing her to limp and have low back pain. Which of the following interventions is indicated initially to help relieve the back pain?

Bracing

Nonsteroidal anti-inflammatory drugs

Orthotics

Surgical repair

Explanation:

Because the scoliosis has resulted in a disparity in the length of the legs, orthotics, such as an elevated shoe or shoe inserts, may help to relieve the low back pain. Bracing will not correct the scoliosis in an adult but may help relieve discomfort as well. Nonsteroidal anti-inflammatory drugs are commonly used to relieve the discomfort associated with adult scoliosis. Surgical intervention may be considered if the patient has severe uncontrolled pain or if there are indications of spinal cord or nerve compression, such as numbness or muscle weakness.

33.

A patient with compression fractures in the thoracic and lumbar regions has been prescribed a thoracolumbosacral orthosis brace with a metal sternal attachment. After logrolling the patient to a sitting position, what should the nurse do first to help the patient?

Help the patient put on a tight-fitting t-shirt.

Place one arm through the straps on one side.

Center the metal sternal attachment.

Fasten the lumbar support.

Explanation:

The first step to applying a thoracolumbosacral orthosis brace is for the patient to put on a tight-fitting t-shirt to protect the skin and prevent chafing. Next, the patient puts the arm through the opening that lies between the shoulder strap and the lumbar portion on one side. The metal sternal attachment is then centered, and the lumbar belt is pulled around and fastened. Then, the shoulder strap on the other side is attached through the loop on the sternal bar. The metal bar of the sternal attachment should be four finger-widths below the sternal notch. Last, the straps on the lumbar portion are tightened and attached.

34.

A tennis player has developed lateral epicondylitis. The most important initial intervention is to

cease tennis playing.

take nonsteroidal anti-inflammatory drugs.

change the size of the equipment.

wear a forearm brace.

Explanation:

The most critical intervention for lateral epicondylitis is to stop the activity that caused the condition, which in the case described in the question is playing tennis. The arm must rest for several weeks before tennis or other activities are resumed. The patient is usually advised to take nonsteroidal anti-inflammatory drugs for pain and swelling and may be referred to physical

therapy for various treatments, such as ultrasound. In some cases, a forearm brace may relieve symptoms. Before resuming play, the patient should ensure that equipment is the correct size.

35.

The primary focus of rehabilitation is the patient's

abilities.

disabilities.

motivation.

capacity to learn.

Explanation:

The focus of rehabilitation should be on the patient's abilities rather than disabilities. When developing the plan of care, the nurse should consider how to take advantage of the patient's strengths—including physical and emotional—to restore the patient to optimal health and independence to maintain the patient's quality of life. The patient should be encouraged to participate actively in his or her therapy.

36.

A patient who has started running has frequent muscle cramps. When educating the patient about preventive methods, the nurse should stress

frequent rest periods.

stretching and hydration.

limiting sodium intake.

supplemental calcium and magnesium.

Explanation:

The two most important preventive measures for muscle cramps are stretching before and after running and ensuring adequate hydration. Because sodium and potassium are lost in perspiration, replacing lost fluids with liquids containing electrolytes or slightly increasing sodium intake may help prevent excessive fluid loss. Excessive weight loss is > 2% above baseline, so athletes should weigh themselves before and after running to determine needs. Generally, the loss of a liter of body fluids is equal to a 2.25 pound loss in weight. Calcium and magnesium supplements help to prevent muscle cramps associated with pregnancy.

37.

Moist heat packs are applied for 30 minutes to an athlete to decrease muscle pain and relax muscles. How deep does the nurse anticipate the heat has penetrated?

3–5 cm

2–4 cm

1–2 cm

0.5–1 cm

Explanation:

Superficial heat usually penetrates 1–2 cm in 30 minutes. Modalities include moist heat packs, paraffin baths, and fluid therapy. The therapeutic temperature range is generally from 40°–45°C. Superficial heat increases metabolism, relaxes muscles, improves circulation, and reduces pain. Superficial heat treatments should be followed by active and passive range-of-motion exercises. Superficial heat is applied topically, while deep heat is generated within the tissues, such as with diathermy or ultrasound.

38.

Following a hip flexor injury, the athlete is returning to sports activity but must have a hip spica wrap in place. What position should the athlete be in when the nurse applies the wrap?

Supine with affected leg elevated

Prone

Sitting with the foot on the affected side turned slightly outward

Standing with the foot on the affected side turned slightly inward

Explanation:

The hip spica wrap should be applied with the athlete standing and the affected foot turned slightly inward as this position relaxes the muscles. To begin the wrap, the 6-inch elastic bandage should be anchored two times around the proximal thigh with the end of the wrap at the lateral aspect, wrapping toward the medial aspect and spiraling the bandage upward. The bandage is brought over the trochanter on the affected side and around the waist and then back around the inner thigh around the hip and back around the waist, until the hip is secure.

39.

A 26-year-old female runner developed a spontaneous fracture while running, and a dual-energy x-ray absorptiometry scan indicated osteoporosis. The patient states that she has not had a

menstrual period for at least 12 months. Based on these findings, for which other disorders should the patient be assessed?

Hypertension

Eating disorder

Diabetes mellitus

Premature menopause

Explanation:

The patient should be assessed for an eating disorder because it is the third element of the female athlete triad that also includes amenorrhea and osteoporosis. Female athletes may be anorexic, or they may binge and purge. Some eat a normal diet but exercise excessively to burn off all of the calories. Others take laxatives or use diuretics to promote weight loss. These efforts at weight control result in inadequate nutrition that, in turn, causes amenorrhea and osteoporosis.

40.

A volleyball player slipped and fell hard, resulting in vertebral herniation at level L4–L5. For which of the following conditions is the patient most at risk?

Cauda equina syndrome

Autonomic dysreflexia

Paraplegia

Spinal cord shock

Explanation:

The cauda equina is the group of nerves at the end of the spinal cord, containing the nerve roots for L1 to S5 vertebrae. Compression of the nerves of the cauda equina, most often occurring at L4 and L5, can result in cauda equina syndrome, which presents as "saddle" numbness of the buttocks and lower legs. The legs may become progressively weak, and the patient may experience fecal and urinary incontinence and impotence. Surgical decompression of the nerves must be done immediately to prevent permanent damage.

41.

Which of the following physical tests helps to identify vertebral herniation compressing the nerve root at S1?

Heel walking

Straight leg raise

Toe walking

Lumbar list

Explanation:

Damage to S1 makes walking across the room on the toes (toe walking) difficult or impossible, depending on the degree of injury. Damage to L5 may result in weakness or hyper-response when the patient is asked to dorsiflex the great toe (toe dorsiflexion); this test should be done on both sides and the findings compared. Damage to L4 makes heel walking difficult, although patients with tightened heel cords from other causes may also have difficulty walking on the heels.

An abnormal shifting of the trunk to the left or right (lumbar list), which is similar to scoliosis, may occur with a vertebral injury.

42.

A long leg cast has been in place for 72 hours, but while examining the cast, the nurse notes that an area of the cast near the fracture feels warmer than other areas. The nurse suspects that

normal heat has been generated by the drying of the cast.

normal heat has been generated by the healing fracture.

increased heat is caused by positioning or blankets.

the heat is an abnormal finding and may be an infection.

Explanation:

A localized area of heat felt through a cast is often an indication of infection and should be reported to the physician. Casts usually dry in 24–48 hours, so heat generated during the drying process should have dissipated. A healing fracture should not generate heat, and positioning and blankets are not likely to result in localized areas of warmth. The usual next step is to obtain a white blood count and differential to evaluate for infection.

43.

A patient with multiple myeloma has developed bone metastasis. Which type of treatment is indicated to help prevent fractures?

Calcium

Bisphosphonates

Radiation

Chemotherapy

Explanation:

Because multiple myeloma results in lytic tumors that destroy the bone, the therapy indicated to prevent fractures is bisphosphonates. Up to 85% of patients with multiple myeloma, which affects the bone marrow, develop bone metastases, so bisphosphonates are often given in conjunction with other therapies to slow resorption of bone, reduce pain, and prevent fractures. Hypercalcemia often occurs with lytic bone tumors. Bisphosphonates used to treat bone metastasis include pamidronate and zoledronic acid, and both are equally effective, although pamidronate has fewer adverse effects.

44.

A 48-year-old woman with rheumatoid arthritis is receiving methotrexate. Which of the following drugs is contraindicated because it may increase the risk of methotrexate toxicity?

Acetaminophen

Digoxin

Salicylates (aspirin)

Phenytoin

Explanation:

Patients receiving methotrexate should be advised to avoid salicylates (aspirin) as they may increase methotrexate toxicity. Methotrexate may decrease digoxin levels, so digoxin levels must be monitored closely and the digoxin dose adjusted accordingly. Methotrexate may also decrease levels of phenytoin and fosphenytoin, increasing the risks of seizures. Acetaminophen may be used with methotrexate. Antibiotics may affect the absorption of methotrexate with some oral antibiotics decreasing the absorption, while penicillins, sulfonamides, and trimethoprim increase the risk of toxicity.

45.

A patient with osteoarthritis is most likely to experience stiffness under which of the following conditions?

After periods of rest

After periods of weight-bearing exercises

After periods of stretching exercises

At the end of the day after periods of normal activity

Explanation:

Stiffness with osteoarthritis is most pronounced after periods of rest, such as first thing in the morning. Stiffness often begins to recede after about 15–30 minutes. Patients should be encouraged to do gentle range-of-motion exercises of affected joints before arising to reduce stiffness. Periods of overactivity, such as engaging in strenuous exercise that stresses an affected joint, may result in transient stiffness. Stiffness may also occur if cartilage particles have dislodged within a joint. This is often associated with crepitation of the joint.

46.

A patient with chronic osteoarthritis of the hip no longer has adequate pain control from acetaminophen and has been prescribed a low-dose nonsteroidal anti-inflammatory drug (NSAID).

Which of the following medications is most effective for use with NSAIDs to reduce gastrointestinal symptoms?

Calcium carbonate antacid

Prokinetic agent

Histamine 2-receptor antagonist

Proton-pump inhibitor

Explanation:

Studies have shown that proton pump inhibitors (PPIs) [e.g., omeprazole] are more successful in reducing gastrointestinal symptoms associated with nonsteroidal anti-inflammatory drugs (NSAIDs) than other drugs, such as histamine 2-receptor antagonists (e.g., famotidine, ranitidine). However, in rare cases, PPIs may result in bone loss, so patients may be advised to increase calcium intake. Patients should be started initially on a low dose (200 mg) of NSAIDs with the dosage titrated upward if ineffective. Opioids have limited effectiveness and should be avoided unless pain is severe and NSAIDs provide no relief.

47.

Which of the following is the most important intervention when an osteoarthritic joint develops markedly increased pain and inflammation?

Doing range-of-motion exercises

Resting the joint

Taking nonsteroidal anti-inflammatory drugs

Taking antibiotics

Explanation:

When an osteoarthritic joint develops markedly increased pain and inflammation, the most important intervention is to rest the joint. Splints may be used for up to a week to maintain the joint in a functional position, but splinting for longer periods may result in increased stiffness. Patients may need to modify activities and use assistive devices, such as a cane or walker, to reduce stress on joints. Over-the-counter or custom-fitted braces may be used to assist with joint stability and function.

48.

A patient with recurrent gout is at increased risk for

nephrolithiasis.

cholelithiasis.

pancreatitis.

rheumatoid arthritis.

Explanation:

Patients with gout have an increased risk of developing nephrolithiasis from both uric acid and calcium stones. The risk increases in dry, arid environments where patients are more likely to become dehydrated. Recent research has also found that elevated uric acid levels increase the risk of both myocardial infarction and stroke. While men are more likely to develop gout than women, the risk increases for women after menopause. Excessive alcohol intake and some medications, such as thiazide diuretics and aspirin, can increase uric acid levels.

49.

A 40-year-old patient is diagnosed with a primary chondrosarcoma of the distal femur and is scheduled for radical amputation. However, the patient is very anxious about surgery and asks why he cannot have radiotherapy treatment instead. The nurse's best response to this patient should be:

"The tumor is too aggressive for radiotherapy."

"You should ask the physician about why amputation was chosen over radiotherapy."

"This particular tumor does not respond to radiotherapy."

"Radiotherapy has been scheduled postoperatively."

Explanation:

The best response is the one that provides the most useful and correct information, which in this case is, "This particular tumor does not respond to radiotherapy." Primary chondrosarcoma is a very aggressive, malignant tumor that is usually located near a joint where the muscles attach (e.g., knees, pelvis, shoulders). It most often occurs in patients who are over 40 years old, usually presenting first with increasing pain, especially at night, and swelling of the site. Radical amputation is the only viable option for treatment, but most patients die within a year.

50.

A patient with rheumatoid arthritis has bone thinning around the joint with slight cartilage damage and slight atrophy of muscles around the joint but no joint deformity. With which of the following stages of rheumatoid arthritis are these findings consistent?

Stage 1

Stage 2

Stage 3

Stage 4

Explanation:

Rheumatoid arthritis is classified in four stages:

Stage 1: Bone thinning but no joint damage.

Stage 2: Bone thinning about the joint with slight cartilage damage and slight atrophy of muscles about the joint but no joint deformity although joint mobility may be limited.

Stage 3: Bone damage and thinning, cartilage damage, joint deformity, and extensive muscle atrophy but without ankylosis. Soft tissue nodules may be evident.

Stage 4: As in stage 3 with the addition of permanent stiffness or joint ankylosis.

51.

Heel spurs place a patient at increased risk for

plantar fascitis.

Achilles tendinitis.

Morton’s neuroma.

sinus tarsi syndrome.

Explanation:

Heel spurs place a patient at increased risk for plantar fascitis and occur in 50%–70% of patients with plantar fascitis, a chronic injury that can result from overuse or direct irritation (as

with bone spurs). Heel spurs are small hook-like projections of bone that grow on the calcaneus. Heel spurs may be present in patients of all ages but are most common in middle age. The plantar fascia extends along the bottom of the foot from the heel to the toes. Symptoms of plantar fascitis include acute pain, usually in the morning because the fascia contracts during sleep.

52.

A patient has undergone a cervical discectomy for a herniated cervical disk. A sign of damage to the recurrent laryngeal nerve may be

a sudden marked increase in radicular pain.

serosanguineous drainage on the dressing.

a headache.

hoarseness.

Explanation:

The retractors that are used during the surgical procedure may cause damage to the recurrent laryngeal nerve, resulting in hoarseness and an inability to cough or clear pulmonary secretions adequately. A sudden marked increase in radicular pain may indicate spinal instability. Serosanguineous drainage may indicate a dural leak. Headache may be a beginning sign of infection and meningitis, especially if a dural leak is present. If cord compression occurs, the patient may experience rapid or delayed-onset paralysis.

53.

A Z-deformity of the hands is characteristic of which of the following arthritic disorders?

Gout

Osteoarthritis

Rheumatoid arthritis

Psoriatic arthritis

Explanation:

A Z-deformity is characteristic of rheumatoid arthritis. Ulnar deviation is one of the early signs of rheumatoid arthritis, especially at the metacarpophalangeal joints of the fourth and fifth fingers. This deformity is frequently associated with other deformities, including deviation of the wrist toward the thumb, resulting in the Z-deformity. The deformities may develop slowly, with ulnar deviation initially most noticeable on flexion, but as the deformities increase, the patient experiences difficulty with pinching, grabbing movements, and hand strength.

54.

A 30-year-old man with septic arthritis of the right knee is hospitalized for intravenous antibiotics. To resolve the infection, which of the following additional treatments would be critical?

Joint drainage

Hot compresses

Corticosteroid injections into the joint

Nonsteroidal anti-inflammatory drugs

Explanation:

Because the synovial fluid is infected and purulent, regular drainage of the joint and antibiotics are critical to the treatment of septic arthritis. The joint may be drained by needle aspiration, usually daily initially, but if that is not adequate, then an arthroscopy may be done to irrigate and clean the joint. In some cases, an arthrotomy may be required. If a surgical procedure is required, drains are usually placed in the joints to drain the fluids.

55.

Patients who have psoriatic lesions on their nails should be monitored in particular for which of the following complications?

Fluid and electrolyte imbalance

Depression

Hypertension

Psoriatic arthritis

Explanation:

While all those with psoriasis have an increased risk of developing psoriatic arthritis, those with psoriatic lesions on the nails are especially at risk. Lesions on the nails appear as discolored, pitting nails, which may loosen from the nail bed. Psoriatic arthritis may affect any joint but often affects the large joints of the lower extremities, distal joints of the digits (dactylitis), and the lower back (spondylitis). Patients may develop enthesitis, which is pain where the ligaments and tendons attach.

56.

An infant has been diagnosed with developmental dysplasia of the hip. Which initial treatment is indicated?

Surgical repair

Range-of-motion and strengthening exercises

Pavlik harness

Casting

Explanation:

Developmental dysplasia of the hip can often be identified shortly after birth because of asymmetry of the gluteal and thigh folds, limitations in hip flexion, and apparent shortening of the femur (one knee lower than the other in flexion). Initial treatment is with the Pavlik harness, which is worn continuously for 3–6 months. The harness maintains the hips and knees in flexion and the hips abducted so that the femoral head is in the acetabulum.

57.

An infant with bilateral talipes equinovarus (clubfoot) is to be discharged with a cast. Before discharge, which of the following procedures is most critical to teach the parents?

Cast protection

Neurovascular assessment

Cast cleaning

Infant bathing

Explanation:

While all of the procedures listed in the question are important, teaching the parents neurovascular assessment is critical because parents must monitor the child's toes and feet for indications of neurovascular compromise that can occur if the cast is ill-fitting or if the infant outgrows the cast before the time scheduled for changing it. Clubfoot is bilateral in about half of cases and is twice as common in boys than girls. If serial casting does not correct the clubfoot deformity, surgical repair may be done, usually between 4–12 months of age.

58.

Patients with open reduction and internal fixation of a fracture are most at risk for

compartment syndrome.

nerve damage.

delayed healing.

infection.

Explanation:

Patients with open reduction and internal fixation (ORIF) of a fracture are most at risk for infection because the skin integrity has been breached, especially if the injury involved an open wound that was contaminated with dirt or other debris. In that case, the wound must be thoroughly irrigated. All patients with ORIF must be monitored carefully for signs of infection, such as fever, chills, increased drainage of the wound, erythema, and edema. An early sign may be an increase in pain.

59.

A patient is to be discharged from the hospital following surgery for a cervical discectomy. As part of the patient's education, the nurse should include which of the following directives?

Limit turning of neck to 15 degrees in either direction.

Wear a cervical collar during periods of activity.

Avoid sitting or standing for more than 30 minutes at a time.

Sleep with no more than two pillows.

Explanation:

Following a cervical discectomy, the patient should avoid sitting or standing for more than 30 minutes at a time. Other important points include the following:

Wear a cervical collar at all times.

Sleep without pillows to avoid neck flexion.

Avoid sleeping in the prone position.

Maintain the head in a neutral position.

Avoid turning, twisting, or turning the neck.

Avoid lengthy rides in an automobile.

Wear low-heeled shoes and avoid high heels.

Practice relaxation exercises.

Maintain adequate pain control with analgesia.

60.

An infant is born with polydactyly of the right foot; however, there is no bony involvement. The most appropriate treatment at this time would be

surgery to remove the extra digit.

no treatment at this time.

tie off the extra digit with a silk suture or vascular clip.

clip off the extra digit as there is no bony involvement.

Explanation:

If there is no bony involvement with polydactyly, then the extra digit is tied off with a silk suture or vascular clip after delivery. This impairs circulation, and the extra digit falls off within a few days leaving only a minimal scar. With bony involvement, the digit may be left in place and no treatment carried out, or it may be surgically removed, usually when the infant is about 1 year of age.

61.

A child with achondroplasia has increasing difficulty ambulating, urinary and fecal incontinence, generalized weakness, brisk reflexes, sleep apnea, and numbness. The child should be assessed initially for which of the following complications?

Hydrocephalus

Cervicomedullary compression

Spinal cord myelopathy

Chronic otitis media

Explanation:

Increasing difficulty ambulating and urinary and fecal incontinence as well as generalized weakness, brisk reflexes, and numbness are consistent with cervico-medullary compression, which is a life-threatening complication. In some children with achondroplasia, the foramen magnum is stenosed; thus, as the child grows, the brain stem can become compressed because bone growth is tight and deformed. Children may begin to exhibit sleep apnea or other evidence of respiratory insufficiency that may result in respiratory arrest and sudden death if the brain stem is not decompressed surgically.

62.

A child who has experienced multiple fractures has been diagnosed with type IV osteogenesis imperfecta. Which type of exercise is most beneficial?

Swimming

Jogging

Weight lifting

None, as exercise is too risky

Explanation:

Children with osteogenesis imperfecta should be encouraged to exercise, but many types of exercise may increase the risk of fracture. Swimming is a relatively safe form of exercise (although not diving) because there is reduced risk of fractures. During infancy, lying in shallow warm water can allow the child to safely kick, strengthening muscles. Later, children can play and walk in water and swim (first with swim vests and later independently). Risk of fractures with type IV osteogenesis decreases when the child enters puberty.

63.

A 10-year-old girl has scoliosis of 15 degrees. Which of the following treatments is most appropriate initially?

Physical rehabilitation

Boston brace

Milwaukee brace

Surgical fusion

Explanation:

Mild scoliosis (10–20 degrees) is generally treated with physical rehabilitation with a focus on improving posture, muscle tone, and spinal flexibility. However, the child must be monitored carefully because if the scoliosis progresses to moderate scoliosis (20–40 degrees), then the child will require bracing, most commonly with a Boston brace. Severe curvatures (40 degrees or more) usually require surgical intervention and spinal fusion, often with bone grafting. Various surgical approaches are used, but most require segmental instrumentation of the spinal cord.

64.

When fitting a cervical collar, how should the nurse determine if the collar is fitted snugly enough?

Ask the patient if the collar is comfortable.

Compare the collar and neck measurements.

Ask the patient to flex the chin forward.

Ask the patient to attempt to turn the head from side to side.

Explanation:

When fitting a cervical collar, the nurse should ask the patient to flex the chin forward. If the chin slides under the collar, then the collar is fitted too loosely and should be tightened until the chin remains outside of the collar. Additionally, the patient should be able to breathe easily and swallow without feeling constricted. Those with a cervical collar should keep their head in a neutral position and avoid turning from side to side.

65.

An 82-year-old woman fell with an outstretched hand and experienced an impacted fracture of the right proximal humerus. Which type of exercise of the arm should the patient do during the healing period to prevent shoulder stiffness?

Resisted isometric exercises

Pendulum exercises

Range-of-motion exercises

Muscle-setting exercises

Explanation:

The impacted fracture of the proximal humerus is a common fracture in older adults because they often reach out their hands to break a fall. This fracture is usually not displaced and heals well, often only requiring the patient to wear a sling for support. During the healing period, patients should be advised to do pendulum exercises to prevent shoulder stiffness. For this exercise, the patient holds onto a solid surface, bends forward at the waist, letting the arm hang freely. Then, the patient rocks the body clockwise while the arm circles and then counterclockwise, usually 10 each. The exercises should be repeated at least three times daily.

66.

A patient with osteosarcoma of the proximal end of the humerus should be carefully monitored for which type of metastasis?

Brain

Liver

Lung

Kidney

Explanation:

About nine out of ten patients with osteosarcoma develop lung metastasis within 2 years although other skeletal sites may be involved as well. Treatment for osteosarcomas may include amputation or limb-sparing procedures, radiotherapy, and chemotherapy. Lung tumors may be removed surgically. Osteosarcomas most often occur in the second decade of life and are very aggressive tumors. Patients may feel a mass initially and experience pain and swelling at the site, limited mobility, fatigue, and weight loss.

67.

A patient with an osteosarcoma of the distal femur is scheduled for limb-salvage surgery. How long should the patient expect to undergo physical rehabilitation in order to learn to walk on the salvaged limb?

6 weeks

3 months

6 months

12 months

Explanation:

Limb-salvage surgery for the treatment of an osteosarcoma is not simple, so the recovery period is prolonged, usually taking up to a year for the patient to learn to walk on the salvaged limb. Patients must be committed to therapy and active participants, as the recovery period may be longer than that for an amputation. When a section of bone is removed, it is replaced with a bone graft or prosthesis. If a prosthesis is used for a child, it may need to be replaced when the child reaches adulthood.

68.

Following an unstable cervical spine fracture, resulting from a fall during gymnastics, a patient must wear a halo vest. When educating the patient before discharge, the nurse should stress that the patient

cannot drive while wearing a halo vest.

should avoid walking.

should begin a program of exercises.

may use dry shampoo only.

Explanation:

For safety reasons, the patient cannot drive while wearing a halo vest. The patient should avoid exercise programs but should be encouraged to walk. The patient may wet the hair and shampoo, as the water will not hurt the halo. The best position for shampooing is lying supine with the head extended over the bed and the bed protected with plastic. The patient will need assistance. The patient should avoid all heavy lifting and bending or sitting upright in bed as this may pull against the pins.

69.

Ultrasound therapy is contraindicated for

a sprain.

a muscle strain.

bursitis.

a suspected fracture.

Explanation:

A suspected fracture is a contraindication for the use of ultrasound therapy, which is used to treat soft-tissue injuries, such as sprains, strains, and bursitis. The treatment uses sound waves to increase the temperature of tissue. A gel medium is applied to the skin and then the transducer is run about the skin in a circular pattern for a few minutes. After treatment, both active and passive exercises are usually carried out. Ultrasound therapy should not be used on the lower extremities if the patient has peripheral vascular disease.

70.

A 28-year-old male rugby player experienced a right shoulder separation with a grade I injury (stretching of ligaments) to the acromioclavicular joint. How long should the player wait until he can return to playing rugby?

48 hours

1–2 weeks

2–4 weeks

6 weeks

Explanation:

A grade I injury of the acromioclavicular joint involves only stretching of the ligaments and is treated conservatively with rest, ice, compression, and elevation; nonsteroidal anti-inflammatory drugs; and a sling to rest the joint until the pain eases, at which time the patient can begin range-of-motion exercises. When the pain has been alleviated and the strength is normal, usually in 1–2 weeks, the patient can return to normal activities, including sports, but should be encouraged to use protective padding.

71.

A 70-year-old woman has developed polymyalgia rheumatica with sudden onset of aching pain and stiffness in the arms, buttocks, and thighs, especially in the morning; the pain eases through the day but is exacerbated by long periods of inactivity. Which treatment is most appropriate initially?

Physical therapy

Corticosteroid therapy

Therapy with nonsteroidal anti-inflammatory drugs

Bisphosphonate therapy

Explanation:

Polymyalgia rheumatica is usually treated with low-dose corticosteroids, such as prednisone, 10–20 mg daily. Symptoms are usually relieved within a day or two, but treatment is provided for a few weeks, tapering the dose after 2–3 weeks; however, some people experience relapse during tapering, and relapses may occur after therapy is completed. Polymyalgia rheumatica is

often associated with giant cell arteritis, so patients should be monitored for signs of the disorder, such as pain in the jaw and scalp, persistent headaches, and visual disturbances.

72.

A 16-year-old boy developed weakness of the lower extremities with difficulty walking; he was diagnosed with spinal muscular atrophy, type III. The nurse should tell the parents to anticipate which of the following complications?

Increased susceptibility to respiratory infections

Swallowing difficulties and impaired respirations

Unstable and floppy limbs and trunk

Death within 2 years of the onset of symptoms

Explanation:

Spinal muscular atrophy (SMA), type III, is the mildest form of SMA with onset usually between ages 2 and 17. Patients often initially experience weakness of the lower extremities and difficulty walking and may also develop scoliosis and muscle and tendon shortening around the joints. Patients are prone to respiratory infections but often are able to live a normal lifespan. Type I SMA with onset in infancy often results in death within 2 years. Type II SMA varies, depending on age of onset and includes weakness of the arms and legs, but some patients are able to sit and walk.

73.

A 22-year-old baseball pitcher had a rotator cuff injury and underwent surgical repair. What type of restraint is applied to the shoulder in the immediate postoperative period?

A sling

An immobilizer

A cast

None of the above

Explanation:

A shoulder immobilizer is applied in the immediate postoperative period after rotator cuff surgery. The patient is encouraged to do finger, isometric, and muscle-setting exercises immediately following surgery and usually begins physical therapy the next day. During therapy, the immobilizer is removed so the patient can begin pendulum exercises, but the immobilizer is replaced when the exercises are completed. The patient must begin a lengthy period of rehabilitation with progressive exercises. Full recovery often takes up to a year.

74.

A patient with amyotrophic lateral sclerosis has increasing difficulty swallowing and decreasing vital capacity. At what vital capacity should a percutaneous endoscopic gastrostomy tube be placed?

≥ 75%

≥ 50%

≥ 40%

≥ 30%

Explanation:

The American Academy of Neurology recommends that the percutaneous endoscopic gastrostomy tube be placed while the vital capacity is above 50%. Patients with amyotrophic lateral sclerosis (ALS) typically develop increasing difficulty swallowing and decreasing vital capacity, leading to the risk of aspiration and pneumonia. About one quarter of patients with ALS develop initial weakness in the muscles enervated by the cranial nerves, resulting in difficulty speaking, swallowing, and breathing. Liquids are particularly difficult to ingest because muscle weakness causes them to be regurgitated through the nose when the patient attempts to swallow.

75.

Patients with multiple sclerosis should be advised to avoid which of the following, which may worsen symptoms or result in a relapse?

High temperatures and hot baths

Cool temperatures and cool baths

Mild exercises, such as stretching

Sexual activity

Explanation:

Patients with multiple sclerosis should avoid anything that raises body temperature, including high environmental temperatures (especially with high humidity), hot baths and showers, and strenuous exercise, as these may trigger a worsening of symptoms or a relapse if patients are in remission. Patients should immediately take antipyretics with any fever, even minor elevations over the patient's baseline. When environmental temperatures are high, patients should use air conditioning. Other triggers include increased stress and pregnancy (primarily the last trimester).

76.

A 25-year-old ice skater fell and dislocated his elbow. He underwent reduction, and his arm was placed in a hinged elbow splint for 3 weeks. One month later, the patient complained to the nurse that his elbow still did not have full motion. The nurse's best response should be:

"You may have a complication and should discuss this with your physician."

"A long recovery time is normal."

"You may need physical therapy to regain full motion in your elbow."

"The elbow does not tolerate injury or immobilization well and may take months to recover completely."

Explanation:

The best response provides a true answer with an explanation, such as: "The elbow does not tolerate injury or immobilization well and may take months to recover completely." Following reduction of an elbow dislocation, the elbow is usually immobilized in a flexed position for about 3 weeks with a posterior splint or a hinged elbow splint. Reduction must be carried out as soon as possible because, if it is delayed for several hours with adults, then the limitations of motion may be permanent.

77.

A 12-year-old boy with Duchenne's muscular dystrophy is scheduled for heel-cord surgery. The patient may be at increased risk for which of the following surgical complications?

Cardiac arrest

Anaphylaxis

Hemorrhage

Malignant hyperthermia

Explanation:

Patients with Duchenne's muscular dystrophy (DMD) are at increased risk for developing malignant hyperthermia, which causes markedly increased body temperatures from excessive release of calcium, and can result in death. The calcium release results in continuously contracting muscles, which increases body temperature. Patients are at risk from inhalational anesthetic agents, such as halothane, isoflurane, and enflurane, and risk increases if these agents are combined with succinylcholine. Patients with DMD should be tested for susceptibility to malignant hyperthermia before surgery.

78.

Osteitis fibrosa is a complication of

hyperparathyroidism.

hypoparathyroidism.

hyperthyroidism.

hypothyroidism.

Explanation:

Hyperparathyroidism results in excess parathyroid hormone, which increases bone resorption and release of calcium and phosphorus from the bones. As the bones soften, fractures may occur, and cysts may form in the bones (osteitis fibrosa). Other symptoms include increased incidence of kidney stones, nausea, anorexia, weight loss, and peptic ulcers. The most common

cause is parathyroid adenoma, and treatment is parathyroidectomy. With other causes, such as kidney disease, treatment with vitamin D may be sufficient.

79.

For a patient receiving glucocorticoid therapy, which of the following actions increases the risk of fractures from glucocorticoid-induced osteoporosis?

Drinking one to two glasses of wine daily

Smoking one pack of cigarettes daily

Walking 1 mile daily

Being 20 pounds overweight

Explanation:

Patients receiving glucocorticoid therapy should be advised to quit smoking as smoking increases the risk of fractures. Moderate drinking (one or two drinks daily) does not increase risk, but excessive drinking (three or more drinks daily) does. Walking helps to prevent osteoporosis, as it is a weight-bearing exercise. Fat cells contain estrogen, so being overweight may serve as protection for women's bones, although excessive weight may have other negative effects on health.

80.

A 45-year-old woman who presented with ptosis and facial weakness has been diagnosed with myasthenia gravis without thymoma. The most appropriate initial treatment is

a corticosteroid.

plasmapheresis.

an anticholinesterase agent.

an immunosuppressive agent.

Explanation:

The initial treatment for myasthenia gravis is an anticholinesterase agent, usually pyridostigmine, which increases transmission of nerve impulses at synapses. If patients do not show improvement, then they may be prescribed immunomodulating agents, such as corticosteroids or azathioprine. Patients may undergo plasmapheresis for exacerbations. Thymectomy is recommended for all those with thymoma, and this alone may reduce or eliminate symptoms in some patients, but it can take up to 3 years for full benefit. Some patients without thymoma also benefit from thymectomy.

81.

A patient with a stable pelvic fracture is allowed to tilt from side to side. The nurse anticipates that the maximum number of degrees that a patient can tilt in either direction is

10 degrees.

20 degrees.

30 degrees.

45 degrees.

Explanation:

While patients with unstable pelvic fractures are not allowed to turn from side to side because of the risk of displacement and internal injuries, patients with stable fractures may be able to tilt up to 45 degrees safely, generally to either side, depending on the location of the fracture. The patient should be carefully logrolled with the back supported by pillows or rolled with a pillow between the knees to avoid any twisting.

82.

To prevent renal osteodystrophy in patients undergoing kidney dialysis, which of the following dietary modifications is necessary?

Calcium restriction

Sodium restriction

Vitamin D restriction

Phosphorus restriction

Explanation:

Patients on kidney dialysis must restrict phosphorus in the diet and are often prescribed phosphorus-binding agents to interfere with phosphorus absorption. Kidney disease results in hypocalcemia, which, in turn, stimulates the parathyroid gland to cause the leaching of calcium from the bones to increase blood levels. Kidney disease also results in high levels of phosphorus, which causes additional leaching of calcium from the bones. Many foods high in calcium (e.g., dairy products) are also high in phosphorus, so high-calcium foods are limited, and patients are often prescribed calcium supplements.

83.

A 70-year-old patient, who has Paget's disease with thickening of the skull, should be assessed initially for

hearing deficits.

dysphagia.

vision deficits.

cognitive impairment.

Explanation:

Paget's disease results in skeletal deformities and thickening of the skull or long bones. As the skull thickens—sometimes just the cranium and not the face—most patients develop hearing deficits because of compression of cranial nerve VIII and dysfunction of the cochlea. Some may also experience tinnitus. Other cranial nerves may be compressed as well, although neurological symptoms are generally rare, and the brain itself is rarely compressed; however, brain-stem compression may occur, resulting in hydrocephalus.

84.

The most common cause of postoperative osteomyelitis is

Staphylococcus aureus.

Proteus species.

Pseudomonas species.

Escherichia coli.

Explanation:

Up to 80% of bone infections result from Staphylococcus aureus, although other organisms, such as Proteus and Pseudomonas species and Escherichia coli are also frequent causes of osteomyelitis, and the incidence of antibiotic-resistant infections is increasing. If the infection is bloodborne, patients experience intense signs of infection (e.g., chills, fever, tachycardia), which may initially mask bone involvement, but eventually the infected area becomes red, swollen, and painful, with pain exacerbated by movement. Only local symptoms occur if infection spreads from an adjacent area.

85.

Which initial intervention is indicated for a toddler with rickets and minimal bowing of the legs?

Surgical repair

Bracing

Range-of-motion exercises

Vitamin D and calcium

Explanation:

Children with rickets are treated with vitamin D and calcium supplements, with the dosage determined by age and size, using care to avoid overdose of vitamin D. Prolonged deficiency in vitamin D is the most common cause of rickets. In some cases, braces may be applied to the legs of a child so that they will straighten as the bone grows. In older children or when deformities are pronounced, surgical repair may be indicated.

86.

When evaluating older men for osteoporosis, it is important to consider which of the following risk factors?

Delayed puberty

Fracture after age 50

Hyperthyroidism

Alcoholism

Explanation:

While all of these are risk factors for osteoporosis in older men, a history of fracture after age 50 is of primary importance as it may indicate bone loss. Most men should be evaluated with dual energy x-ray absorptiometry of the spine and hip at age 70, but those with increased risk factors should be tested earlier (ages 50–69). Other risk factors include delayed puberty, hyperthyroidism, hyperparathyroidism, alcoholism, history of smoking, and some drug treatments (e.g., glucocorticoids, chemotherapy).

87.

A 13-year-old female soccer player has an injury of the anterior cruciate ligament (ACL) and is undergoing conservative therapy with bracing and physical therapy; however, her knee will be ACL-deficient in the future. If the athlete returns to soccer, she is most at risk for experiencing

an avulsion fracture of the distal femur.

an avulsion fracture of the tibia.

a posterior cruciate ligament injury.

a meniscal tear.

Explanation:

Female athletes are especially at risk for anterior cruciate ligament (ACL) injuries. Girls younger than age 14 and boys younger than age 15 are usually treated conservatively (e.g., bracing, physical therapy), although reconstruction may be completed at a later time. Conservative treatment usually requires about 3 months, although the knee may be ACL-deficient, increasing the risk of secondary injuries, especially meniscal tears. Reconstruction should return the knee to preinjury strength and stability, but recovery time is usually 9–12 months.

88.

A 30-year-old football player experienced a dislocation of the right knee and is in the emergency department with the knee splinted. Which of the following assessments has priority?

Vascular assessment

Nerve function assessment

Pain evaluation

Assessment for further injuries to tendons, ligaments, and cartilage

Explanation:

While all of the assessments listed in the question are important, the critical assessment is of vascular status because dislocation of the knee often tears the popliteal artery. Knee dislocation places the patient at high risk for compartment syndrome and amputation, especially if circulation is impaired for more than 6 hours. The presence of pedal pulses is not sufficient to rule out vascular injury, so the patient must undergo arteriograms or ultrasound evaluation. Nerve assessment is also important, as injury to the tibial and peroneal branches of the sciatic nerve is common.

89.

What is the minimum daily dose of vitamin D recommended for adults 19–50 years of age to maximize bone health?

400 IU/day

600 IU/day

1000 IU/day

1500 IU/day

Explanation:

Patients 19–50 years old should receive a minimum dose of 600 IU/day of vitamin D. Infants younger than a year require 400 IU/day, while children 1–18 years old require 600 IU/day. Those with vitamin D deficiency may need higher doses; however, the highest doses that should be taken without direct medical supervision are 1000 IU/day for 0–6 months, 1500 IU/day for 6 months to 1 year, 2500 IU/day for ages 1–3, 300 IU/day for ages 4–8, and 400 IU/day for all other ages.

90.

To prevent venous stasis in a patient who is immobilized in skeletal traction, which of the following actions would be most important?

Deep-breathing and coughing exercises

Range-of-motion exercises to noninvolved limbs

Muscle-setting exercises and dorsi/plantar flexion foot exercises

Frequent weight shifting

Explanation:

While range-of-motion exercises to noninvolved limbs are important to maintain circulation, muscle-setting exercises and dorsi/planter flexion foot exercises can be done on the affected limb as well and are the most important. Patients should be taught how to do muscle-setting exercises and be advised to do them at least every 2 hours during the day. Additionally, antiembolic stockings or intermittent external pneumatic compression devices may be applied to the noninvolved limb to prevent venous stasis.

91.

Which of the following symptoms differentiate osteomalacia from osteoporosis?

Bone pain is generalized.

Bone pain is localized.

Fractures are primarily in the axial skeleton.

Onset is after age 65.

Explanation:

Osteomalacia is characterized by generalized bone pain because the bones are not adequately mineralized, so the entire skeleton may be affected, resulting in pain and tenderness, bowing of the bones, and fractures. Osteomalacia results from deficiency of activated vitamin D, so calcium cannot be adequately absorbed from the intestines. Skeletal deformities, such as kyphosis and bowing of the legs, are common findings. Patients often exhibit an abnormal

"waddling" gait and have pronounced muscle weakness because of calcium deficiency, increasing the risk for falls.

92.

When a patient uses a walker to ambulate, the correct height of the walker should be

at the height of the hip.

slightly above the waist.

slightly below the waist.

at the height of the elbow.

Explanation:

When a patient ambulates with a walker, the height of the walker should be slightly below the waist, allowing for a small degree of flexion in the elbow. If the walker is too low, the patient will be forced to lean forward when walking, and if too high, the patient will be unstable. The patient should be cautioned not to use the walker for support when sitting but to reach for the arm of the chair. The patient should also not use the walker for support when standing as this may pull the walker over, and the patient could fall.

93.

Quantitative computed tomography is primarily used to measure bone density of which part of the skeleton?

Hip

Vertebrae (spine)

Arms and legs

Heel and forearm

Explanation:

Different bone density tests:

Quantitative computed tomography (QCT): Vertebrae

Peripheral QCT (pQCT): Arms (usually wrist) or legs

Duel-energy x-ray absorptiometry (DEXA): Vertebrae or hip

Peripheral DEXA (pDEXA): Arms or legs

Quantitative ultrasound: Heel and distal radius

Single-energy x-ray absorptiometry: Heel or forearm

Dual photon absorptiometry: Hip and vertebrae

94.

A 60-year-old woman is concerned that she have adequate calcium in her diet to help prevent osteoporosis. What calcium intake does the Surgeon General recommend for women over 50?

800 mg/day

500 mg/day

1000 mg/day

1200 mg/day

Explanation:

The Surgeon General recommends 1200 mg of calcium daily for women over 50 years of age.

Age	*Milligrams of Calcium a Day*
0–6 months	*210*
7–12 months	*270*
1–3 years	*500*
4–8 years	*800*
9–18 years	*1300*
19–50 years	*1000*
Over 50 years	*1200*

95.

A 65-year-old patient asks the nurse why he has lost 1 inch in height. The nurse's correct response is:

"Muscle atrophy that occurs with age results in a stooped posture."

"The cushioning disks between your vertebrae begin to thin, resulting in lost height."

"It is normal for people to lose height as they age."

“The vertebrae compress as you age.”

Explanation:

“The cushioning disks between your vertebrae begin to thin, resulting in lost height” is the best response by the nurse because it directly answers the question and provides an explanation. Patients are often reluctant to “bother” their physicians with questions or feel that their questions are not important, so the nurse should take every opportunity to educate patients and respond to their questions, avoiding technical terms and medical jargon as much as possible.

96.

A patient has an obvious gait disturbance. When evaluating the cause, which of the following would be the most appropriate first action?

Completely test all of the muscles.

Measure the length of the legs.

Note atrophy or differences in muscle tone from one leg to the other.

Advise the patient of the need for x-rays.

Explanation:

While measuring the legs is not part of a normal assessment, if a patient presents with an impaired gait, the initial evaluation should include measuring the legs from one bony prominence to another (e.g., from hip to knee and knee to ankle), comparing one side with the other to determine if there is a disparity in length that could account for the gait impairment. The feet should also be examined to determine if foot problems are impairing gait.

97.

Using the Functional Ambulation Classification Scale, which of the following categories corresponds to a patient who is able to ambulate independently on flat surfaces but requires standby supervision?

Category 1

Category 2

Category 3

Category 4

Explanation:

Functional Ambulation Classification Scale:

Category O: Ambulation nonfunctional: Cannot ambulate or ambulates only in parallel bars or with two-person assistance.

Category 1: Dependent on assistance, level II: Requires continuous assistance of one person to ambulate on level surface.

Category 2: Dependent on assistance, level I: Requires continuous or intermittent light assistance to ambulate on level surface.

Category 3: Dependent, supervision: Can ambulate independently on level surface with standby supervision.

Category 4: Dependent, level surface: Can ambulate independently on level surface but needs supervision or assistance for stairs or uneven surfaces.

Category 5: Independent: Can ambulate independently on all surfaces.

98.

A 75-year-old man complains that he has to limit walks and other activities because of generalized joint pain and stiffness. Which of the following initial interventions is indicated?

Recommend analgesia, such as acetaminophen or nonsteroidal anti-inflammatory drugs.

Introduce stair-walking exercises.

Reduce weight-bearing exercises.

Recommend the application of warm compresses to the joints.

Explanation:

Mild analgesia, such as acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs), is usually the initial intervention for increasing joint pain and stiffness, a common complaint of older adults. Patients usually begin with acetaminophen because it has fewer adverse effects than NSAIDs. Weight-bearing exercises are important to maintain muscle strength and bone health, but stair-walking can increase stress to weak or injured joints. Warm compresses may help to relieve discomfort but may not be an adequate solution for generalized pain and stiffness.

99.

A patient is immobilized in skeletal traction. How much fluid intake should the patient have in 24 hours to prevent urinary complications?

1000 mL

1500 mL

2000 mL

2500 mL

Explanation:

Immobilization can result in bone demineralization, increasing the levels of calcium in the blood. This, in turn, leads to calcium precipitation in the urine, increased urinary pH, and stasis. These changes increase the risk of both urinary infections and kidney stones, so patients need additional fluids of at least 2500 mL/24 hours. A secondary benefit is that the added fluid intake also helps reduce constipation, which commonly occurs with immobilization.

100.

For which of the following injuries is application of rest, ice, compression, and elevation therapy most effective as an initial intervention?

Sprains and strains

Dislocations

Fractures

Muscle spasms

Explanation:

Rest, ice, compression, and elevation therapy is most effective initially for the treatment of sprains and strains because it helps to reduce swelling and pain. The patient should immediately stop activities, rest the injured area, and apply ice or cold compresses for 15–20 minutes each hour for up to 48 hours. An ACE bandage or other compression dressing may be applied to provide gentle pressure. The injured body part should be elevated above the level of the heart.

101.

An adolescent fell during a football game and injured his left leg. Which of the following is the cardinal sign of a fracture?

Severe pain

Edema

Deformity

Muscle spams

Explanation:

The cardinal sign for a fracture is deformity; however, if the fracture is not displaced, deformity may not be evident, so its absence does not rule out fracture. Other indications include marked pain, inability to stand or walk, and swelling. In some cases, neurovascular symptoms, such as numbness or cyanosis, may be evident because of impaired circulation or compression of nerves and vessels resulting from the injury. Muscle spasms may also be present with fractures.

102.

A 27-year-old patient is admitted to the emergency room with an open contaminated fracture of the tibia following a tractor accident. Which of the following information is especially important to obtain from the patient?

The cause of the accident

The date of the last treatment with antibiotics

A description of the environment in which the accident occurred

The date of the last tetanus shot

Explanation:

The date of the last tetanus shot is especially important for all open contaminated wounds. Patients whose tetanus toxoid injections are up-to-date and have had three or more immunizations generally require no further preventive treatment; however, if the patient is not immunized, has had fewer than three immunizations, or is unclear about immunization, then the patient should receive both the tetanus toxoid and tetanus immune globulin because tetanus toxoid does not confer immediate immunity, while tetanus immune globulin provides immediate temporary immunity.

103.

A 48-year-old patient has osteomyelitis affecting the right knee and distal femur. Which of the following range-of-motion (ROM) exercises should the patient be advised to do for the right leg?

ROM exercises of the right knee

ROM exercises of the right hip and ankle

ROM exercises of the right ankle

No exercises as the limb should rest

Explanation:

While a joint with osteomyelitis must rest because the bone is weak from the infective process, and immobilization devices, such as a knee brace, are usually used to prevent stress on the bone, the patient should undergo range-of-motion (ROM) exercises of the joints above and below the affected part of the leg. In the case described in the question, the patient should do

routine ROM exercises of the hip and the ankle to maintain strength and mobility. The patient may also do isometric exercises to maintain muscle tone.

104.

A 30-year-old patient with an ipsilateral fracture of the distal radius and dislocation of the elbow complains of severe pain in the forearm that is unrelieved by analgesia. In this situation, the nurse should be suspicious of

infection.

fat embolism.

drug tolerance.

compartment syndrome.

Explanation:

Severe increasing pain that is unrelieved by analgesia and located distal to the injury (in this case, the forearm) is an initial sign of compartment syndrome, which is usually caused by bleeding into the tissue. On examination, the compartment feels tense, and pain may be present with passive stretching of the muscles. Patients may develop paraesthesia and hypoesthesia. Motor weakness is a late sign as is vascular insufficiency, so the nurse should not assume that finding a pulse below the injury precludes compartment syndrome.

105.

When assessing an athlete's Q-angle of the knee in a flexed position, the Q-angle measures 9 degrees. This finding places the athlete at increased risk for

patellar subluxation/dislocation.

anterior cruciate ligament injury.

posterior cruciate ligament injury.

medial collateral ligament injury.

Explanation:

With the knee in a flexed position, the normal Q-angle should be 0 degrees, so a positive finding is any angle greater than 8 degrees. If the knee tracks laterally during flexion, risk of lateral patellar subluxations and patellar dislocations increases. Measurement is made by identifying the anterior superior iliac spine (ASIS), the midpoint of the patella, and the tibial tuberosity. A goniometer is placed over the midpoint of the patella and the fixed arm parallel to the ASIS line where it crosses the midpoint. The movable arm lines up from the midpoint of the patella to the tibial tuberosity.

106.

An athlete fell on his knee when making a jump shot. When the athlete sits with the knee flexed, the knee is extended with the tibia medially rotated; however, the athlete complains of pain at 30-degrees flexion. Flexion is stopped, and the athlete is asked to rotate the tibia laterally, causing the pain to disappear. This presentation indicates a

patellar fracture.

patellar subluxation.

osteochondritis dissecans.

posterior cruciate ligament insufficiency.

Explanation:

These maneuvers (Wilson's test) indicate that the likely injury is osteochondritis dissecans of the femoral condyle, which means that a piece of cartilage has loosened in the joint with a thin layer of bone attached. This is a common sports injury in young athletes, primarily affecting the knee. In some cases, the fragments may remain close to where they detached, causing few symptoms and healing without intervention, but if the fragments move within the joint, they may impair joint functioning, causing chronic pain, stiffness, edema, and locking or popping of the joint.

107.

A 58-year-old man has pain and stiffness in his right knee from which synovial fluid is aspirated for examination. The volume is 5 mL, and the fluid is opaque and yellow with 10,000 white blood cells per microliter, 55% polymorphonuclear leukocytes, and a negative culture. Based on these findings, how would the joint disorder be classified?

Normal

Noninflammatory

Inflammatory

Purulent

Explanation:

Synovial fluid (knee):

Measure	*Normal*	*Non-inflammatory*	*Inflammatory*	*Purulent*
Fluid (mL)	*< 3.5*	*≥ 3.5*	*≥ 3.5*	*≥ 3.5*
Appearance	*Clear*	*Clear*	*Clear to opaque*	*Opaque*

Color	*Clear*	*Yellow*	*Yellow to opalescent*	*Yellow to green*
White blood cells per microliter	*< 200*	*200–300*	*2000–75,000*	*> 100,000*
Polymorphonuclear leukocytes (%)	*< 25*	*< 25*	*≥ 50*	*≥ 75*
Culture	*Negative*	*Negative*	*Negative*	*Usually positive*

108.

Generally, the recommended treatment for acute cases of gout is

a nonsteroidal anti-inflammatory drug.

colchicine.

a corticosteroid.

low-dose aspirin.

Explanation:

The treatment of choice for acute cases of gout is a nonsteroidal anti-inflammatory drug (NSAID), such as indomethacin or ibuprofen. Colchicine is no longer recommended as treatment for acute gout but may be administered as preventive medication for patients who have repeated episodes of gout (usually 0.6 mg one or two times daily). Corticosteroids can provide rapid relief but are usually given only to those who cannot take NSAIDs or who have polyarticular gout. Low-dose aspirin is one of the causes of acute gout.

109.

A patient has a knee injury with damage to the quadriceps muscle. Where will the patient likely experience referred pain?

Anterior thigh only

Anterior thigh, patella, lateral thigh, and knee

Posterior knee and posterior thigh

Posterior knee, posterolateral calf, and posteromedial calf to instep

Explanation:

Knee injury with muscle injury and referred pain:

Quadriceps muscle: Anterior thigh, patella, lateral thigh, and knee

Sartorius: Anterior thigh

Biceps femoris: Posterior knee and posterior thigh

Gastrocnemius: Posterior knee, posterolateral calf, and posteromedial calf to instep

Gracilis: Medial thigh

Semimembranosus and semitendinosus: Ischial tuberosity and posterior thigh

Popliteus: Posterior knee

Tensor fasciae latae: Lateral thigh

Abductor longus and brevis: Superior anterolateral thigh, anterior thigh to patella, and sometimes down anteromedial leg

Plantaris: Posterior knee and calf

Abductor magnus: Medial thigh from groin to adductor tubercle

110.

A patient with a sprained ankle incurred 72 hours earlier continues to have edema. The most appropriate treatment at this time is

rest, ice, compression, and elevation therapy.

immobility.

warm compresses (98°–105°F).

hot compresses (105°–115°F).

Explanation:

While therapy with rest, ice, compression, and elevation is used for the first 24–48 hours, usually after 48–72 hours, warm compresses (98°–105°F) help to dilate the blood vessels, increasing circulation of the tissues and reducing the edema. It is important that the water temperature be slightly warmer than the body temperature but not hot, as excessive heat may damage tissue. While patients do not need to be immobile, they should avoid placing excessive weight on the ankle while it is still painful; thus, they may need crutches.

111.

Which of the following crutch gaits allows for partial weight-bearing on both extremities with maximal support from the crutches?

Three-point

Swing-through

Tripod

Four-point

Explanation:

The four-point crutch gait allows for partial weight-bearing on both extremities with maximal support from the crutches. The patient has maximal balance support because there are always three points in contact with the ground; however, the rate of ambulation is slow because of the constant shifting. The sequence is to advance the right crutch, then the left foot, followed by the left crutch, and finally the right foot. The patient should practice with a "one-two-three-four" cadence.

112.

A patient has undergone knee replacement surgery. Which of the following is of most concern in the first 3 days after surgery?

Temperature of 100.4°F (38°C) 24 hours after surgery

Temperature of 100°F (37.8°C) 60 hours after surgery

Serosanguineous drainage of dressings

Continued pain in the operative site

Explanation:

Temperature of 100°F (37.8°C) 60 hours after surgery is of most concern because the initial rise in temperature (up to 100.4°F/38°C) that is common within the first 24–48 hours after surgery because of the body's reaction to surgical stress should have subsided. The nurse should

carefully examine the wound for signs of infection, such as erythema, edema, and discharge. A white blood cell count and differential should be completed as well as a wound culture.

113.

When using adjustable wooden or metal crutches, at what degree of flexion should the patient's elbows be when standing upright?

0 degrees

5 degrees

20 degrees

30 degrees

Explanation:

When the patient is standing upright while using adjustable wooden or metal crutches, the patient's arms should be at 30 degrees of flexion. This allows the arms to extend adequately when the crutches are advanced. Adjustable crutches are useful for patients whose muscles or joints may change during the course of treatment, requiring a different adjustment or different gait. An approximate measurement for this type of crutch is to measure from the anterior fold of the axilla to a point on the floor and then add 2 inches.

114.

A runner has developed painful shin splints. The best approach to treatment is

a relative rest program.

complete rest.

continued running, thereby “running through the pain.”

surgical intervention.

Explanation:

Neither complete rest nor continued running is now recommended as treatment for shin splints. Instead, a program of relative rest allows the athlete to continue with some activities that do not stress the area, such as riding a stationary bicycle or exercising in the water. Concurrent treatment includes nonsteroidal anti-inflammatory drugs, an ACE bandage to the affected area, stretching and strengthening exercises, and a gradual return to running as symptoms subside, beginning on level terrain at half the preinjury distance and intensity.

115.

A patient who has been bedridden with multiple injuries following an automobile accident is resuming activity. Which of the following is an indication of activity intolerance?

Increase in respiration rate of 12–15/minute

Decrease in systolic blood pressure of 8 mm Hg

Increase in systolic blood pressure of 10 mm Hg

Increase in pulse rate of 30 beats/minute over the resting rate

Explanation:

The following responses to activity may indicate activity intolerance:

Increase in pulse rate of 20–30 beats/minute over resting rate, which may vary, depending on the intensity of the exercise

Increase in systolic blood pressure of 20 mm Hg or more or a decrease of 10 mm Hg or more

Palpitations

Wheezing and dyspnea

Tightness of the chest and discomfort

Pallor, diaphoresis, dizziness, and light-headedness

Marked fatigue

The nurse should assess emotional status and readiness for activity. Older patients may experience orthostatic hypotension, and some patients may require oxygen for increased activity.

116.

A patient who has undergone an amputation of the left arm below the elbow as a result of a traumatic injury is exhibiting indications of disturbed body image. Which of the following initial interventions is most appropriate?

Discuss the grief process and the normalcy of the patient's feelings.

Teach the use of adaptive equipment.

Discuss the use of concealing clothing.

Refer the patient to a support group.

Explanation:

The nurse should discuss the grief process that people go through after a change in body image, such as an amputation, stressing that it is normal for patients to feel disturbed about body changes. The nurse might discuss coping mechanisms that the patient has used in the past. The patient should be encouraged to express his feeling about the changes and, when

ready, taught the use of adaptive equipment and concealing clothing. Patients often benefit from a support group, especially as they reintegrate into their normal routines.

117.

A patient recovering from a fractured hip is at risk for falls and is sometimes confused and tries to climb out of bed. Which of the following interventions is most critical?

Keep all side rails elevated.

Apply physical body restraints.

Notify staff, and implement fall-precaution procedures.

Place all of the patient's personal items and the call bell within reach.

Explanation:

If a patient is at risk for falls, all staff members should be aware of the danger. This may involve posting signs or other indicators. Additionally, staff members should implement fall-precaution procedures. Physical body restraints should be avoided as much as possible. While all of the patient's personal items and a call bell should be within reach, these interventions alone may be insufficient. Studies show that leaving at least one side rail (out of four) down is associated with fewer risks of falls as patients often fall while climbing over rails.

118.

A patient who is scheduled to undergo an amputation below the knee because of bone cancer has become very withdrawn and has outbursts of anger and hostility. He eats little and has lost weight. Which of the following is the most likely cause of these reactions?

Disturbed body image

Anticipatory grief

Infection

Metastatic lesions

Explanation:

The patient is exhibiting typical signs of anticipatory grief, a condition in which a patient grieves a loss (e.g., a body part) before the loss occurs. Patients may become withdrawn and depressed, may cry or have angry or hostile outbursts, may experience changes in eating habits, and may express fear and a sense of hopelessness. Patients may go through the normal stages of grieving (i.e., denial, anger, bargaining, depression, acceptance) or may stay in one stage for a prolonged period. The nurse should remain supportive, provide information, assess the patient's support system, and reinforce the patient's strengths.

119.

A patient has impaired physical mobility because of rheumatoid arthritis, which limits the use of her arms and hands. Which of the following therapeutic interventions is indicated initially?

Provide positive reinforcement.

Instruct in active range-of-motion exercises.

Instruct in energy-saving techniques.

Provide training in the use of assistive devices.

Explanation:

While all of the interventions listed in the question are valuable for a patient with impaired physical mobility, it is very difficult to carry out the activities of daily living (ADLs) with limitations in the use of the arms and hands, so the best initial intervention is to assess the patient for the types of appropriate assistive devices and then provide training in their use. Assistive devices, such as walkers, may help promote mobility, but other devices, such as grabbers, adapted kitchen utensils, dressing and toileting aids, large-button remote controls and telephones, and writing aids, may allow the patient to continue to carry out ADLs independently.

120.

An elderly patient who lives alone has had one hip replacement and is scheduled for hip replacement on the opposite side because of increasing pain and immobility; however, the patient has been steadily losing weight and is 15% below ideal body weight. Which intervention is indicated initially for an imbalanced nutrition?

Explain the need for adequate nutrition.

Discuss attitudes toward eating.

Obtain a nutritional history (e.g., meals, food choices, food preparation).

Encourage nutritional supplements.

Explanation:

The initial intervention for a patient with imbalanced nutrition is to obtain a nutritional history, including when the patient eats meals, the number of meals, food choices, and meal preparation. When possible, caregivers and family members should be included in the assessment as patients may be reluctant to admit that they are unable to prepare meals or shop for food adequately. A food diary in which a patient keeps a record of all foods and fluids for a prescribed period of time (3–7 days) may be helpful. The patient may need meal assistance or referral to Meals on Wheels.

121.

A 62-year-old patient has undergone an amputation of the left leg above the knee and has a rigid pressure cast dressing applied to the stump; however, the patient is occasionally incontinent of urine because of an overactive bladder. Which of the following is the best solution to protect the stump?

Insert a Foley catheter.

Schedule urination every 2 hours.

Cover cast with plastic.

Place the patient in adult diapers.

Explanation:

While various methods should be used to help control an overactive bladder, such as medications and scheduled toileting, the cast should be covered with plastic to protect it from urine; if the cast becomes wet, the wound may become contaminated, increasing the risk of infection. The cast should be inspected regularly and any slippage noted, as this may indicate an infective process. A rigid pressure cast dressing may be left in place initially for 7–10 days.

122.

A patient with an amputation of the left leg below the knee has been fitted with a temporary prosthesis and is scheduled to begin ambulation. To prepare the patient for his first attempt at bearing weight on the residual limb, it is most important to give the patient

analgesia.

emotional support.

an explanation of the procedure.

a crutch fitting.

Explanation:

Even if the prosthesis fits properly, it is almost always uncomfortable, and weight-bearing may be extremely painful because the tissues are not yet healed or conditioned to bearing weight. Patients should be provided adequate analgesia before attempting ambulation because if the first experience is severely painful, patients may be fearful and reluctant to cooperate with physical therapy. Bone pain is very painful, and patients may require higher doses of opioid analgesia than other patients.

123.

Which of the following statements by a patient with rheumatoid arthritis suggests a need for more education about the disease?

"At least rheumatoid arthritis only affects the joints."

"I should sleep at least 8–10 hours each night."

"Splinting will help to protect my joints."

"Nonsteroidal anti-inflammatory drugs will help relieve pain but will not prevent joint damage."

Explanation:

Rheumatoid arthritis is a chronic inflammatory systemic disease that usually presents with inflammation of the joints and progressive proliferation of the synovium (pannus formation) inside and outside of the joint capsule, but changes occur to organs throughout the body as well:

Cardiovascular: pericarditis, heart failure, and cardiomyopathies

Renal: chronic renal failure

Pulmonary: chronic obstructive pulmonary disease and repeated lung infections

Skin: tissue changes and nodules

Eyes: scleritis

Hematologic: leukopenia, anemia, and splenomegaly

Neuromuscular: nerve compression and muscle weakness

124.

A patient has had a long-leg plaster cast applied to the left leg after a skiing accident that resulted in a fractured tibia and fibula. The cast is still damp, but the patient complains that the cast feels hot and uncomfortable. The feeling of heat most likely indicates

an infection.

an ill-fitting cast.

a normal reaction.

anxiety.

Explanation:

Heat is generated during the drying process of a cast, so the feeling of the cast being hot and uncomfortable is normal. The patient should be advised to be sure to keep the cast uncovered until it is completely dry (24–48 hours). The limb should be kept elevated to decrease swelling but may be supported on a pillow, which may help prevent the cast from becoming misshapen as it dries. The patient should be turned every 2 hours to allow air to circulate about the cast so that it dries evenly.

125.

During which stage of bone healing can a patient resume weight-bearing?

Inflammatory stage

Development of fibrocartilaginous (soft) callus

Development of bony callus

Remodeling

Explanation:

A patient cannot resume weight-bearing until the remodeling stage of bone healing because the bone is not strong enough in earlier stages. During the inflammatory stage, a hematoma develops about the fracture ends, helping to hold the bone ends together. Granulation tissue then forms from the hematoma, setting down a fibrin network for osteoblasts. A fibrocartilaginous (soft) callus begins to form about a week after injury. The soft callus ossifies, forming the bony callus that joins and consolidates the bone ends. The final stage is remodeling, during which excess callus is reabsorbed and the bone strengthens.

126.

A patient who pitches on a baseball team complains of numbness in the thumb and first two fingers of his throwing hand on arising in the morning, although strength and grip remain intact. Which of the following initial treatments is most important?

Surgical repair

Splint

Corticosteroid injection

Nonsteroidal anti-inflammatory drugs

Explanation:

The symptoms described in the question are consistent with mild carpal tunnel syndrome, which results in compression of the median nerve when the hand is in flexion, so the initial treatment is to apply a splint at night. The patient may also be advised to avoid activities that may contribute to the disorder. If symptoms increase, then other options for treatment include corticosteroid injection and surgical repair. As the condition worsens, patients often complain that the fingers feel swollen, numb, and painful, and the ability to grip is impaired.

127.

When conducting passive range-of-motion (ROM) exercises for a bed-bound patient, the nurse notes that the patient complains of pain when the knee is flexed beyond 90 degrees. Which of the following actions is correct?

Stop the ROM exercises at the point of pain.

Move the joint through the entire expected range.

Move the joint slightly past the point of pain.

Stop all ROM exercises until the joint is fully evaluated.

Explanation:

The nurse should stop the range-of-motion (ROM) exercises at the point of pain or resistance as forcing the joint past this point may result in severe pain and damage to the joint. While evaluation may be indicated, passive ROM that does not elicit pain should cause no further

damage and helps to maintain muscle strength. The normal flexion range for the knee (bringing heel toward the back of the thigh) is 135–145 degrees, while the extension range is zero.

128.

A patient with decreasing muscle strength states she gets too tired to complete tasks needed to care for her family, such as cooking and cleaning. Which of the following interventions is likely to be most helpful?

Advise the patient to do all tasks in a 2-hour period.

Assist the patient to plan a schedule for necessary tasks and rest periods.

Advise the patient to hire help.

Advise the patient to learn to accept her limitations.

Explanation:

The most helpful intervention is to assist the patient to plan a schedule for necessary tasks and rest periods. While some patients, such as those with rheumatoid arthritis, may do better if they schedule tasks in the morning, this may not always be possible with family demands; however, the patient must learn to pace herself with adequate rest periods so that she can complete necessary tasks. While hiring help may be ideal, many patients are unable to afford hired help, and patients should be helped to maintain as much independence as possible.

129.

A patient is scheduled to undergo magnetic resonance imaging (MRI) to evaluate a vertebral injury. Which of the following instructions is most important?

"Be sure to remove all metal before the MRI."

“Just try to take deep breaths and relax during the procedure.”

“Wear comfortable clothes.”

“Be sure to ask for earplugs.”

Explanation:

While all of the instructions listed in the question are helpful, the most critical is to instruct the patient to remove all metal, including bras with underwires, before the magnetic resonance imaging (MRI). The MRI generates a very strong magnetic field, and implanted devices, such as pacemakers, cochlear ear implants, aneurysm clips, magnetic dental implants, and shrapnel (especially in the eye) are contraindications. Orthopedic implants are usually MRI safe after they are well-imbedded, usually about 6 weeks after implantation. Dental fillings are also MRI safe.

130.

A patient has Buck’s traction applied after falling and fracturing a hip. The primary reason for the application of Buck’s traction is to

heal a fracture.

reduce pain.

delay surgical repair.

reduce the fracture and maintain alignment.

Explanation:

Buck's traction may be applied after a hip fracture in order to reduce the fracture and maintain alignment prior to surgical repair. The traction may also reduce pain resulting from a displaced fracture. Buck's extension traction is a type of skin traction, which is applied temporarily. Prolonged skin traction may result in skin breakdown, especially in older adults. Traction may help to reduce muscle spasms caused by the fracture. With Buck's traction, the heel should be off of the bed, and the leg should lie parallel to the bed.

131.

A patient is in skeletal traction after the insertion of pins into the distal femur. A recent x-ray shows that the bone ends are slightly overriding. What alteration does the nurse expect?

Removal of traction and surgical repair

Decrease in weights

Increase in weights

No alteration as this is normal in the early stages of healing

Explanation:

Skeletal traction is applied after surgical insertion of pins or wires (generally into the distal femur or proximal tibia) to pull on the bones and maintain proper alignment for healing. Weights are usually 15–25 pounds, but this may need to be adjusted for the individual, and added weights may be necessary to overcome strong muscle spasms. If the weights are not sufficient, then the bone ends may override. If the weights are excessive, the bone ends may be pulled too far apart to heal, so frequent x-rays must be taken to assess progress.

132.

A patient is in skeletal traction with a Thomas Splint with the Pearson attachment because of a right tibial fracture. The patient's left heel, coccyx, and both elbows are slightly reddened. Which intervention by the nurse is indicated initially?

Instruct the patient in the proper use of the overhead trapeze to facilitate movement.

Massage the reddened areas.

Place a support surface over the mattress.

Place protective dressings over the reddened areas.

Explanation:

The pattern of skin irritation (i.e., contralateral heel, elbows, coccyx) described in the question is usually caused when patients use their heels and elbows to slide their body up in bed, causing sheer and friction of the coccyx. The initial intervention should be to instruct the patient in the proper use of the overhead trapeze to lift the body toward the head of the bed. It is especially important that patients understand the need to lift the coccyx off the bed rather than to slide it over the mattress. If patients are unable to lift adequately, then they should call the nurse for assistance.

133.

A patient in skeletal traction has pins inserted into the proximal tibia. Which of the following findings by the nurse is of particular concern?

Small amount of serous drainage from the insertion site

Mild discomfort from the insertion site

Slight crusting about the insertion site

Elevated body temperature

Explanation:

The insertion site of pins and wires should be assessed at least every 8 hours. An elevation in body temperature may be an indication of an infection, so this should be the primary concern. Slight amounts of serous drainage are normal, especially in the period immediately after surgery, but any purulent drainage may be a sign of infection. Slight crusting often occurs about the insertion site, but it should be gently removed when the site is cleaned. Another cause for concern is any loosening or movement of the pin or wire.

134.

A patient with a comminuted fracture of the tibia has an external fixator with three-dimensional (triangular) fixation. Which of the following is the correct method of moving the leg with its frame?

Place a pull sheet under the leg/frame and pull.

Use the frame to lift and move leg.

Support the leg above and below the frame to move it.

Ask the patient to drag the leg with the frame, using the opposite foot.

Explanation:

To move a limb with an external fixation device, the nurse should support the limb above and below the frame while lifting and moving. The frame itself should never be grasped to move the limb. External fixation devices (i.e., metal frames) are attached to the bone with a number of pins that are screwed into the bone and are often used for complicated fractures of the long bones or pelvis, such as open fractures or those with extensive soft tissue injuries that require medical care while the bone heals. Pin care must be done every 8 hours, and any loose pins reported immediately.

135.

Which of the following is a basic principle of traction?

Weights should always hang freely.

Ropes should be covered only with light blankets.

Skeletal traction should be released for only brief periods.

Knots should be placed at pulleys.

Explanation:

Traction uses weights to pull on affected body parts while the patient's body weight, position, and sometimes additional weights serve as countertraction to keep the patient from being pulled out of position or even out of bed. The basic principles of traction include the following:

Weights should always hang freely.

Ropes should not touch bed linens.

Traction and countertraction should be maintained continuously.

Skeletal traction should never be released.

Knots should be free of the pulley.

Correct body alignment (center of bed) must be maintained.

136.

During the acute stage of rheumatoid arthritis affecting the ankles, what primary precaution should the patient use to protect the ankle joints?

ROM exercises

Bedrest with foot elevated

Avoidance of all walking

Use of ankle splints

Explanation:

The ankles should be supported by splints during the acute stage of rheumatoid arthritis to prevent development of equinus deformity, which can quickly become fixed. With the ankle stabilized, the patient should be encouraged to continue walking in order to prevent stiffness. If pain is severe, a short period of non–weight bearing may be necessary or local steroid injection. The patient may also need to use crutches or a cane to reduce pressure on the ankles.

137.

Which of the following heat-producing therapies is most indicated for pain and stiffness of large joints, such as the shoulder or hip?

Microwave diathermy

Phonophoresis

Short wave diathermy

Moist heat pack

Explanation:

Short wave diathermy penetrates soft tissues well and is often used for treatment of deep joints, such as the hip and shoulder. Short wave diathermy uses radio waves (27.12 megahertz)

to increase the temperature in subcutaneous tissue and is used along with passive and active range of motion exercises to improve range in painful conditions such as inflammation of the muscles, tendons, and bursae. The radio waves (eddy currents) are transmitted through a capacitor or inductor in a continuous or pulse waveform. Temperatures increase about 15°C in fatty tissue and 4°C–6°C in muscular tissue.

138.

A patient has injury of the right knee. What is the correct instruction for the patient's use of a cane?

Cane in left hand and moving cane forward and then the right leg

Cane in right hand and moving cane forward and then the right leg

Cane in right hand and moving cane and right leg forward together

Cane in left hand and moving cane and right leg forward together

Explanation:

A cane should be held on the opposite side of an injured limb and should move forward at the same time as the injured limb so that the person can put weight on the cane when moving the other foot forward, relieving weight on the injured limb. Using the cane on the same side as the injury may result in an unstable gait and increase risk of falls. The cane should reach the patient's waist when standing, and when the cane is forward, the elbow should not be flexed more than 20° because more flexion may interfere with the ability to lock the elbow to provide support and prevent falls.

139.

When examining a patient, the nurse notes that passive exercise results in cogwheeling (jerky incremental movements). Cogwheeling is characteristic of which of the following diseases?

Myasthenia gravis

Muscular dystrophy

Multiple sclerosis

Parkinson's disease

Explanation:

Cogwheeling (passive exercise resulting in jerky incremental movements) is a characteristic of Parkinson disease and is associated with rigidity, one of the cardinal manifestations of Parkinson disease. Often, if one limb is actively engaged in voluntary movement, the opposite limb remains stiff. Other manifestations of PD include tremor, which is evident at rest and increases with activity; bradykinesia, which results in stooped posture, shuffling gait, drooling, and masked facies; and postural instability, which results in a propulsive gait.

140.

Which of the following is a primary use of electrical muscle stimulation (EMS)?

Control pain

Reduce contractures and scarring

Relieve muscle spasms and increase muscle size

Increase range of motion