M_PTQ_CWON (200+ Questions) - Quiz Questions with Answers

1.

Which of the following extends from a wound under normal tissue and connects two structures, such as the wound and an organ?

undermining

fistula

tunneling

abscess

Explanation:

A fistula extends under normal tissue away from the wound and connects two structures, such as the wound and an organ or the wound and the skin. Undermining occurs when damaged tissue lies underneath intact skin about the wound perimeter. Tunneling is damaged tissue extending from the wound under normal tissue, but not opening to the skin or other structures. An abscess is a collection of purulent material in a localized area, often occurring with a fistula.

2.

Which of the following is the most definitive method for obtaining a wound specimen for culture and sensitivities?

tissue biopsy

sterile swab of wound

needle biopsy

sterile swab of discharge

Explanation:

The most definitive method of obtaining a wound specimen for culture and sensitivities is with a tissue biopsy. A needle biopsy can also provide an adequate sample in many cases. Swabbing a wound with a sterile applicator often does not provide an adequate sample, because this method obtains material only from the wound surface, which may include both pathogenic agents from the wound and contamination from skin bacteria. The tissue itself must be cultured, not just the discharge.

3.

If a patient has a total contact cast applied for offloading for a plantar neuropathic foot ulcer, how frequently should the TCC be changed?

every 4 to 5 days

every 1 to 2 weeks

every 2 to 4 weeks

every 4 to 5 weeks

Explanation:

If a patient has a total contact cast (TCC) applied for offloading for a plantar neuropathic foot ulcer, the TCC should be changed every 1 to 2 weeks. With the TCC, healing usually occurs within 6 to 8 weeks, primarily because it forces the patient to carry out offloading since it rests and immobilizes the area of the lesion. However, the cast may be uncomfortable and makes bathing difficult, so removable cast walkers are often utilized instead.

4.

When using Doppler ultrasound to evaluate blood flow, at what angle to the skin should the transducer be held?

20 degrees

45 degrees

75 degrees

90 degrees

Explanation:

When using Doppler ultrasound to evaluate blood flow, conductive gel is placed on the end of the transducer or on the skin and the transducer is then held at approximately a 45-degree angle to the skin (pointing towards the patient's head, which can be anywhere from 30 to 60 degrees). The pulse is counted, noting the intensity and a marking pen used to mark the site where the pulse is heard. The echo is at a higher frequency when blood flow is in the direction of the transducer and lower frequency when it is in the opposite direction (representing the Doppler effect/frequency shift).

5.

An essential role of fat in the diet is to

provide the most available source of energy.

serve as a component of antibodies and the immune system.

maintain the normal function of the cell membrane.

increase the activation of white blood cells at the wound site.

Explanation:

An essential role of fat in the diet is to maintain the normal function of the cell membrane, permitting fat-soluble substances (such as vitamins A, D, E, and K) to move in and out of the cell. Fats can also serve as a source of energy when carbohydrates are deficient. Stored fat in the tissues provides insulation and protection against heat and cold. Fat provides 9 kcal/g compared to 4 kcal/g for proteins and carbohydrates.

6.

When educating a patient with peripheral arterial disease about self-care, which of the following should the patient be advised poses the greatest risk for decreasing circulation?

drinking one glass of wine daily

smoking cigarettes

using cannabidiol (CBD) cream to reduce pain

drinking 2 cups of coffee daily

Explanation:

When educating a patient with peripheral arterial disease about self-care, the patient should be advised that smoking cigarettes poses the greatest risk for decreasing circulation because the nicotine serves as a vasoconstrictor. With each cigarette, the smoker absorbs about 1 mg of nicotine although this can vary among patients because of genetic differences and racial differences. Vaping and other smokeless tobacco products (such as chewing tobacco) also pose a risk to patients.

7.

The Braden Q scale was designed specifically for which population?

pediatric

geriatric

obstetric

disabled

Explanation:

The Braden Q scale was designed specifically for the pediatric population. The scale is similar to the Braden scale although every category is scored from 1 (worst) to 4 (normal) and the descriptions are age appropriate. The categories include mobility, activity, sensory perception, moisture, friction/shear, and nutrition. The last category does not appear in the adult Braden scale and is tissue perfusion and oxygenation. This category is scored based on MAP, hemoglobin, and oxygen saturation.

8.

If the nurse is teaching a hearing-impaired patient to do dressing changes, and the patient nods the head and appears to understand, which of the following is the MOST effective method of ensuring

the patient understands the information?

provide information in writing/visual form as well

provide instructions to a family member

ask the patient if the instructions are clear

ask the patient to do a return demonstration

Explanation:

If the nurse is teaching a hearing-impaired patient to do dressing changes, and the patient nods the head and appears to understand, the most effective method of ensuring the patient understands the information is to ask the patient to do a return demonstration. While presenting the information in more than one form (spoken and visual) is also helpful, some patients are unable to read or to follow written directions well, and patients may state that they understand even when they do not.

9.

If collagenase is being applied to a wound for debridement, the wound's pH must stay within the range of

2 to 4.

4 to 6.

6 to 8.

8 to 10.

Explanation:

If collagenase is being applied to a wound for debridement, the wound's pH must stay within the range of 6 to 8 because otherwise inactivation will occur. Other substances that may inactivate the enzyme include Burrows solution, heavy metal ions, and hexachlorophene. If papain/urea compounds are utilized for enzymatic debridement, the pH must remain between 3 and 12, and heavy metal salts and hydrogen peroxide may inactivate the enzymes.

10.

If a patient who is malnourished has the following nursing diagnosis on the plan of care, "Imbalanced nutrition, less than body requirements," which of the following is an appropriate desired outcome?

provide supplements if diet remains insufficient

patient will improve activity level and show increased energy

ensure well-balanced healthy diet

patient will maintain adequate nutrition evidenced by weight within normal range

Explanation:

A desired outcome for a patient should clearly reflect the nursing diagnosis. Therefore, if the nursing diagnosis is, "imbalanced nutrition—less than body requirements," the appropriate desired outcome is "Patient will maintain adequate nutrition evidenced by weight within normal range." A number of different outcomes may be listed under "evidenced by." Nursing interventions, such as "provide supplements…" are part of the plan of care and distinct from desired outcomes.

11.

Which of the following is a contraindication to surgical/sharp debridement of a wound?

diabetic neuropathy

ischemic tissue

underlying infection

deep extensive wound

Explanation:

Ischemic tissue is a contraindication to surgical/sharp debridement because this indicates that the blood supply is inadequate for healing. Other contraindications include malignant lesions (because debridement may spread cancer cells), clotting disorders (anticoagulation is a relative contraindication), immunocompromise, and unstable medical condition. Surgical debridement is primarily used for wounds with an underlying infection, such as cellulitis or sepsis, when the need for debridement is urgent.

12.

The best method of attaching dressings to vascular leg ulcers is

paper tape.

ACE bandage.

liquid adhesive.

tube gauze/netting.

Explanation:

The best method of attaching dressings to vascular leg ulcers is tube gauze/netting, which holds the dressings in place but does not apply excessive pressure on the wound, because it's important to avoid any type of adhesive since the skin is likely to be friable. Adhesives may cause stripping of the skin and further ulceration. If adhesives must be used, silicone adhesives are likely to cause the least skin irritation.

13.

A patient with an infected abdominal wound is taking a number of drugs. Which of the following is most likely to impair healing?

phenytoin

corticosteroid

prostaglandin

estrogen

Explanation:

Corticosteroids may impair wound healing by interfering with vascular proliferation and epithelialization. The anti-inflammatory effect may interfere with the inflammatory phase of healing by decreasing migration of macrophages and polymorphonuclear leukocytes to the wound, interfering with angiogenesis, and increasing susceptibility to wound infection. Other drugs that may impair healing include vasoconstrictors, NSAIDs, aspirin, colchicine, immunosuppressant's, DMARDS (anti-rheumatoid-arthritis drugs), and anticoagulants. Some drugs appear to promote wound healing, including phenytoin, prostaglandin, and estrogen.

14.

If a patient has a diabetic ulcer with minimal to moderate exudate and a small amount of eschar that requires debridement, which of the following dressing choices is MOST appropriate for autolytic debridement?

gauze

hydrogel

alginate

hydrocolloid

Explanation:

If a client has a diabetic ulcer with minimal to moderate exudate and a small amount of eschar that requires debridement, the most appropriate dressing choice is a hydrocolloid (such as DuoDERM®, Exuderm®, and Replicare®). Hydrocolloids form a gelatinous mass that keeps the wound hydrated and provides an environment in which autolytic debridement can occur. Hydrocolloids can be used with wounds that have minimal to moderate exudate.

15.

Compression of tissue impairs circulation and can result in ischemia and pressure injury when the skin perfusion pressure falls to below

5 to 10 mm Hg.

10 to 20 mm Hg.

30 to 40 mm Hg.

50 to 60 mm Hg.

Explanation:

Compression of tissue impairs circulation and can result in ischemia and pressure injury when the skin perfusion pressure falls to below 30 to 40 mm Hg. Normal skin perfusion pressure may range from 50 mm Hg to 100 mm Hg. Skin perfusion pressure, which measures blood flow to a wound, may be assessed by applying sensors that detect oxygen about the wound in a normal room environment. The test may also be conducted in a hyperbaric chamber with the patient breathing 100% oxygen to determine if the oxygen content increases with hyperbaric oxygen treatment.

16.

If a patient score 13 total points in the 5 categories of the Norton Plus Pressure Ulcer Scale and checks positive for diabetes, hypertension, and hemoglobin, what is the patient's risk for pressure ulcers?

high risk

moderate risk

low risk

no risk

Explanation:

Score of ≤10 is high risk and 11 to 15 moderate risk on the Norton Plus Pressure Ulcer scale. Each category (physical condition, mental state, activity, mobility, and incontinence) is score from 1 (worst) to 4 (normal). A one-point deduction is made for each of the following categories

for which the patient is positive: diabetes, hypertension, hematocrit (<41% for males and <36% for females), hemoglobin (<`4 g/dL for males and <12 g/dL for females), albumin level (<3.3 g/dL, fever (>99.6□F/37.6□C), polypharmacy (5 or more), and change in mental status to confused/lethargic within 24 hours. Thus, the patient's initial score was 13, minus 3 points for positive findings of diabetes, hypertension, and hemoglobin for a total score of 10.

17.

The 5 basic elements of a skin assessment include (1) temperature, (2) color, (3) moisture, (4) integrity, and (5)

pain.

turgor.

sensation.

edema.

Explanation:

The 5 basic elements of a skin assessment include:

1. *Temperature: Normally warm to the touch. Cool may indicate impaired circulation, and hot may indicate inflammation or infection.*
2. *Color: Varies according to ethnicity, but pallor may indicate impaired circulation, hyperpigmentation/hypopigmentation may indicate impaired circulation, disease or skin condition (altered melanin deposition).*
3. *Moisture: May vary from dry to moist, depending on general condition and skin disorders.*
4. *Integrity: Should be intact and free from open areas.*
5. *Turgor: Pinched skin should return to normal shape rapidly. Turgor may slow with dehydration and aging skin.*

18.

If the healthcare provider is using the NERDS mnemonic to identify a superficial infection, the D stands for

Degeneration.

Data.

Dusky.

Debris.

Explanation:

Debris. NERDS mnemonic to identify a superficial infection:

- *N: Non-healing wound is present.*
- *E: Exudate is present from the wound.*
- *R: Red and bleeding surface granulation tissue evident.*
- *D: Debris include yellow or black necrotic tissue on the surface of the wound.*
- *S: Smell or malodor present from the wound.*

19.

If a wound is characterized by a defective matrix and cell debris that are impairing healing, which of the following is the correct intervention?

negative pressure wound therapy

moisture-balancing dressings

antimicrobials

debridement

Explanation:

If a wound is characterized by a defective matrix and cell debris that are impairing healing, the correct intervention is debridement, which may be carried out episodically or continually, depending on the condition of the wound. Various methods of debridement may be utilized: autolytic, biological, sharp, mechanical, or surgical. The goal is to restore the wound base so that there is viable tissue that can begin the healing process.

20.

Calluses on the bottom of the foot most often occur because of

improperly fitted shoes.

shoes that are too soft.

dampness, such as from excessive perspiration.

going barefoot.

Explanation:

Calluses on the bottom of the foot most often occur because of improperly fitted shoes, which cause the patient's weight to be unevenly distributed. As calluses thicken, they may begin to crack and fissure, causing pain and discomfort. Treatment includes soaking, filing or with pumice stone, and applying moisturizer. In some cases, inserts may be necessary to better distribute weight.

21.

With the TIME wound bed preparation approach, the M stands for

mechanical debridement.

measure of wound.

moisture balance.

maintenance of circulation.

Explanation:

M stands for moisture balance. TIME wound bed preparation approach:

- ***T:*** *Tissue nonviable or deficient: Carry out debridement.*
- ***I:*** *Infection/Inflammation: Administer topical/Systemic antimicrobials/anti-inflammatories/Protease inhibitors.*
- ***M:*** *Moisture balance: Apply moisture-balancing dressings/therapy.*
- ***E.*** *Edge margin non-advancing or undermined: Utilize adjunctive therapies, bioengineered skin, debridement, skin grafts.*

22.

In a chronic wound, which phase of wound healing is generally prolonged?

hemostasis

inflammatory

proliferative

maturation

Explanation:

In a chronic wound, the inflammatory phase is generally prolonged because of the presence in the wound of neutrophils, which produce proinflammatory cytokines. As new tissue forms, it tends to become degraded through the action of proteinases. Most chronic wounds have full-thickness loss of tissue, so the basement membrane to which epithelial cells generally attach is missing so that epithelialization is a more complex and lengthier process. Chronic wounds are also susceptible to the growth of biofilms, which retard healing.

23.

If an older adult was admitted to the hospital with severe malnutrition and pressure sores and was started on a high protein diet, which of the following laboratory tests is the BEST measure of short-term change in nutritional status?

prealbumin

albumin

transferrin

total protein

Explanation:

Prealbumin is the laboratory test that is the best measure of short-term change in nutritional status because it has a half-life of just 2 to 3 days. Prealbumin is a good measurement because it quickly decreases when nutrition is inadequate and rises quickly in response to increased protein intake. Protein intake must be adequate to maintain levels of prealbumin. Prealbumin is necessary for transportation of both thyroxine and vitamin A throughout the body. Values:

Normal—16-40 mg/dL, mild deficiency—10-15mg/dL, moderate deficiency—5-9 mg/dL, and severe deficiency—<5 mg/dL.

24.

A burn extending through the dermis with obvious blistering would be classified as

first degree.

second degree.

third degree.

full thickness.

Explanation:

A burn extending through the dermis with obvious blistering would be classified as a second-degree burn. A first-degree burn is superficial and involves only the epidermis. First and second-degree burns, like other wounds, may also be classified as partial-thickness injuries, because the vessels and glands necessary for healing remain intact. A third-degree burn, also classified as a full-thickness injury, extends through the dermis and into the underlying subcutaneous tissue and may extend through vessels, nerves, muscle and even to the bone.

25.

In a wound, a biofilm may take on the appearance of

necrosis.

slough.

serosanguinous discharge.

purulent discharge.

Explanation:

In a wound, a biofilm may take on the appearance of slough, so it may be a challenge to differentiate the two although a biofilm tends to have a shinier and more gel-like appearance from the extracellular polymeric matrix that encloses the biofilm. In fact, the biofilm causes a chronic inflammation that results in increased permeability of vessels and increased exudate, leading to the production of slough, so the presence of slough may be an indication that a biofilm is present. Treatment includes debridement and dressings and topical antibiotics to prevent reformation of the biofilm.

26.

Which of the following results from smoking cigarettes?

vasodilation

vasoconstriction

increased oxygen transport

increased oxygen tension

Explanation:

The nicotine in cigarettes is a powerful vasoconstrictor and interferes with oxygen transport. The carbon monoxide from smoking displaces oxygen on hemoglobin, decreasing the level of oxygen in the blood. Vasoconstriction reduces delivery of nutrients needed for healing. Peripheral blood flow can be reduced by 50% for up to 60 minutes after smoking a cigarette, and oxygen tension may be reduced for 120 minutes. Additionally, nicotine increases the heart rate and blood pressure, so the heart requires more oxygen to function adequately, while receiving less.

27.

When calculating the ankle-brachial index (ABI), if the ankle systolic pressure is 90 and the brachial systolic pressure is 120, what is the ABI?

1.33

13.3

7.5

0.75

Explanation:

The ankle-brachial index (ABI) examination evaluates peripheral arterial disease of the lower extremities. The ankle and brachial systolic pressures are obtained, and then the ankle systolic pressure is divided by the brachial systolic pressure to obtain the ABI. If the ankle systolic pressure is 90 and the brachial systolic pressure is 120: 90 divided by 120 = 0.75. Normal value is 1 to 1.1 with lower values indicating decreasing perfusion. A value of 0.75 indicates severe disease and ischemia.

28.

Using transcutaneous oxygen pressure measurement (TCPO2), which of the following values indicates that oxygenation is adequate for healing?

18 mm Hg

20 mm Hg

30 mm Hg

42 mm Hg

Explanation:

Transcutaneous oxygen pressure measurement (TCPO2) is a noninvasive test that measures dermal oxygen, to show the effectiveness of oxygen in the skin and tissues. A value of >40 mm Hg indicates adequate oxygenation for healing. Values of 20 to 40 mm Hg are equivocal findings, and values < 20 mm Hg indicate marked ischemia, affecting healing. Two or three different sites on the lower extremities should be tested to give a more accurate demonstration of oxygenation. TCPO2 is often used to determine if oxygen transport is sufficient for hyperbaric therapy.

29.

The method of closure that involves leaving the wound open and allowing it to close naturally through granulation and epithelialization is healing by

primary or first intention.

secondary or second intention.

tertiary or third intention.

quaternary prevention.

Explanation:

Secondary healing (healing by second intention) involves leaving the wound open and allowing it to close through granulation and epithelialization. Primary healing (healing by first intention) involves surgically closing a wound by suturing, flaps, or split or full-thickness grafts to completely cover the wound. Tertiary healing (healing by third intention) is also sometimes called delayed primary closure because it involves first debriding the wound and allowing it to begin healing while open and then later closing the wound through suturing or grafts. Quaternary prevention includes activities to prevent iatrogenic disorders/effects.

30.

A patient's laboratory results show a serum sodium of 155 mEq/L and a serum osmolality of 300 mOsm/kg. The most likely cause is

infection.

overhydration.

dehydration.

malnutrition.

Explanation:

Increased serum sodium and serum osmolality indicate dehydration. Serum sodium measures the sodium level in the blood.

- *Normal values: 135 to 150 mEq/L*
- *Dehydration: >150 mEq/L*

Serum osmolality measures the concentration of ions, such as sodium, chloride, potassium, glucose, and urea in the blood. Levels increase with dehydration, which stimulates the

antidiuretic hormone, resulting in increased water reabsorption and more concentrated urine in an effort to compensate.

- *Normal levels: 285 to 295 mill-osmoles per kilogram/ H_2O*
- *Dehydration: >295 mOsm/kg/ H_2O*

31.

Autolytic debridement is most effective for

chronic wounds.

large burns.

small wounds without infection.

necrotic wounds.

Explanation:

Autolytic debridement is effective for small wounds without infection, but it is slower than other types of debridement. Autolytic debridement requires an occlusive or semi-occlusive dressing to create a warm moist wound environment. Any moisture-retentive dressing, such as hydrocolloids, alginate, and hydrogels, and transparent film, can promote some degree of autolytic debridement, but because of drainage and odor, surrounding tissue must be protected with some type of skin barrier to prevent tissue maceration.

32.

Enzymatic debridement requires application of enzymes

1 to 2 times daily.

3 to 4 times daily.

1 to 2 times weekly.

3 to 4 times weekly.

Explanation:

Enzymatic (chemical) debridement requires application of enzymes 1 to 2 times daily and is most effective for a wound with necrosis and eschar, which must be crosshatched if it is dry. Enzymes include the following:

- *Collagenase, applied 1 time daily. Wound pH must remain at 6 to 8 or the enzyme deactivates. Deactivated by Burrows solutions, hexachlorophene, and heavy metals.*
- *Papain/urea combinations, applied 1 to 2 times daily. Wound pH must remain at 3 to 12. Deactivated by hydrogen peroxide and heavy metals.*

33.

A patient has a wound on the right hip with tunneling and fistulae. Which of the following is *MOST* indicative of an abscess formation?

increased purulent discharge

increased wound pain

increased erythema and swelling at wound perimeter

erythematous, painful, swollen area 3 cm from wound perimeter

Explanation:

Abscesses often form in conjunction with fistulae. Typical indications include erythema, pain, and swelling above the localized area of the abscess. If the abscess is deep within the tissue or within an internal organ, however, obvious signs of abscess formation may not be evident, and symptoms may be less specific, including general malaise, abdominal pain, chills, fever, lethargy, diarrhea, and anorexia. Additional symptoms may be specific to the site of the abscess, for example a perirenal abscess may cause flank pain.

34.

Which of the following indicates that sharp instrument debridement must be discontinued?

purulent discharge occurs

black eschar is removed

pain and bleeding occur

patient complains of fatigue

Explanation:

Pain and bleeding indicate that viable tissue is being debrided, so debridement must be discontinued. Only necrotic tissue/eschar should be removed by sharp debridement, removing small layers at a time to prevent injury to viable tissue. Purulent discharge often occurs with an infected wound. While patient fatigue is a concern, positioning the patient for comfort, explaining the procedure, and reassuring the patient may help the patient tolerate continuing the procedure until the wound is adequately debrided.

35.

A patient has second and third degree burns on 30% of the body and is in severe pain. Which method of debridement is most indicated?

autolytic debridement

enzymatic debridement

sharp instrument debridement

surgical debridement

Explanation:

Surgical debridement is most commonly used when very large amounts of tissue must be debrided, such as with extensive burns or when there is immediate debridement is needed in order to effectively treat a serious wound infection. General anesthesia allows extensive debridement to be done without the patient suffering associated pain and trauma, although postoperative pain is common. One advantage is that most debridement can be done in one procedure. Lasers may also be used for surgical debridement, with pulsed lasers posing less risk to adjacent tissue than continuous lasers.

36.

Which method of mechanical debridement may cause damage to granulation tissue and is generally contraindicated?

wet-to-dry dressings

whirlpool bath

irrigation under pressure

ultrasound treatment

Explanation:

In the past, wet-to-dry gauze dressing were frequently used for wound care; but wet-to-dry dressings have little use in current wound care unless the wound is very small, because the gauze adheres to the wound and can disrupt granulation or epithelization. While a whirlpool bath may effectively cleanse debris from a wound, concerns about cross infection have resulted in less frequent use of the whirlpool. Ultrasound may effectively débride wounds. Irrigating a wound with pressurized solution can be effective if the pressure remains in the optimal range, usually 8 to 12 psi.

37.

Which of the following topical antimicrobials is most appropriate to treat nasal colonization of *Staphylococcus aureus* in a patient with an open wound?

cadexomer iodine

metronidazole

mupirocin (Bactroban®)

silver sulfadiazine

Explanation:

Mupirocin is effective against Gram-positive organisms, such as Staphylococcus aureus and MRSA, and is used for treating nasal colonization to decrease risk of wound infection. Cadexomer iodine is effective against a wide range of bacteria, viruses, and fungi and is placed in the wound where beads of iodine swell in contact with exudate, releasing the iodine into the wound. Metronidazole is effective against bacterial infections, such as MRSA: Silver

sulfadiazine is often used to treat burns and is effective against Gram-positive organisms, including Staph, MRSA, and Strep.

38.

Which of the following is a contraindication to negative pressure wound therapy?

chronic Stage IV pressure ulcer

wound malignancy

unresponsive arterial ulcer

dehiscent surgical wound

Explanation:

Contraindications to negative pressure wound therapy include wound malignancy, untreated osteomyelitis, exposed blood vessels or organs, and nonenteric, unexplored fistulas. Negative pressure therapy uses subatmospheric (negative) pressure with a suction unit and a semi occlusion vapor-permeable dressing. The suction reduces periwound and interstitial edema, decompressing vessels, improving circulation, stimulating production of new cells, increasing the rate of granulation and reepithelialization and decreasing colonization of bacteria NPWT is used for a variety of difficult-to-heal wounds, especially those that show less than 30% healing in 4 weeks of postdebridement treatment or those with excessive exudate.

39.

Which of the following is the primary goal in referring a patient for multidisciplinary consultation?

prevention of complications

treatment of complications

education

identification of outcomes

Explanation:

The primary goal in referring a patient for multidisciplinary consultation is to prevent complications. A multidisciplinary team is composed of experts in a number of different fields, collaborating to address the complex problems associated with wound care and underlying pathology. Instead of the serial approach to problem solving involved in the traditional model of care, where referrals are made in response to problems that arise with little communication among specialists, the multidisciplinary approach attempts to identify potential problems and institute preventive measures at the onset, with all members communicating and sharing information.

40.

Becaplermin (Regranex®) gel is indicated for which type of wound?

venous stasis ulcer

pressure ulcer

sutured/stapled wound

diabetic ulcer

Explanation:

Becaplermin (Regranex®) gel is indicated for treatment of peripheral diabetic ulcers extending into subcutaneous tissue or deeper with adequate perfusion. Application follows debridement and usually about 3 weeks offloading if healing is not adequate. Becaplermin is a growth factor derived from human platelets. It is not approved for use with pressure ulcers and stasis ulcers and should not be used with closed (sutured/stapled) wounds. Becaplermin is associated with increased risk of developing malignancy and increased risk of death from existing malignancy.

41.

Which of the following types of dressing is indicated for treatment of a full-thickness infected wound with large amount of exudate?

alginate

hydrocolloid

hydrogel

semipermeable film

Explanation:

Alginates are effective for infected full-thickness wounds with undermining, tunneling, and large amounts of exudate. They are made from brown seaweed and absorb exudate, forming a hydrophilic gel that conforms to the shape of the wound. Hydrocolloids are effective for clean wounds with granulation and minimal to moderate exudate, but they increase the risk of anaerobic infection and hypergranulation. Hydrogels are effective for partial- or full-thickness wounds that are dry or have a small amount of exudate. Hydrogels can be used with necrotic and infected wounds. Semipermeable film is effective over intravenous sites or dry, shallow, partial-thickness wounds.

42.

What hyperbaric oxygen therapy (HBOT) treatment regimen is usually recommended for chronic wounds and lower extremity diabetic ulcers?

compression at 2 ATA 3 times 60 minutes daily for 48 hours

compression at 2 to 2.4 ATA for 90 minutes daily for at least 30 treatments

compression at 3 ATA for 2 to 4 hour periods 3 to 4 times daily

compression at 3 to 2.5 ATA for 60 to 90 minutes 2 times daily for 2 to 3 days and then decreasing frequency over 4 to 6 days

Explanation:

The usual hyperbaric oxygen therapy (HBOT) for chronic wounds and lower extremity diabetic ulcers is compression at 2 to 2.4 ATA for 90 minutes daily, with at least 30 treatments. Oxygen toxicity may occur with treatment over 90 minutes. Hyperbaric oxygen therapy (HBOT) is treatment in a high-pressure chamber while breathing 100% oxygen, which increases available oxygen to tissues by 10 to 20 times, improving perfusion. HBOT results in:

- *Hyperoxygenation of blood and tissue.*
- *Vasoconstriction, reducing capillary leakage.*
- *Angiogenesis, because of increased fibroblasts and collagen.*
- *Increased effectiveness of antibiotics needing active transport across cell walls (fluoroquinolone, amphotericin B, aminoglycosides).*

43.

Which NPIAP stage is a pressure ulcer characterized by deep full-thickness ulceration that exposes subcutaneous tissue with possible presence of slough, tunneling, and undermining, but without visibility of underlying muscle, tendon, or bone?

stage I

stage II

stage III

stage IV

Explanation:

This is a Stage III ulcer. NPIAP stages include:

- *Suspected deep tissue injury: purple/reddish discoloration and boggy, mushy, or firm tissue*
- *Stage I: skin intact with localized non-blanching reddened area, often over bony prominences*
- *Stage II: abrasion, blister, or slightly depressed area with red/pink wound bed, partial-thickness skin loss, but no slough*
- *Stage III: deep, full-thickness ulceration that exposes subcutaneous tissue with possible presence of slough, tunneling and undermining without visibility of underlying muscle, tendon, or bone*
- *Stage IV: deep, full-thickness ulceration with extensive damage, necrosis of tissue extending to muscle, bone, tendons, or joints*
- *Unstageable: cannot be staged before debridement because of the extent of slough/eschar*

44.

Which of the following laboratory tests is the most effective to monitor acute changes in nutritional status?

total protein

albumin

prealbumin

transferrin

Explanation:

Prealbumin is most commonly monitored for acute changes in nutritional status because it has a half-life of only 2 to 3 days. Prealbumin decreases quickly when nutrition is inadequate and rises quickly in response to increased protein intake. Protein intake must be adequate to maintain normal levels of prealbumin.

- *Normal value: 16 to 40 mg/dL.*
- *Mild deficiency: 10 to 15mg/dL*
- *Moderate deficiency: 5 to 9 mg/dL.*
- *Severe deficiency: <5 mg/dL.*

Total protein levels and transferrin levels may be influenced by many factors, so they are not reliable measures of nutritional status. Albumin has a half-life of 18 to 20 days, so it is more sensitive to long-term protein deficiencies than to short-term deficiencies.

45.

What is the most common cause of shear?

“sheet burn”

elevating the head of the bed >30°

lifting the patient with a pull sheet

turning the patient side to side

Explanation:

The most common cause of shear is elevation of the bed >30°. Shear occurs when the skin stays in place and the underlying tissue in the deep fascia over the bony prominences stretches and slides, damaging tissue and vessels, which become thrombosed, often resulting in undermining and deep ulceration. Friction against the sheets holds the skin in place while the body slides down the bed, causing pressure and damage in the sacrococcygeal area. The head of the bed should be maintained <30° except for the brief periods when the patient is lifted with a pull sheet or lifting device and turned, at least every 2 hours.

46.

What is the minimal thickness of a support surface for a chair?

one inch

two inches

three inches

four inches

Explanation:

Support surface material should provide at least one inch of support under areas to be protected when in use to prevent "bottoming out." (Check by placing a hand palm up under the overlay, below the pressure point.). Static support surfaces are appropriate for patients who can change position without increasing pressure to an ulcer. Those needing assistance to move require dynamic support surfaces. Dynamic support surfaces are also needed when static pressure devices provide less than an inch of support.

47.

When turning and repositioning patients, what is the preferred position for the patient to reduce pressure?

prone

supine

30° lateral

90° side lying

Explanation:

The 30° lateral position is better than the 90° side-lying or supine positions because it prevents pressure over bony prominences. Prone (face down) is not comfortable for most patients and requires careful positioning. Devices such as pillows or foam should be used to correctly position patients so that bony prominences are protected and not in direct contact with each other. Patients should not be positioned on ulcers. Goals for repositioning and a turning schedule of at least every 2 hours should be established for each individual and documented.

48.

On the Braden scale for predicting risk of developing pressure scores, a patient scores 2 (1 to 4 or 1 to 3 scale) on each of 6 parameters (total score 12). What is the patient's risk of developing a pressure sore?

very minimal risk

breakpoint for risk

high risk

extremely high risk (worst score)

Explanation:

A Braden score of 12 indicates high risk. The Braden scale rates 5 areas (sensory perception, moisture, activity, mobility, and usual nutrition pattern) with a 1 to 4 scale and one area (friction and shear) with a 1 to 3 scale. Lower scores correlate with increased risk. The scores for all six items are totaled, and a risk is assigned according to the number.

- *23 (best score): excellent prognosis with very minimal risk*
- *≤16: breakpoint for risk of pressure ulcer (will vary somewhat for different populations)*
- *12 to 14: high risk*
- *6 (worst score): prognosis is very poor with strong likelihood of developing pressure ulcer*

49.

Which type of overlay support surface is best for moisture control?

rubber

plastic

gel

foam

Explanation:

Foam overlays provide the best moisture control for preventing moisture damage to skin. Some materials, such as rubber, plastic, or gel, may increase perspiration and moisture, while some porous materials, including some types of foam, may reduce perspiration. Foam varies considerably in density and indentation load definition (ILD). ILD is the number of pounds of pressure needed to make an indentation in a 4-inch foam of 25% of its thickness, using an indentation of 50 square inches. Foam can be closed-cell (resistant) or open cell (viscoelastic).

Open-cell foam is temperature sensitive, helping it to mold to the body as it reaches the patient's body temperature.

50.

Which of the following characteristics indicates venous insufficiency?

pain ranges from intermittent to severe constant

pulses are absent or weak

brownish discoloration is evident about ankles and anterior tibial area

rubor occurs on dependency and pallor on foot elevation

Explanation:

Venous insufficiency is characterized by hemosiderin staining (brownish discoloration) about the ankles and anterior tibial area. Pain is usually aching and cramping, and peripheral pulses are present. Lipodermatosclerosis occurs in the lower leg area as the tissue becomes fibrotic from fibrin and protein (collagen) deposits, causing the skin to feel waxy and the tissue to harden, with narrowing of the tissue around the ankle compared to proximal tissue above. Venous (stasis) dermatitis is inflammation of the epidermis and dermis, resulting in scaly, erythematous, crusty, weepy, itchy skin, usually in the lower leg (ankle and tibia).

51.

Which of the following is a typical example of a peripheral ulcer caused by arterial insufficiency?

deep, circular, necrotic ulcer on toe tips

irregular ulcer on medial malleolus

round ulcer on anterior tibial area

irregular ulcer on lateral malleolus

Explanation:

Arterial ulcers are characterized by painful, deep, circular, often necrotic ulcers on toe tips, toe webs, heels or other pressure areas, with little edema of extremity. Because circulation is impaired, peripheral pulses are weak or absent and skin is pale, shiny, and cool with loss of hair on toes and feet and little edema. Nails are thick, with ridges. Rubor occurs on dependency and pallor on foot elevation. Venous ulcers, by contrast, are typically superficial, irregular ulcers on the medial or lateral malleolus and sometimes on the anterior tibial area, with varying pain and moderate to severe edema of extremity.

52.

When assessing for capillary refill, arterial occlusion is indicated with refill time of

15 seconds.

<2 seconds.

>20 seconds.

>2 to 3 seconds.

Explanation:

Capillary refill time >2 to 3 seconds indicates arterial occlusion. To assess capillary refill, grasp the toenail bed between the thumb and index finger and apply pressure for several seconds to cause blanching. Release the nail and count the seconds until the nail regains normal color. Check both feet and more than one nail bed. Assess venous refill time with the patient lying supine for a few moments and then have the patient sit with the feet dependent. Observe the veins on the dorsum of the foot and count the seconds before normal filling. Venous occlusion is indicated with times >20 seconds.

53.

A pulse graded as 1 on a 0 to 4 scale of intensity could be described as

strong and bounding.

weak, difficult to palpate.

absent.

normal, as expected.

Explanation:

A pulse graded 1 would be weak and difficult to palpate. Pulses should first be evaluated with the patient in a supine position and then again with the legs dependent, checking bilaterally and proximally to distally to determine if the intensity of pulse decreases distally. Pedal pulses should be examined at both the posterior tibialis and the dorsalis pedis. The pulse should be evaluated for rate, rhythm, and intensity, which is usually graded on a 0 to 4 scale.

- *0 – pulse absent*
- *1 – weak, difficult to palpate*
- *2 – normal, as expected*
- *3 – full*
- *4 – strong and bounding*

54.

Which of the following off-loading measures is usually the MOST effective for treatment of neuropathic ulcers?

total contact cast

removable cast walkers

wheelchairs

half-shoes

Explanation:

Total contact casts (TCC) encase the lower extremity in a walking cast that equalizes pressure of the plantar surface. The casts may have windows over pressure ulcers to allow observation and treatment. TCC is more successful than other off-loading measures, possibly because people restrict activity more. Removable cast walkers allow patients to remove the casts, but studies show that people only use them 28% of the time, decreasing effectiveness. Wheelchairs allow dependency of using a limb but prevents pressure. Half shoes may have a high walking heel with the front of the foot elevated off of the ground.

55.

On the eighth day of wound care, granulation tissue is evident about the wound perimeter, and the wound is beginning to contract. The wound is in which of the following phases of healing?

proliferation

inflammation

hemostasis

maturation

Explanation:

Proliferation (days 5 to 20) is characterized by granulation tissue starting to form at wound perimeter, contracting the wound, and epithelialization, resulting in scar formation. Hemostasis (within minutes) occurs as platelets seal off the vessels and the clotting mechanism begins. Inflammation (days 1 to days 4 to 6) is characterized by erythema and edema as phagocytosis removes debris. During maturation or remodeling (days 21 plus), scar tissue continues to form until the scar has about 80% of original tissue strength, and the wound closes; the underlying tissue continues to remodel for up to 18 months.

56.

Which of the following is characteristic of Charcot arthropathy (Charcot foot)?

severe pain and inflammation

high arch and hypersensitivity

muscle spasms, increased pain, and inflammation

weak muscles, reduced sensation, inflammation, and collapsed arch

Explanation:

Charcot arthropathy results from neuropathy that weakens the muscles of the foot and reduces sensation. As muscles supporting the bones weaken, the bones become weak and fracture easily. Because of the lack of sensation, the patient may be unaware of the fracture and continue to walk, causing further deformity. It causes inflammation, swelling, and increased

temperature in the foot, and but usually no pain. In time, the joint dislocation causes the arch to collapse. Treatment includes:

- *Compression bandages for 2 to 3 weeks.*
- *Total contact or non–weight-bearing cast for up to 9 months.*
- *Gradual weight-bearing after skin has resumed its normal temperature.*

57.

Which of the following is necessary to manage peripheral lymphedema of the legs?

daily diuretics

static compression bandaging

off-loading

bed rest

Explanation:

Lymphedema is managed with static compression bandaging during the day, providing 40 to 60 mmHg pressure. Bandaging maybe removed at night if the limb is elevated. Dynamic compression may be used, but it can displace fluid or further damage lymphatics if not monitored carefully. Diuretics do not help. Lymphedema is a dysfunction of the lymphatic system, resulting in a debilitating, progressive disease. Proteins, lipids, and fluids accumulate in interstitial spaces, causing pronounced induration, edema, and fibrosis of tissues, resulting in distention and thick fibrotic skin with orange discoloration (peau d'orange). Scaly keratotic debris collects, and the skin develops cracks and leaks of lymphatic fluid.

58.

Which measurement must be used to evaluate the safety of static compression therapy to manage edema?

capillary refill time

venous refill time

ankle-brachial index

blood pressure

Explanation:

Static compression is contraindicated if the ankle brachial index (ABI) is <0.5. Compression therapy serves as a preventive and therapeutic treatment to eliminate edema. It is contraindicated in those with heart failure or peripheral arterial disease, because it may further impair compromised arterial circulation.

- *High-level compression provides therapeutic compression at 30 to 40 mmHg at the ankle. Some may provide pressure at 40 to 50 mmHg. ABI should be >0.8.*
- *Low-level compression provides modified pressure up to 23mmHg at the ankle. ABI must be >0.5 and <0.8. While this level is less than therapeutic, even low levels of pressure may provide some therapeutic benefit.*

59.

Which of the following pharmacological measures is used to maximize perfusion with intermittent claudication?

antiplatelet agents, such as Plavix®

vasodilators, such as cilostazol (Pletal®)

thrombolytics

anticoagulants, such as warfarin (Coumadin®)

Explanation:

While vasodilators may divert blood from ischemic areas, some, such as cilostazol (Pletal®) or pentoxifylline (Trental®), may be indicated. Vasodilators dilate arteries and decrease clotting and are used for control of intermittent claudication. If medications do not relieve symptoms, surgical intervention, such as bypass grafts, angioplasty, and even amputation (if ischemia is irreversible) may be necessary. Surgery is indicated with ABI <0.5 or >0.5 if the patient fails to respond to medication and lifestyle changes, or with intolerable, incapacitating pain.

60.

Which of the following may be a subtle indication of infection with arterial insufficiency?

fever and chills

decrease in necrotic area

decreased pain or edema

fluctuance of periwound tissue

Explanation:

Subtle indications of infection with arterial insufficiency include fluctuance (soft, wavelike texture) of periwound tissue on palpation, increased pain in the ischemic limb, or ulcer and/or increased edema, increased area of necrosis, and slight erythema about wound perimeter. Because of the lack of circulation, the normal signs of inflammation and infection may not be evident with arterial insufficiency, so observing for subtle signs of infection is critically important. Prompt identification and treatment is necessary to prevent cellulitis and/or osteomyelitis, which might necessitate amputation.

61.

A patient with venous insufficiency requires compression therapy and has Unna's boot applied but must be on bed rest for four weeks. Which action is correct?

continue Unna's boot therapy during bed rest, but change 2 times weekly

continue Unna's boot therapy, but keep leg elevated

discontinue Unna's boot therapy during the bed rest period

continue Unna's boot therapy, but change only every 2 weeks

Explanation:

Unna's boot (ViscoPaste®) is a gauze wrap impregnated with zinc oxide, glycerin, or gelatin to provide a supporting compression "boot" to support the calf muscle pump during ambulation, so it is not suitable for non-ambulatory patients and should be discontinued during the bed rest period. The bandage must be applied carefully, without tension. It may either be left open to dry or covered with an elastic or self-adherent wrap. The dressings are changed according to individual needs, determined by a decrease in edema, the amount of exudate, and hygiene, with dressing changes ranging from twice weekly to once every other week.

62.

When doing the nylon monofilament test, how many test sites should be used?

2

4

8

10

Explanation:

The nylon monofilament test is evaluated according to how many of 10 test sites the patient is able to detect, with <4 indicative of decreased sensation. To test, use this procedure:

- *Ask the patient to indicate when the monofilament pressure is felt.*
- *Grasp a length of #10 monofilament in the instrument provided.*
- *Touch the monofilament against the bottom of the foot and then press the monofilament into the foot until the line buckles.*
- *Test the great, 3rd, and 5th toes.*
- *Test the left, medial, and right areas of the ball of the foot*
- *Test the right and left of the arch.*
- *Test the middle of the heel.*

63.

The *NEXT* step in wound care for a traumatic wound, such as a dog bite, after stabilizing the patient's condition and stopping bleeding is

administer antibiotics

administer tetanus toxoid/immune globulin as indicated

flush wound with copious amounts of normal saline under pressure

scrub wound with povidone-iodine

Explanation:

Traumatic injuries are usually contaminated, and once the patient is stable and the bleeding is controlled, the wound should be flushed with copious amounts of isotonic normal saline under pressure (8 to12 psi), usually 100 to 200 mL of irrigant per inch of wound. Prophylactic antibiotics may be given for 3 to 7 days for superficial wounds and up to 14 days with evidence of infection. Tetanus toxoid or tetanus immune globulin may be necessary if vaccination is not current. Animal bites may also require rabies postexposure prophylaxis (PEP).

64.

A patient with pemphigus vulgaris has generalized lesions with ulcerations and crusting, causing the patient's skin to adhere to the bed sheets. The patient is mobile and otherwise healthy, and is seeking recommendations to self-manage this issue. What should the wound care nurse recommend?

ensure bed sheets are always clean and dry

set an alarm to turn frequently during the night

place a piece of soft plastic over the sheets

use an alternating pressure mattress

Explanation:

Pemphigus vulgaris (PV), an autoimmune disorder causing blistering of both the skin and the mucus membranes (presenting symptom in 50 to 70% of patients), creates burn-like wounds, which may heal slowly or not at all, often starting in the mouth and genital areas. Untreated, the disorder can lead to death. Blisters on skin rupture, causing ulcerations, and those in folds may develop hypergranulation and crusting. Treatment includes corticosteroids, immunosuppressive drugs, and plasmapheresis to remove antibodies. Ensuring that bed sheets are always clean and dry will help keep the patient's skin from sticking to them and prevent the introduction of infection.

65.

What is the most effective treatment for a fungating neoplastic wound of the breast that is oozing blood from eroded vasculature?

charcoal dressing

hemostatic dressing and cauterization with silver nitrate

cleansing with ionic solution

surgical debridement

Explanation:

The ulcers of fungating neoplastic wounds bleed as the vasculature erodes so hemostatic dressings (gel foam, alginates) and cauterization with silver nitrate may be necessary. Using nonadherent dressings or long-term dressing reduces trauma. Charcoal dressings control odor, and ionic cleansers or antiseptics may be used to cleanse the wound. A foam, alginate, or hydrofiber dressing or wound pouch is used to manage exudate. Skin sealants, barrier ointments, and hydrocolloid wafers to anchor tape protect periwound tissue.

66.

Which of the following is the correct procedure for applying Eutectic Mixture of Local Anesthetics (EMLA Cream) to a wound prior to debridement?

apply a thin layer (1/8 inch thick) to the wound for 15 minutes, leaving the wound open

apply a thick layer (1/4 inch thick) to the wound, extending 1/2 inch past the wound onto surrounding tissue, and cover with plastic wrap for 20 to 60 minutes

apply a thick layer (1/4 inch thick) to the wound surface only and cover with plastic wrap for 15

minutes

apply a thin layer (1/8 inch thick) to the wound surface only and cover with a loose dry dressing for 20 to 60 minutes

Explanation:

Eutectic Mixture of Local Anesthetics (EMLA Cream) is applied thickly (1/4 inch) to both the surface of the wound and surrounding tissue, extending about 1/2 inch past the wound. After application, the wound must be covered with plastic wrap for 20 to 60 minutes to numb the tissue. EMLA cream is effective for about an hour after the wrapping is removed. EMLA can interact with a number of different medications, such as antiarrhythmics, anticonvulsants, and acetaminophen, so medications should be carefully reviewed prior to administration.

67.

One of the primary treatments for contact dermatitis with an itching, blistering rash is

nonadherent dressings.

topical corticosteroid.

antibiotics.

cleansing with povidone-iodine.

Explanation:

With contact dermatitis, topical corticosteroid is used to control inflammation and itching. Skin should be gently cleansed with water or oatmeal bath and left open without dressings. Antibiotics are needed only if a secondary infection occurs. Caladryl® lotion may relieve itching, and antihistamines may reduce allergic response. Contact dermatitis is a localized response to contact with an allergen, resulting in a rash that may blister and itch. Common allergens include

poison oak, poison ivy, latex, benzocaine, nickel, and preservatives, but people may react to a wide range of items, preparations, and products.

68.

How many grams of protein per kilogram should the average person with a pressure sore receive each day?

1.25 to 1.5 g/kg

1.5 to 2 g/kg

2 to 2.5 g/kg

2.5 to 3 g/kg

Explanation:

The average person with a pressure sore should receive 1.25 to 1.5 g/kg per day, but the patient's kidney function should be assessed to determine if the person can tolerate high levels of protein. Protein has important roles in healing, increasing synthesis of collagen and proliferation of epidermal cells. Protein also has immune properties, is a component of antibodies, and takes part in chemical reactions throughout the body. Each gram of protein provides 4 kilocalories.

69.

If a patient is about to be discharged home from an acute care hospital unit but has poor insurance coverage and is concerned about the costs of dressing supplies, but best referral is likely

community agency.

social worker.

national charity.

faith-based organization.

Explanation:

If a patient is about to be discharged home from an acute care hospital unit but has poor insurance coverage and is concerned about the costs of dressing supplies, the best referral is likely a social worker. A social worker can help the patient find resources, including community resources, and determine if the patient may be eligible for Medicaid or for manufacturer's patient assistance programs and assist the patient with applying for appropriate programs.

70.

If a patient with a chronic leg wound comes to an appointment and the wound has deteriorated because the patient has been changing the dressing one time weekly instead of every 3 days, the MOST appropriate response is,

"Let's talk about how I can help you to adhere to the plan of care."

"Your wound is deteriorating because you aren't adhering to the plan of care."

"Why didn't you change your dressings according to the plan of care?"

"If you don't take care of this wound, you might lose your leg."

Explanation:

If a patient with a chronic leg wound comes to an appointment and the wound has deteriorated because the patient has been changing the dressing one time weekly instead of every 3 days, the most appropriate response is, "Let's talk about how I can help you to adhere to the plan of care." This is a non-judgmental response that may encourage the patient to share rather than being defensive. There can be many reasons why a patient doesn't adhere to the plan of care, including inability to pay for supplies.

71.

A toe-brachial index should be assessed rather than the ankle-brachial index for patients with

pain on walking.

history of atherosclerosis.

vascular calcification.

hypertension.

Explanation:

A toe-brachial index should be assessed rather than the ankle-brachial index for patients with vascular calcification. If vessels are calcified, then correct measurements are impossible because the vessels cannot be compressed. The vessels in the toe are much smaller so the calcification that is present rarely encircles the entire vessel, so the vessel can be compressed for testing. A pressure of at least 50 mm Hg is required for healing; 20 to 30 mm Hg indicates vascular compromise, which can impair healing of lesions.

72.

A patient's transcutaneous oxygen pressure measurement (TCPO2) is 18 mm Hg, which indicates

adequate oxygenation.

slight impairment.

equivocal finding.

marked ischemia.

Explanation:

Marked ischemia. Transcutaneous oxygen pressure measurement (TCPO2) assesses dermal oxygen and is used to determine if oxygenation is sufficient for hyperbaric oxygen treatment, to determine the optimum site for amputation, and to determine the degree of hypoxia in tissues. Contact gel and electrodes are applied to the lower extremities to determine variations in oxygen tension. Test results:

- *>40 mm Hg adequate oxygenation for healing.*
- *20-40 mm Hg equivocal finding.*
- *<20 mm Hg marked ischemia, affecting healing.*

73.

If a patient scheduled for hyperbaric oxygen therapy presents with a severe upper respiratory infection, the treatment should generally be

withheld.

given for a shorter period of time.

given for a longer period of time.

given as usual.

Explanation:

If a patient scheduled for hyperbaric oxygen therapy presents with a severe upper respiratory infection, the treatment should generally be withheld because an upper respiratory infection increases the risk of developing barotrauma. URIs are considered a relative contraindication. Other relative contraindications include lung disorders (such as COPD and asthma), high fever, pregnancy, seizure disorders (the threshold for seizures may be lowered), medical devices (may malfunction unless approved for hyperbaric oxygen therapy), abnormalities of the eustachian tube, and claustrophobia.

74.

If using the PQRST method of pain assessment, an appropriate question to begin the assessment with is

"Does the pain move or stay in one place?"

"When did the pain start?"

"What causes the pain?"

"What does the pain feel like?"

Explanation:

"What causes the pain?"

PQRST Method of pain assessment

P	*Perception/Provoking factors*	*What causes the pain? What relieves the pain or makes it worse?*

Q Quality of pain	*What does the pain feel like? Would you describe the pain as sharp, dull, stabbing, shock-like, aching, burning?*
R Radiation	*Does the pain move or stay in one place?*
S Severity	*Can you rank the pain on a scale of 1 to 10?*
T Time (onset and duration)	*When did the pain start? How long did it last?*

75.

Excessive collagen production at the site of a wound leads to

inflammation.

abnormal scarring.

dehydration of wound.

rapid healing.

Explanation:

Excessive collagen production at the site of a wound leads to abnormal scarring. This often results from dehydration of the tissue, which stimulates keratinocytes to produce cytokines. These in turn cause fibroblasts to release collagen. Hydrating agents, such as silicone sheets/gels (dimethicone) should be applied to the scar to maintain hydration and prevent transepidermal water loss (TEWL). TEWL increases when the barrier function of the skin is impaired. TEWL can be affected by both intrinsic factors (inadequate intake of fluids, fever) and environmental factors (temperature, humidity).

76.

Hydrocolloid dressings with silver are appropriate for

dry infected wounds.

dry clean wounds.

infected wounds without heavy exudate.

infected wounds with mild to moderate exudate.

Explanation:

Hydrocolloid dressings with silver are appropriate for infected wounds with mild to moderate exudate. The silver requires exudate in order to be released, but hydrocolloid dressings are inappropriate with heavy exudate. The silver has antimicrobial action. The hydrocolloid dressing can be left in place for up to a week before changing the dressing, but this may depend on the amount of exudate. Hydrocolloid dressings with silver deactivate enzymatic agents used for debridement.

77.

When doing a routine dressing change for a healing decubitus ulcer on the right hip, which is the most appropriate cleaning solution?

povidone-iodine solution

hydrogen peroxide

alcohol

normal saline

Explanation:

Normal saline is the most appropriate wound-cleansing solution. Antiseptic solutions should be avoided, as they may damage granulation tissue and retard healing, because they interfere with fibroblast cells necessary for healing of the wound, cause increased pain, and do not significantly reduce overall bacterial load. In heavily-contaminated or necrotic wounds, topical antiseptic solutions, such as dilute povidone-iodine or hydrogen peroxide, may be used for a short period of time to reduce surface bacteria and foul odor.

78.

Which of the following drugs may impede wound healing?

NSAIDs

levothyroxine

insulin

ferrous sulfate

Explanation:

Medications that may impede wound healing include NSAIDs and steroids. Steroids, especially, have a negative effect on healing and may increase the risk of skin breakdown. Patients' medication lists should be reviewed if wound healing is slow. Other drugs that may impede healing include anticoagulants, antibiotics (some classes), anti-angiogenesis agents, methotrexate, colchicine, and vasoconstrictive agents. Some drugs, such as levothyroxine, phenytoin, insulin, estrogen, and ferrous sulfate may improve wound healing.

79.

Which class of therapeutic compression stockings is appropriate for refractory venous ulcers and lymphedema?

class 1: 20-30 mm Hg.

class 2: 30-40 mm Hg.

class 3: 40-50 mm Hg.

class 4: 50-60 mm Hg.

Explanation:

Class 3 (40-50 mm Hg) therapeutic compression stockings are appropriate for refractory venous ulcers and lymphedema. Compression stockings may be used to prevent ulcers after edema is controlled or with existing ulcers when edema recedes. The stockings come in many sizes and colors and may extend from the foot to the knee or the groin. The stockings must be fitted properly and have the correct level of compression:

- *Class I: 20-30 mm Hg (varicose veins).*
- *Class 2: 30-40 mm Hg (venous ulcers and prevention).*
- *Class 3: 40-50 mm Hg (refractory venous ulcers & lymphedema).*
- *Class 4: 50-60 mm Hg (lymphedema).*

80.

A patient has been prescribed becaplermin gel (Regranex®) according to standard protocol for wound treatment. How many hours out of 24 should the gel be in place on the wound?

6

12

18

24

Explanation:

If a patient has been prescribed becaplermin gel (Regranex®), a growth factor derived from platelets, according to standard protocol for wound treatment, the gel should be left in place for 12 out of 24 hours. The wound is cleansed with saline or water, becaplermin gel applied, and the wound covered with a saline-moistened gauze dressing. After 12 hours, the dressing and gel is removed and the wound covered with saline-moistened gauze only for the remaining 12 hours.

81.

Which comment by the patient suggests that the patient may benefit from a referral to a nutritionist?

“I try to eat my three meals within a 14-hour timespan so that I fast for 10 hours.”

“I’ve been eating a vegetarian diet for two years.”

“I limit my meat intake to 4 ounces daily and eat more fruits and vegetables.”

“I’m substituting honey for sugar in everything, so my carbohydrate intake is lower.”

Explanation:

The comment by the patient that suggests that the patient may benefit from a referral to a nutritionist is, “I’m substituting honey for sugar in everything, so my carbohydrate intake is lower.” In fact, a teaspoon of honey has 7 g of carbohydrate compared to about 5 g per

teaspoon of sugar. Sugar, honey, and maple syrup all metabolize in a similar manner in the body and should be limited in a healthy diet.

82.

If teaching a caregiver to use pillow bridging to prevent pressure ulcers for an immobile patient, how many pillows should be employed?

2

4

5

7

Explanation:

teaching a caregiver to use pillow bridging to prevent pressure ulcers for an immobile patient, five pillows should be employed:

- *First under legs to elevate the heels.*
- *Second between the ankles.*
- *Third between the knees.*
- *Fourth behind the back.*
- *Fifth under the head.*

In some cases, a small pillow may also be placed under the upper arm for comfort when the patient is positioned on the side.

83.

When assessing a patient with diabetes, it's important to remember that diabetic patients tend to lose protective sensation after

10 to 15 years.

8 to 10 years.

5 to 8 years.

3 to 5 years.

Explanation:

When assessing a patient with diabetes, it's important to remember that diabetic patients tend to lose protective sensation after 10 to 15 years; therefore, patients may not feel a lesion and need to be educated about the importance of examining the feet daily, avoiding going barefoot, wearing well-fitting shoes, and seeing a physician if any abnormality is noted. Patients may also begin to develop neuropathic pain or numbness, which can interfere with recognition of skin lesions.

84.

Which of the following steroid dermatologic agents has the highest potency?

hydrocortisone acetate

desonide

triamcinolone

betamethasone dipropionate

Explanation:

Betamethasone dipropionate (Diprolene®) has ultra-high potency as a steroid dermatologic agent. Hydrocortisone acetate and Desonide have low potency while triamcinolone has medium potency. Betamethasone, which comes in ointment, cream, and lotion forms, is used for lesions that are non-responsive to lower level corticosteroids as well as for lichen planus and insect bites. Betamethasone is typically applied twice daily.

85.

If a patient with a slow-healing coccygeal wound is having negative pressure wound therapy (NPWT) and the nurse is assessing the wound with the DIM acronym, the D refers to debridement, I to infection/inflammation control and M to

mobility.

maceration.

moisture balance.

malodor.

Explanation:

If a patient with a slow-healing coccygeal wound is having negative pressure wound therapy (NPWT) and the nurse is assessing the wound with the DIM acronym, the D refers to debridement, I to infection/inflammation control and M to moisture balance. Eschar must be removed from the wound prior to NPWT, and infection must be cleared. The moisture balance should be evaluated with each dressing change. If too dry, the wound healing will slow and eschar may form, so the negative pressure should be reduced or type of packing changed. If the wound is too moist, maceration may occur, and the pressure may need to be increased.

86.

If a patient complains of severe pain during dressing changes and has an analgesic order, the analgesic should generally be administered

60 to 90 minutes before treatment.

30 to 60 minutes before treatment.

15 to 30 minutes before treatment.

5 to 15 minutes before treatment.

Explanation:

If a patient complains of severe pain during dressing changes and has an analgesic order, the analgesic should generally be administered 30 to 60 minutes before treatment to ensure that the medication has peaked. Soaking a dressing with water or NS may help to loosen it if it is adhering to the wound surface. The nurse should note any signs of infection, which generally increases wound pain, and clean the wound of exudate and any debris to reduce the bioburden.

87.

Which of the following types of debridement is MOST indicated for a wound with large amounts of unviable tissue and increasing cellulitis?

sharp debridement

enzymatic debridement

wet-to-dry debridement

autolytic debridement

Explanation:

The type of debridement most indicated for a wound with large amounts of unviable tissue and increasing cellulitis is sharp debridement because this is the fastest method of converting a necrotic wound to a clean wound and allows for better assessment and treatment of the cellulitis. Sharp debridement may be done as a one-time surgical procedure or as a series of sequential debridement. In some cases, laser debridement (considered a form of surgical debridement) may be done if the patient is not a candidate for operative debridement.

88.

Which of the following wound irrigation devices will provide approximately 8 psi in irrigant pressure to the wound surface?

35-mL syringe with 19-gauge Angiocath

250-mL squeeze bottle

bulb syringe

6-mL syringe with 19-gauge Angiocath

Explanation:

A 35-mL syringe with 19-gauge needle provides irrigation pressure at about 8 psi. A squeeze bottle (250 mL) provides about 4.5 psi, but a bulb syringe usually only ≤2 psi. Both syringe/catheter and needle size affect irrigant pressure. Pressures <4 psi do not provide adequate wound cleansing, but pressures >15 psi can result in wound trauma.

- *6 mL/19 gauge = 30 psi*
- *12 mL/19 gauge = 20 psi*
- *12 mL/22 gauge = 13 psi*
- *35mL/21 gauge = 6 psi*

- *35mL/25 gauge = 4 psi*

89.

The MOST accurate method of measuring the size and depth of a wound is a

ruler.

comparison with known object, such as a coin.

photograph.

stereophotogrammetry.

Explanation:

The most accurate method of measuring the size and depth of a wound is stereophotogrammetry (SPG), which creates images and measurements through the use of a digital camera and computer software. The software calculates the size. If measuring manually, a ruler should be used that measures in mm and cm and the wound size should not be assessed by comparison with known objects, such as a coin.

90.

Undermining most often occurs as the result of

friction.

shear.

direct trauma.

direct pressure.

Explanation:

Undermining most often occurs as the result of shear or when the surface opening of the wound is smaller than the damage under the surface. Undermining is often documented according to a clock face, "Undermining from 1 to 3 o'clock, extending 0.75 cm." A thorough description of the undermining should include how far it extends under the tissue and which areas have the most extensive undermining.

91.

The odor of a wound should be assessed

before the dressing is removed.

before cleaning the wound.

after cleaning the wound.

at all stages of dressing change.

Explanation:

The odor of a wound should be assessed after the dressing is removed and the wound is cleaned because some wound treatments and dressings develop a malodor that may be mistaken for infection. Some infections have a distinctive odor. Proteus, for example, has an ammonia-like smell; Pseudomonas aeruginosa, a grape-like or sweet odor; and Escherichia coli, a floral odor.

92.

If exudate covers less than two-thirds, but more than one-third of a dressing after it is removed, the amount of exudate would be classified as

small.

moderate.

large.

excessive.

Explanation:

If exudate covers less than two-thirds of a dressing after it is removed, the amount of exudate would be classified as moderate. If the drainage covers less than a third of the dressing, it is classified as a small amount. A large amount is drainage that covers more than two-thirds of the dressing. The amount of exudate provides important information about the condition of the wound and the patient's general condition.

93.

Moisture-associated skin damage (MASD) most often results in

maceration of periwound skin.

wound infection.

eschar development.

undermining.

Explanation:

Moisture-associated skin damage (MASD) most often results in maceration of periwound skin. MASD usually results from wound changes that cause excessive exudate or inadequate dressings to absorb the amount of exudate. With maceration, the skin becomes soft and irritated and often takes on a white, water-logged appearance. Skin barriers and more absorptive dressings, such as alginates, are indicated to better manage exudate.

94.

Under CMS regulations, how long must a patient have an unsuccessful trial with static compression therapy before switching to intermittent pneumatic compression therapy?

1 month

2 months

4 months

6 months

Explanation:

Under CMS regulations, a patient must have an unsuccessful trial with static compression therapy for 6 months before switching to intermittent pneumatic compression (IPC) therapy. IPC may also be used if a patient is immobile. IPC devices are used on the lower leg or plantar area of the foot. IPC devices have a garment and a pneumatic pump that inflates the garment. Intermittent inflations occur segmentally up the leg, increasing venous return.

95.

If the edges of a wound are rolled inward, this usually indicates that

the wound is infected.

the wound bed is dehydrated.

the wound bed is too damp.

the wound is healing normally.

Explanation:

If the edges of a wound are rolled inward, this usually indicates that the wound bed is dehydrated and the edges are seeking moisture below the wound surface. The wound edges may be attached to the wound or unattached, such as may occur with undermining. Epithelialization usually goes from the outside edge of the wound toward the center, but this can vary depending on the type and extent of the wound. In some cases, epithelialization may occur in patches or in the middle of the wound bed.

96.

When developing the care plan for a patient, the MOST effective method of prioritizing a list of goals is to

review the history and physical.

ask the physician.

ask the patient.

refer to a care plan guide.

Explanation:

When developing the care plan for a patient, the most effective method of prioritizing a list of goals is to ask the patient what the patient feels is the most important. This patient-focused approach encourages the patient to take an active role in healthcare decisions and shows respect for the patient's autonomy. If the patient is unable to participate, then a parent or caregiver may provide useful insight into what is most important to the patient.

97.

The initial sign of an infection in a chronic wound is often

delayed healing.

serosanguinous drainage.

purulent drainage.

pain.

Explanation:

The initial sign of an infection in a chronic wound is often delayed healing. Typically, an uninfected healing ulcer should show improvement in 2 to 4 weeks, so if there is no sign of improvement, a wound culture is indicated. The classic signs of infection—erythema, increased temperature, purulent discharge, and edema—may or may not be present, and it can be difficult to distinguish among a deep infection, contamination, and colonization because the response to infection may be altered.

98.

When using the STONES mnemonic to help identify a deep infection, the O stands for

oxygenation.

obesity.

occlusion.

os (bone).

Explanation:

When using the STONES mnemonic to help identify a deep infection, the O stands for os (bone):

- *S: Size is bigger.*
- *T: Temperature has increased.*
- *O: Bone is exposed or prone to exposure.*
- *N: New or satellite areas of tissue breakdown are evident.*
- *E: Exudate, erythema, and or edema are evident.*
- *S: Smell is present.*

99.

Which of the following is the most important criterion when assessing a patient's level of wound pain?

patient's behavior

type of wound

patient's report of pain

patient's facial expression

Explanation:

Perceptions and expressions of pain vary widely from one individual to another, so the most important criterion for evaluating pain is the patient's own report of pain. Cultural differences have a role in how people express pain, with some cultures typically appearing more stoic than others. Using a 1 to 10 pain scale is an effective tool for people who are cognitively alert. If people are not able to report their pain level, then observation of behavior and facial expressions may give clues to their need for pain medication.

100.

When applying a lidocaine 2% soak to a wound, how long should the saturated gauze be left in place prior to debridement of the wound?

30 to 60 seconds

1 to 2 minutes

3 to 5 minutes

6 to 8 minutes

Explanation:

When applying a lidocaine 2% soak to a wound, the saturated gauze should be left in place prior to debridement of the wound for 3 to 5 minutes. The wound should be thoroughly cleansed with water, saline, or a wound cleaning solution before the gauze, saturated with 5 to 10 mL of

lidocaine, is applied to cover the wound and periwound tissue. Before beginning debridement, the wound should be checked to ensure that it is thoroughly anesthetized.

101.

Which of the following support surfaces has low moisture retention?

air fluidized

static flotation (air, water)

alternating air

foam

Explanation:

Air fluidized and low air loss support surfaces have low moisture retention. Air-fluidized (high air loss) beds are special bed systems in which silicone beads are contained in a bathtub-like frame. There is a high flow of air through the beads. As the air flows through the beads, it "fluidizes" them so that they move, and provide support and redistribution of pressure in much the way water does. The air-fluidized bed is most commonly used for patients with multiple pressure ulcers, making positioning to avoid pressure on sores very difficult.

102.

When assessing venous flow with duplex ultrasound, retrograde flow is classified as abnormal if it persists for

more than 0.5 second.

more than 1.0 second.

more than 1.5 seconds.

more than 2 seconds.

Explanation:

When assessing venous flow with duplex ultrasound, retrograde flow is classified as abnormal if it persists for more than 0.5 second. Various factors, such as trauma or thrombosis, may result in retrograde flow (reflux), which increases hydrostatic pressure and may cause veins to dilate and capillaries to burst. Retrograde flow occurs when the valves are impaired and the flow of blood is reversed when the patient is sitting or standing. Treatment generally includes the use of compression stockings to increase blood flow.

103.

Hot tub folliculitis is most often caused by

Staphylococcus aureus.

Escherichia coli.

Enterobacter.

Pseudomonas aeruginosa

Explanation:

Hot tub folliculitis is most often caused by Pseudomonas aeruginosa. Pruritic pustular lesions usually occur within 1 to 4 days of exposure to contaminated water in a hot tub. Some patients

may have flu-like symptoms in addition to the rash. Generally, the rash is self-limiting within about a week, but persistent or severe infections may require topical or oral antibiotics (such as ciprofloxacin for 5 days), especially in patients who are neutropenic.

104.

The use of topical silver-based creams, such as Silvadene®, should be limited to

one week.

two weeks.

three weeks.

four weeks.

Explanation:

The use of topical silver-based creams, such as Silvadene® (which contains silver sulfadiazine) should be limited to two weeks. Silver sulfadiazine is used to treat second- and third-degree burns and has been found to be effective in reducing bacterial levels. Use should be of limited duration because extended use may increase the risk of resistant bacteria. Additionally, studies have shown that bacterial levels usually decrease markedly within one week.

105.

Which of the following is a contraindication for the use of transparent film dressings?

the wound has a small amount of exudate

the dressing is applied to protect a pressure spot

the wound is covered with dry eschar

the wound has a suspected bacterial infection

Explanation:

A contraindication to the use of transparent film dressings is when the wound has a suspected bacterial or fungal infection. Transparent film dressings should also be avoided with third-degree burns, moderate to heavy exudate, fragile skin, and skin at risk for periwound maceration. Transparent film can be used when a wound has no or minimal exudate or dry eschar that will be debrided and to help secure other dressings in place over the wound.

106.

Which of the following are the two primary factors that determine how damaging pressure will be to the tissue?

duration and magnitude

oxygenation and nutrition

duration and oxygenation

magnitude and nutrition

Explanation:

The two primary factors that determine how damaging pressure will be to the tissue are duration (the length of time the pressure occurs) and magnitude (the amount of pressure

exerted). As the magnitude increases, the duration must decrease in order to protect the tissue. Pressure points of greatest concern include the sacrum, greater trochanters, ischial tuberosities, heels, and scapula. However, other areas may also be at risk, such as ears, depending on the position of the patient.

107.

When evaluating support surfaces, what does *immersion* refer to?

the thickness of the support surface

the duration that a patient can be left in one position on the support surface

the depth the patient's body penetrates the support surface

the amount of pressure that the support surface can actually support

Explanation:

When evaluating support surfaces, immersion refers to the depth the patient's body penetrates the support surface and is a factor is the dispersal of pressure. For example, on a hard surface, the pressure is more localized to pressure points, but on a softer surface that allows greater immersion, the pressure is more dispersed. However, immersion is different from compression. If a support surface is too compressed, then the pressure localizes, regardless of the type of support surface.

108.

If a patient's wound has developed epibole and a closed edge, what intervention is needed to increase healing?

a moist healing environment

debridement of the epibole

application of topical antibiotics

compression therapy

Explanation:

If a patient's wound has developed epibole and a closed edge the intervention that is needed to increase healing is debridement of the epibole, which may be done surgically or conservatively, such as with silver nitrate. In some cases, vigorous scrubbing of the epibole with gauze or monofilament fiber dressings may be sufficient to open the tissue. Epibole occurs when upper epidermal cells proliferate over lower epidermal cells rather than across the open wound, causing a rolled edge to occur.

109.

Foam mattresses tend to "bottom out" and should be replaced after about

3 months.

12 months.

2 years.

3 years.

Explanation:

Foam mattresses tend to "bottom out" and should be replaced after about 3 years of use because foam begins to degrade over time. Two types of foam support surfaces are available:

elastic and viscoelastic. Some are permeable (open-cell) to fluid and gas and others are impermeable (closed cell). Support surfaces are often comprised of layers of different densities of foam and different configurations. Foam seat cushions, for example, may be flat, contoured to fit the shape of the person's buttocks, segmented, or cut out.

110.

Which of the following is likely to have the *MOST* negative effect on wound healing for a 65-year-old woman?

hypoalbuminemia

BMI of 20.2

BMI of 28

vegan diet

Explanation:

Hypoalbuminemia is likely to have the most negative effect on wound healing. Hypoalbuminemia is an indication of protein malnutrition (kwashiorkor) and may cause delayed wound healing because of inadequate nutrition. A BMI of 20.2 is within normal range (18.5 to 24.9) and indicates normal weight. A person with a BMI of 29 is overweight, but not obese. Both being underweight (BMI <18.5) and obese (BMI ≥30) can interfere with the body's ability to heal. BMI alone is not adequate to assess nutritional status or healing ability and vegan diets can provide adequate nutrition.

111.

Which of the following is a contraindication for use of electrical stimulation to promote healing?

pacemaker

diabetic neuropathy

renal disease

edema

Explanation:

Electrical stimulation should be avoided with electronic implants, such as pacemakers, which may be negatively affected. Electrical stimulation is also contraindicated with malignancy, osteomyelitis, and presence of topical substances containing metal ions. A commonly used device provides high voltage pulsed current (HVPC) with pulse rate of 50 to 120 pps, peaks of 5 to 20 microsecond phase duration, voltage between 100 and 500 V, and amplitude between 80 and 200 V for wound healing. Pulse rate varies according to the targeted phase of healing: 30 pps during inflammatory stage and 100 to 150 pps during other phases. HPVC effectively increases blood flow and reduces edema and bacterial load.

112.

Which of the following is a recommended position for a patient on a horizontal surface?

prone position with rotation of 40 degrees to the right or left

supine position with rotation of 40 degrees to the right or left

supine position with head of bed elevated ≤30 degrees and knees flexed

supine position with head of bed elevated ≤35 degree and feet blocked

Explanation:

A recommended position for a patient on a horizontal surface is supine with the head of the bed elevated ≤30 degrees and the knees flexed or the feet blocked. Patients may also be positioned prone or supine with rotation of 40 degrees to the right or left. Regardless of the position, the heels should be supported by pillows to reduce pressure on the heels and pillows may be placed between the knees if rotated to the side.

113.

A patient on a continuous or intermittent lateral rotation support surface is at risk for

friction injury.

shear injury.

pressure injury.

moisture injury.

Explanation:

A patient on a continuous or intermittent lateral rotation support surface, which moves the patient about a longitudinal axis from side to side, is at risk for shear injuries every time the patient's position is changed, so the patient must be carefully positioned and supported to prevent the development of ulcers or the worsening of existing ulcers. Lateral rotation support surfaces are often used for obese patients that are difficult to turn, but the support surfaces typically have a weight capacity, which may vary from 350 to 1000 pounds.

114.

Lower extremity girth measurement to assess edema should be done at the metatarsal head, both malleoli, and

2, 8, 14, and 18 cm above the lateral malleolus and lower edge of patella.

2, 4, and 8 cm above the lateral malleolus and lower edge of patella.

8 and 16 cm above the lateral malleolus and lower edge of patella.

3, 12, and 18 cm above the lateral malleolus and lower edge of patella.

Explanation:

Lower extremity girth measurement to assess edema should be done at the metatarsal head, both malleoli, 3, 12, and 18 cm above the lateral malleolus and the lower edge of the patella. Measurement should be done distal to proximal and on both the left and right sides. Lower extremity girth measurement can provide accurate evaluation of changes in edema. The other method of assessment is volumetric measurement, which utilizes a tank and water displacement to determine the amount of edema.

115.

If a diabetic patient has a stage IV sacral ulcer with undermining from 4 to 8 o'clock to 1 cm, a heavy volume of exudate, and a bioburden, which of the following dressings is MOST indicated?

packing wound with calcium alginate and covering with bordered foam dressing

packing wound with silver alginate and covering with bordered foam dressing

packing the wound with normal-saline saturated gauze and covered with absorptive dressing

packing wound with a wound filler (starch copolymers) and covering with absorptive dressing

Explanation:

If a diabetic patient has a large (7 x 3 x 1.5 cm) chronic stage IV sacral ulcer with undermining from 4 to 8 o'clock to 1 cm, a heavy volume of exudate, and a bioburden, the dressing that is most indicated is packing the wound with silver alginate and covering with bordered foam dressing. The silver alginate is indicated because of the volume of exudate and the bioburden as silver has antimicrobial properties. The dressing will need to be changed on a daily basis.

116.

If an overweight patient's weight is at the upper limit for a specialty mattress, the correct intervention is to

consider the patient's weight distribution.

utilize the specialty mattress for the patient's weight.

utilize a bariatric mattress.

utilize the specialty mattress for the patient's weight with additional support surface.

Explanation:

If an overweight patient's weight is at the upper limit for a specialty mattress, the correct intervention is to consider the patient's weight distribution. If the patient's weight is evenly distributed, then the specialty mattress for the patient's weight is appropriate, but if the

distribution is uneven—for example if the patient has very large hips—then a better choice is a bariatric mattress because the patient may bottom out on the weight-appropriate mattress.

117.

When educating a patient with mild cognitive impairment (MCI) about wound care, one way to deal with the communication barrier is to

also instruct a caregiver.

write everything down.

break instructions into small steps.

repeat the instructions numerous times.

Explanation:

When educating a patient with mild cognitive impairment (MCI) about wound care, one way to deal with the communication barrier is to break instructions into small steps because carrying out actions that require a number of sequential steps can be very confusing to patients with MCI. The healthcare provider should ask the patient what helps them to learn. Some patients may want to take notes while others may need illustrations or written guides.

118.

Biologic therapy with maggots is contraindicated with

a wound that has not responded to other treatments.

infected wound.

painful wound.

exposed blood vessels.

Explanation:

Biologic therapy with maggots is contraindicated with exposed blood vessels because the maggots may cause the vessels to bleed. Maggots debride the wound because they secrete proteolytic enzymes as well as cytokines and growth factors. Maggot therapy is typically reserved for wounds that have not responded well to other therapies because patients often object to the use of maggots, which are usually left in the wound for about 48 hours. The maggots must be secured to the wound with a special "maggot cage" and gauze that allows air to circulate because lack of air will kill the maggots.

119.

When carrying out limb volume measurements by the circumferential method, measurements are taken on the hand and arm every

4 cm.

6 cm.

10 cm.

14 cm.

Explanation:

When carrying out limb volume measurements by the circumferential method, measurements are taken on the foot and leg every 10 cm with the foot in dorsiflexion position and on the hand and arm every 4 cm with the hand flat. The two other methods of limb volume measurements include water displacement (inserting a limb into a container with a measured volume of water and then measuring the overflow) and Perometer® (using an infrared laser system and software to calculate limb volume).

120.

The Braden scale for risk of developing pressure sores assesses 6 different areas: sensory perception, moisture, activity, mobility, usual nutrition pattern, and

friction and shear.

mental status.

pain level.

risk of fall.

Explanation:

Friction and shear. Braden scale:

Sensory perception	*(1) Completely limited, (2) very limited, (3) slightly limited, (4) no impairment*
Moisture	*(1) Constantly moist, (2) very moist, (3) occasionally moist, (4) rarely moist*
Activity	*(1) Bed, (2) chair, (3) occasional walk, (4) frequent walk*
Mobility	*(1) Immobile, (2) limited, (3) slightly limited, (4) no limitations*

Usual nutrition pattern	*(1) Very poor, (2) inadequate, (3) adequate, (4) excellent*
Friction & shear	*(1) Problem (skin frequently slides down sheets and needs help to move), (2) potential problem (skin slides somewhat during moves, needs assistance, (3) no apparent problem*

121.

A 57-year-old male is diagnosed with stage III cancer of the bladder with invasion of the muscle tissue. Which primary treatment is *MOST* common?

partial or segmental cystectomy

interstitial radiation only

radical cystectomy with urinary diversion and chemotherapy

chemotherapy only

Explanation:

The most standard treatment for cancer that has invaded the muscle is radical cystectomy with urinary diversion. Chemotherapy may be done prior to or after surgery to improve survival rates, because recurrence rates are about 50%. In males, the bladder, prostate, seminal vesicles, and perivesical tissues are removed; in females, the bladder, uterus, ovaries, fallopian tubes, urethra, and anterior vaginal wall are removed. Urinary diversions may include an ileal conduit or an internal pouch, such as the Indiana pouch or neobladder (formed from part of the intestine).

122.

Which type of colostomy creates one or two stomas, usually in the upper abdomen in the middle or on the right side?

descending

transverse

ascending

end

Explanation:

A transverse colostomy creates one or two stomas in the transverse colon, usually in the upper abdomen, in the middle or on the right side. A descending (sigmoid) colostomy (most common) creates a stoma from the end of the sigmoid colon, usually in the lower left abdomen. An ascending colostomy creates a stoma from the ascending portion of the colon on the right side of the abdomen. An end colostomy is a temporary procedure or a permanent procedure where a stoma is created proximal to an inoperable carcinoma to allow for fecal diversion and to prolong life.

123.

If a Vietnamese immigrant patient had surgery for a bowel resection and colostomy but has not requested pain medicine in the 6 hours after returning from the recovery room to his room on the surgical unit, the nurse should assume the patient

has no pain.

is insensitive to pain.

is reluctant to complain of pain.

has not recovered from anesthesia.

Explanation:

If a Vietnamese immigrant patient had surgery for a bowel resection and colostomy but has not requested pain medicine in the 6 hours after returning from the recovery room to his room on the surgical unit, the nurse should assume the patient is reluctant to complain of pain. Asian patients are traditionally stoic, so the nurse should ask the patient to rate or describe his pain rather than asking if the patient has pain.

124.

When teaching a patient to irrigate a colostomy, how much fluid should the patient be advised to use for the irrigation?

200 to 500 mL

500 to 700 mL

500 to 1000 mL

1000 to 1500 mL

Explanation:

When teaching a patient to irrigate a colostomy, the patient should be advised to use 500 to 1000 mL for the irrigation, beginning with 500 mL at first and then adding more fluid until the right amount for the individual is determined. The bag should be filled with 1000 mL warm water and bag hung so that the bottom of the bag is at shoulder level so that gravity will help

the flow of water into the bowel. Patients may sit on the toilet with the irrigation bag between the legs or may sit on a chair or stool in front of the toilet.

125.

Which of the following is the best choice to protect the skin from drainage from a high-output fistula?

moisture barrier powder

skin barrier spray

absorbant dressings

moisture barrier cream

Explanation:

The best choice to protect the skin from drainage is skin barrier spray, which provides a thin, breathable layer of silicone protection from both adhesive and discharge (including enzymes). The barrier spray can be applied to the skin prior to application of a wound management/pouching system. The barrier spray does not sting and can be applied quickly because it dries within seconds. (The same product is available in wipes.)

126.

When siting the stoma for a woman who is 6 months pregnant, the stoma site should be

in the same position as for non-pregnant patients.

in the same horizontal plane as the umbilicus.

more medial than the usual site.

more lateral than the usual site.

Explanation:

When siting the stoma for a woman who is 6 months pregnant, the stomas site should be more lateral than the usual site because of the enlarged abdomen. Following pregnancy, when the abdomen returns to a more normal shape, the lateral stoma will move medially. A stoma placed high on the abdomen will tend to shift downward, and a stoma placed low on the abdomen will tend to shift upward.

127.

Most bacteria that is ingested orally is eliminated by

gastric alkalinity.

gastric acidity.

intestinal bile.

intestinal villi.

Explanation:

Most bacteria that is ingested orally is eliminated by gastric acidity; therefore, the stomach is relatively sterile. However, bacteria increase throughout the small and large intestine. Bile acids in the duodenum and antibodies decrease bacterial growth of aerobic bacteria. Anaerobic

bacteria are plentiful distal to the ileocecal valve and serve essential roles in digestion, but they can become pathogenic if the normal balance is disrupted.

128.

Absorption of nutrients, electrolytes, vitamins, and minerals takes place primarily in the

stomach.

small intestine.

ascending colon.

descending colon.

Explanation:

Absorption of nutrients, electrolytes, vitamins, and minerals takes place primarily in the small intestine. Most absorption occurs in the first 100 cm of the small intestine, primarily the duodenum and jejunum, which have plentiful villi. Of the 8 to 9 L of fluid that are received or produced by the small intestine, 7 to 8 L are reabsorbed, including carbohydrates and minerals. The duodenum neutralizes the gastric contents while pancreatic enzymes continue digestion and bile emulsifies fat. Most fats, proteins, and vitamins as well as a smaller amount of carbohydrates are absorbed in the jejunum.

129.

Penrose drains are usually kept in a wound postoperatively for

1 to 2 days.

2 to 3 days.

3 to 5 days.

6 to 7 days.

Explanation:

Penrose drains are usually kept in a wound postoperatively for 3 to 5 days and are usually slowly removed as the wound heals. The drain may be cut with sterile scissors as it is advanced, being sure to place a sterile safety pin near the end to prevent the drain from migrating into the wound. The longer the drain is in place, the greater the risk of developing an ascending infection from the drain.

130.

Most colorectal lymphomas are located in the

cecum/ascending colon.

transverse colon.

descending colon

sigmoid colon/rectum.

Explanation:

Up about 70% of colorectal lymphomas are located in the cecum/ascending colon because this area has a large amount of lymphoid tissue. Onset of symptoms is usually in the 50s to 70s. Because the disease is usually systemic, treatment may include radiation and chemotherapy,

but surgery is not usually indicated except for focal lesions or complications, such as perforations. Patients may present with nonspecific symptoms, abdominal pain, and/or abdominal mass

131.

If a patient is diagnosed with rectal cancer, which of the following TNM classifications generally indicate the need for transanal excision only?

T4

T3N2

T2N0

T1N0

Explanation:

If a patient is diagnosed with rectal cancer, the TNM (tumor size, nodal status, and metastatic spread) classification that generally indicates the need for transanal excision only is T1N0. T1 indicates that the tumor has invaded the mucosa and the submucosa, and NO indicates no nodal spread and, therefore, no metastasis. Tis (in situ) would indicate only invasion of the mucosa but not the submucosa.

132.

Most electrolyte loss occurs through

urine.

respirations.

feces.

perspiration.

Explanation:

Most electrolyte loss occurs through urine because essential electrolytes (sodium, chloride, potassium, calcium, phosphate, bicarbonate, hydrogen, and magnesium) are regulated by the kidneys. Normally, food and food intake provide an adequate electrolyte balance, but disease or surgical interventions (such as ileostomy) may result in electrolyte imbalance that can be life threatening, so the electrolyte balance must be carefully monitored and replacement therapy provided as needed.

133.

A loop colostomy is usually performed for

simplicity of procedure.

inflammatory bowel disease.

permanent fecal diversion.

short-term fecal diversion.

Explanation:

A loop colostomy is usually performed for short-term fecal diversion. A loop colostomy creates one stoma with two openings, one for stool and the other for mucus, usually in the transverse

colon. A supporting rod may be in place to maintain the stoma's position. This procedure is relatively easy and can be reversed in a simple operation. Indications include trauma, conditions requiring the bowel to heal and rest, such as cancer, and (in children) major pelvic surgery.

134.

If a colonoscopy shows a fragmented polyp with invasive cancer, the likely treatment will be

remove the polyp and observe the patient.

adjuvant therapy only.

colectomy, removal of lymph nodes, and possible diversion.

colectomy, removal of lymph nodes, diversion, and adjuvant therapy.

Explanation:

If a colonoscopy shows a fragmented polyp with invasive cancer, the likely treatment will be colectomy, removal of lymph nodes, and possible diversion. If the polyp is not fragmented and is a single specimen that is able to be completely removed, then only observation is needed with colonoscopy at least every 3 years. If colon cancer is found and the lesion is not obstructing, then diversion may or may not be necessary.

135.

Carcinoid tumors are most common in which of the following ethnic groups?

Asians

African Americans

Hispanics

Caucasians

Explanation:

Carcinoid tumors are most common in African Americans. These slow-growing neuroendocrine tumors generally don't occur until the 50s or 60s and are accompanied by carcinoid syndrome in 10% to 18% of patients. Carcinoid syndrome results in flushing of skin, liquid stools, pain in the abdomen, heart failure (right-sided), and wheezing. Colorectal carcinoid tumors are often asymptomatic and found on colonoscopy.

136.

Which of the following makes patients with Crohn's disease more refractory to treatment?

older age

obesity

alcohol use

smoking

Explanation:

Smoking makes patients with Crohn's disease more refractory to treatment. Additionally, smokers are more likely to develop Crohn's disease and to exhibit more severe symptoms and may have more than twice as many flareups; therefore, patients with Crohn's disease need to

stop smoking as part of the plan of treatment, but they may need support in order to do so. Female patients tend to have more negative effects from smoking than male patients.

137.

A patient with Crohn's disease is especially at risk for which of the following vitamin deficiencies?

B12

B6

C

D

Explanation:

A patient with Crohn's disease is especially at risk for deficiency of vitamin B12 because the terminal ileum, which is essential for vitamin B12 absorption, is the most commonly involved part of the small intestine and the most commonly resected. Patients should receive preventive vitamin B12. If the ileocecal valve and cecum are removed, the patient may also have deficiency of fat-soluble vitamins and zinc.

138.

With ulcerative colitis, which of the following is an indication for urgent surgery?

chronic steroid dependency

refractory disease

adenocarcinoma

toxic megacolon

Explanation:

With ulcerative colitis, toxic megacolon is an indication for urgent surgery. Other urgent situations include perforation, uncontrolled bleeding, obstruction, and fulminant attack that is nonresponsive to treatment. Indications for elective surgery include refractory disease, adenocarcinoma, failure to thrive (pediatrics), and chronic steroid dependency because delay in surgery is not immediately life threatening.

139.

If a patient has a subtotal colectomy with ileostomy and a Hartman's pouch for Crohn's disease, the patient should be told to expect

no issues with the Hartman's pouch.

to feel the urge to defecate and pass mucus periodically.

to feel no urge to defecate but leak mucus.

periodic cramping pain in the Hartman's pouch.

Explanation:

If a patient has a subtotal colectomy with ileostomy and a Hartman's pouch for Crohn's disease, the patient should be told to expect to feel the urge to defecate and pass mucus periodically. This usually occurs about once a day because the pouch continues to produce mucus. With a

Hartman's pouch, the anus and rectum stay in place but the top of the rectum is sewn closed. The Hartman's pouch may later be removed if a proctectomy is indicated.

140.

If a male patient who is 6 weeks postoperative with an ileal pouch anal anastomosis (IPAA) complains of difficulty achieving an erection and engaging in sexual activity and seems quite distressed, the MOST appropriate referral is to a

urologist.

gastroenterologist.

sex therapist.

psychologist.

Explanation:

If a male patient who is 6 weeks postoperative with an IPAA complains of difficulty achieving an erection and engaging in sexual activity and seems quite distressed, the most appropriate referral is to a urologist. During the surgical procedure, sometimes the nerves that affect urination and sexual function become damaged, so the urologist can best make this assessment. In most cases, function resumes within a few months.

141.

If a patient with Crohn's disease is considering surgery to create an ileostomy, the most important role of the nurse is to

provide encouragement and reassurance.

stress the positive aspects of an ileostomy.

stress the negative aspects of an ileostomy.

provide information about the procedure.

Explanation:

If a patient with Crohn's disease is considering surgery to create an ileostomy, the most important role of the nurse is to provide information about the procedure, including the pros and cons, to help the patient make an informed decision. The nurse could provide literature and pictures to explain the procedure and provide a list of resources, such as the United Ostomy Association of America and Crohn's and Colitis Foundation.

142.

When a patient undergoing a 3-stage proctocolectomy and ileal pouch anal anastomosis (IPAA) procedure has the end ileostomy changed to a temporary loop ileostomy, the patient is especially at increased risk of

infection.

dehydration.

dehiscence.

hemorrhage.

Explanation: