

HS-SM-4 Injury Classification

Understanding Injury Classification and Evaluation

Objective:

Students will be able to differentiate between evaluate and diagnose, distinguish between a sign and a symptom, and identify and demonstrate appropriate anatomical structures to palpate during an injury evaluation.

Assessment:

Students will participate in a scenario-based activity where they must evaluate a series of injury cases and correctly differentiate between signs, symptoms, and anatomical structures to palpate.

Key Points:

- Understanding the difference between evaluation and diagnosis
- Differentiating between signs and symptoms in injury assessment
- Identifying and demonstrating anatomical structures for palpation during evaluation

Opening:

- Introduction to the lesson objective and relevance
- Engage students with a scenario where they have to decide what actions to take in a given injury situation

Introduction to New Material:

- Differentiate between evaluate and diagnose by providing examples
- Discuss the difference between signs and symptoms with clear illustrations
- Address the appropriate anatomical structures to palpate during an injury evaluation
- Common misconception: Students often confuse signs and symptoms in injury assessment

Guided Practice:

- Engage students in role-playing scenarios where they practice differentiating between signs and symptoms
- Provide examples for students to practice identifying anatomical structures for palpation
- Monitor student performance through active questioning and feedback

Independent Practice:

- Students will analyze injury cases individually, differentiating between signs, symptoms, and appropriate anatomical structures to palpate
- They will demonstrate their understanding by creating their own injury assessment scenarios

Closing:

- Quick recap of the key differences between signs and symptoms in injury assessment
- Reflect on the importance of correctly identifying anatomical structures during an injury evaluation

Extension Activity:

- Students who finish early can research a real-life injury case and present their findings to the class


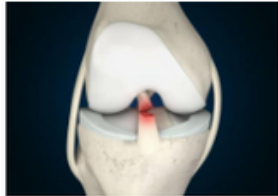

Homework:

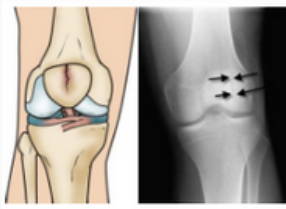
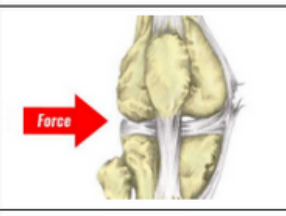
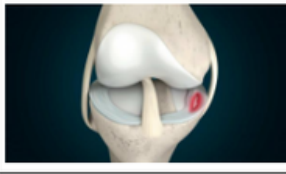

- Research a specific type of injury and create a detailed injury assessment plan including evaluation, differentiation between signs and symptoms, and palpation techniques.

Standards Addressed:

- HS-SM-4.1: Students will differentiate between evaluation and diagnoses during an injury assessment.
- HS-SM-4.2: Students will distinguish between a sign and a symptom in the context of an injury evaluation.

Common Injuries of the Knee:

Name of Injury and What Treatment is Needed:	Injury:
	
	
	

Injury Classification and Tissue Healing Test VERSION

1. What phase of healing does vasodilation occur during?
 - A. Subacute/Repair and Regeneration Phase
 - B. Remodeling/Maturation Phase
 - C. Acute/Inflammation Phase
2. What is the purpose of vasodilation?
 - A. To restrict the amount of white blood cells to the area
 - B. To increase swelling
 - C. To flush out debris
 - D. To decrease blood pressure
3. What type of fracture usually occurs in children?
 - A. Spiral
 - B. Greenstick
 - C. Compression
 - D. Comminuted
4. What type of fracture usually occurs in the elderly?
 - A. Transverse
 - B. Longitudinal
 - C. Greenstick
 - D. Compression
5. What type of fracture occurs along the hori:
 - A. Transverse
 - B. Spiral
 - C. Longitudinal
 - D. Depressed
6. Which of the following is NOT a sign of infla
 - A. Pain
 - B. Heat
 - C. Edema
 - D. Ecchymosis

7. What is hypoxia?
 - A. Increased breathing
 - B. Increased amount of oxygen
 - C. Decreased breathing
 - D. Decreased amount of oxygen

Match the information given with the phase it is associated with.

- | | | |
|----------|-----------------|---------------|
| A. Acute | B. Regeneration | C. Remodeling |
|----------|-----------------|---------------|
8. Starts week 3-4 and can last over a year
 9. Starts immediately after injury and lasts approx. 72 hours
 10. Starts 48 hours after injury and lasts until approx. week 6 from injury
 11. Scar tissue is laid down
 12. Scar tissue begins resembling the tissue surrounding it
 13. Inflammation occurs

For the following scenarios, what degree of injury is described?

- | | | |
|---------------------------|---------------------------|---------------------------|
| A. 1 st Degree | B. 2 nd Degree | C. 3 rd Degree |
|---------------------------|---------------------------|---------------------------|
14. A pitcher throws a pitch and feels a pop in his elbow. When he comes to the dugout you notice a bulge at his elbow. The pitcher tells you he is in no pain, but he can't flex his wrist.

Match the following descriptions with the disease.

- | | | | | |
|----------|----------------------|--------------------|-----------------|-----------------------|
| A. Shock | B. Internal Bleeding | C. Ruptured Spleen | D. Appendicitis | E. Anaphylactic Shock |
|----------|----------------------|--------------------|-----------------|-----------------------|
32. Symptoms include shock, dizziness, and ecchymosis
 33. Pain in upper left abdomen and left shoulder
 34. Pain between umbilicus and right hip
 35. Lay the person down and slightly elevate legs
 36. An allergic reaction to an antigen

Match the following descriptions with the disease.

- | | | | | |
|------------|-------------|-------------|-----------|-----------|
| A. Seizure | B. Fainting | C. Diabetes | D. Asthma | E. Hernia |
|------------|-------------|-------------|-----------|-----------|
37. Use an inhaler if available
 38. The inability of the body to control the amount of sugar in the body
 39. Temporary loss of consciousness
 40. Gently lower patient to ground and move anything that could harm the patient
 41. Bulge in the area of weakened abdominal tissue

Match the following descriptions with the disease.

- | | | | | |
|-------------|-------------------|-------------|---------|-----------|
| A. Ringworm | B. Athlete's Foot | C. Impetigo | D. MRSA | E. Eczema |
|-------------|-------------------|-------------|---------|-----------|
42. Red sores that ooze and dry with a yellowish-brown crust
 43. Painful red bumps that appear like spider bites
 44. Moisturizing can help but may need medication
 45. Keep area dry and use anti-fungal medication
 46. Circular patch of flat scaly skin

Short Answer: Answer the following questions on a separate sheet of paper.

47. What is Wolff's law? Give an example.
48. What is Davis's law? Give an example.
49. What is the function of a ligament and a tendon?
50. What is acclimatization?

For the following scenarios, what temperature is most appropriate?

- | | |
|------------------|--------------------|
| A. Muscle Cramps | B. Heat Exhaustion |
| C. Hypothermia | D. Hypothermia |
17. Stretch and rehydrate
 18. Remove wet clothing
 19. Numbness in extremities
 20. Muscle spasms involuntarily
 21. Ice bath and call 911
 22. Core temperature under 95 degrees
 23. Core temperature over 104 degrees
 24. Cool and moist/clammy skin
 25. Wet Bulb Globe Thermometer DOES NOT
 - A. Wind chill
 - B. Radiant temperature
 - C. Humidity
 - D. Ambient temperature
 26. What is the best way to clean a lightly soiled area?
 - A. Saline
 - B. Peroxide
 - C. Betadine
 - D. Alcohol

Match the description with the skin wound.

- | | | | | |
|-------------|-------------|---------------|-------------|------------|
| A. Abrasion | B. Avulsion | C. Laceration | D. Incision | E. Blister |
|-------------|-------------|---------------|-------------|------------|
27. Surgical cut or tear in the skin
 28. Pulling of the skin completely off or mostly off
 29. Layers of skin scraped off
 30. Cut or tear in the skin
 31. Collection of fluid under the skin

**HS-SM-4
4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9,
4.10, 4.11**

9 The purpose of inflammation is to trigger the healing process, alerting your body that something is wrong so that it will fix itself.
 Is inflammation a good or a bad thing?

10 Histamine response
 The histamine response during this time attracts fibroblasts to the area to repair injured tissue.
 What are ways to stop hypoxia from occurring?

11 This is why a scar feels harder than the skin around it

12 Remodeling/Maturation Phase
 Time Frame
 Week 3-4 to 1 year or more
 During this phase the collagen fibers, scar tissue, begins to realign in a way that is similar to the tissue surrounding it
 Wolff's Law - Bones will adapt to the stresses put on them
 Davis's Law - Soft tissue will adapt to the stresses put on them

13 Remodeling/Maturation Phase
 During the repair phase adhesions may occur
 Adhesions is when scar tissue is laid down and bonds to tissue around it that it shouldn't bond to
 Example: When you put a bandaid on a sore and the sore sticks to the bandaid
 Example 2: When you strain a hamstring an adhesion may occur between the hamstring muscle and your dermis, skin. The muscle should glide below the dermis, but now it is stuck to it.
 During the remodeling phase adhesions should dissipate.

14 Treating Adhesions
 Keep injured body part moving and stretched, lightly stretching immediately after injury and become more aggressive as it heals
 Myofascial Release is a method of massaging the skin to break up adhesions between the muscle and the fascia surrounding it.

15 3 Stages of an Acute Injury
 The timeframes of the three stages are general guidelines, it may be slower or faster than the time frames I gave you.
 What do you think can speed up the time frame?
 What do you think can slow down the time frame?

16 Types of Injuries
 Sprains
 Tear of a ligament
 Ligaments connect bones together
 Strains
 Tear of a muscle or tendon
 Tendons connect muscle to bones
 Fractures
 Break of a bone
 A tear and sprain/strain are the same thing!!!
 A fracture and break are the same thing!!!

17 Types of Injuries
 Dislocation
 A bone out of its joint
 Subluxation
 A bone slides out of joint, then immediately returns to joint
 Contusion
 Damaged tissue due to an outside force, a bruise

18 Degrees of Soft Tissue Injuries
 First Degree Injuries
 Tearing of 0-25 percent of fibers
 Symptoms
 Painful, little loss strength and range of motion
 Second Degree Injuries
 Tearing of 25-50 percent of fibers
 Symptoms
 Very painful, substantial loss of strength and range of motion
 Third Degree Injuries
 Tearing of more than 50 percent of fibers
 Symptoms
 Severe pain or no pain, complete (or nearly complete) loss of strength and range of motion, deformity

19 Degrees of Soft Tissue Injuries
 What degree of injury is illustrated in the following scenarios?
 A softball player comes to you complaining of pain in her arm. She said she can still play, but it's an annoying pain.
 A soccer player goes down on the field. She tells you that she can't move her leg, but it doesn't really hurt. You notice a big hump on the back of her leg.

Power Points with Classroom discussions help solidify the understanding of classification of injuries. 4.1, 4.2, 4.3, 4.4, 4.8, 4.9

21 ABNORMAL INJURIES
 Precision standard 11.8 Recognize abnormal injuries, bleeding, and shock
 Precision standard 11.9 Describe the treatment for the following medical conditions

22 Different and from the neck
 Confusion, lightheadedness, and dizziness
 Treatment
 Rest if minor, surgery if serious

23 Confusion
 Nausea and vomiting
 Treatment
 Appendectomy, removal of appendix

24 Incline
 Weakness in groin
 Treatment
 Surgery if painful

25 SEIZURES
 A sudden uncontrollable electrical disturbance in the brain
 Treatment
 Gently lower patient to the ground and move anything that might hurt the patient

26 FAINTING (SYNCOPE)
 Temporary loss of consciousness
 Treatment
 Gently lower patient to the floor and monitor vital signs

27 DIABETES
 The inability of the body to control the amount of sugar in the body
 Treatment
 If sugar is low: give patient food or drink with sugar
 If sugar is high: give patient insulin

28 ASTHMA
 A condition in which your airway swells and narrows.
 Treatment
 Inhaler if available
 Pursed lip breathing
 Take a deep breath through your nose then hold lips together and slowly breathe out. Purse a circle and your blowing force to make it move, but you aren't blowing it out.

29 EXERTIONAL SICKLING
 Sickle cell trait athletes typically have regular shaped blood cells. However, with certain conditions their blood cells can sickle. Usually this occurs at the start of exercise with a dehydrated athlete and lack of oxygen.

30 ANAPHYLACTIC SHOCK
 An allergic reaction to a certain antigen
 Treatment
 Benadryl
 EpiPen

31 POTATO SKIN WOUND LAB
 Using whatever you need to in the classroom, create the 4 skin wounds discussed in the class on your potato.
 The 4 skin wounds are:
 Abrasion
 Laceration
 Incision
 Avulsion