

CHAPTER 4

The Skeletal System

Activity A Understanding Word Parts

Word Parts Matching, Part 1

Instructions: Match each of the following word parts with the correct meaning.

- | | |
|--------------------------------------|-------------|
| 1. ____ within; into | A. meta- |
| 2. ____ inflammation | B. -algia |
| 3. ____ change; beyond | C. inter- |
| 4. ____ around; surrounding | D. -itis |
| 5. ____ softening | E. -al |
| 6. ____ process of cutting; incision | F. intra- |
| 7. ____ pain | G. -tomy |
| 8. ____ between | H. peri- |
| 9. ____ deficiency | I. -penia |
| 10. ____ pertaining to | J. -malacia |

Word Parts Matching, Part 2

Instructions: Match each of the following word parts with the correct meaning.

- | | |
|-------------------------------------|--------------|
| 1. ____ joint | A. myel/o |
| 2. ____ wrist | B. arthr/o |
| 3. ____ crooked; bent | C. ped/o |
| 4. ____ lubricating fluid of joints | D. scoli/o |
| 5. ____ tendon | E. carp/o |
| 6. ____ foot; child | F. synovi/o |
| 7. ____ bone marrow; spinal cord | G. tars/o |
| 8. ____ straight | H. tendon/o |
| 9. ____ vertebra; backbone | I. spondyl/o |
| 10. ____ ankle | J. orth/o |

Medical Terms and Definitions

Instructions: Break down each of the following medical terms into its word parts (prefix, root word, combining vowel, and suffix if used). Then define each term.

1. intercostal

Breakdown: _____

Define: _____

2. tendonitis

Breakdown: _____

Define: _____

3. kyphosis

Breakdown: _____

Define: _____

4. antipyretic

Breakdown: _____

Define: _____

5. arthralgia

Breakdown: _____

Define: _____

6. craniotomy

Breakdown: _____

Define: _____

7. arthroplasty

Breakdown: _____

Define: _____

8. rheumatoid

Breakdown: _____

Define: _____

9. subcostal

Breakdown: _____

Define: _____

10. lumbalgia

Breakdown: _____

Define: _____

11. narcosis

Breakdown: _____

Define: _____

Activity B Interpreting Medical Records

Definitions

Instructions: Use a regular dictionary or a medical dictionary to define the following terms.

1. aggravation

2. alleviate

3. therapeutic

4. bulge

5. In your own words, explain what *pain radiating* means.

6. What does the term *over-the-counter medication* mean?

Medical Record Interpretation

Instructions: Read the following medical record. Then, using the chapter and Appendix B: Medical Abbreviations in the text, define the abbreviations that follow the medical record.

Medical Record

Patient's Name: Jane Doe

ID Number: 12345

Date of Service: May 3, 20XX

Subjective Data: 45 **y/o** female with **c/o** increasing difficulty using her **R** hand. **Pt** states she is "continually dropping things like her car keys and hairbrush." **Pt** states symptoms have worsened over the past six months. **Pt** states that she wakes up in the morning with severe numbness and tingling, and that it takes approximately two to three hours for symptoms to reduce in intensity. **Pt's OH** is a computer analyst for the past 20 years. **Pt** states that her **PCP** has ordered **OTC NSAIDs**, occupational therapy evaluation with recommendations of home exercises, and night splinting. **Pt** states that symptoms have worsened despite conservative **Tx**. **Pt** referred to orthopedics for evaluation.

Objective Data: **Pt** is a well-developed female. **Ht:** 65 inches. **Wt:** 154.2 pounds. **HEENT** exam **WNL**. Evaluation of affected extremity reveals slight atrophy of **R** forearm in relationship to the **L** side. Wrist circumference: **R:** 18 **cm**, **L:** 19 **cm**. **Pt** is not able to distinguish between light and firm pinpoint pressures in the 2nd to 4th digits of the **R** hand.

Assessment: Moderate to severe **CTS**

Plan: Order **NCV** study. If this test indicates moderate to severe **CTS**, schedule **Pt** for endoscopic **R** carpal tunnel release. Instruct **Pt** that if surgery is required, she will have to schedule to be off work for at least six weeks. If **NCV** study does not reveal **CTS**, contact **Pt** to return to clinic for further evaluation and **Tx**.

1. y/o: _____
2. c/o: _____
3. R: _____
4. Pt: _____
5. OH: _____
6. PCP: _____
7. OTC: _____
8. NSAID: _____
9. Tx: _____
10. Ht: _____
11. Wt: _____
12. HEENT: _____
13. WNL: _____
14. L: _____
15. cm: _____
16. CTS: _____
17. NCV: _____

Define Medical Terms

Instructions: Define the following terms. If you are unsure what a term means, look up the term in the Glossary/Index of your text or use a medical dictionary.

1. orthopedics: _____
2. conservative treatment: _____
3. extremity: _____
4. digits: _____
5. endoscopy: _____

Review

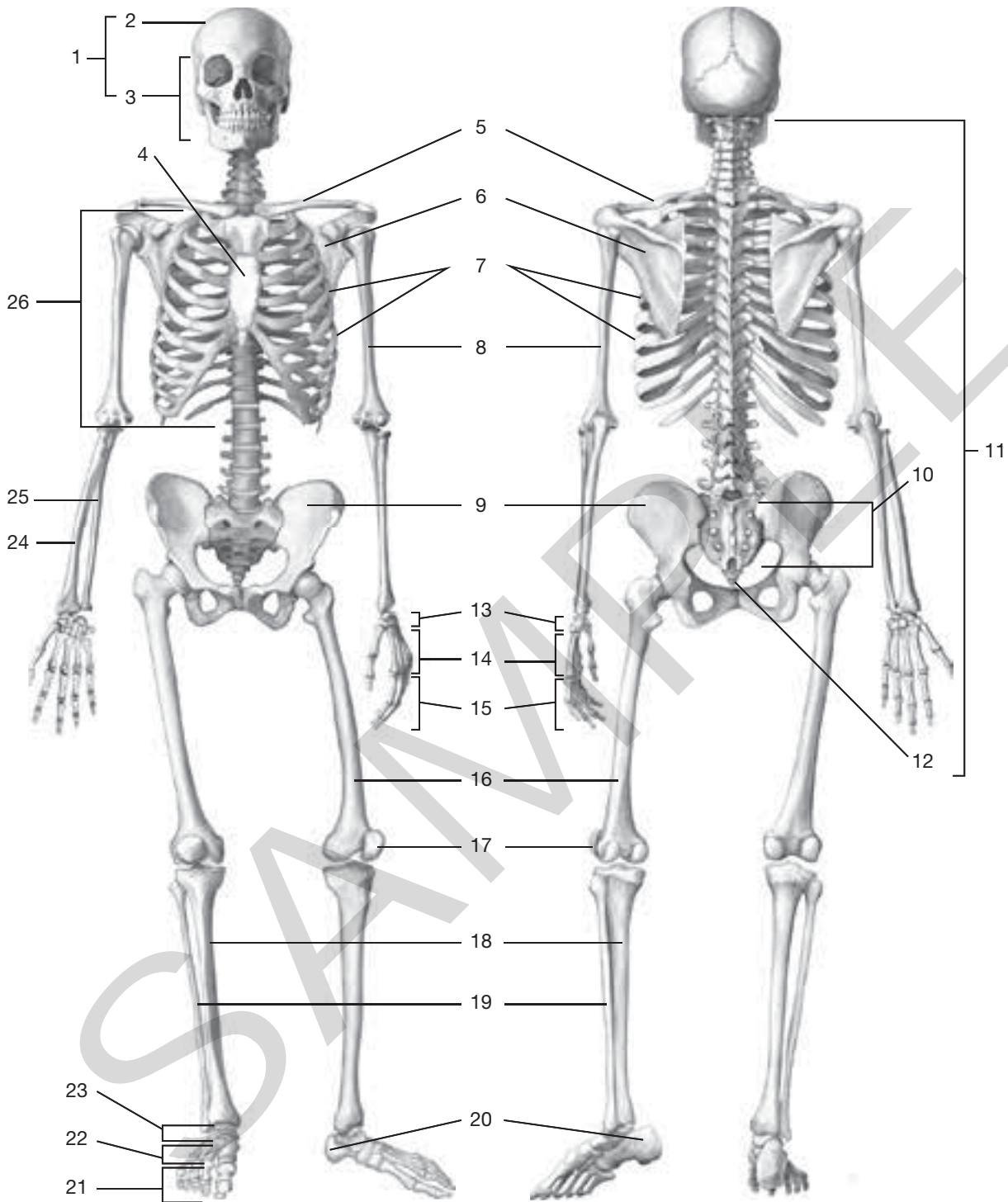
Instructions: Answer the following questions related to Jane Doe's medical record. You may need to conduct research using reliable and valid medical resources to find an answer.

1. Why do you think the patient described in this medical record developed CTS?

2. What are some steps that patients can take to prevent or minimize this condition?

Labeling

Instructions: Label the different types of bones in the following image.



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- | | |
|------------------|--------------------|
| 1. Item 1: _____ | 6. Item 6: _____ |
| 2. Item 2: _____ | 7. Item 7: _____ |
| 3. Item 3: _____ | 8. Item 8: _____ |
| 4. Item 4: _____ | 9. Item 9: _____ |
| 5. Item 5: _____ | 10. Item 10: _____ |

Name _____

- 11. Item 11: _____
- 12. Item 12: _____
- 13. Item 13: _____
- 14. Item 14: _____
- 15. Item 15: _____
- 16. Item 16: _____
- 17. Item 17: _____
- 18. Item 18: _____
- 19. Item 19: _____
- 20. Item 20: _____
- 21. Item 21: _____
- 22. Item 22: _____
- 23. Item 23: _____
- 24. Item 24: _____
- 25. Item 25: _____
- 26. Item 26: _____

Review, Part 2

Instructions: Answer the following questions.

1. What is the anatomical term for a bone's growth plate?

2. Where is the periosteum located?

3. What does the term *hematopoiesis* mean?

4. What does the term *articulate* mean?

Joint Descriptions and Examples

Instructions: Describe each type of joint and give an example of where each type is found in the body.

1. Diarthroses: _____
Example: _____
2. Amphiarthroses: _____
Example: _____
3. Synarthroses: _____
Example: _____

Matching

Instructions: Match each of the following bone-related terms with the correct meaning.

- | | |
|---|-------------------|
| 1. _____ passageway for blood vessels and nerves | A. bone processes |
| 2. _____ shallow pit or cavity in or on a bone | B. tubercle |
| 3. _____ one of two large processes found on the femur | C. trochanter |
| 4. _____ a hollow cavity within a bone | D. tuberosity |
| 5. _____ areas on bones that extend outward and serve as points of attachment for muscle or tendons | E. fossa |
| 6. _____ a groove or furrow | F. foramen |
| 7. _____ point where cranial bones attach to each other | G. sulcus |
| 8. _____ small, round process found on many bones | H. sinus |
| 9. _____ soft spot on an infant's skull | I. suture |
| 10. _____ large, rough process found on many bones | J. fontanel |

Activity D Understanding Terms Related to Diseases and Conditions

Disease or Condition Identification

Instructions: Identify the term that corresponds to each disease or condition described.

1. inflammation of the sac of fluid that is located near a joint:

2. a medical condition in which blood uric acid levels are elevated and can cause joint swelling and pain:

3. joint swelling at the base of the great toe due to inflammation:

4. luxation:

5. softening of the cartilage:

6. rheumatoid arthritis of the spine:

7. pain in the lower back:

8. inflammation of the covering that surrounds the bone:

9. inflammation of the bone and bone marrow:

10. rickets:

11. cancer of plasma cells:

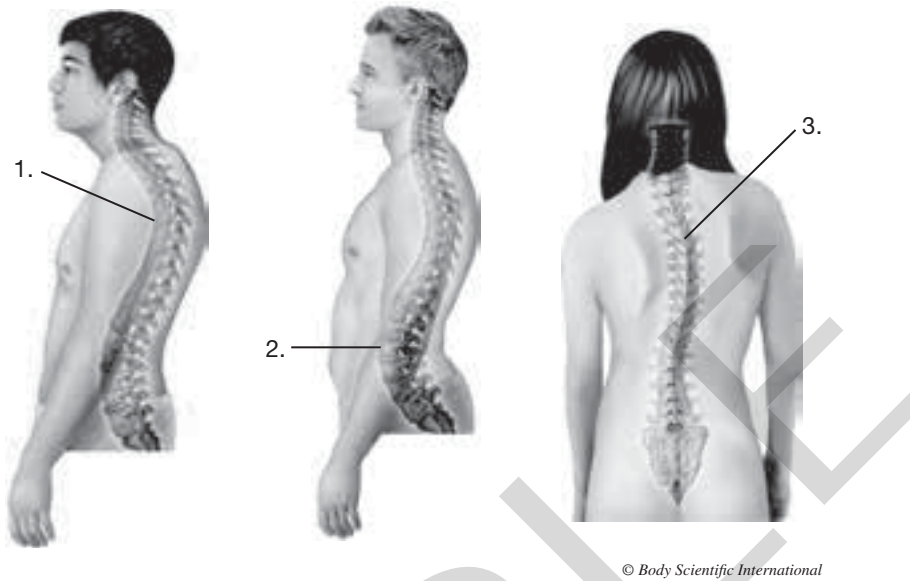
12. partial dislocation of a bone:

13. clubfoot:

14. osteitis deformans:

Abnormal Curvature Labeling

Instructions: Label each abnormal curvature of the spine shown in the following images.



1. Item 1: _____

2. Item 2: _____

3. Item 3: _____

Matching

Instructions: Match each of the following terms related to fractures with the correct meaning.

- | | |
|--|------------------------|
| 1. ____ a break across the bone at an angle | A. Colles fracture |
| 2. ____ an open fracture | B. comminuted fracture |
| 3. ____ a fracture that may be a result of falling onto an outstretched hand | C. greenstick fracture |
| 4. ____ a break that is a result of a weakened bone | D. oblique fracture |
| 5. ____ a common fracture seen in sports injuries | E. pathologic fracture |
| 6. ____ a fracture primarily seen in children | F. spiral fracture |
| 7. ____ a fracture that splinters or crushes the bone | G. stress fracture |
| 8. ____ a fracture that may occur because of an excessive impact | H. compound fracture |

Activity E Analyzing Diagnostic- and Treatment-Related Terms

Diagnostic Test Identification

Instructions: Identify the diagnostic test that would be considered in each of the following situations.

1. a test that may be used to collect cells that would be used in a stem-cell transplant procedure:

2. a test that is used to diagnose osteoporosis:

3. a test that provides more detailed images than a regular X-ray but is not as costly as an MRI:

Matching

Instructions: Match each of the following surgical procedures or treatments with the correct meaning.

- | | |
|---|---------------------|
| 1. _____ surgery to repair a fracture that requires the use of plates and screws | A. arthrodesis |
| 2. _____ an artificial limb | B. physical therapy |
| 3. _____ the application of a pulling force to correct a dislocated shoulder | C. bursectomy |
| 4. _____ surgical immobilization of a joint | D. amputation |
| 5. _____ a procedure used to remove fluid from within a joint | E. traction |
| 6. _____ the surgical fusion of vertebrae | F. prosthesis |
| 7. _____ the surgical removal of a limb | G. spondylosyndesis |
| 8. _____ the process of rehabilitating a patient so that he or she is able to ambulate after hip replacement surgery | H. ORIF |
| 9. _____ the process of transplanting and implanting bone tissue from the pelvic bones to repair a facial bone injury | I. arthrocentesis |
| 10. _____ the surgical removal of the sac of fluid that is found near the elbow joint | J. bone grafting |

Definitions

Instructions: Using the word parts on pages 71–73 and Appendix A on pages 473–479 of your textbook, define the following medical terms.

1. subcostal: _____
2. bradykinesia: _____
3. arthrogram: _____
4. osteoarthritis: _____
5. pedal: _____

Activity F Preparing for Your Future in Healthcare

Word Part Definitions

Instructions: Define each of the following word parts that are related to healthcare professions.

1. chir/o: _____
2. neur/o: _____
3. muscul/o: _____
4. ultra-: _____
5. orth/o: _____
6. -ist: _____
7. radi/o: _____

Definitions

Instructions: Use the Glossary/Index in the text or a dictionary to define the following terms.

1. manipulation:

2. adjunctive:

3. acupuncture:

4. modification:

5. intervention:

6. customized:

7. rehabilitation:

8. amputation:

Healthcare Professional Indication

Instructions: Indicate the appropriate healthcare professional (chiropractor, physical therapist, orthopedic surgeon, prosthetist, radiologic technologist) for each of the following tasks. You will use some of the healthcare professionals more than once.

1. fabricates artificial limbs:

2. educates people on exercises to improve their mobility:

3. requires a DC degree:

4. requires an MD or a DO degree:

5. takes X-rays of bones:

6. may use acupuncture as a treatment option:

7. may work in a nursing home:

8. is licensed to perform surgery:

9. may practice with an associate's degree:

10. must have a doctor's order before fitting a patient with a prosthesis:

Chapter 4 Practice Test

Word Part Definition

Instructions: Using the word parts on pages 71–73 of your textbook, identify the medical term that corresponds to each of the following definitions.

1. incision into the skull: _____
2. surgical repair of a joint: _____
3. pertaining to below the ribs: _____
4. inflammation of the bones in a joint: _____
5. resembling watery flow: _____

Medical Terms and Definitions

Instructions: Break down each of the following medical terms into its word parts (prefix, root word, combining vowel, and suffix if used). Then define each term.

1. subluxation
Breakdown: _____
Define: _____
2. osteopenia
Breakdown: _____
Define: _____
3. metatarsal
Breakdown: _____
Define: _____
4. intracranial
Breakdown: _____
Define: _____
5. arthrodesis
Breakdown: _____
Define: _____
6. chondroma
Breakdown: _____
Define: _____
7. cranioplasty
Breakdown: _____
Define: _____
8. myeloma
Breakdown: _____
Define: _____

Bone Labeling

Instructions: Label each of the following bones as either axial or appendicular depending on the part of the skeletal system in which it is located.

- 1. cervical vertebra: _____
- 2. clavicle: _____
- 3. frontal bone: _____
- 4. ribs: _____
- 5. fibula: _____
- 6. coccyx: _____

Review, Part 1

Instructions: Answer the following questions.

- 1. Which two minerals are stored inside bones?

- 2. Which structure attaches bones to muscles?

- 3. Which term describes the shaft of a long bone?

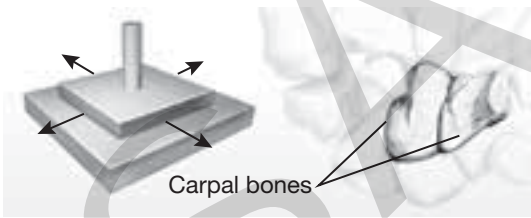
- 4. What substance is found at the edge of the growth plate and allows for new bone to form in children?

- 5. Which term describes the hard, strong, and dense bone that forms the outermost layer of most bones?

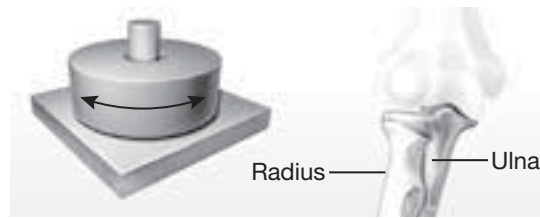
- 6. What is the smallest bone in the body? Where is it located?

Joint Identification

Instructions: Identify the type of joint shown in each of the following images.

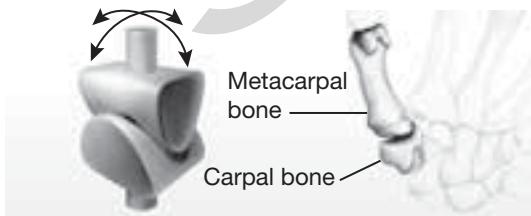


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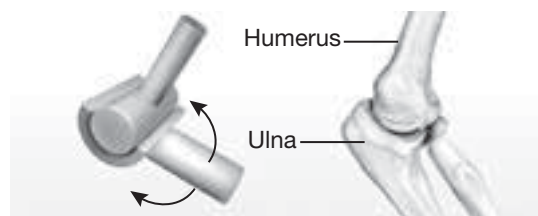


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- 1. Type of joint: _____
- 2. Type of joint: _____

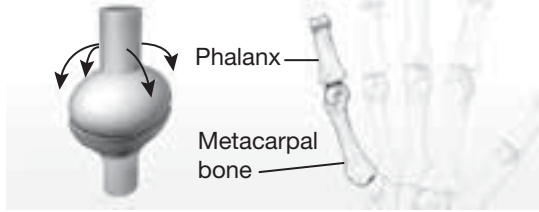


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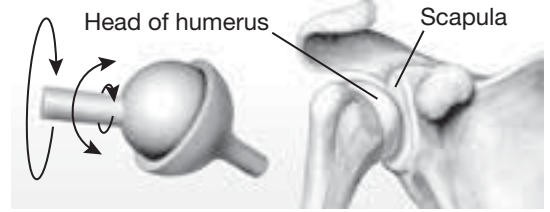


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- 3. Type of joint: _____
- 4. Type of joint: _____



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5. Type of joint: _____

6. Type of joint: _____

Disease or Condition Identification

Instructions: Identify the term that corresponds to each disease or condition described.

1. inflammation of the sac that contains synovial fluid and is found between bones and muscles:

2. inflammation of a joint that is caused by elevated levels of uric acid:

3. a malignant tumor of the connective tissue that affects the bone:

4. abnormal lateral (side-to-side) curvature of the spine:

5. the partial dislocation of a joint:

6. an abnormal depression of the sternum into the chest cavity:

Fracture Identification

Instructions: Identify the type of fracture shown in each of the following images.



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1. Type of fracture: _____



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2. Type of fracture: _____



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3. Type of fracture: _____



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4. Type of fracture: _____



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5. Type of fracture: _____



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6. Type of fracture: _____



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7. Type of fracture: _____ 8. Type of fracture: _____

Term Identification

Instructions: *Identify the term that corresponds to each treatment described.*

1. external manipulation to restore a fractured bone to the correct position: _____
2. the incision of a tendon: _____
3. the surgical repair of a bone: _____
4. the surgical removal of a vertebral disk: _____
5. the surgical repair of a joint: _____
6. the surgical removal of a limb: _____
7. an artificial limb: _____
8. the surgical repair of a fracture using hardware, such as pins and plates: _____

Review, Part 2

Instructions: *Answer each question that follows using your knowledge of medical abbreviations.*

1. If a drug is ordered **PRN**, when would a patient take it?

2. If an arthroplasty were recommended because of **DJD**, what reason would you give the patient for the surgery?

3. If a drug is ordered **PO**, how should the patient take it?

4. If the doctor ordered a **BP**, what test would be performed?

5. If the medical chart states that the Pt c/o **LBP**, what problem does the patient have?

6. If a patient has a compound fracture, and the doctor is scheduling the patient for an **ORIF**, what kind of surgery will the patient be having?

7. If a patient's chart states that he or she was treated by the **ATT PHYS** at a hospital, what is that healthcare worker's title?

