

Bone Fractures and Treatments: Review & Practice

Fracture Types and Medical Treatments: Study Guide

A **bone fracture** is a complete or partial break in a bone. Fractures are classified by how the bone breaks and whether it pierces the skin:

- **Simple (Closed) Fracture:** The bone breaks completely or partially, but the skin remains intact with no open wound.
- **Compound (Open) Fracture:** The broken bone pierces through the skin, creating an open wound that carries a high risk of infection.
- **Transverse Fracture:** The break occurs in a straight horizontal line perpendicular (at a right angle) to the long axis of the bone.
- **Comminuted Fracture:** The bone shatters or splinters into three or more distinct pieces, usually caused by high-impact trauma.
- **Greenstick Fracture:** An incomplete break where the bone bends and cracks on one side while remaining intact on the other. This type is most common in young children because their bones are softer and more flexible.

Medical Treatments for Fractures:

- **Diagnostic Imaging (X-rays):** High-energy electromagnetic radiation produces pictures of dense bone structures, allowing doctors to determine the exact location, type, and severity of the break.
- **Realignment (Reduction):** The process of restoring broken bone ends into their proper anatomical position. In a *closed reduction*, a doctor manipulates the bone without surgery. In an *open reduction*, surgeons use pins, plates, or screws to align the bone.
- **Immobilization:** Holding the realigned bone firmly in place so osteoblasts (bone-forming cells) can rebuild bone tissue. Common tools include casts, splints, and braces.

Part 1: Fracture Identification

DRAG AND DROP

Word Bank: Simple Fracture | Compound Fracture | Transverse Fracture | Comminuted Fracture | Greenstick Fracture



1. Fracture Type:



2. Fracture Type:



3. Fracture Type:



4. Fracture Type:



5. Fracture Type:

Part 2: Multiple Choice Questions

6. Which type of fracture occurs when a bone breaks at a direct 90-degree right angle across the shaft?

☐ A) Greenstick fracture

☐ B) Transverse fracture

☐ C) Compound fracture

☐ D) Comminuted fracture

7. Why are greenstick fractures seen almost exclusively in young children rather than adults?

- ☐ A) Children have weaker immune systems
- ☐ B) Children participate in more outdoor sports
- ☐ C) Children have softer, more flexible bones
- ☐ D) Children have fewer bones in their skeletons

8. A high-speed motorcycle accident causes an athlete's femur (thigh bone) to shatter into four separate fragments. Which fracture did the athlete sustain?

- ☐ A) Comminuted fracture
- ☐ B) Transverse fracture
- ☐ C) Greenstick fracture
- ☐ D) Simple fracture

9. Why is a compound (open) fracture considered an urgent medical emergency compared to a simple (closed) fracture?

- ☐ A) The bone cannot ever heal after breaking
- ☐ B) It carries a severe risk of deep bacterial infection
- ☐ C) It always requires complete limb amputation
- ☐ D) Casts cannot be used on open fractures

10. Which diagnostic tool uses electromagnetic radiation to allow a doctor to confirm the exact location and pattern of a break?

- ☐ A) Pulse oximeter
- ☐ B) Stethoscope
- ☐ C) Electrocardiogram (ECG)
- ☐ D) X-ray imaging

11. Before applying a fiberglass cast, an orthopedic doctor physically moves the misaligned bone fragments back into their natural position. What is this treatment called?

- ☐ A) Realignment (reduction)
- ☐ B) Resorption
- ☐ C) Ossification
- ☐ D) Biopsy

12. What is the primary purpose of immobilizing a fractured bone with a splint or cast?

- ☐ A) To stop blood flow to the broken limb
- ☐ B) To prevent movement so new bone cells can knit the break together
- ☐ C) To stretch the surrounding muscles and ligaments
- ☐ D) To permanently freeze the joints near the bone