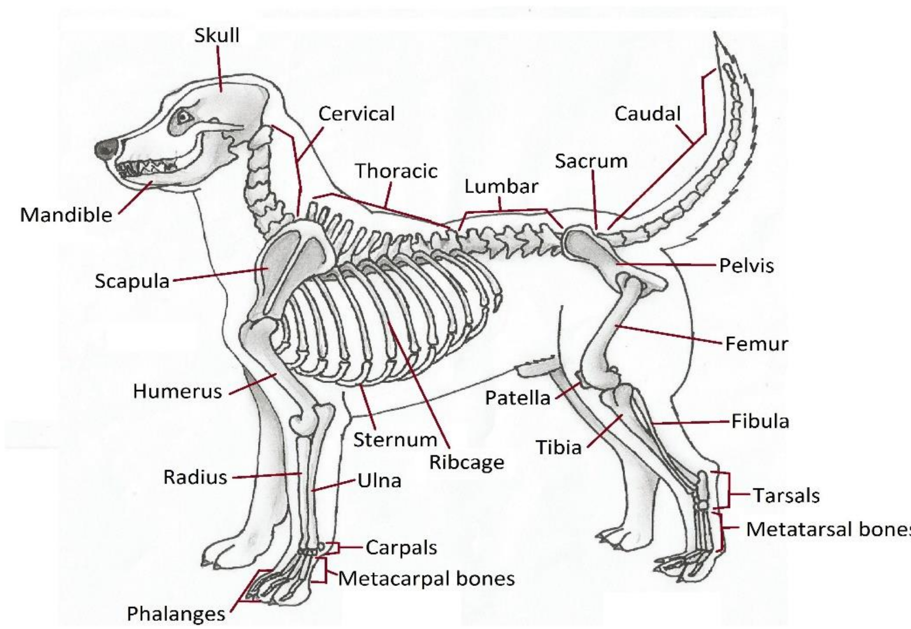
Fracture Repair

Fractures are breaks in the bones of the body. The long bones of dogs and cats are susceptible to fracture due to vehicular trauma/accidents, fight with other animals, activity related injury, metabolic bone disease, and neoplastic bone pathology.



Limb Anatomy:
Forelimb paw: phalanges, metacarpal bones, carpal bones.
Mid forelimb: radius ulna.
Upper forelimb: humerus and scapula.
Hindlimb paw: phalanges, metatarsal bones, tarsal bones.
Mid hindlimb: tibia and fibula.
Upper hindlimb: femur.
Pelvis: ilium, acetabulum, ischium.

Types of fractures:

- Incomplete: the bone is partly broken. This is most commonly seen in young animals.
- Complete: the bone is broken through its full circumference and two or more bone fragments are created.

	A fracture that results in an open wound in the skin is called an open fracture. Open fractures can be created when the broken bone penetrates the skin or when an object goes through the skin and breaks the bone. A closed fracture is when there is no open wound near the fracture. Complete fractures can be further described: • Transverse: the break is straight across the bone at a right angle to the length of the bone. • Oblique: the break is at a diagonal across the bone, creating two bone fragments with sharp points. • Comminuted: the break is in three or more pieces of varying shapes. Signs and Symptoms: Severe lameness is most commonly seen. Most pets with fractured limbs will hold up the affected limb. Pain, swelling, and abnormal movement/instability of the affected site may be observed. Some pets are able to bear some weight on the limb, depending on the location and nature of the break. Pets that have sustained major trauma, such as being struck by a motor vehicle or falling from a height, may have more than one broken limb, and may be unwilling or unable to walk. When trauma is involved, it is very important to note that other systemic signs may be possible. Abdominal trauma can result in internal hemorrhage (bleeding) and rupture of internal organs. Thoracic trauma can result in pulmonary contusions (bruising and hemorrhage within the lungs), hemorrhage around the lungs, and air around the lungs caused by a tear in the lung. These can be very critical injuries and may delay the definitive treatment of the fracture. Diagnosis: The veterinarian will assess the pet thoroughly, to evaluate for any other injuries to vital organs. The veterinarian will perform radiographs (X-rays) of the affected region. Often times pets need a pain medication or sedative for radiographs to be obtained. Other tests that may be recommended initially include complete blood work, abdominal and thoracic (chest) radiographs, and possibly abdominal ultrasound. Treatment: When a fracture first occurs, if possible immediate immobilization with a bandage or splint will be performed to reduce pain and further damage to the muscles, nerves, and blood vessels surrounding the bone. The veterinarian will make recommendations for fracture healing based on the type of fracture and other factors that are specific to the age and health of the pet. Treatment options may include:

- External coaptation: a splint or cast may be placed on the affected limb.
- External fixation: a surgically applied device that is attached to the bone with pins that pass through the skin.
- Internal fixation: surgically applied implants that are placed inside the bone or on the surface of the bone.

Closed comminuted right radius/ulna fracture repaired with internal fixation with plates and screws.

Postoperative care: Specific post-surgical care instructions will be provided by the veterinarian. They will include exercise restrictions, medications, how to assist the pet to walk, follow-up for radiographs to monitor bone healing, and if a bandage/splint was placed it will include bandage care directions and follow-up recommendations for bandage/splint changes. It is important to know that if a bandage gets wet, any bad odor is noticed coming from the bandage, or the pet is chewing at the bandage it will need to be evaluated within 4-6 hours, as serious skin problems may develop. It is advised that modifications the bandage are not made at home. Adding tape or other wrappings can seriously compromise the safety of the bandage/splint. If there is a concern about the security or integrity of the bandage, then return to the veterinarian as soon as possible for re-evaluation/replacement. Confinement of the pet after fracture stabilization is essential for the healing process. This often includes cage rest, preventing access to slippery floors or stairs, keeping the pet on a leash, and no playing, running, jumping, or climbing/jumping on/off furniture. Providing traction surfaces such as carpet or rug in the house

	so the pet avoids slipping. A way to confined cats is to have a large dog crate where food and liter can be placed. Prognosis: In general, the prognosis for healing of non-pathologic fractures is good and most pets regain normal or good use of the affected limb.

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