Cells to Systems

LECTURE 6

THE SKELETON

LECTURER

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INTENDED LEARNING OUTCOMES

At the end of this lecture, you should be able to:

- Describe the position, relationships, form, and appearance of the major bones of the quadruped skeleton, information used to understand the skeleton scaffold within the body, radiography, and as landmarks during clinical procedures.
- Identify the major bones in novel animals, as not all animals treated by veterinarians will be domestic species.

KEY WORDS

- Axial skeleton: skull, mandible, hyoid, vertebral column (cervical, thoracic, lumbar, sacral, caudal vertebrae), thoracic skeleton (thoracic vertebrae, ribs, sternum).
- Appendicular skeleton: bones of the forelimb and hindlimb.
- Bones of the forelimb: pectoral girdle (scapula, clavicle, coracoid), humerus, radius and ulna, carpal bones, metacarpal bones, digits (phalanges).
- Bones of the hindlimb: pelvic girdle (ilium, ischium, pubis, acetabulum), femur, tibia and fibula, tarsal bones, metatarsal bones, digits (phalanges).
- Features on bones: process, tuberosity, epicondyle; fossa, foramen, fissure, canal, duct, condyle, articular facet.
- Specialised bones: sesamoids, splanchnic bones, pneumatic bones.

LECTURE OVERVIEW

The skeleton serves to support the body and provide its basic shape, as well as anchor the leverage system used for locomotion and provide protection to delicate structures.

Skeletal bones may be palpated or vizualised from the surface of the animal or identified on a radiograph. Thus, they offer consistent and accessible landmarks for the description of many other structures and for the location of internal organs or clinically relevant structures. The basic quadruped skeleton has been adapted in numerous ways to allow for flight, fast running, swimming, digging, and many other ways of life. This lecture introduces the bones that may be present and how to identify which bones are present in any animal skeleton.

FURTHER READING

Studdart, Gay & Hinchcliff. *Saunders Comprehensive Veterinary Dictionary*. Available as a downloadable e-book through the University library here.

Singh. *Dyce, Sack & Wensing's Textbook of Veterinary Anatomy* (any edition). Link to its' University library page here.

König & Liebich. *Veterinary Anatomy of Domestic Mammals* (any edition). Link to its' University library page here.

Hermanson, de Lahunta & Evans. *Miller and Evans' Anatomy of the Dog* (any edition). Available as an e-book through the University library here.

Hildebrand. Analysis of Vertebrate Structure (any edition). Link to its' University library page here.

vet-Anatomy, the interactive atlas of veterinary anatomy by IMAIOS. Available through the University library here.

Coulson & Lewis. An Atlas of Interpretative Radiographic Anatomy of the Dog & Cat. Available as a downloadable e-book through the University library here.