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— STUDY NOTES

Veterinary Anatomy Notes: Free Illustrated Study Guide for Vet Students (PDF)

Veterinary anatomy is divided twice over. **Depth** asks how close you are looking — gross, microscopic (histology) or developmental (embryology inside it). **Map** asks how it is arranged — systematically by organ system, or regionally by part of the body. The branches are the headings of the systematic map, and the nomenclature's names for them are not always the words on a syllabus.

INSIDE THESE NOTES

LEVEL
Vets & veterinary students

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STUDY NOTES · BASIC SCIENCES · ANATOMY · UPDATED 2026-09-04

CONTENTS

LEARNING OBJECTIVES

After working through these notes you will be able to:

- ✓ **Distinguish** the three depths of anatomy from the two ways it is organised, and explain why the two questions are independent.
- ✓ **Name** the eight NAV headings of systematic anatomy in order, and state what each owns.
- ✓ **Place** any given structure or topic at a depth, on a map, and under a heading.
- ✓ **Contrast** systematic with regional anatomy, and identify which one a given resource is written on.
- ✓ **Recall** the species veterinary anatomy covers, and the point at which mammalian generalisations stop.

TL;DR

Veterinary anatomy is divided twice over. Depth asks how close you are looking — gross, microscopic (histology) or developmental (embryology inside it). Map asks how it is arranged — systematically by organ system, or regionally by part of the body. The branches are the headings of the systematic map, and the nomenclature's names for them are not always the words on a syllabus.

AT A GLANCE

THREE DEPTHS	Gross · microscopic (histology) · developmental (embryology inside it)
TWO MAPS	Systematic, by organ system · regional, by part of the body
NAV HEADINGS	Osteologia, Arthrologia, Myologia, Splanchnologia, Angiologia, Systema nervosum, Organa sensuum, Integumentum commune
PRECEDED BY	*Regiones corporis* — the body regions
NOT A NAV HEADING	Biomechanics — taught by many courses, named by none of them
SPECIES	Dog, cat, pig, cattle, sheep, goat, horse; chicken as the usual bird

01 Two questions, not one

- **Depth** — how close are you looking? Gross, microscopic, developmental.
- **Map** — how is the material arranged? Systematically, or regionally.
- **They are independent.** The stifle joint is gross anatomy on *both* maps: systematic files it under joints, regional puts it in the hindlimb.
- **Functional anatomy is not a third axis.** It is the question *what is this for?*, asked at any depth on either map.

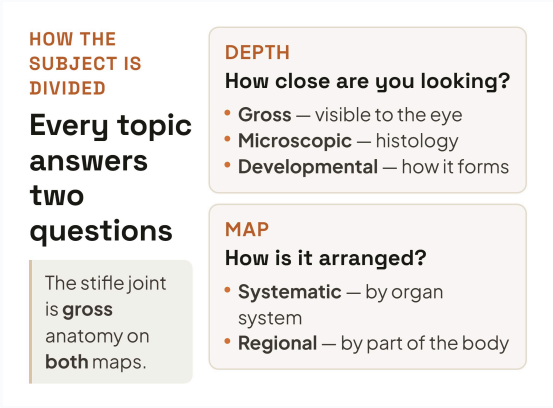

Fig 1 — The two axes every anatomy topic sits on. Diagram — Vet-eBooks.com, drawn for this guide.

02 The three depths

DEPTH	WHAT YOU LOOK AT	WHERE IT STOPS
Gross (macroscopic)	Organs, muscles, bones, vessels, nerves	At the limit of unaided vision
Microscopic (histology)	Tissues, cells and their arrangement	At the limit of the instrument
Developmental	The stages from conception to old age	Nowhere — it runs the whole life span
Embryology	Embryonic and foetal development from fertilisation	At birth — it sits *inside* developmental anatomy

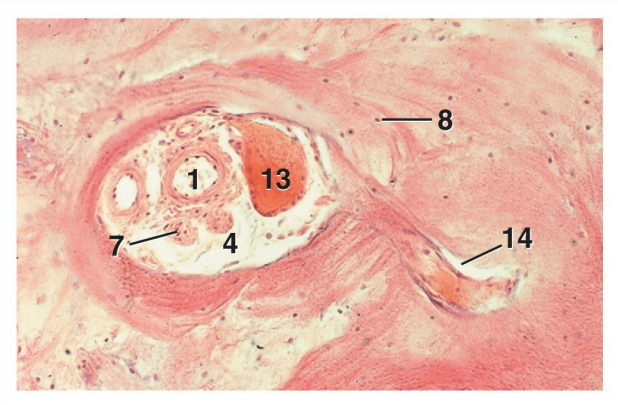

Fig 2 — One depth down: compact bone, dog jaw (×125). [4] Haversian canal with [1] artery, [13] vein and [7] nerve; [14] Volkmann's canal; [8] osteocytes. *Image — Bacha & Bacha, Color Atlas of Veterinary Histology, 3rd ed., Fig. 5.19. Reproduced for educational reference.*

03 The two maps

- **Systematic** — organs grouped because their functions are related, i.e. by body system. Suits comparison between species; easier to learn first.
- **Regional (topographic)** — everything present in one part of the body, whatever system it belongs to. Less attention to function, immediate clinical application, and it must be given **species by species**.
- **Surface, applied, surgical and radiographic anatomy** are regional anatomy pursued with a particular aim — not separate branches.

04 The eight headings

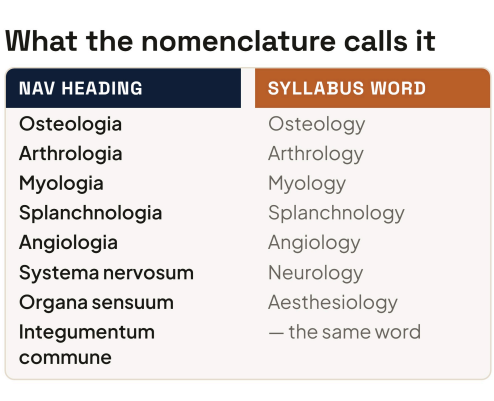

Fig 3 — The nomenclature's heading against the word a syllabus prints. *Diagram — Vet-eBooks.com, drawn for this guide.*

HEADING	WHAT IT OWNS	THE CATCH
Osteologia	Bones: structure, classification, development, the skeleton	A bone is an **organ**
Arthrologia	Joints: how two bones meet, and what movement follows	Called **syndesmology** in older texts
Myologia	Muscles: organisation, attachments, actions, innervation	The **active** half of the locomotor system
Splanchnologia	Viscera: digestive, respiratory, urogenital, endocrine	Narrow and wide senses both in use
Angiologia	Heart, arteries, capillaries, veins, lymphatics	Lymphatics belong here although nothing pumps them
Systema nervosum	Central, peripheral and autonomic	Structure, not localisation
Organa sensuum	Eye, ear, smell, vomeronasal organ, taste	Folded into "aesthesiology" by older lists
Integumentum commune	Skin, hair, horn, pads, claw and hoof, glands, mamma	**The hoof is skin**

05 The numbers worth carrying

- **Bone is 60–70% mineral** — which is why it does not change after death the way soft tissue does.
- **Blood volume 6–8% of body weight** in the domestic animals; **about 4% in the cat**, which is why cats are more susceptible to anaemia.

- **One circuit of the body**: about 30 s in a large animal, 15 s in a medium-sized one, **7 s in a cat**.
- **The horse's cannon bone** (third metacarpal) is the only one carrying a digit; the second and fourth are the splint bones.
- **The pig's stomach** carries a diverticulum over the fundus.
- **The ruminant stomach has four chambers** — rumen, reticulum and omasum, which together are the **forestomach**, plus the abomasum, the true glandular stomach. The abomasum is **7%** of the ox's stomach volume but **13%** of a small ruminant's.
- **Sacral vertebrae:** S5 in cattle and goats, **S4 in sheep**.

06 Species, and where the map stops

- Dog, cat, pig, cattle, sheep, goat and horse — with the **chicken** as the usual bird.
- **A bird is not a small mammal with feathers.** Nearly everything on these notes is written about mammals; the avian differences reach the skeleton, the respiratory system and the urogenital tract.

USE IT LIKE THIS

Name the topic, then answer three questions in order: how close am I looking, which map am I on, and which heading owns it. If you cannot answer the third, you have found the gap in your notes.

KEY TERMS — QUICK GLOSSARY

Gross (macroscopic) anatomy	Structure resolvable with the naked eye.
Microscopic anatomy	Structure below the eye's limit; taught as **histology**.
Developmental anatomy	The stages from conception to old age. **Embryology** is the part of it before birth.
Functional anatomy	The relationship between structure and function — a question asked at any depth, on either map.
Systematic anatomy	Organs grouped because their functions are related, i.e. by body system.
Regional (topographic) anatomy	Everything present in one part of the body, whatever system it belongs to.
NAV	*Nomina Anatomica Veterinaria* — the agreed Latin vocabulary, 1968 onward.
Synarthrosis / diarthrosis	A continuous joint with no gap / a synovial joint with a cavity holding synovia.
Viscus (pl. viscera)	An organ, with or without a cavity, surrounded by and if hollow lined by special layers.
Common integument	Skin and everything made from it: hair, horn, pads, claw and hoof, skin glands, mammary gland.

QUICK REVISION — REMEMBER THESE

1. **Depth and map are independent.** Gross anatomy tells you nothing about whether you are on the systematic or the regional map.
2. **Developmental anatomy is broader than embryology.** Embryology stops at birth; developmental anatomy runs to old age.
3. **Systematic follows a system; regional follows a place.** Systematic suits comparison between species; regional is what a clinician meets and must be given species by species.
4. **Surface, applied, surgical and radiographic anatomy are aspects of regional anatomy**, not separate branches.
5. **"Aesthesiology" is a syllabus word.** The nomenclature files that material under *Organa sensuum* and *Integumentum commune*.
6. **A bone is an organ** — bone tissue, periosteum and endosteum, marrow, and its own vessels and nerves.
7. **Synarthrosis = no gap; diarthrosis = a gap** with a cavity and synovial fluid in it.
8. **The cat is the blood-volume exception** — about 4% of body weight against 6–8%.
9. **The hoof is skin.** Horn, claw, pads and the mammary gland all sit under the common integument.

MEMORY AIDS

Old Anatomists Map Soft And Nervy Structures Inside — the eight NAV headings in order — **O**steologia, **A**rthrologia, **M**yologia, **S**planchnologia, **A**ngiologia, **N**ervosum (systema), **S**ensuum (organa), **I**ntegumentum commune.

Get Much Deeper — the three depths in order of magnification — **G**ross, **M**icroscopic, **D**evelopmental.

System travels, region stays — a systematic chapter follows one system all over the animal; a regional chapter stays in one place and takes whatever it finds there.

TEST YOURSELF — ACTIVE RECALL

Cover the answers and try to retrieve each one from memory first — self-testing beats re-reading.

1. Give the three depths of anatomy, and say which one embryology sits inside.
2. A chapter is headed "the thoracic limb". Which map is the book on?
3. List the eight NAV headings in order.
4. Why does searching a modern textbook for "aesthesiology" return nothing?
5. What makes a bone an organ?
6. Name the two joint classes and the single feature that separates them.
7. Which four systems does the nomenclature list under *Splanchnologia*?
8. A cat and a same-sized dog lose the same volume of blood. Why is the cat worse off?

ANSWERS

1. Gross (macroscopic), microscopic (histology) and developmental. Embryology sits inside developmental anatomy and stops at birth.
2. Regional (topographic) — it is organised by a part of the body, and will contain bones, muscles, vessels and nerves together.
3. *Osteologia, Arthrologia, Myologia, Splanchnologia, Angiologia, Systema nervosum, Organa sensuum, Integumentum commune* — preceded by *Regiones corporis*.
4. It is a teaching term, not a nomenclature one. The material is filed under two headings: *Organa sensuum* and *Integumentum commune*.
5. Bone tissue sheathed by endosteum and periosteum, marrow inside it, and its own blood vessels and nerves.
6. Synarthrosis and diarthrosis. The feature is the gap: a synarthrosis is a continuous union, a diarthrosis has a joint cavity holding synovial fluid.
7. Digestive, respiratory, urogenital and endocrine.
8. Blood volume is about 4% of body weight in the cat against 6–8% in the other domestic animals, so the loss is a larger fraction of the total.

WHEN TO REFER OR ESCALATE

- You cannot say which branch a topic belongs to — go back to the eight headings and the "what it owns" column before revising the topic itself.
- A textbook seems to skip material you need — check which map it is on before assuming the material is missing.
- A term returns nothing in the index — try the nomenclature's word for it, not the syllabus's.
- You are learning slide recognition from a human histology atlas — know that the veterinary differences are exactly what that book does not cover.

SOURCES

1. Singh B (ed.). *Dyce, Sack and Wensing's Textbook of Veterinary Anatomy*, 5th ed. Elsevier — ch. 1, pp. 26–27.
2. König HE, Liebich H-G. *Veterinary Anatomy of Domestic Animals: Textbook and Colour Atlas*, 7th ed. Thieme, 2020 — §1.3–1.5, pp. 25–52; pp. 186, 355.
3. Singh B (ed.). *Dyce, Sack and Wensing's Textbook of Veterinary Anatomy*, 5th ed. — pp. 1149 and 1181, the ruminant vertebral formulae and stomach proportions.
4. Constantinescu GM. *Illustrated Veterinary Anatomical Nomenclature*, 4th ed., 2018 — the NAV headings.
5. Getty R (ed.). *Sisson and Grossman's The Anatomy of the Domestic Animals*, Vol. I, 5th ed., 1975 — ch. 3 and 6.
6. Bacha WJ, Bacha LM. *Color Atlas of Veterinary Histology*, 3rd ed. Wiley-Blackwell, 2012 — p. ix and Fig. 5.19.
7. McGeady TA et al. *Veterinary Embryology*, 2nd ed. Wiley, 2017 — ch. 1.

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