Course material for 23.03.2020

# VERTEBRAE OF RABBIT

**Course: B.Sc.(H) Zoology IV semester**

**Paper: Comparative Anatomy**

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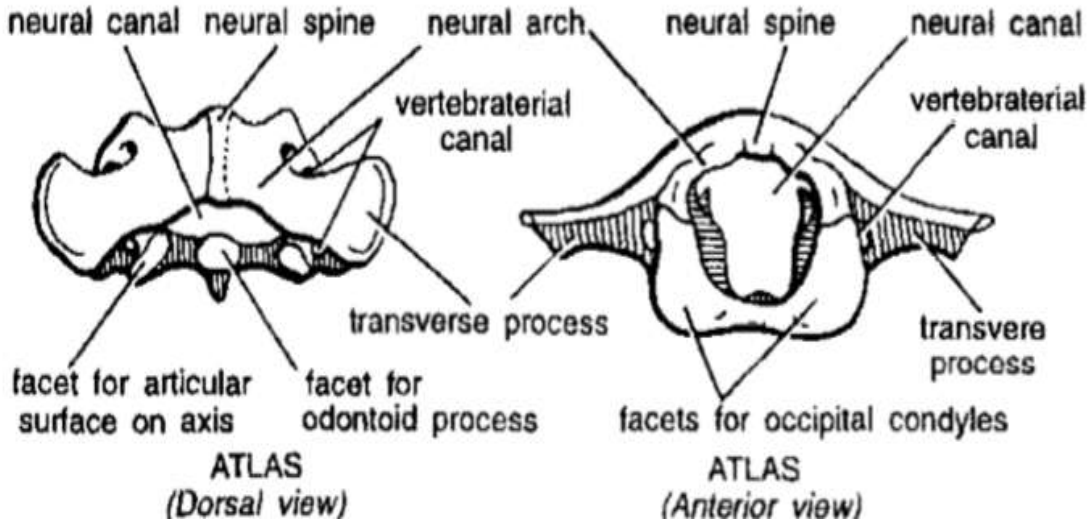
# RABBIT

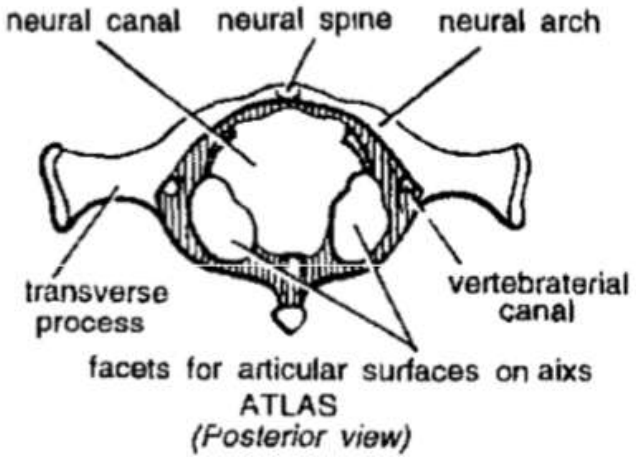
- **Vertebral column of a mammal differs from that of other vertebrates in several respects**
- **A bony plate, called epiphysis, is present at each end of centrum of vertebra, so that articular surfaces of centra are more or less flat (acoelous or amphiplatyan).**
- **Cartilaginous intervertebral discs are present between centra of adjacent vertebrae.**
- **Vertebral column of rabbit includes about 46 vertebrae and is differentiated into five regions : cervical, thoracic, lumbar, sacral and caudal. Vertebral formula of rabbit is C7,T12-13,L6-7, S4, Cd16 where C = Cervical, T = thoracic, L = lumber, S = sacral and Cd = caudal**

Rabbit

# ATLAS: 1st cervical vertebra

- Signet-ring like
- Centrum, prezygapophyses, postzygapophyses absent
- Neural spine rudimentary
- Transverse processes: horizontal wing-like processes
- Anteriorly, it bears a pair ofwo large, shallow concave facets for occipital condyles of skull
- Posteriorly, it bears two stout lateral facets and a small mid-ventral facet for odontoid process of axis

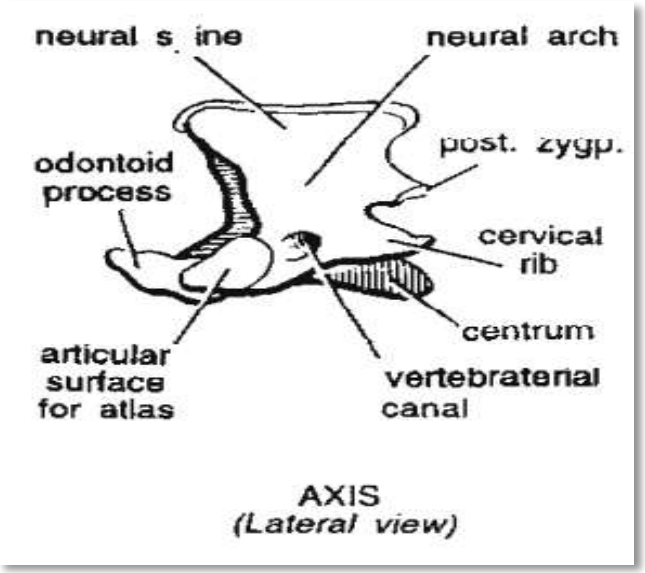


Rabbit

# Axis/ Epistropheus: 2nd cervical vertebra

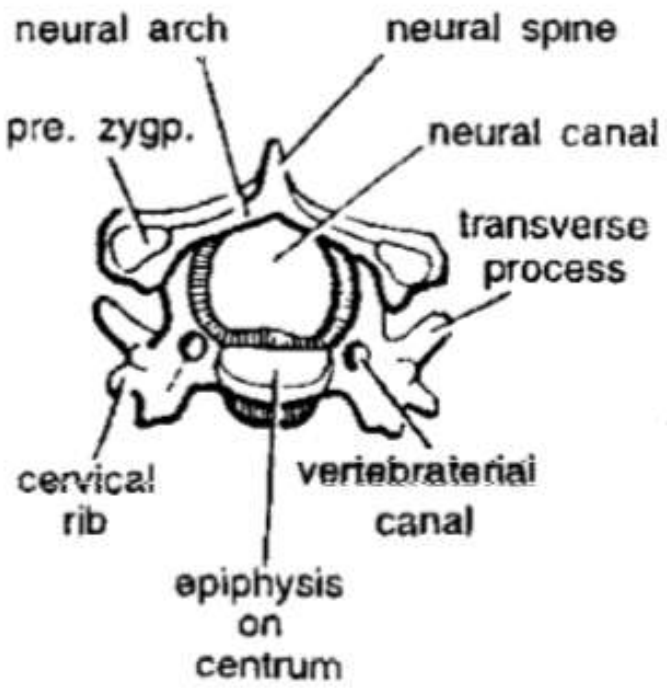
- **Neural spine: high, ridge-like, laterally flattened and elongated antero-posteriorly.**
- **Transverse processes: small, posteriorly directed and basally perforated by vertebarterial canals.**
- **Prezygapophyses** absent
- **Postzygapophyses** present
- **Anteriorly, centrum bears a long, pointed, peg-like odontoid process**



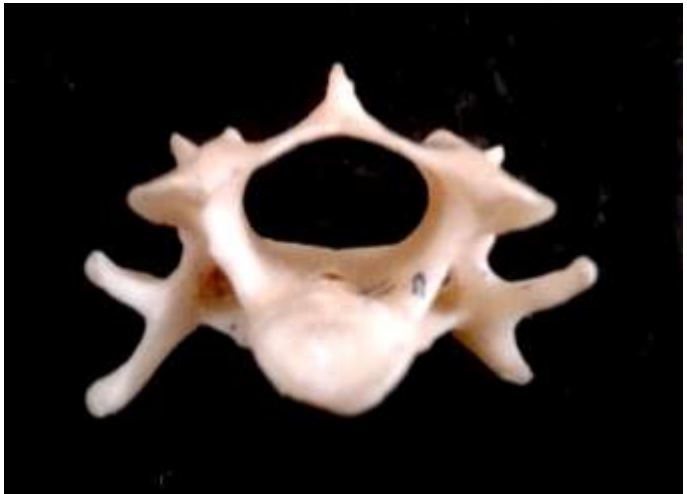

Rabbit

# Typical cervical ($3^{rd}$ – $7^{th}$)

- Neural arch large
- Neural spine small
- Centrum: short, flattened
- Pre- and postzygapophyses: present
- Transverse process: bifurcated, pierced by a vertebraterial canal, formed by the fusion of a cervical rib with the vertebra.
- *The 7th cervical vertebra differs slightly from others in having more elongated neural spine, in presence of a small concave facet at the posterior edge of centrum for the articulation of thoracic ribs and in absence of foramen transversia (= vertebraterial canal)*



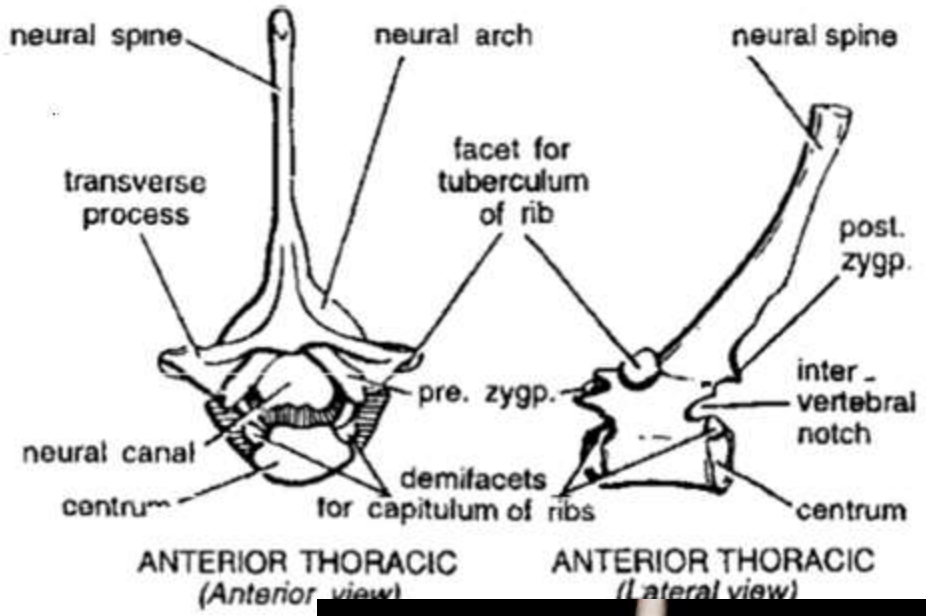
TYPICAL CERVICAL
*(Anterior view)*



Rabbit

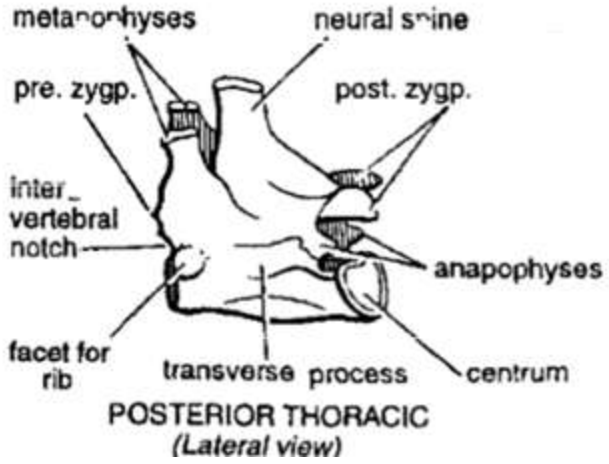
# Anterior thoracic (first 6-7)

- **Neural spine:** high,  backwardly directed
- **Pre-zygapophyses:** outwards and upwards
- **Postzygapophyses :** inwards and downwards
- **Transverse processes:** short, stout and horizontal, each bears ventrally a facet for the tuberculum of a rib
- **Centrum:** short and thick, bears a facet for the capitulum of a rib




# Posterior Thoracic (last 4-5)

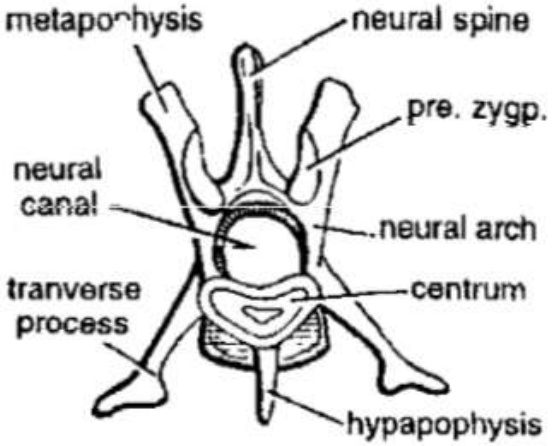
- **Centrum:** longer and stouter
- **Neural spine:** short
- **Zygapophyses:** more prominent
- **Transverse processes:** reduced without tubercular facets but with a complete capitular facet




Rabbit

# Anterior Lumbar (first 2)

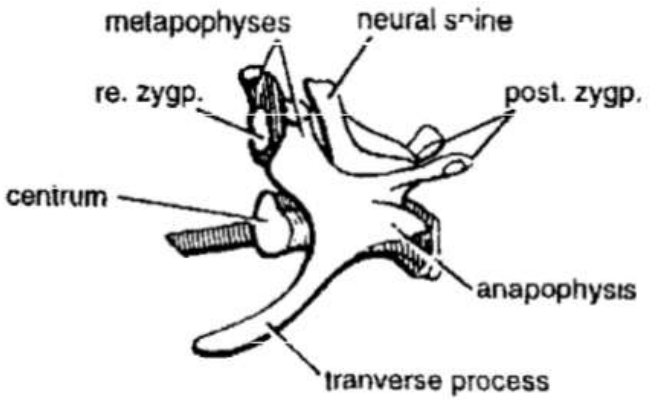
- **Centrum**, **Hypapophysis**, **Neural spine** well developed
- **Transverse** processes: large, expanded distally and directed downwards and forwards
- Anterior end of neural arch gives off on either side a large forward sloping process, the **metapophysis**, bearing a pre-zygapophysis on its medial aspect.
- Similarly, a pair of small backwardly directed processes, the **anapophyses**, arise form the posterior end of neural arch, below post-zygapophyses.




ANTERIOR LUMBAR
*(Anterior view)*

# Posterior Lumbar (3rd – 7th)

It resembles anterior lumbar in all the essential parts, but hypapophysis below centrum is absent, being replaced by a short ridge

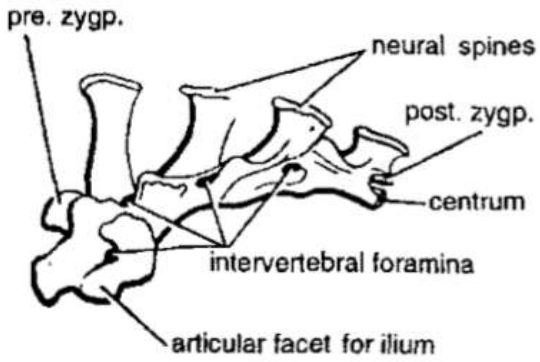


POSTERIOR LUMBAR
*(Lateral view)*

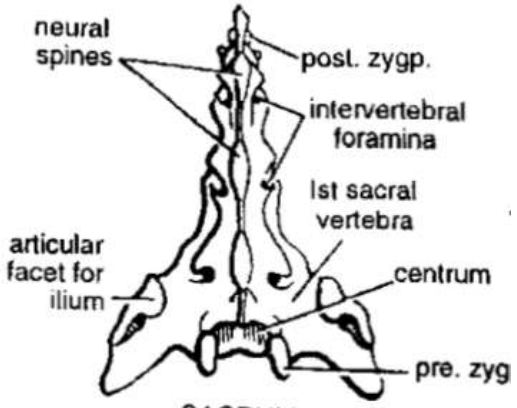
**Rabbit**

# Sacrum (3 to 4 sacral vertebrae)

- **a single compound bone**
- **supports the pelvis**
- **formed by the fusion of 3 or 4 sacral vertebrae**
- **Neural spine, zygapophyses & intervertebral foramina are prominent**
- **1st or true sacral vertebra: largest, bears strong transverse processes, which are attached with ilia bones of pelvic girdle.**
  - **Its neural spine is upright, metapophyses are reduced and anapophyses absent.**



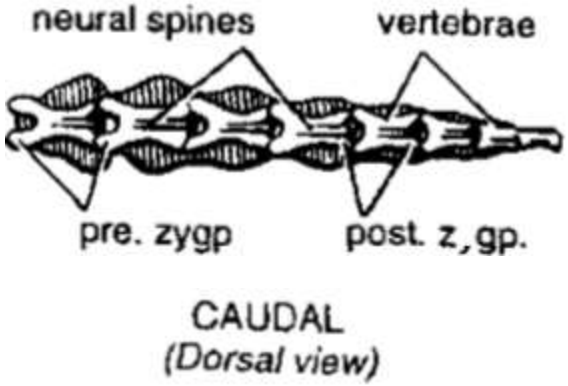

SACRUM
*(Lateral view)*




SACRUM
*(Dorsal view)*

# Caudal (16)

- **Caudal vertebrae progressively decrease in size backward**
- **Their processes also become gradually shorter and finally the terminal vertebrae are merely rod-like centra alone**




CAUDAL
*(Dorsal view)*