

THIRD WEEK OF DEVELOPMENT

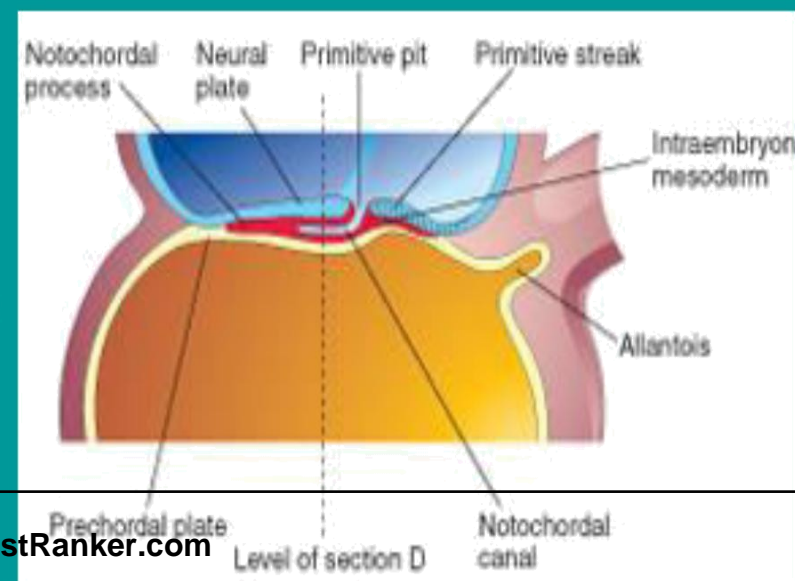
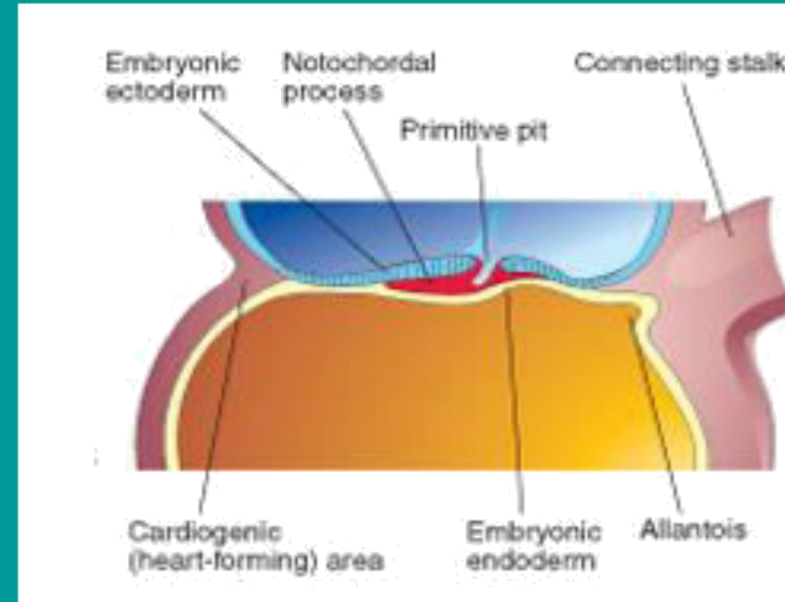
FORMATION OF NOTOCHORD

● Prenotochordal cells

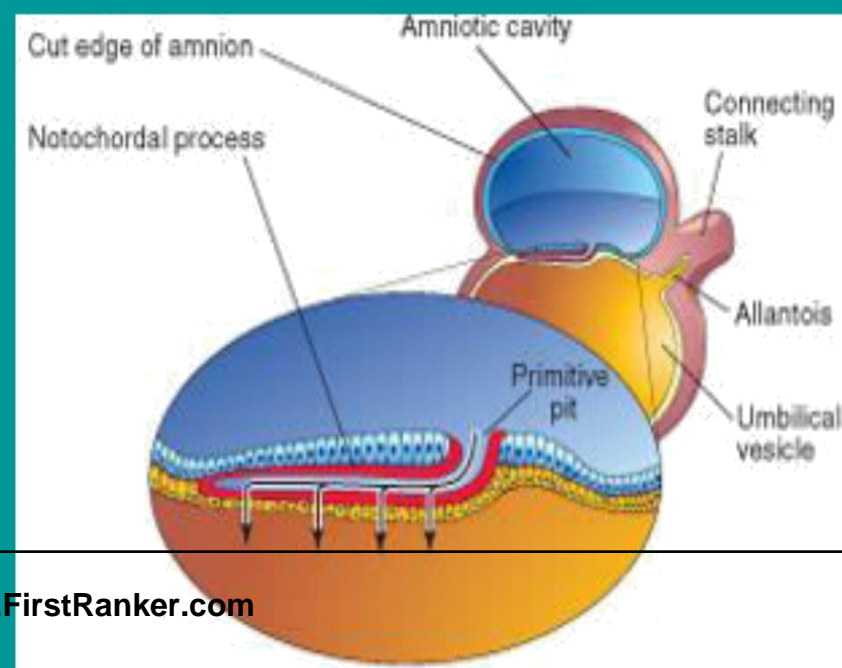
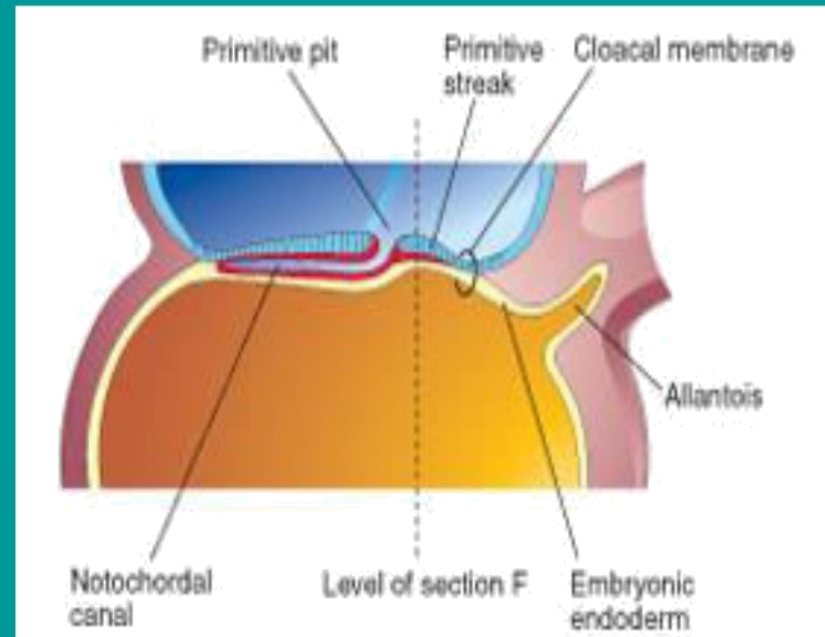
invaginating in the primitive pit, move forward cranially until they reach the prechordal plate forming a median cellular cord, the **notochordal process**.

● Formation of **notochordal canal**

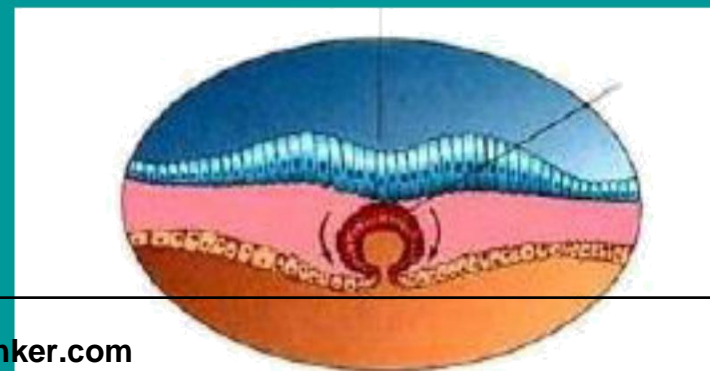
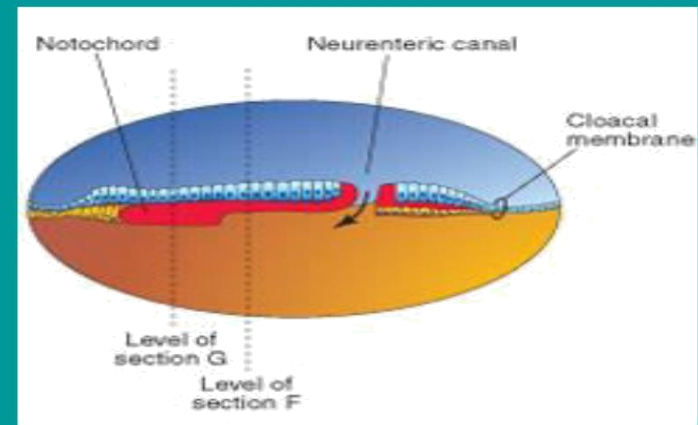
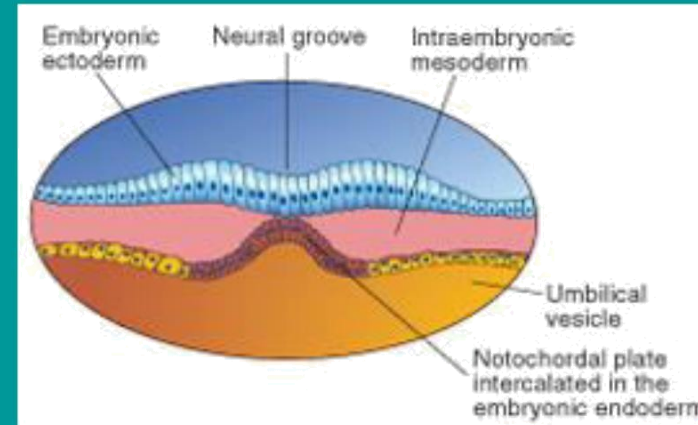
● Notochordal process extends from prechordal plate to primitive node



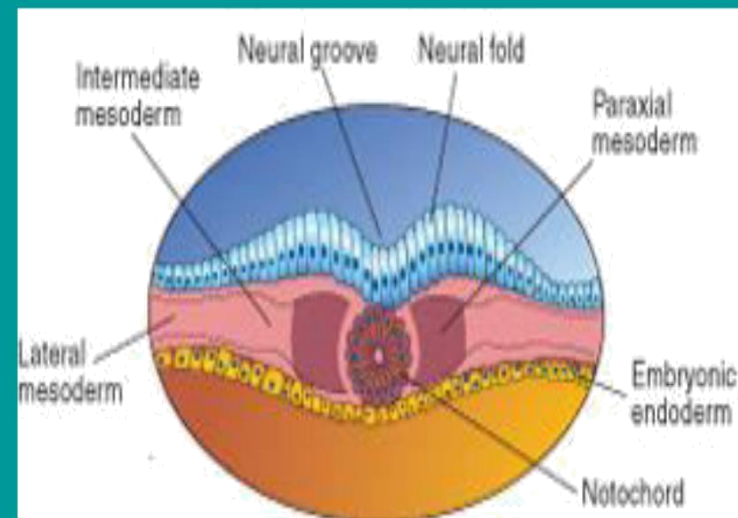
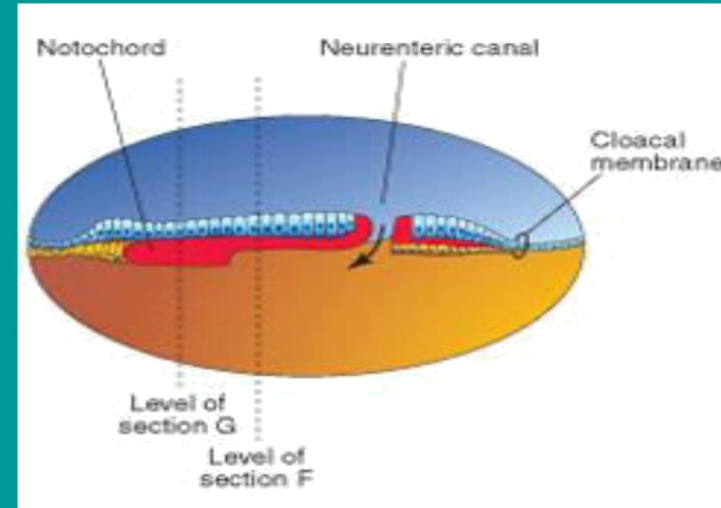
- The floor of the notochordal process **fuses** with the underlying embryonic endoderm.
- The fused layers gradually undergo **degeneration**, resulting in the formation of **openings** in the floor of the notochordal process, which brings the notochordal canal into communication with the yolk sac.



- The openings rapidly become confluent and the **floor of the notochordal canal disappears**; the remains of the notochordal process form a flattened, grooved **notochordal plate**
- Beginning at the cranial end of the embryo, the notochordal cells proliferate and the notochordal plate infolds to form the **definitive notochord**.



- The proximal part of the notochordal canal persists temporarily as the **neurenteric canal**, which forms a transitory communication between the amniotic and yolk sac cavities. When development of the notochord is complete, the neurenteric canal normally obliterates. The **notochord becomes detached from the endoderm** of the yolk sac, which again becomes a continuous layer and itself forms the **definitive notochord**.



THE NOTOCHORD

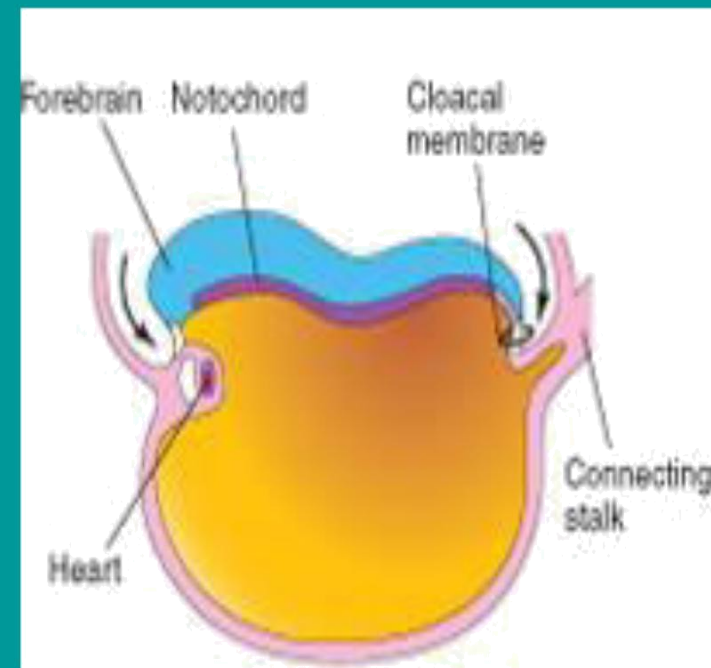
- ❑ The notochord degenerate as the bodies of vertebrae form but small portions of it persist as **Nucleus pulposus**.
- ❑ Provides **signals** that are necessary for the development of **axial musculoskeletal structures** and the **central nervous system**
- ❑ Defines the **primordial longitudinal axis** of the embryo and gives it some rigidity

Remnants of notochord tissue

- Both benign and malignant tumors (chordomas) may form from vestigial remnants of notochordal tissue

ALLANTOIS

- Sausage shaped diverticulum appears on the 16th day and grows into the mesoderm of the connecting stalk.
- In humans allantoic sac remains small.
- It has a respiratory or excretory function in embryos of reptiles, birds and some mammals.



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Thank You