"Formation of Notochord"

- Epiblastic cells -> Form prechordal plate
-> Forms future forebrain
- Prechordal plate is formed between tip of notochord and the oropharyngeal memebrane

» Prenotochordal cells

- Are precursor cells of notochord
- While invaginating, move downward, forward and cranially in the midline until they reach prechordal plate
- Will become intercalated in the hypoblast temporarily
- Form a plate called notochordal plate
- When epiblastic cells displace hypoblast to form endoderm -> Prenotochordal cells will form a cord called definitive notochord
- There is no mesoderm at notochordal region
- This notochord is present beneath the epiblast in between:

1) Cranially -> Pre-chordal plate
2) Caudally -> Primitive pit

》 Functions of Notochord:

1) Neurulation initiation
2) Axial skeleton (Notochord makes nucleus pulposus which is the jelly like material inside the vertebral bodies)

》 Neuroenteric Canal:

- The connection between amniotic cavity and the yolk sac due to the formation of primitive pit
- Fluid exchange occurs here

》 Oropharyngeal memebrane:

- The region where the crescentic masses of the ectoderm and endoderm come into direct
contact with each other constitutes a thin membrane called oropharyngeal (or buccopharyngeal) membrane
- Has no mesoderm

》 Cloacal memebrane

- Has a diverticulum at the posterior wall of the yolk sac called allantoenteric diverticulum or allantois
- Apperas around 16th day of development
- In some lower vertebrates, it is used to store renal products
- In humans, it may contributes to congenital diseases of urinary bladder
- Has no mesoderm

》 Fate Map

1) Cells which ingress from the cranial region of the node -> Form prechordal plate + notochord

2) Cells which migrate from the lateral edges of the node and cranial end of the streak -> Form paraxial mesoderm

3) Cells which migrate from the mid-streak -> Form intermediate mesoderm

4) Cells which migrate from the caudal part of the streak -> Form lateral plate mesoderm