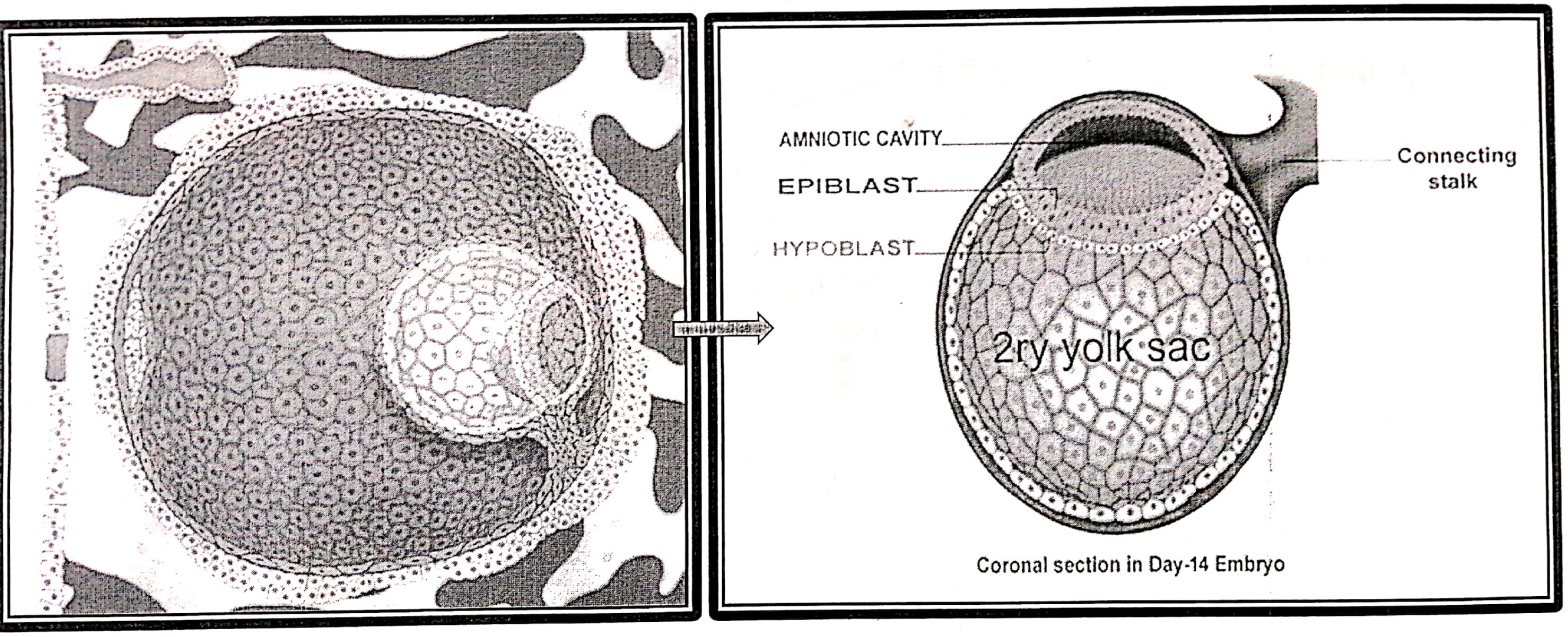
Embryo by the end of the 2nd week



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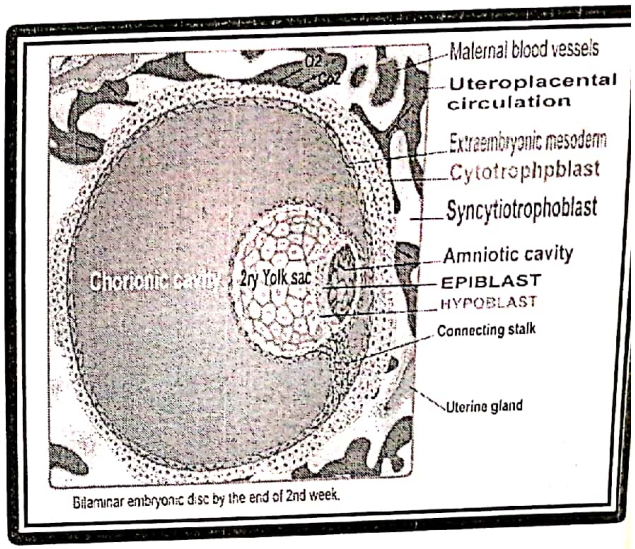
Third week embryo

Third week manifest the following:

- Beginning of embryonic period 3rd - 8th week.
- The week of the first missed menstrual period.
- Rapid development of embryo.
- Gastrulation:
  - A process of converting the Bilaminar embryo into a trilaminar embryo with three definitive germ layers:
    1. Ectoderm
    2. Endoderm
    3. Mesoderm



Bilaminar embryonic disc by the end of 2nd week.

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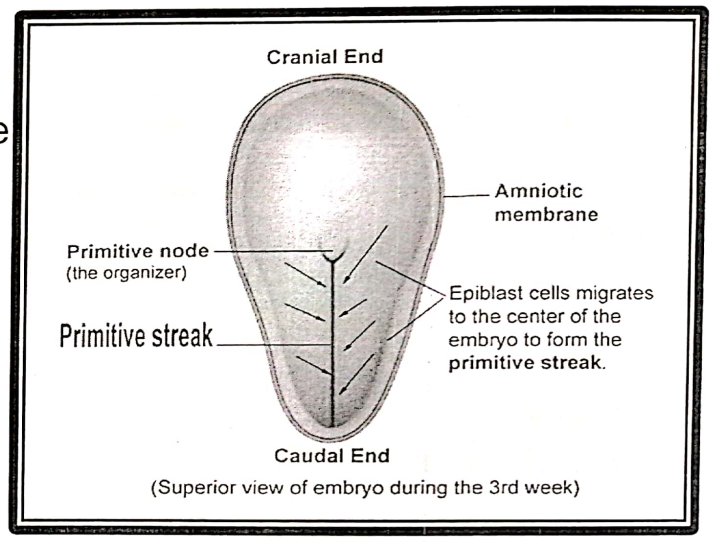
Primitive streak formation

Gastrulation begins with the formation of the **primitive streak** on the surface of the epiblast.

Around Day 15,

Epiblast cells speed up their formation and migrates to the **center** of the embryo to form two hilltops with a groove in between called the **Primitive Streak**.



(Superior view of embryo during the 3rd week)

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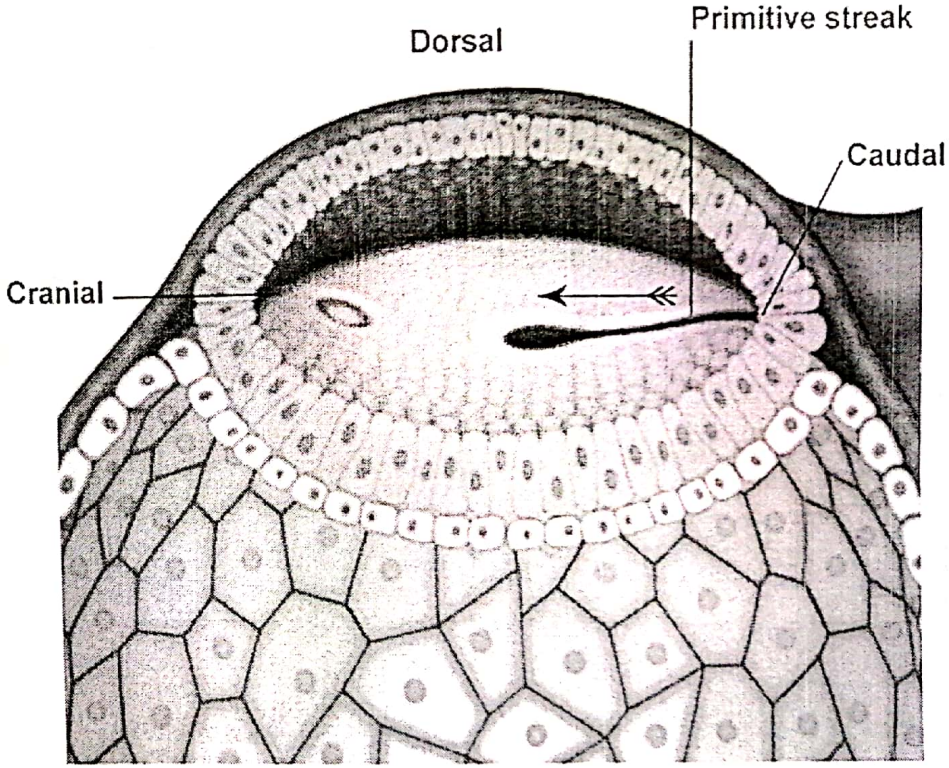
Primitive streak

- **Primitive Streak** appears **caudally** and grow cranially in the median plane of the dorsal aspect of the embryonic disc.
- It define the cranial end and the caudal end of the embryo..



Dorsal aspect of embryo at Day-15

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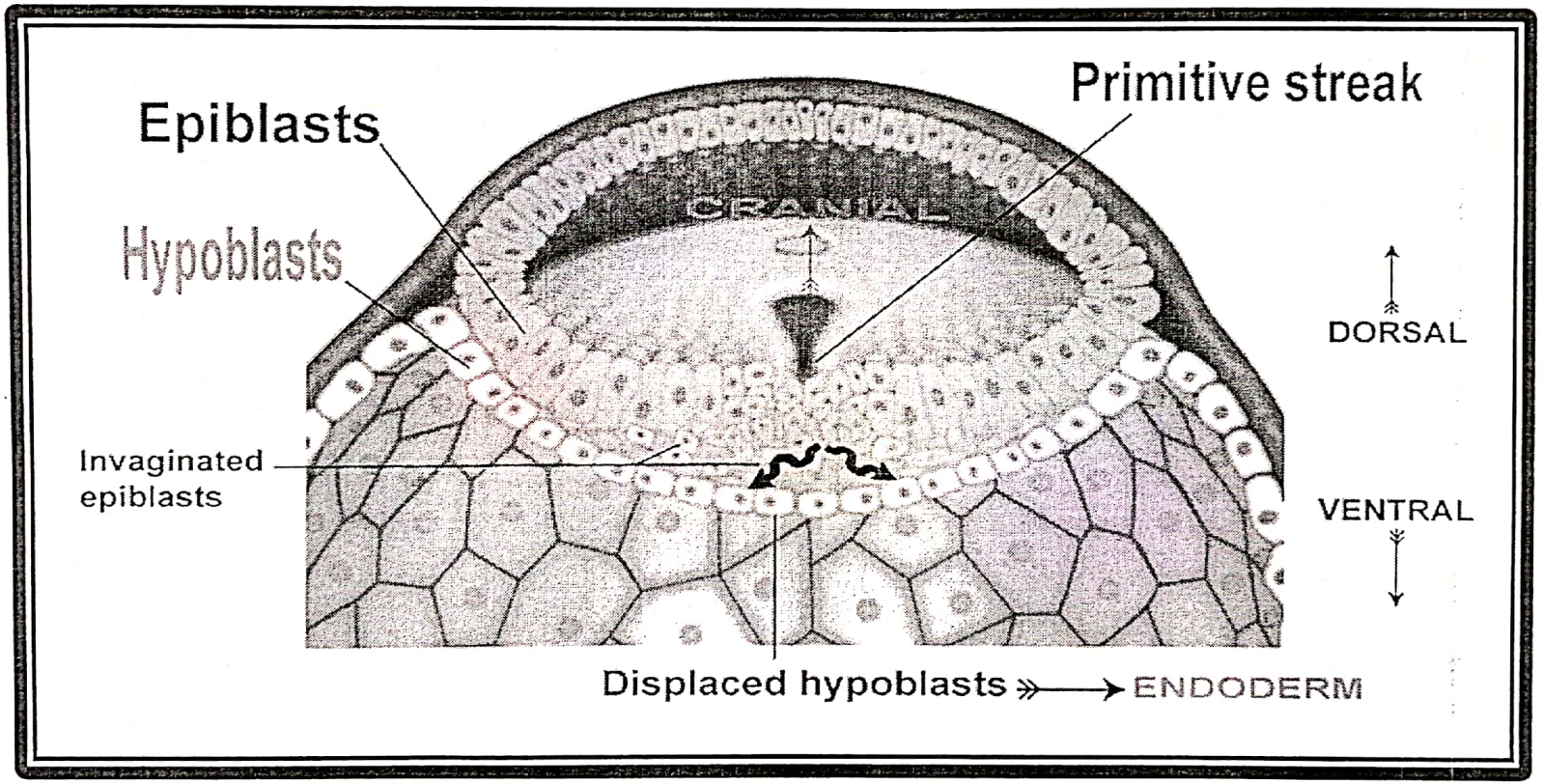
Third week.. continued

1. **S**ome primitive streak epiblast cells invaginated down and displace the hypoblast cells and form the definitive **Endoderm.**

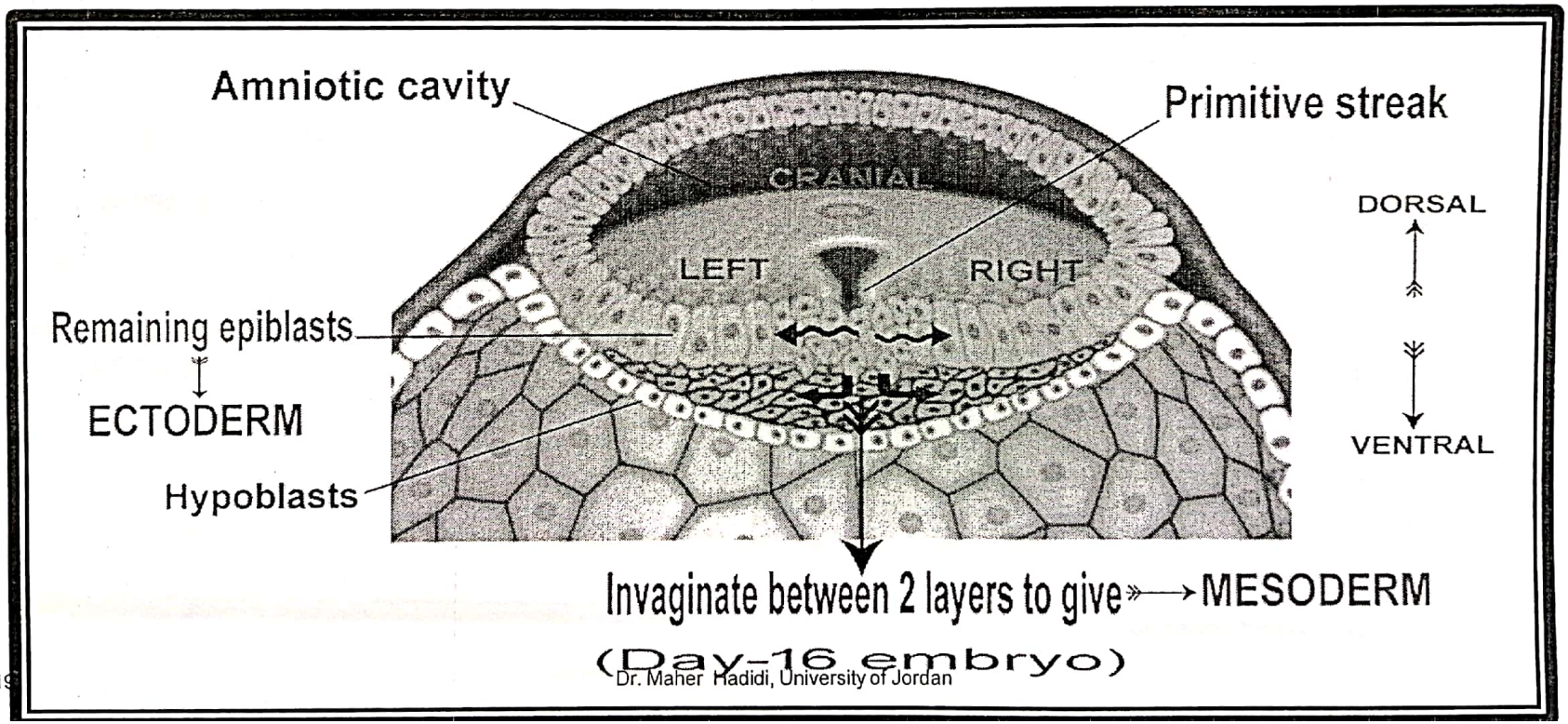


Scanned by CamScanner

2. **A**nother epiblast cells from primitive streak invaginates between epiblast and hypoblast to give the **Mesoderm.**

3. **T**he remaining epiblast cells, form the definitive **Ectoderm.**

➢ **Epiblast of Primitive streak is the source of all germ layers in the embryo.**



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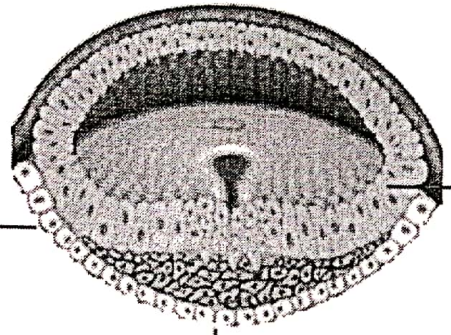
Derivatives of the three germ layers



ENDODERM

1. Epithelium of GIT.
2. Epithelium of Respiratory system
3. Liver
4. Pancreas
5. Thyroid gland
6. Tonsils
7. Parathyroid glands
8. Urinary bladder

MESODERM

1. Bones
2. Muscles
3. Connective tissue
4. Dermis of skin
5. Primitive heart, Blood vessels, Lymphatic vessels, Blood and Lymphatic cells
6. Spleen
7. Serous membranes, pleura, peritoneum.
8. Urinary system, including ducts and acessory glands
9. Genital system, including ducts and acessory glands

ECTODERM

NEUROECTODERM

1. Central nervous system
2. Peripheral nervous sys.
3. Retina
4. Posterior part of pituitary gland.

SURFACE ECTODERM

1. Epidermis
2. Hair
3. Nails
4. Mammary gland
5. Internal ear
6. Lens of eye
7. Anterior part of piuitary gland.

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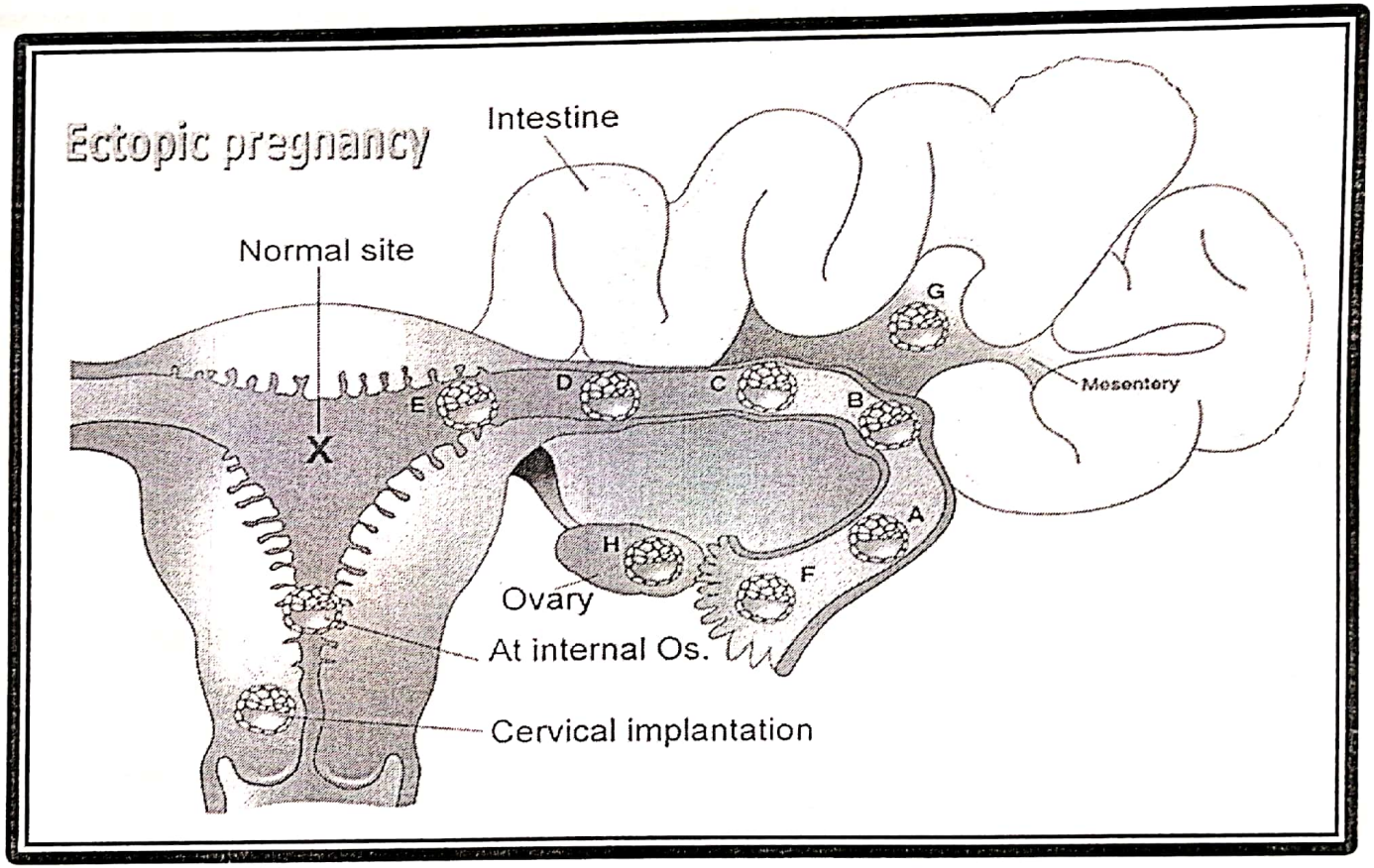

Implantation outside the uterus.

- The approximate order of frequency of ectopic implantations is indicated alphabetically (A, most common, H, least common.
- **Tubal pregnancies** are the most common type of ectopic pregnancy.

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