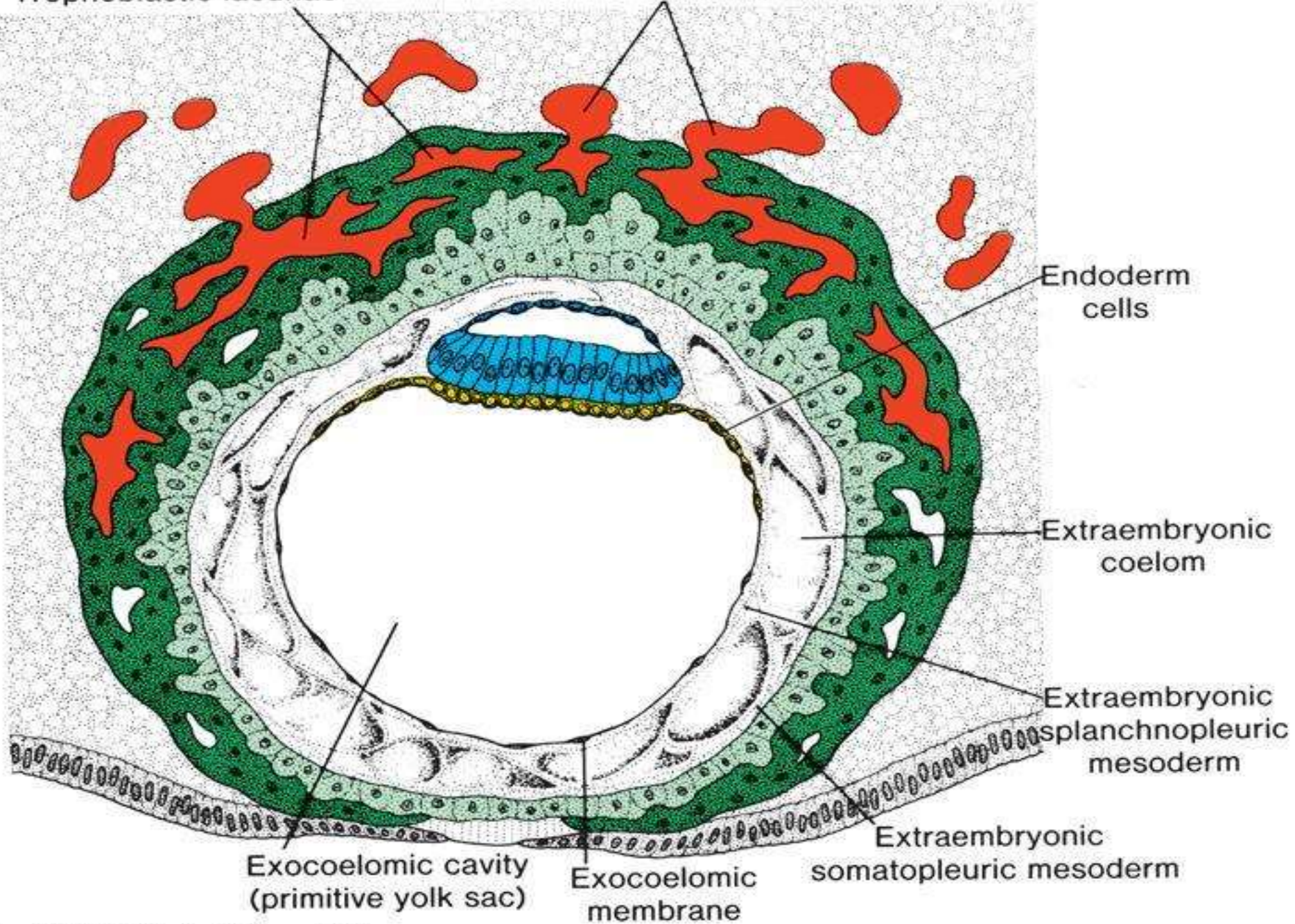


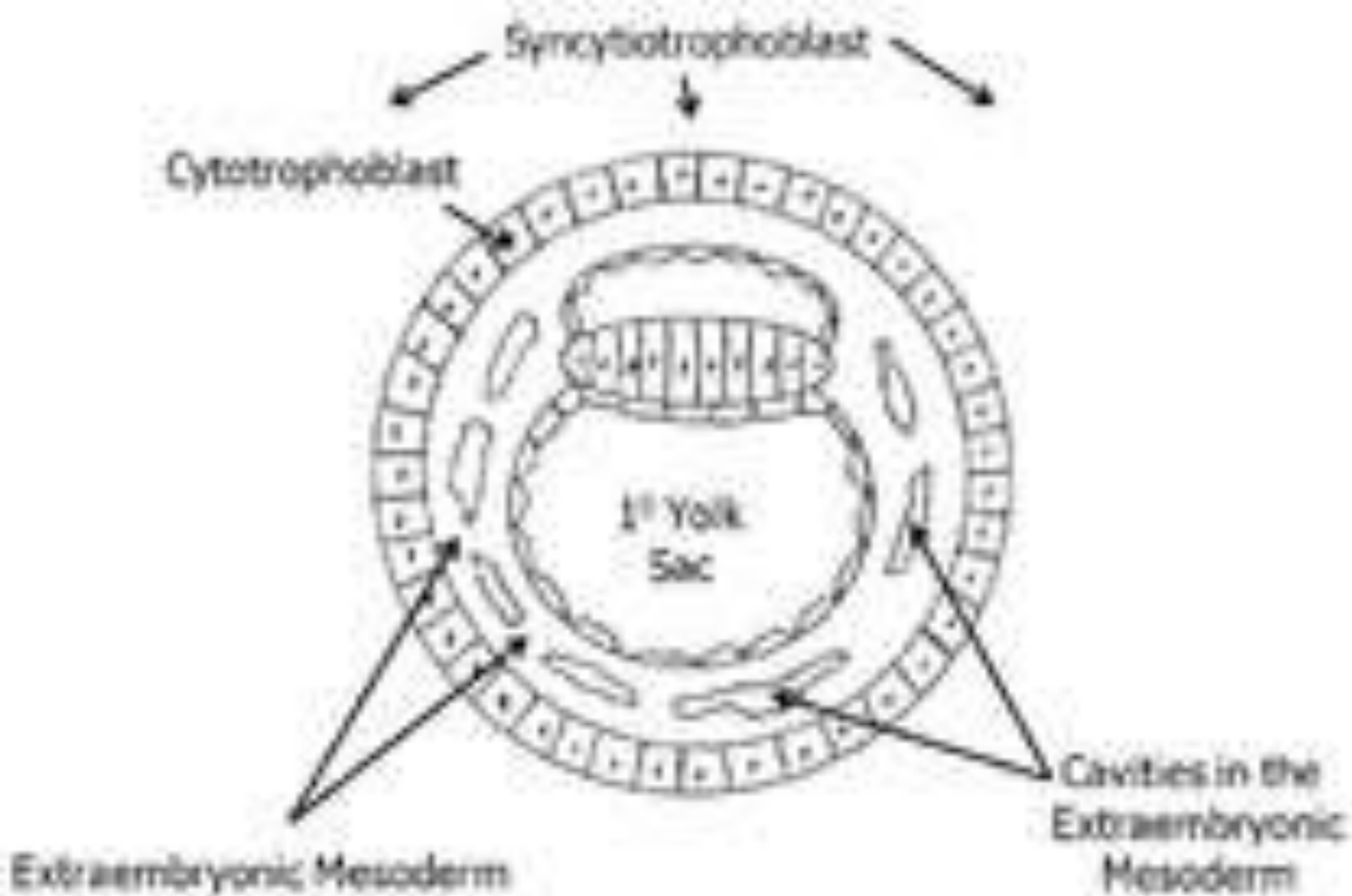
# Formation of germ layers

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Trophoblastic lacunae

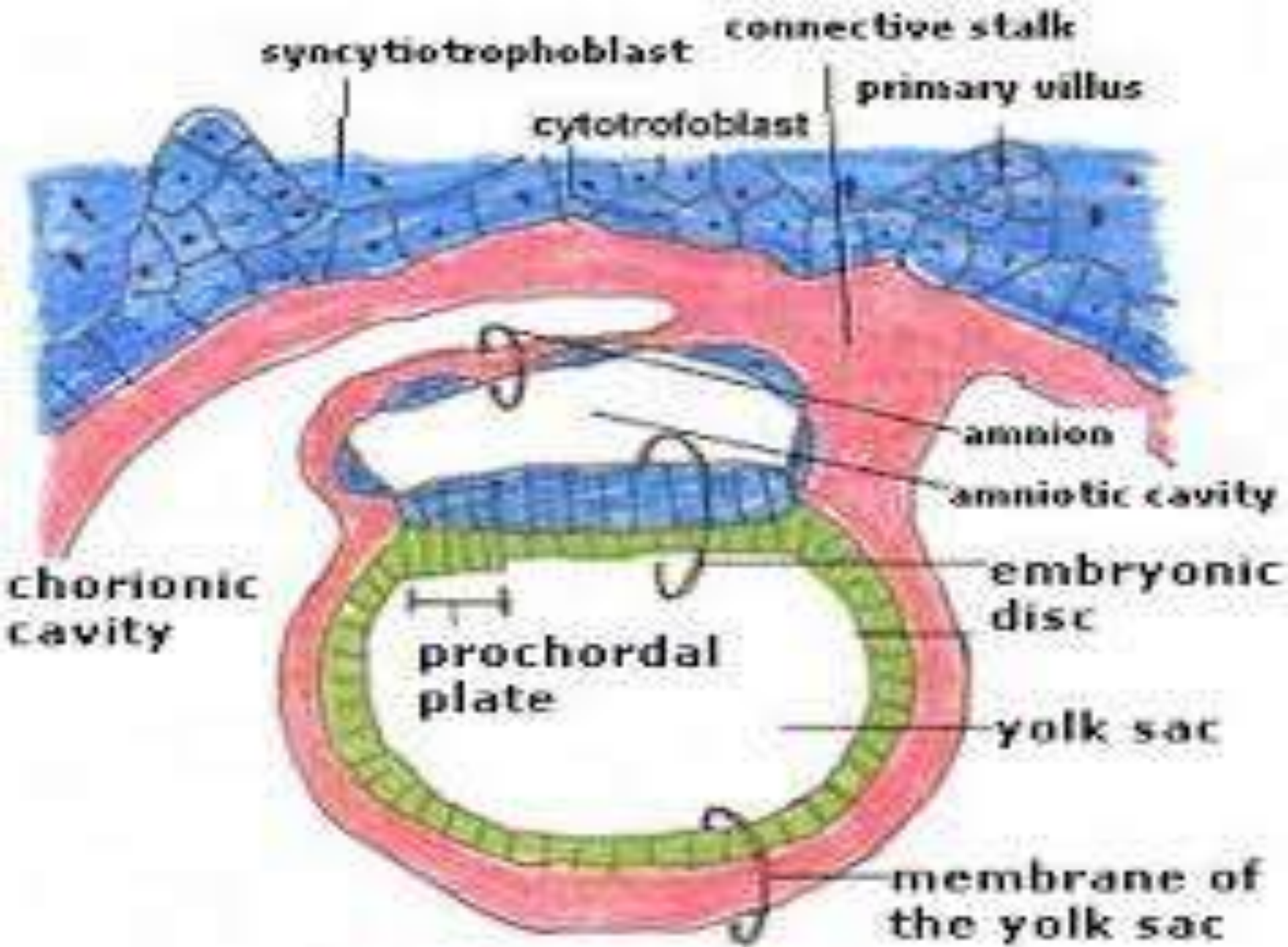
Maternal sinusoids

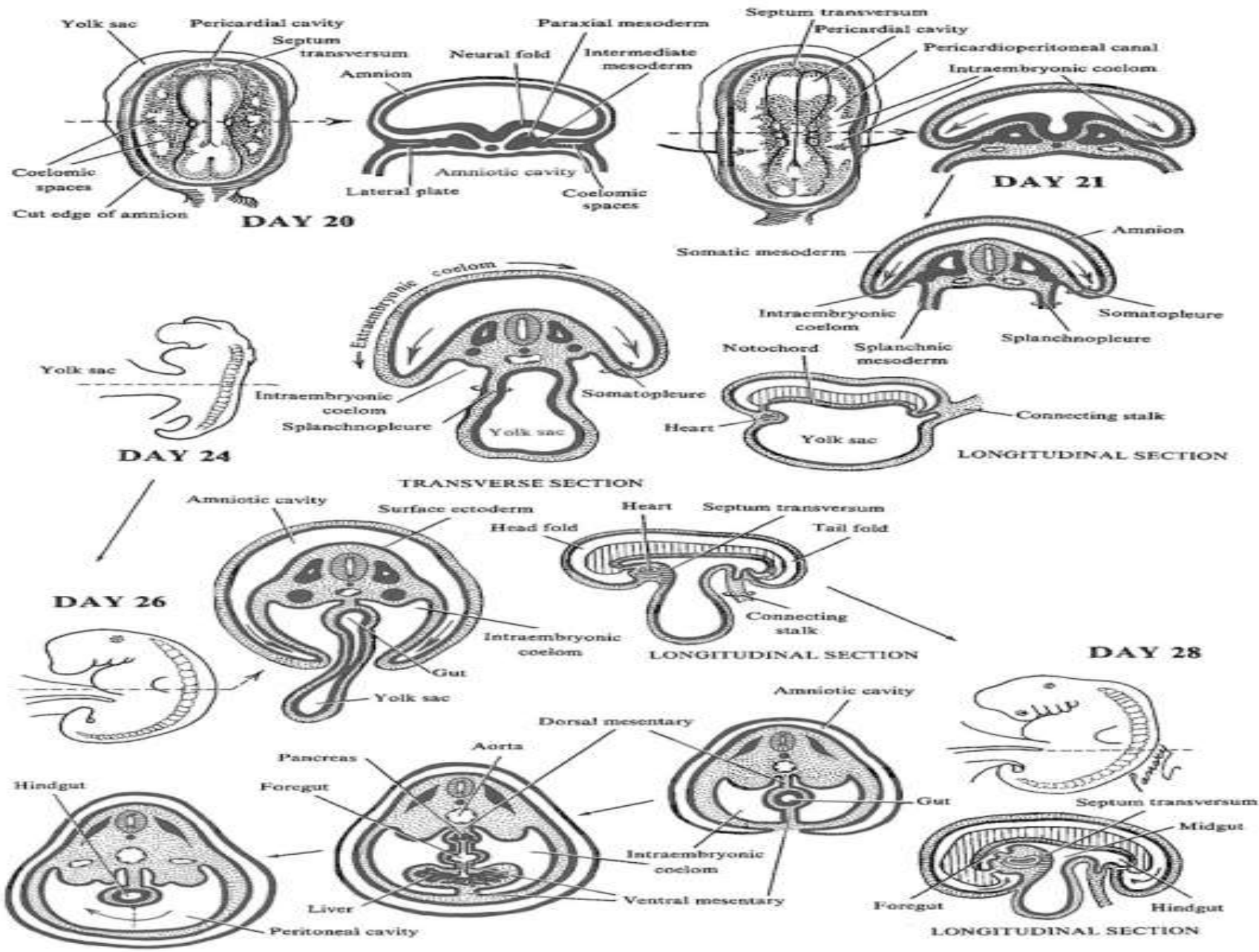




- Extra embryonic mesoderm
- small cavities appear
- cavities join
- parietal / somatopleuric mesoderm
- visceral/ somatopleuric mesoderm
- it is thus seen that extra embryonic coelom does not extend to part of mesoderm which attaches the wall of amniotic cavity & yolk sac, now suspended in coelom, is attached to wall of blastocyst. (**connecting stalk**)

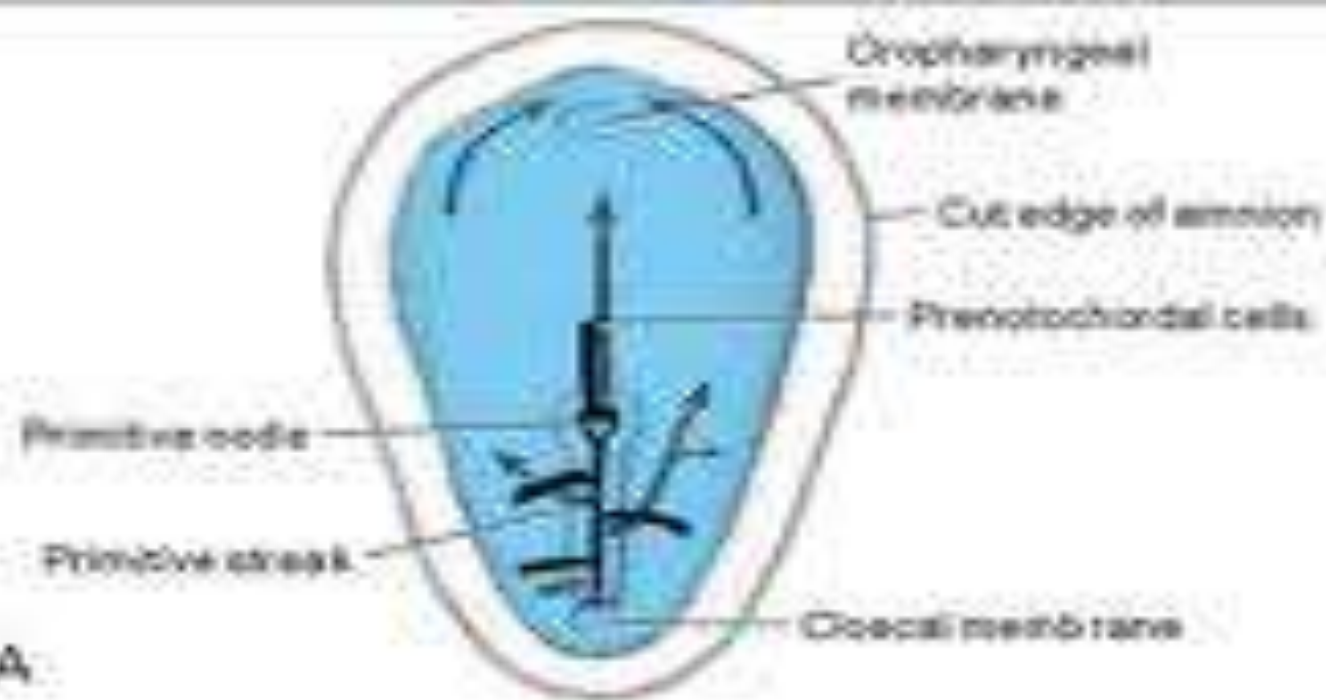
- **formation of chorion & amnion**
- at this stage two very important membranes are formed –
- one is formed from parietal extraembryonic mesoderm– **chorion,**
- other is constituted from amniogenic cells forming wall of amniotic cavity—**amnion.**



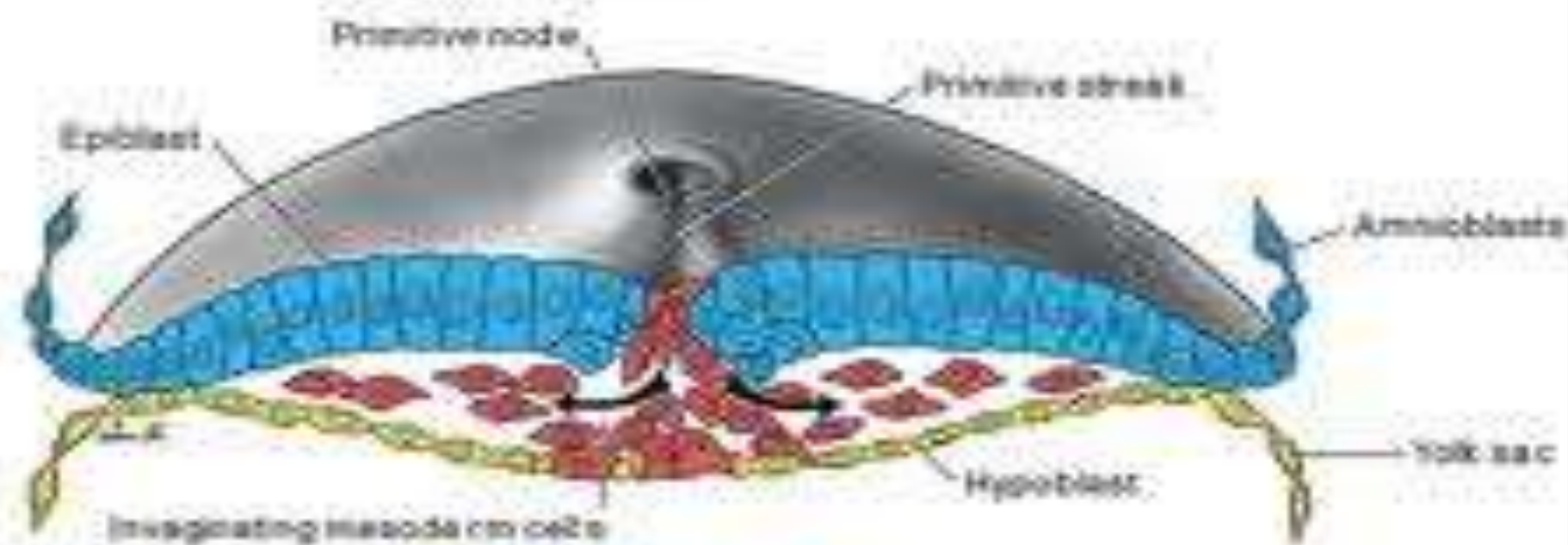


- With the appearance of EEM the yolk sac becomes much smaller than before & is now called the **secondary yolk sac** accompanied by change in cells also which now becomes cubical from flattened ones.
- till now the embryo disc has been circular in shape., with no head or tail ends.
- now at one circular area near margin of disc , the cubical cells of endoderm becomes columnar ,this area is called **prochordal plate**.

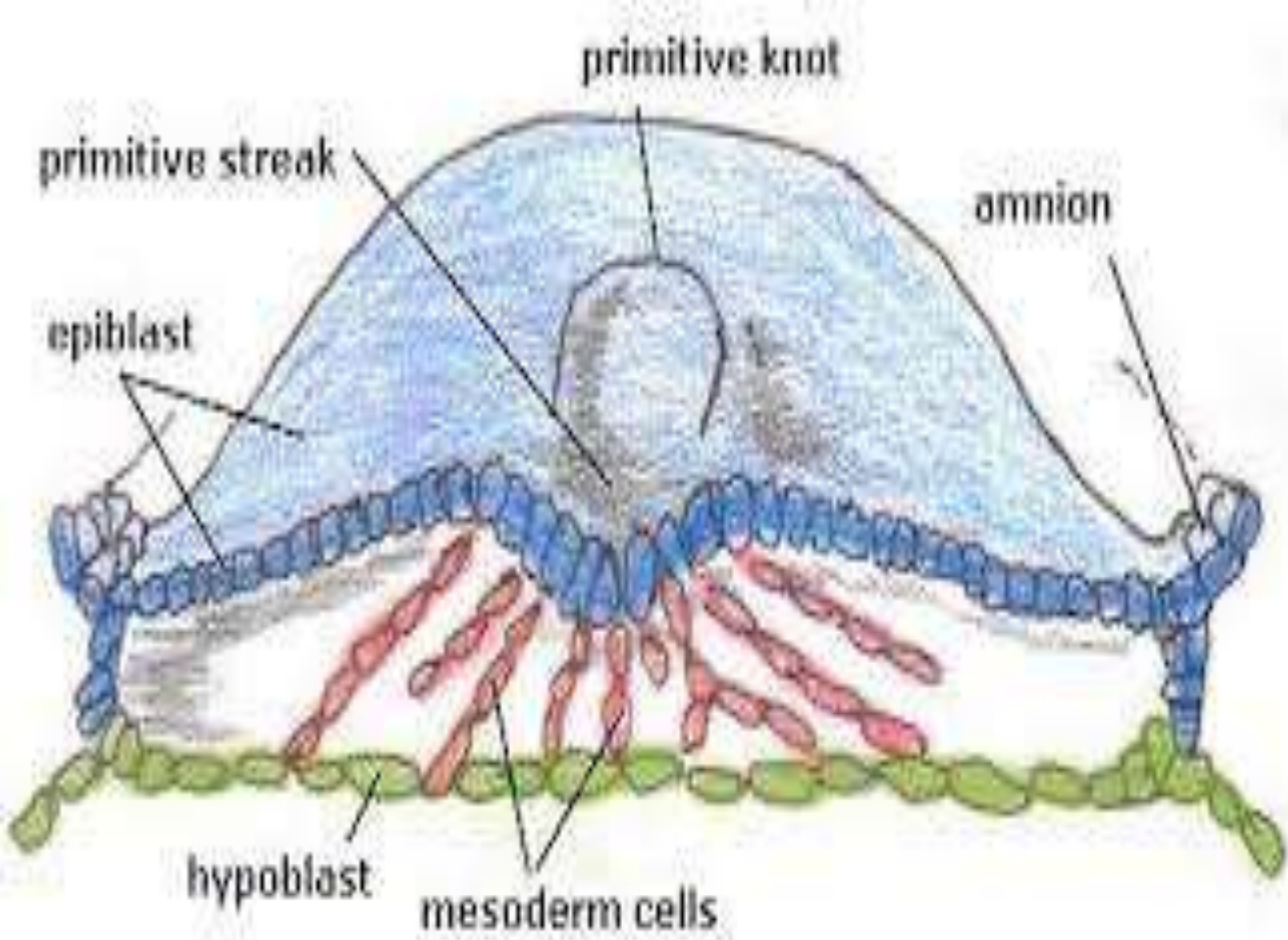




A



B



- the appearance of **prochordal plate** determines the central axis of embryo( divides into right & left half) & also enable us to distinguish its future head & tail ends .
- soon after the formation of prochordal plate ,some of epiblast cells lying along the central axis, near the tail end of the disc, begin to proliferate & form an elevation that bulges into amniotic cavity---**primitive streak**

- the cells that proliferate in region of primitive streak pass sideways, pushing themselves b/w epiblast & hypoblast.
- these cells form—intraembryonic mesoderm/secondary mesoderm.
- some cells arising from primitive streak displace hypoblast & form the layer known as **endoderm. ( thus both endoderm &mesoderm are derived from epiblast)**
- the remaining cells of epiblast now form **ectoderm.**

- thus we now have a disc made of three layers –ectoderm, endoderm & mesoderm.
- this process of formation of primitive streak, of endoderm, intraembryonic mesoderm is called as **gastrulation**.
- the intraembryonic mesoderm spreads through the disc except in the region of prochordal plate ( thus here ectoderm & endoderm remains in contact)

- later the ectoderm & endoderm persist in body as lining epithelium , while bulk of tissues in body formed from mesoderm.
- as there is no mesoderm in prochordal plate, this region remains thin , & later forms **buccopharangeal** membrane.
- THE PRIMITIVE STREAK gradually elongates, along central axis , of embryonic disc.

- the connecting stalk initially was very broad compared to size of embryo, as disc enlarges in size & elongates, the connecting stalk becomes relatively small & its attachment becomes confined to region of the tail end of embryonic disc.
- some i/embryonic mesoderm arising from primitive streak where ectoderm & endoderm remains in contact –**cloacal membrane**.

