UGBABE DORCAS IGBADI

17/MHS01/310

MBBS

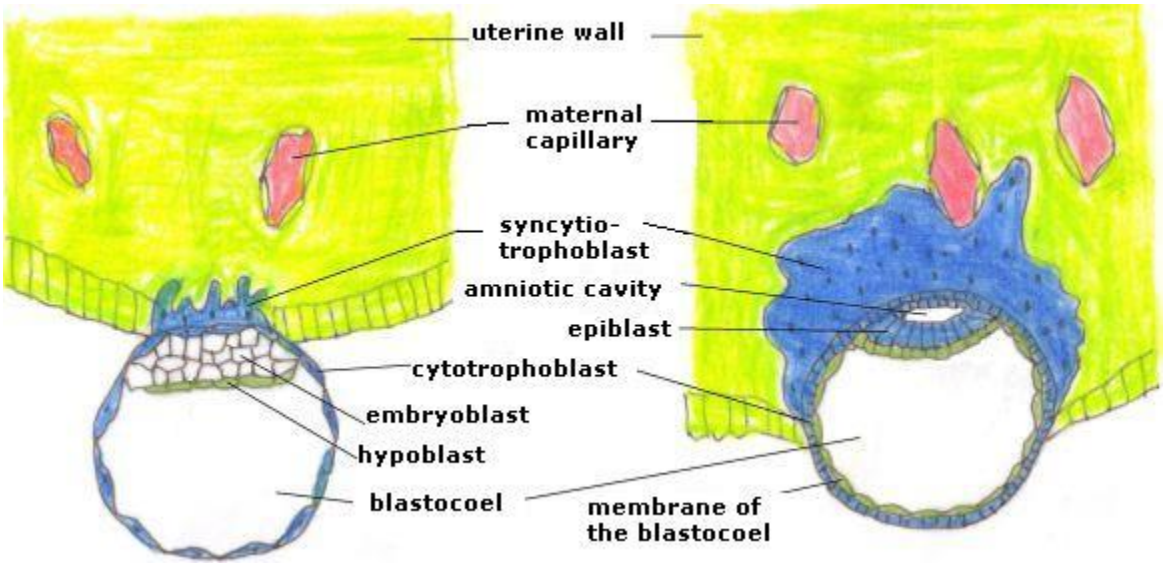
200L

EMBRYOLOGY ASSIGNMENT

Discuss the second week of development.

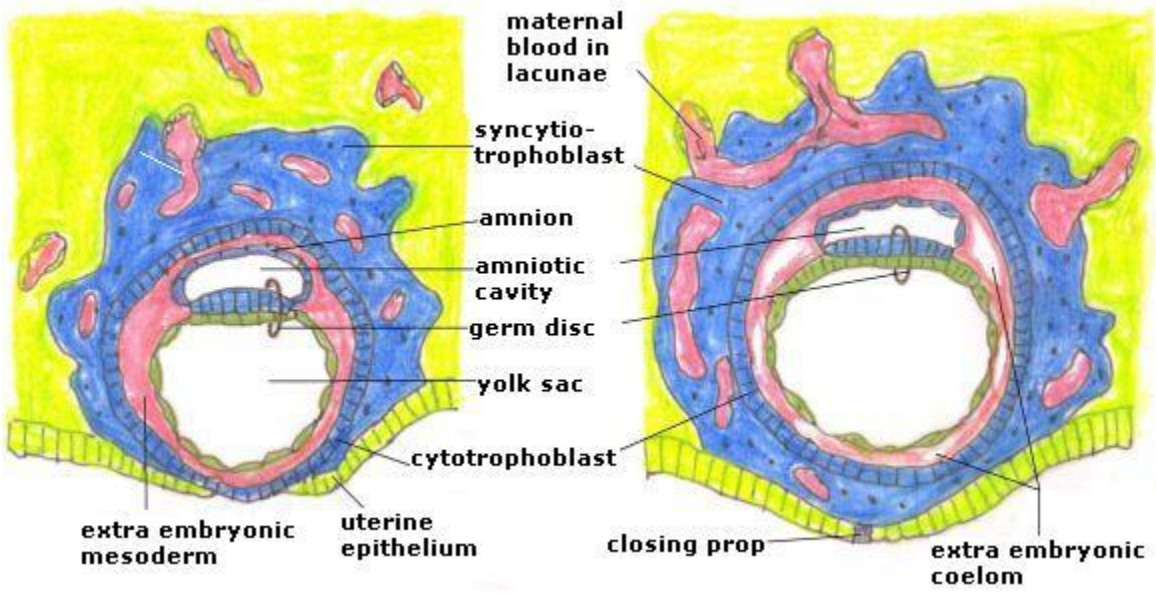
DAY 8

At the eighth day of development, the blastocyst is partially embedded in the endometrial stroma. The trophoblast is differentiated into two layers; the inner layer, **cytotrophoblast** and the outer layer, **synctiotrophoblast.** Cells of the embryoblast differentiate into two layers; the hypoblast layer and the epiblast layer. Together, forming a bilaminar disc. Together, the layers form a flat disc. At the same time, a small cavity appears within the epiblast and enlarges to become the **amniotic cavity.** Amnioblasts line the amniotic cavity.



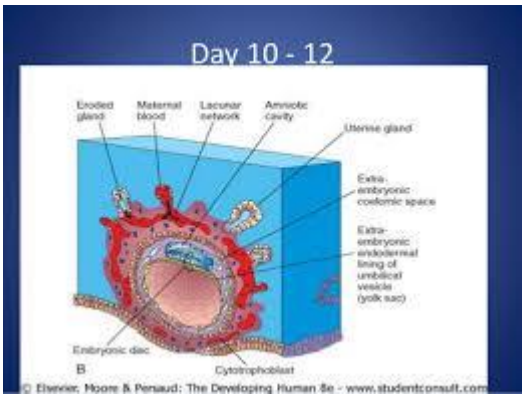
DAY 9

The blastocyst is more deeply embedded in the endometrium. Cytotrophoblast divides and continues to migrate. Flattened cells originating from the hypoblast form a thin membrane, the exocoelomic (Heuser's) membrane that lines the inner surface of the cytotrophoblast. This membrane together with the hypoblast forms the lining of the exocoelomic cavity or primitive yolk sac.



DAYS 11&12

The blastocyst is completely embedded in the endometrial stroma. Cells of the synctiotrophoblast penetrate deeper into the stroma and erode the endothelial lining of the maternal capillaries (sinusoids). As the trophoblast continues to erode more and more sinusoids, maternal blood begins to flow through the trophoblastic system, establishing the **uteroplacental circulation.** The chorionic cavity which surrounds the primitive yolk sac and amniotic cavity is formed. The **extraembryonic somatic mesoderm** lines the cytotrophoblast and the amnion. The **extraembryonic splanchic mesoderm** is the lining covering the yolk sac. Cells of the endometrium become polyhedral and loaded with glycogen and lipids. These changes, known as the **decidua reaction**, at first are confined to the area immediately surrounding the implantation site but soon occur throughout the endometrium.



DAY 13

Cells of the cytotrophoblast proliferate locally and penetrate into the synctiotrophoblast forming **primary villi.** The hypoblast produces additional cells that migrate along the inside of the exocoelomic membrane. These cells proliferate and gradually form a new cavity within the exocoelomic cavity known as the **secondary yolk sac** or **definitive yolk sac.** The extraembryonic coelom expands and forms a large cavity, the **chorionic cavity.** The extraembryonic mesoderm lining the inside of the cytotrophoblast is then known as the **chorionic plate.** With the development of blood vessels, the connecting stalk becomes the **umbilical cord.**