**NAME: AMADIKE CHIOMA PAMELA**

**MATRIC NUMBER: 18/MHS01/072**

**COURSE: EMBRYOLOGY**

**ASSIGNMENT: DISCUSS THE 2ND WEEK OF EMBRYONIC DEVEOPMENT.**

During the second week of development, with the embryo implanted in the uterus, cells within the blastocyst start to organize into layers. Some grow to form the extra-embryonic membranes needed to support and protect the growing embryo: the amnion, the yolk sac, the allantois, and the chorion.

At the beginning of the second week, the cells of the inner cell mass form into a two-layered disc of embryonic cells, and a space—the **amniotic cavity—**opens up between it and the trophoblast. Cells from the upper layer of the disc (the **epiblast)** extend around the amniotic cavity, creating a membranous sac that forms into the **amnion** by the end of the 2nd week. The amnion fills with the amniotic fluid and eventually grows to surround the embryo. Early in the development, amniotic fluid consists almost entirely of a filtrate of maternal plasma, but as the kidneys of the fetus is protected from trauma and rapid temperature changes. It can move freely within the fluid and can prepare for swallowing and breathing out of the uterus.

On the ventral side of the embryonic disc, opposite the amnion, cells in the lower layer of the embryonic disk (the hypoblast) extend into the blastocyst cavity and form a **yolk sac.** The yolk sac supplies some nutrients absorbed from the trophoblast and also provides primitive blood circulation to the developing embryo for the second and third week of development. When the placenta takes over nourishing the embryo at approximately week 4, the yolk sac has been greatly reduced in size and its main function is to serve as the source of blood cells (cells that will give rise to gametes).