**Gastrulation & Extra-embryonic Membrance Formation**

Extra Embryonic Membranes

After implantation the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layer begins to thicken and divides into 2 separate layers

(diagram)

***Amnion Layer*** –

* forms a sac \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;
* cells of amnion secrete \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ in which fetus will be suspended;
* amniotic fluid acts as a "\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_" for fetus, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it against injury

***Chorion Layer***-

* "interface" with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of uterus;
* allows for exchange of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (to the embryo) and \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (from the embryo) with the mother's circulatory system;
* forms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ later on in pregnancy;
* produces **\_\_\_\_\_\_\_\_** (human chorionic gonadotropic hormone) which maintains the corpus luteum for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of pregnancy (after that placenta takes over) – maintains estrogen and progesterone levels to maintain endometrium. (this is the hormone that pregnancy tests detect)

***Allantois***–

* small sac that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the form of cast-off cells from the embryo;
* temporary storage site for these materials that later becomes part of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Yolk Sac*** –

* cells of the yolk sac produce high-calorie, nutritious yolk that supplies embryo before the connection to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is complete
* site of early \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (RBC) formation
* later contributes to primitive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tract

Cells from the endometrium & embryo combine to form the *PLACENTA*

* will produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through the last 7 months of pregnancy
* richly supplied with blood vessels. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ensure that a large number of blood vessels of the fetus are exposed to maternal blood
* The *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* provides umbilical blood vessels in the placenta
* Interface for exchange between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + From mother to fetus – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + From fetus to mother \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The *umbilical cord* connects the embryo with the placenta

Blastocyst → Gastrula (day 7-10) -- process is called ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Gastrulation***

* changes happening to inner cell layer (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
* inner cell layer forms \_\_\_\_\_\_\_\_\_\_\_\_\_\_ separate layers
* as the embryonic disc folds into two directions the endoderm pushes out through an opening. The part of the endoderm that emerges = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**(forms the umbilical cord)
* diagram:
* *ectoderm* – skin, hair, fingernails, teeth, NS, brain , eye, semicircular canals, etc
  + *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
* *mesoderm* – muscles, blood vessels, connective tissue, kidney, reproductive system
  + *­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
* *endoderm* – digestive, respiratory, bladder, liver, pancrease, thyroid, parathyroid
  + *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*