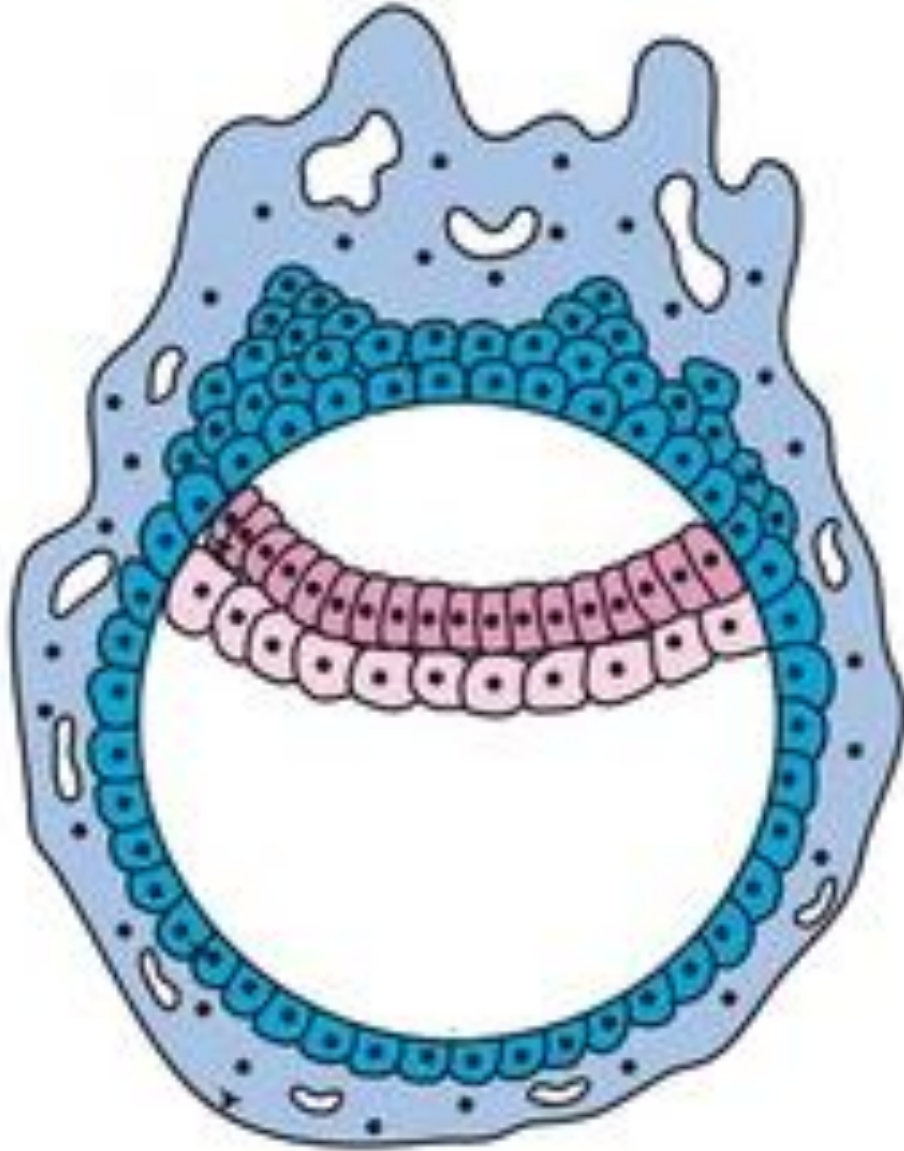
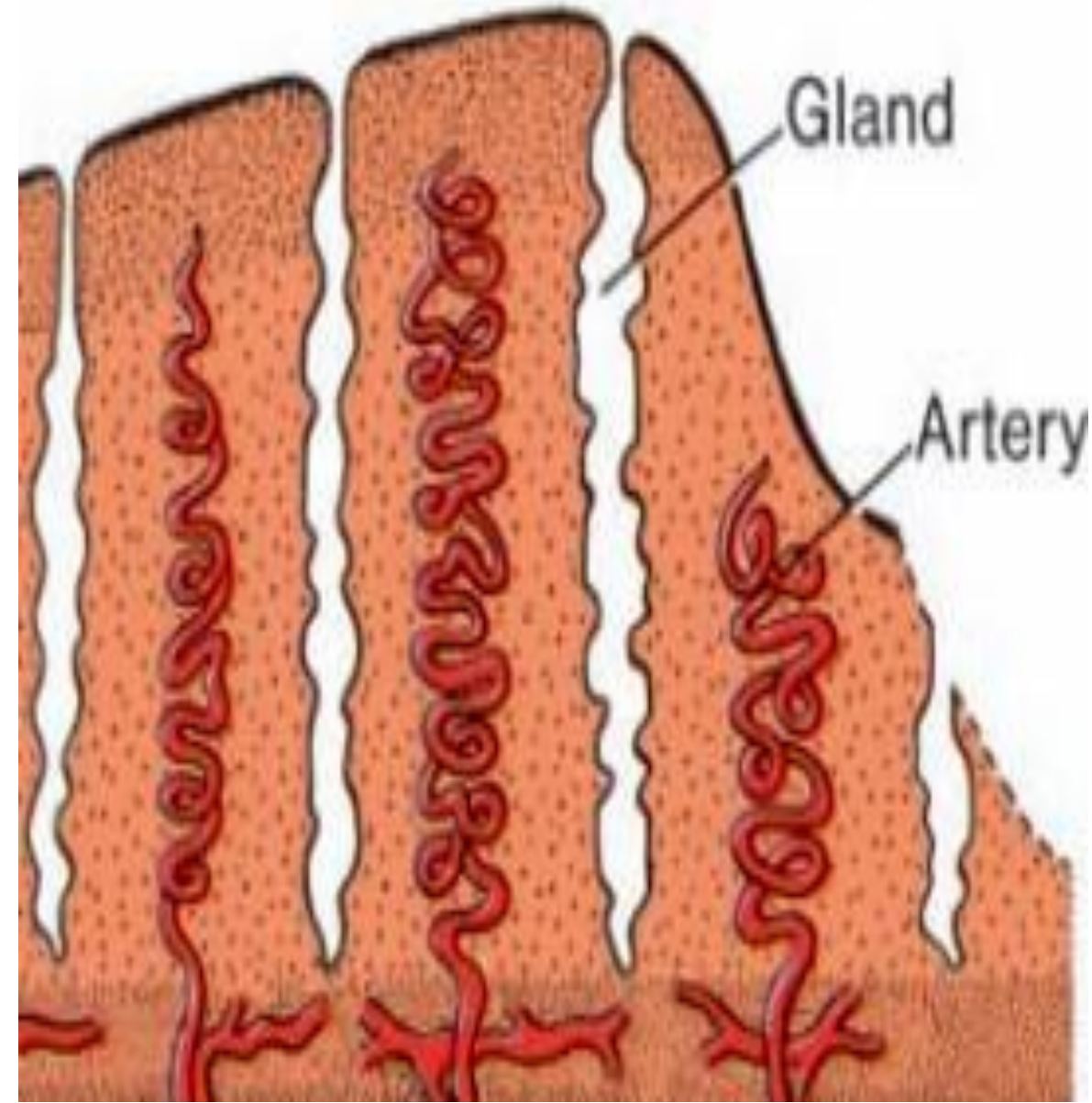
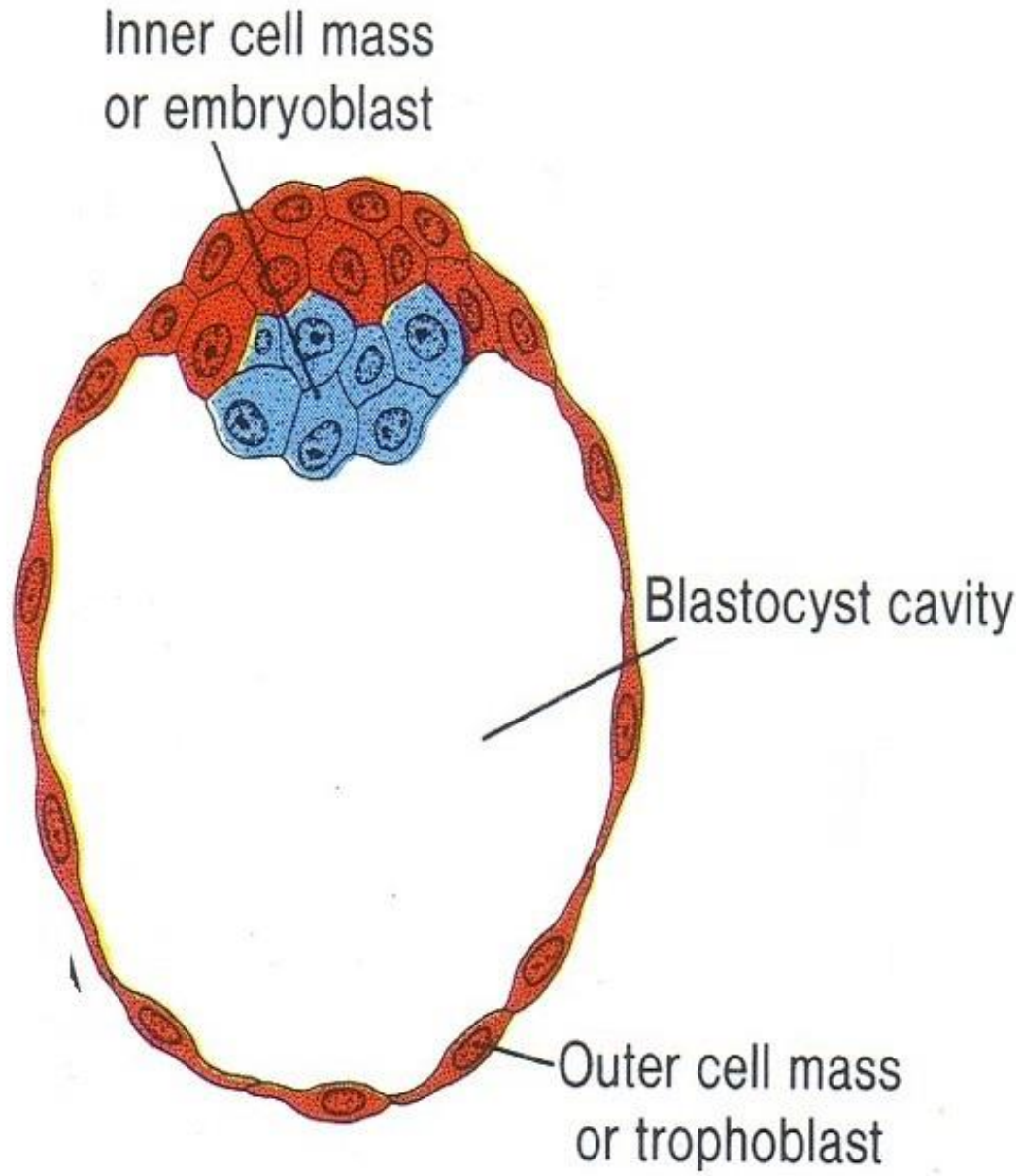


EVENTS AT THE 2ND WEEK



BY

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DAY 8

the endometrium

is highly vascular the glands secrete more glycogen & mucus

Trophoblast

Trophoblastic cells at embryonic pole differentiate into

Outer layer of syncytiotrophoblast:

multinucleated cells without clear cell boundaries

Inner layer of cytotrophoblast:

mononucleated cells with clear cell boundaries

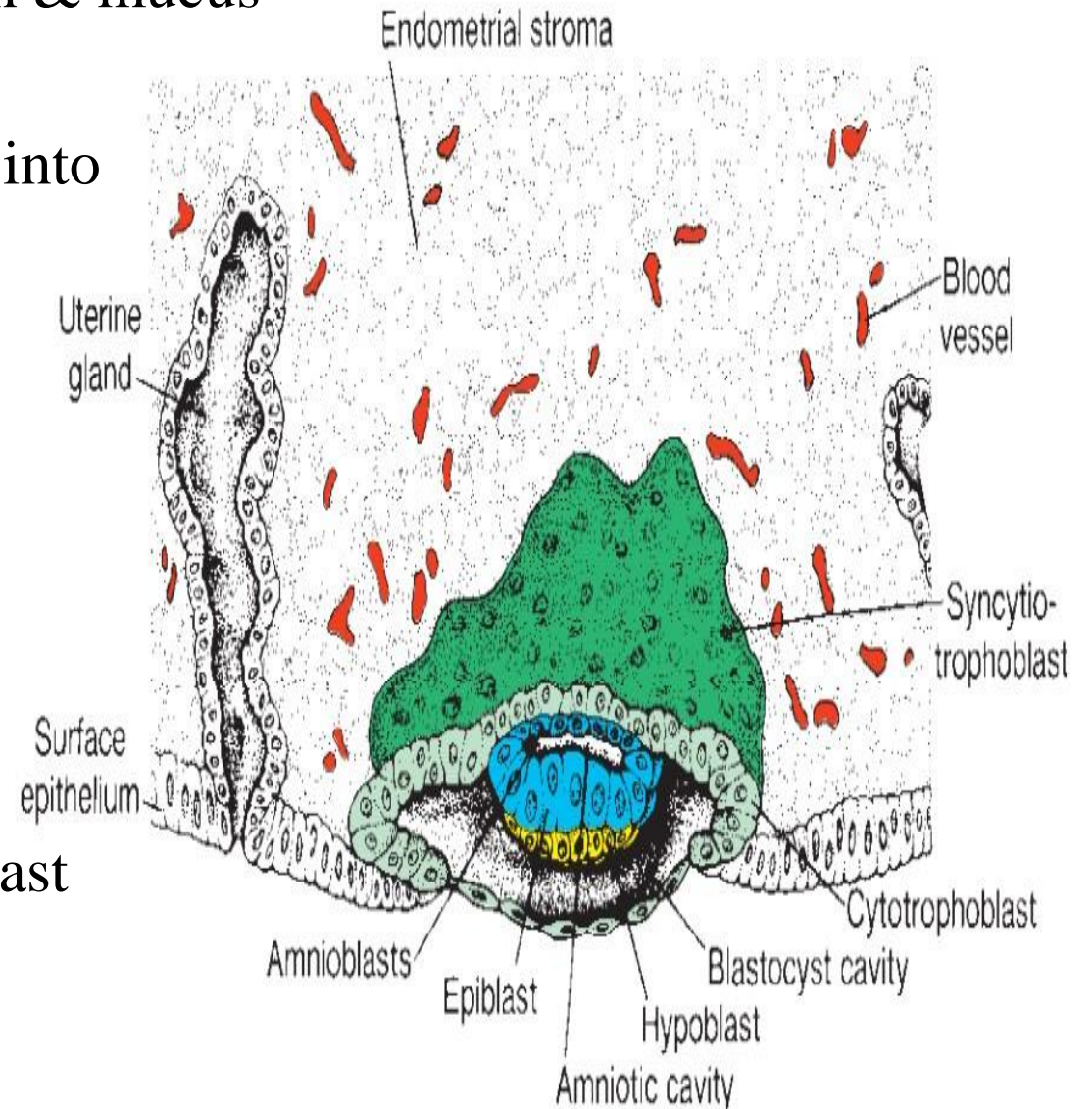
Embryoblast

inner cell mass differentiate into

Hypoblast layer: cubical cells close to blastocele

Epiblast layer: columnar cells close to the trophoblast

now the embryo is called bilaminar disc



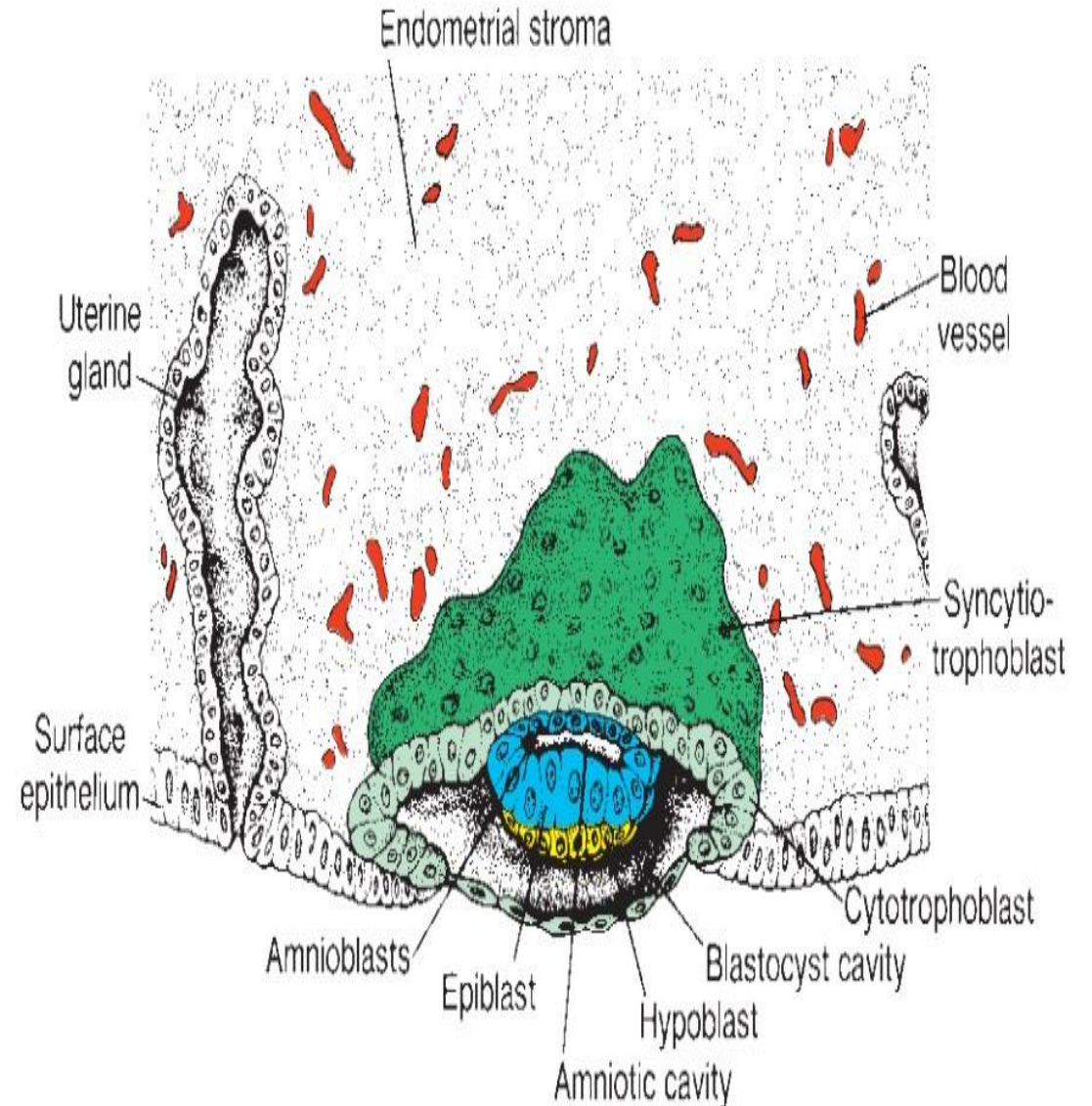
DAY 8

Embryoblast

-Amniotic cavity appear within the Epiblast layer dividing it into amnioblasts close to cytotrophoblast & original Epiblast layer

Implantation

blastocyst is partially implanted



DAY 9

the endometrium

has enlarged tortuous blood vessels

Trophoblast

small vacuoles appear in the syncytiotrophoblast then they fuse to form large lacunae (lacunar stage)

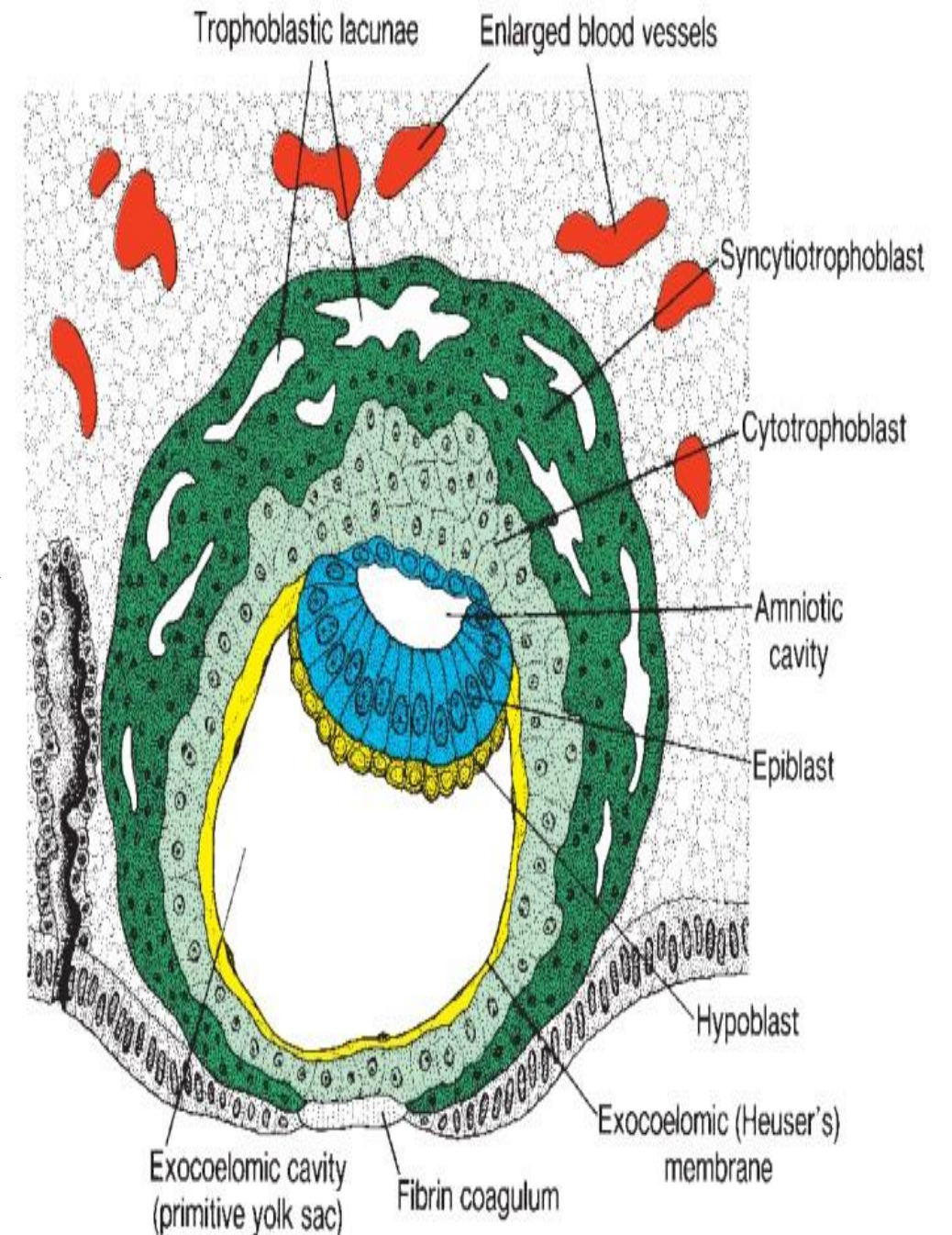
Embryoblast

hypoblast form a membrane lines the cytotrophoblast at the abembryonic pole this membrane called **exocoelomic (Heuser) membrane**

Due to appearance of this membrane the blastocele is transformed into **1ry yolk sac**

Implantation

blastocyst is deeply implanted & penetration defect is closed by fibrin coagulum



N.B. THE 2ND WEEK IS WEEK OF TOWS

The trophoblast differentiates into 2 layers,
cytotrophoblast & syncytiotrophoblast

- The inner cell mass differentiates into 2 layers,
epiblast & hypoblast.
- Starting of formation of the
amniotic and yolk sac cavities.
- The primary mesoderm splits into
Somatic mesoderm & splanchnic mesoderm.

DAY 11 & 12

the endometrium

has dilated congested capillaries called **maternal sinusoids**

Trophoblast

the syncytiotrophoblast erode the maternal sinusoids, the lacunae become continuous with these sinusoids so the maternal blood enters the lacunae establishing **the uteroplacental circulation**

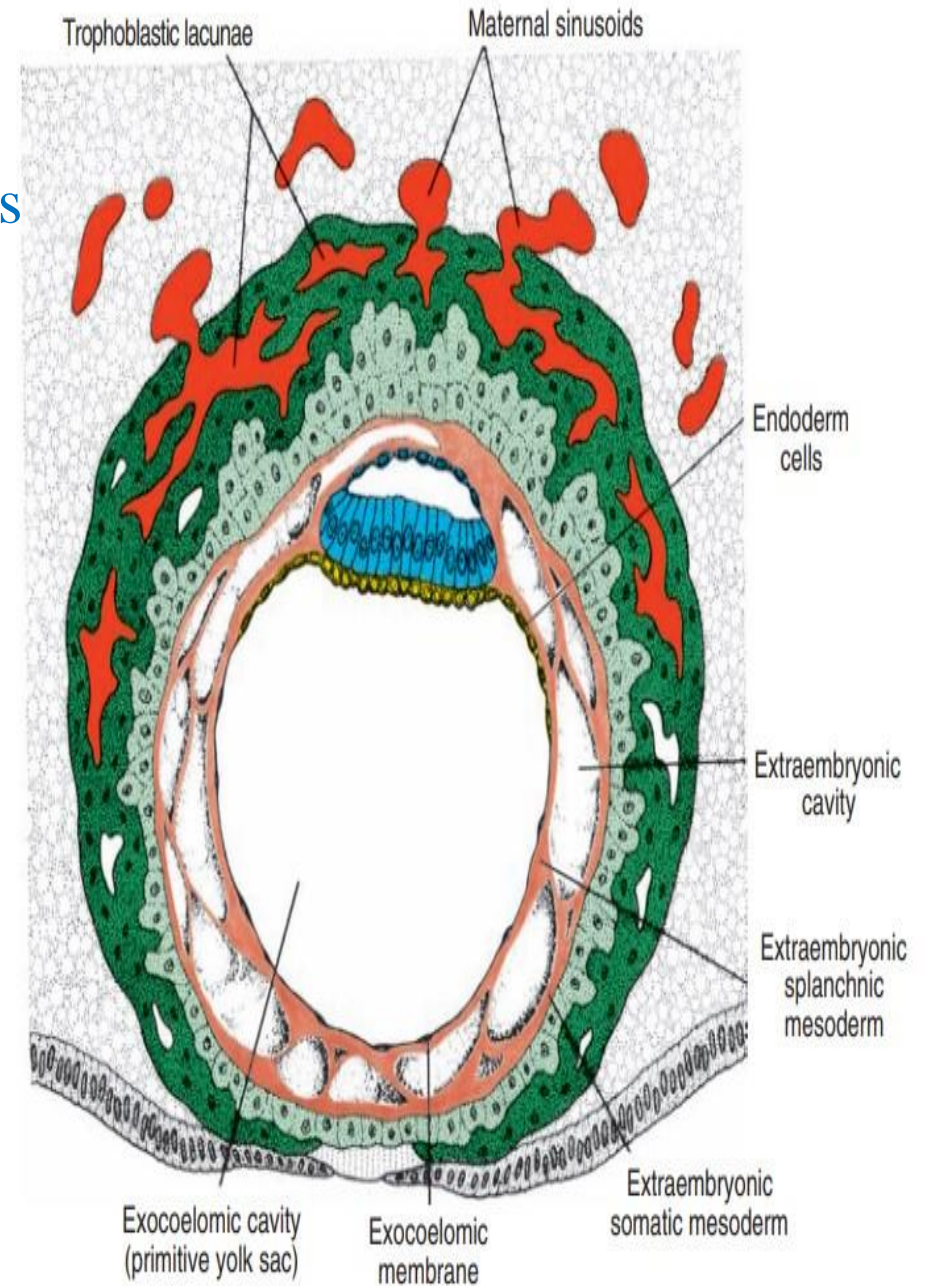
Embryoblast

Formation of Extra embryonic (lry) mesoderm

New Cells appear between cytotrophoblast externally & exocoelomic membrane & amnion internally.

Formation of extra embryonic coelom:

Spaces appear in extra embryonic mesoderm, then unite to form c-shaped cavity called **extra embryonic coelom**



DAY 11 & 12

Embryoblast

Fate of extra embryonic mesoderm:

Extra-embryonic somatic mesoderm: line cytotrophoblast & covers amniotic cavity.

Extra – embryonic splanchnic mesoderm: covers 1ry yolk sac.

Connecting stalk: extra-embryonic mesoderm that connect embryonic disc with trophoblast

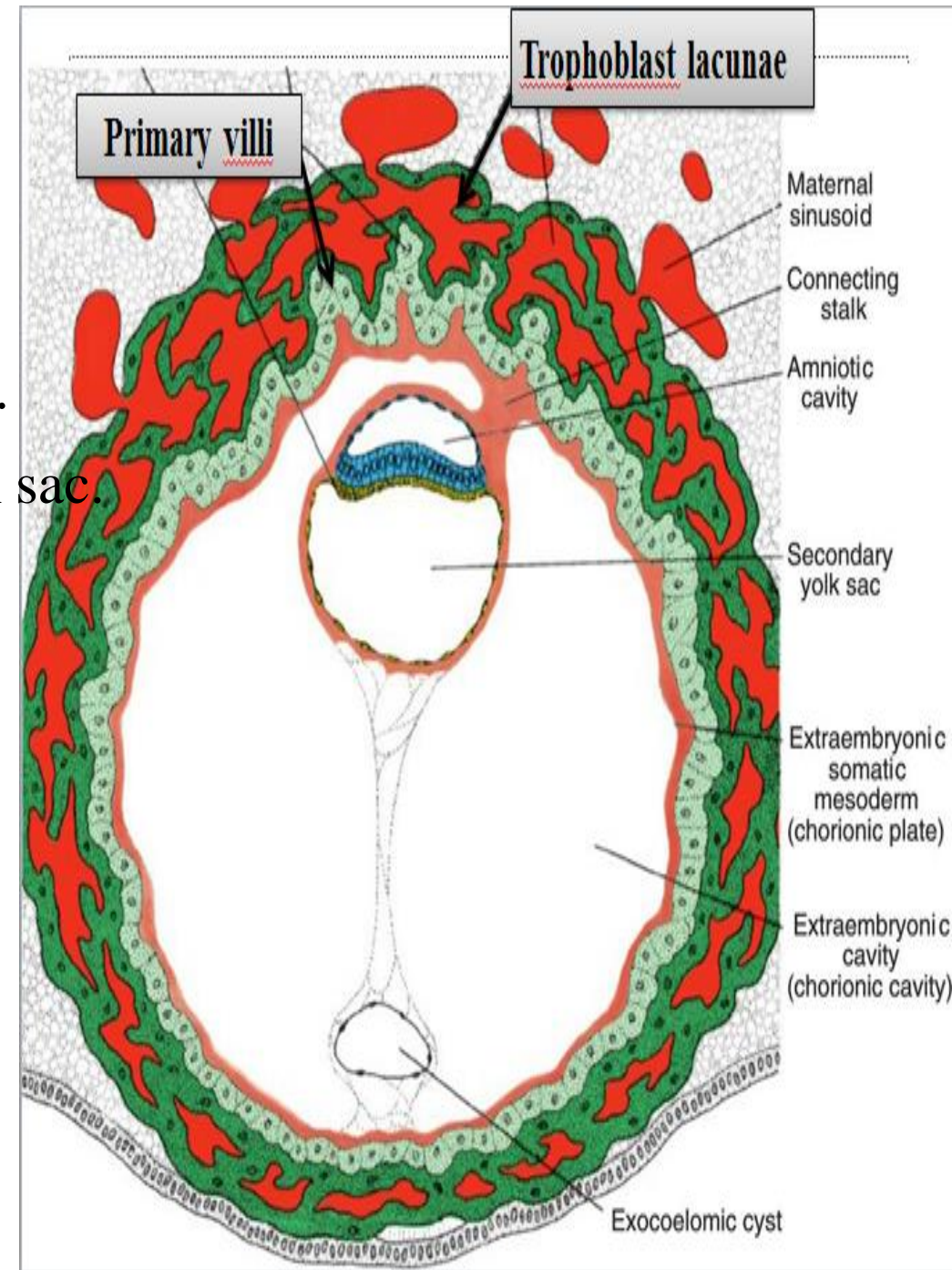
N.B.: chorion :- formed by extra embryonic somatic mesoderm & overlying trophoblast

N.B: now blastocyst is called chorionic vesicle

N.B.: Extra-embryonic coelom is called chorionic cavity

Implantation

blastocyst is completely implanted & penetration defect is covered by surface epithelium of the endometrium



DAY 13

Trophoblast

formation of the 1ry villi

which are columns of cytotrophoblast covered by syncytiotrophoblast

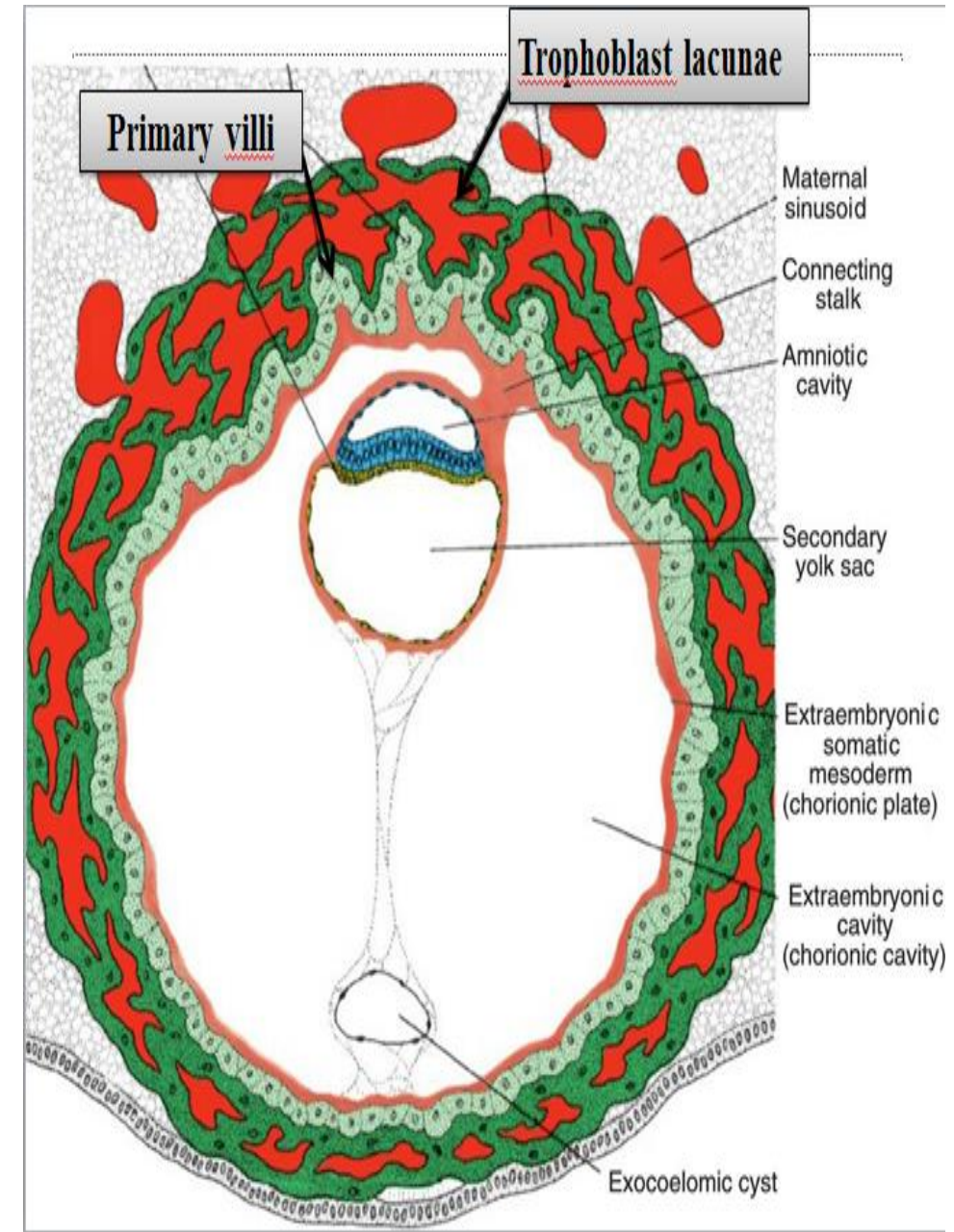
Embryoblast

formation of 2ry yolk sac

hypoblast proliferate, new cavity is formed in these cells, this cavity is called 2ry yolk sac, during its formation large part of the 1ry yolk sac is pinched off to form exocoelomic cyst

Implantation

surface defect is healed



CHORIONIC VILLI

Def: finger like processes arise from trophoblast into decidua basalis & capsularis.

Stages:

1- primary villus:

outer syncytiotrophoblast & inner cytotrophoblast.

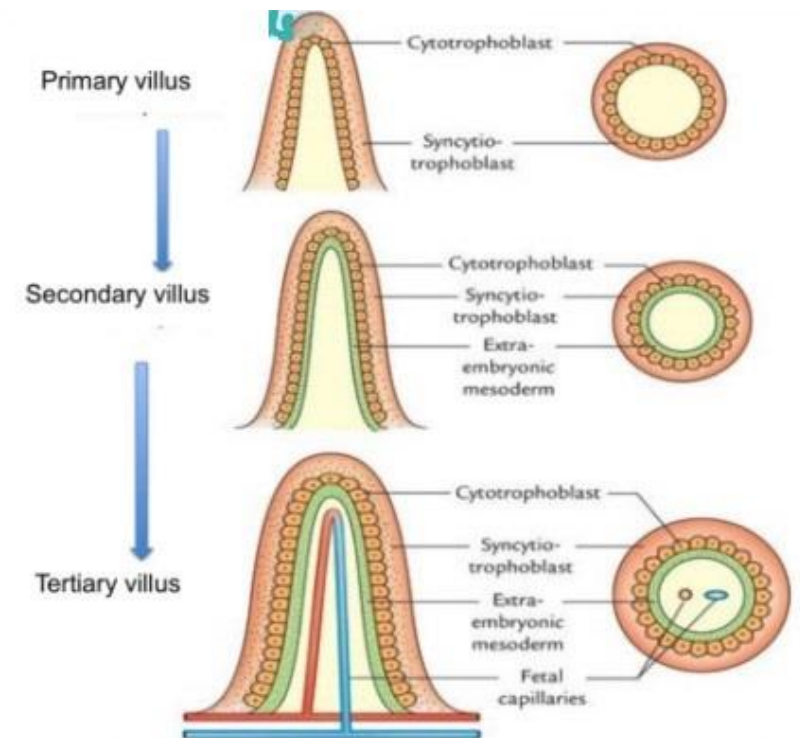
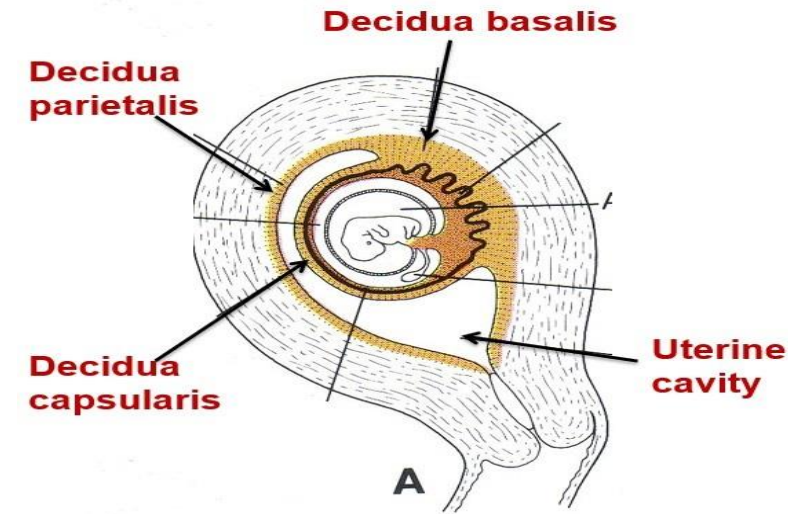
2- secondary villus :

as primary but acquire a core of lry mesoderm.

3- tertiary villus :

as secondary but a blood vessel develops in its lry mesoderm.

N.B.: -at first chorionic villi are present over entire surface of chorionic vesicle. but with time the villi towards decidua basalis grow & branch WHILE the villi towards decidua capsularis degenerate.



YOLK SAC

Primary yolk sac

•the cavity of the blastocyst after formation of exocoelomic membrane.

Secondary yolk sac

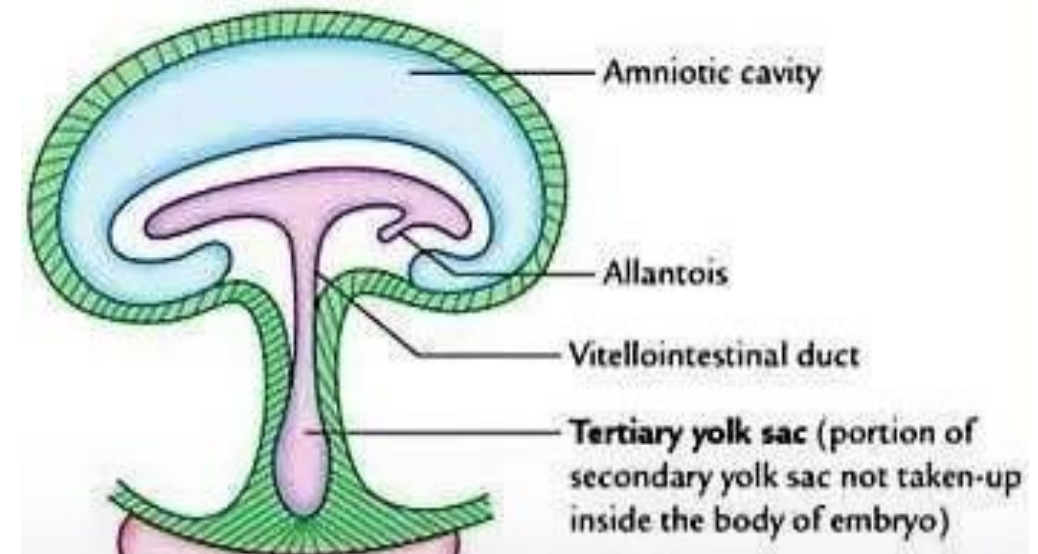
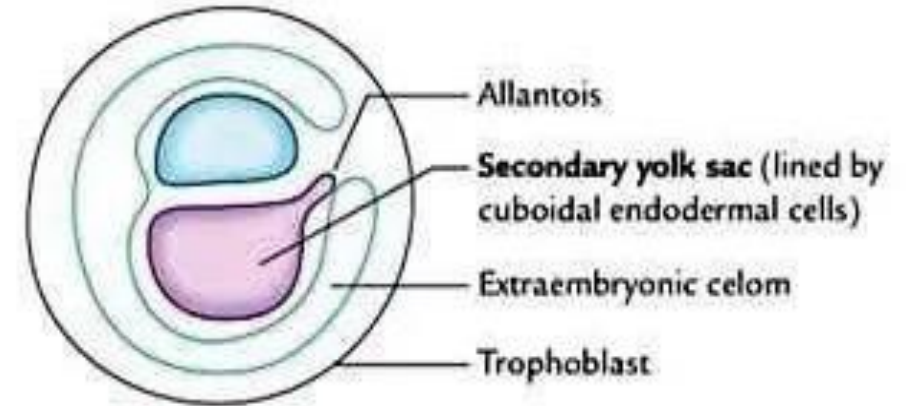
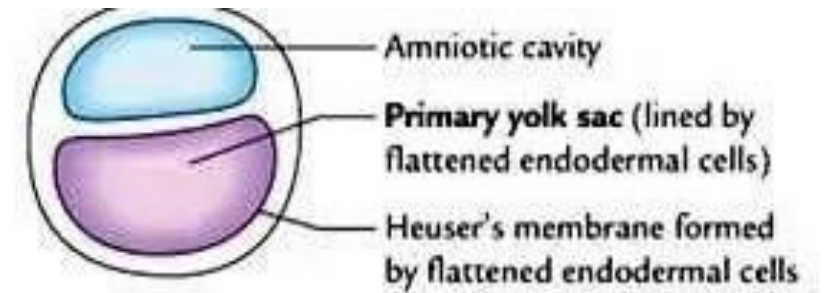
A cavity in chorionic vesicle after constriction in primary yolk sac.

& dorsocaudal diverticulum develop from it in connecting stalk called allantois.

Definitive yolk sac

remaining part of yolk sac outside embryo after disc folding & formation of gut.

temporary connected with midgut by vitello intestinal duct which disappear later.



THANQ