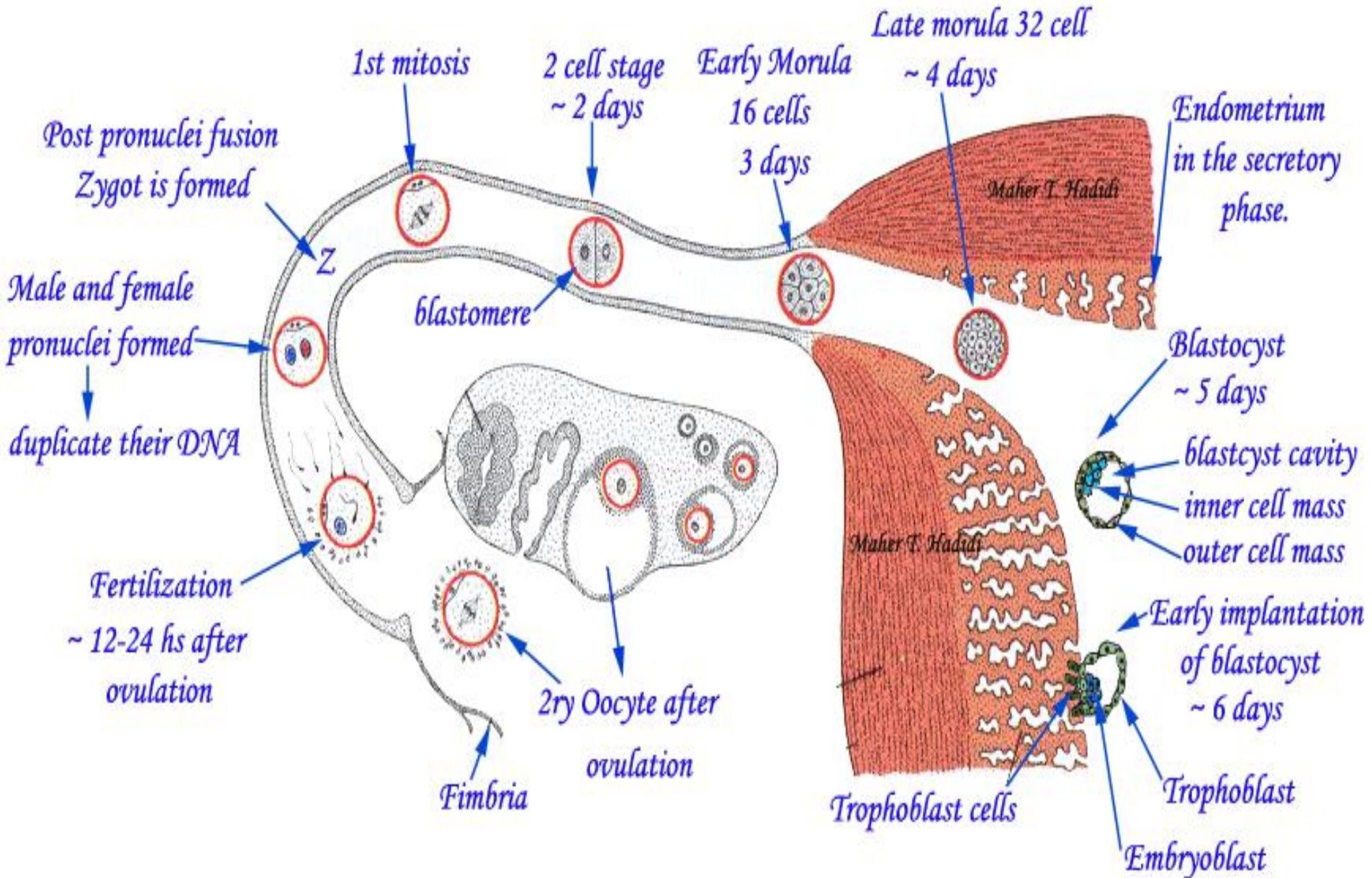


Events during first week of development

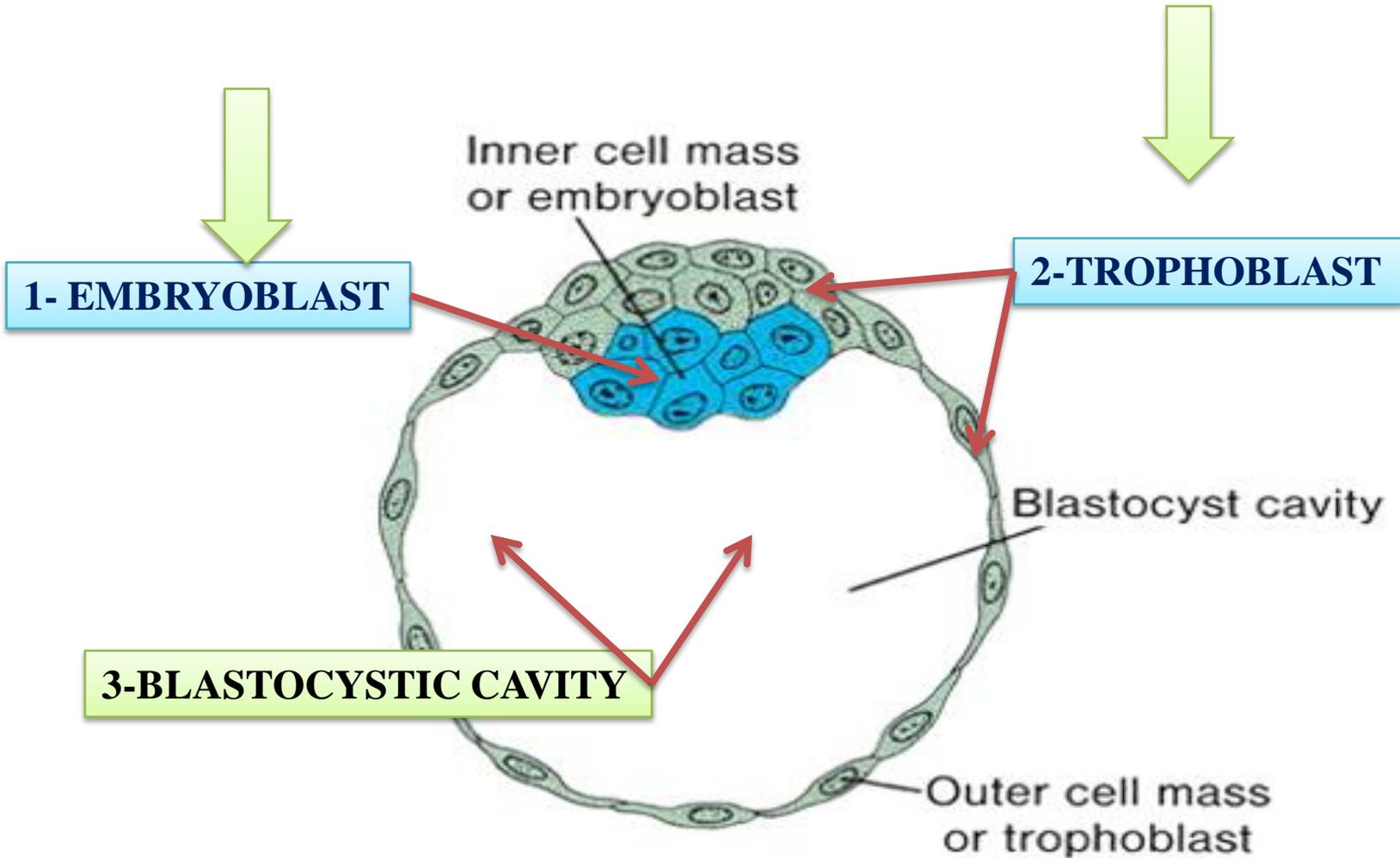


What is the final product of the first week of development?



The Blastocyst

➤ The blastocyst is made of:



SECOND WEEK OF DEVELOPMENT

Recommended

<https://www.youtube.com/watch?v=bldJOiXpp9g>

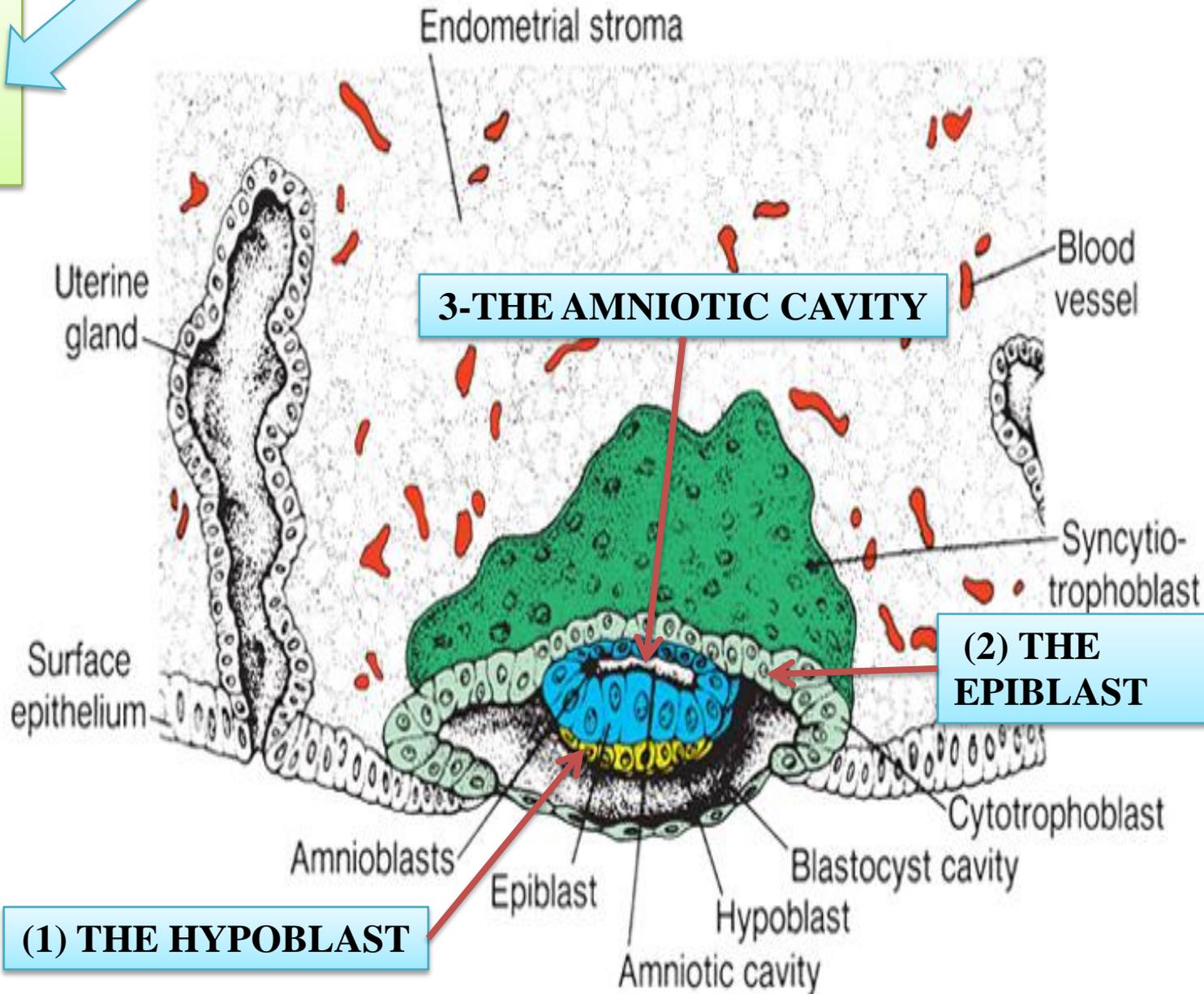
At the eighth day of development

The **EMBRYOBLAST** differentiates into two layers:

(1) THE HYPOBLAST

(2) THE EPIBLAST

3-THE AMNIOTIC CAVITY



(1) THE HYPOBLAST

3-THE AMNIOTIC CAVITY

(2) THE EPIBLAST

DAY 9

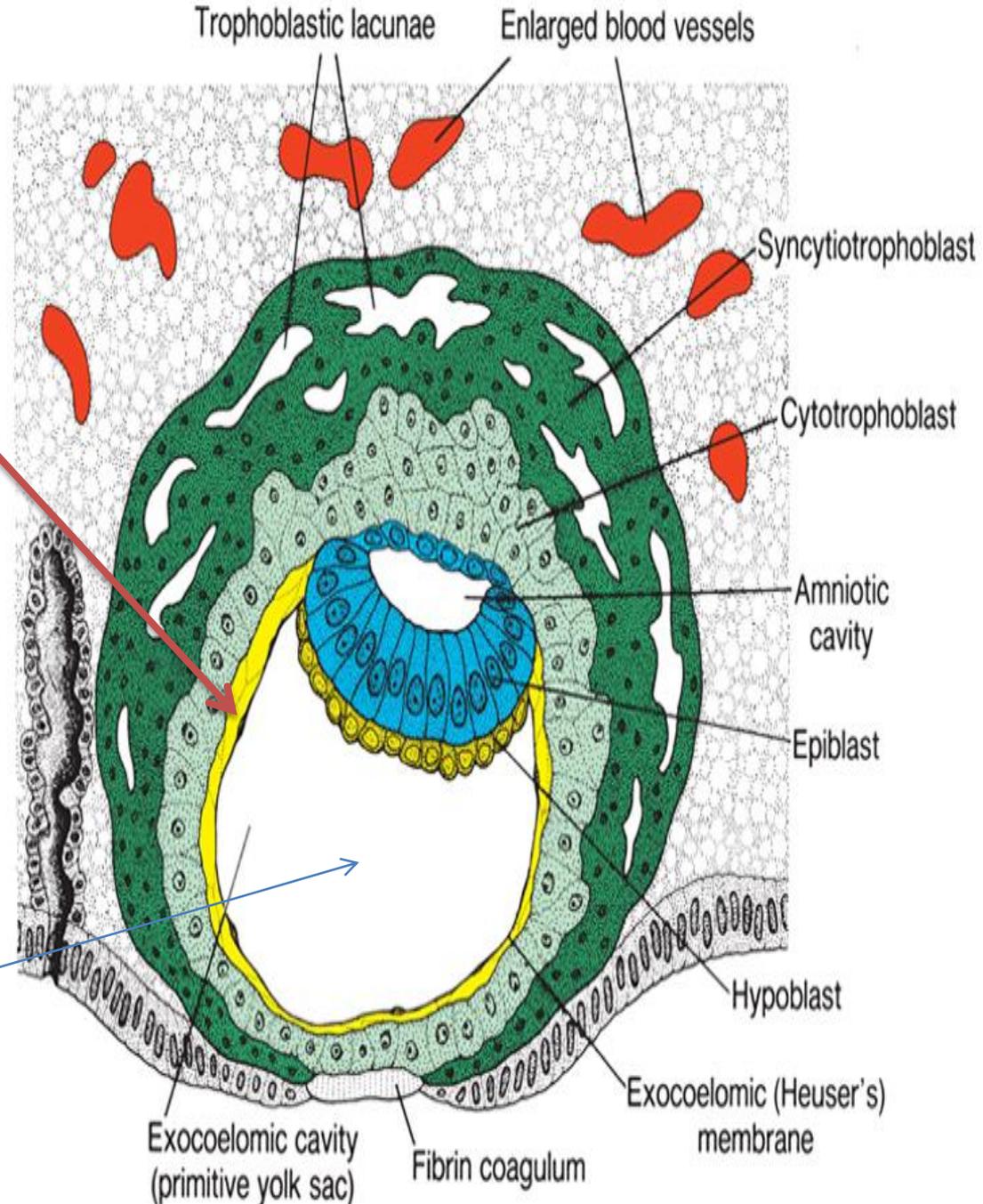
❖ the **hypoblast** give rise to a thin membrane

THE EXOCOELOMIC MEMBRANE

This membrane, together with the hypoblast, lines (The blastocystic cavity) to become

THE PRIMITIVE YOLK SAC

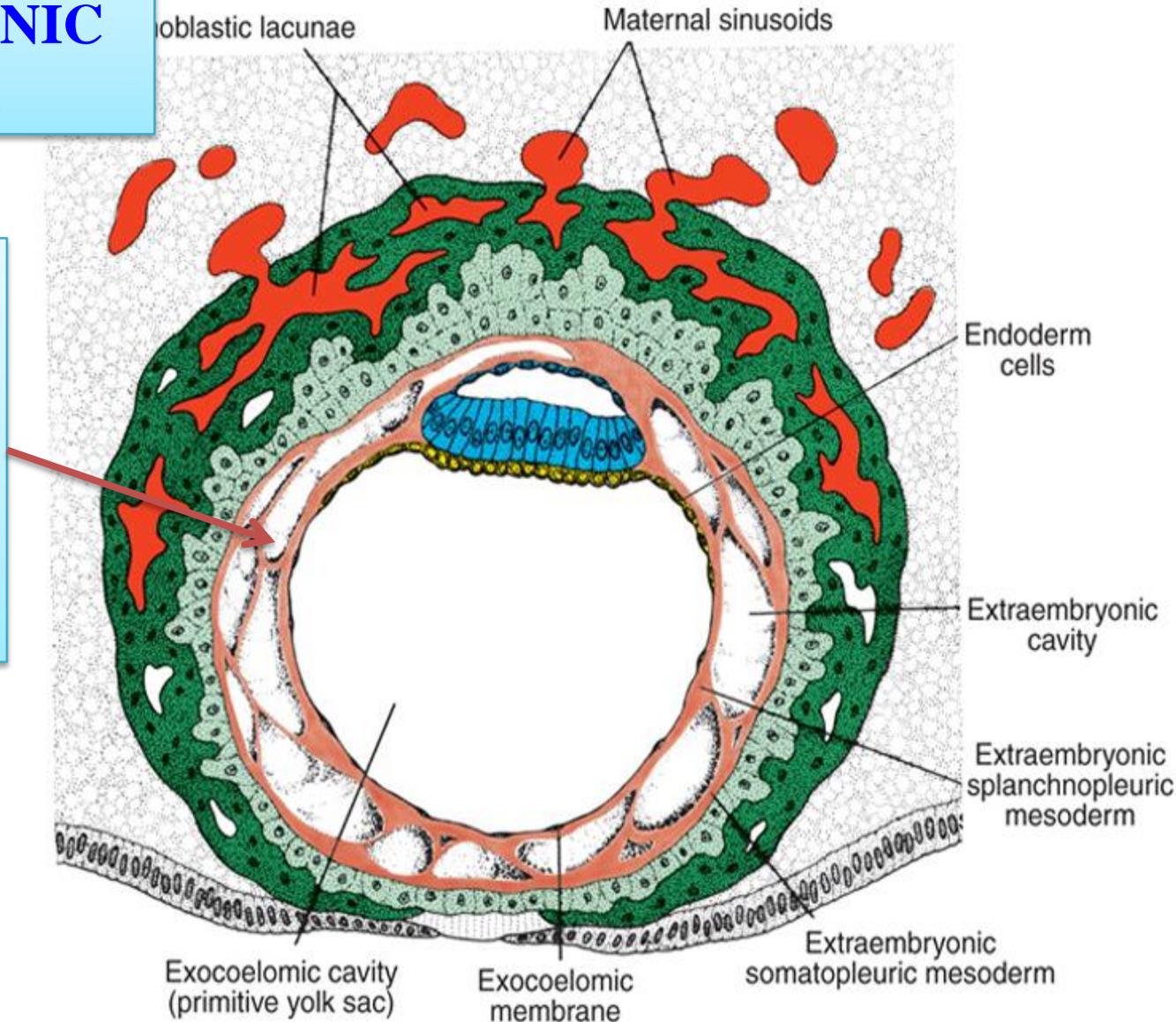
Or exocoelomic cavity



Days 11 and 12

The **yolk sac** cells, form a fine, loose connective tissue, the **EXTRAEMBRYONIC MESODERM**,

which fills all of the space between the **trophoblast externally** and the **amnion and exocoelomic membrane internally**



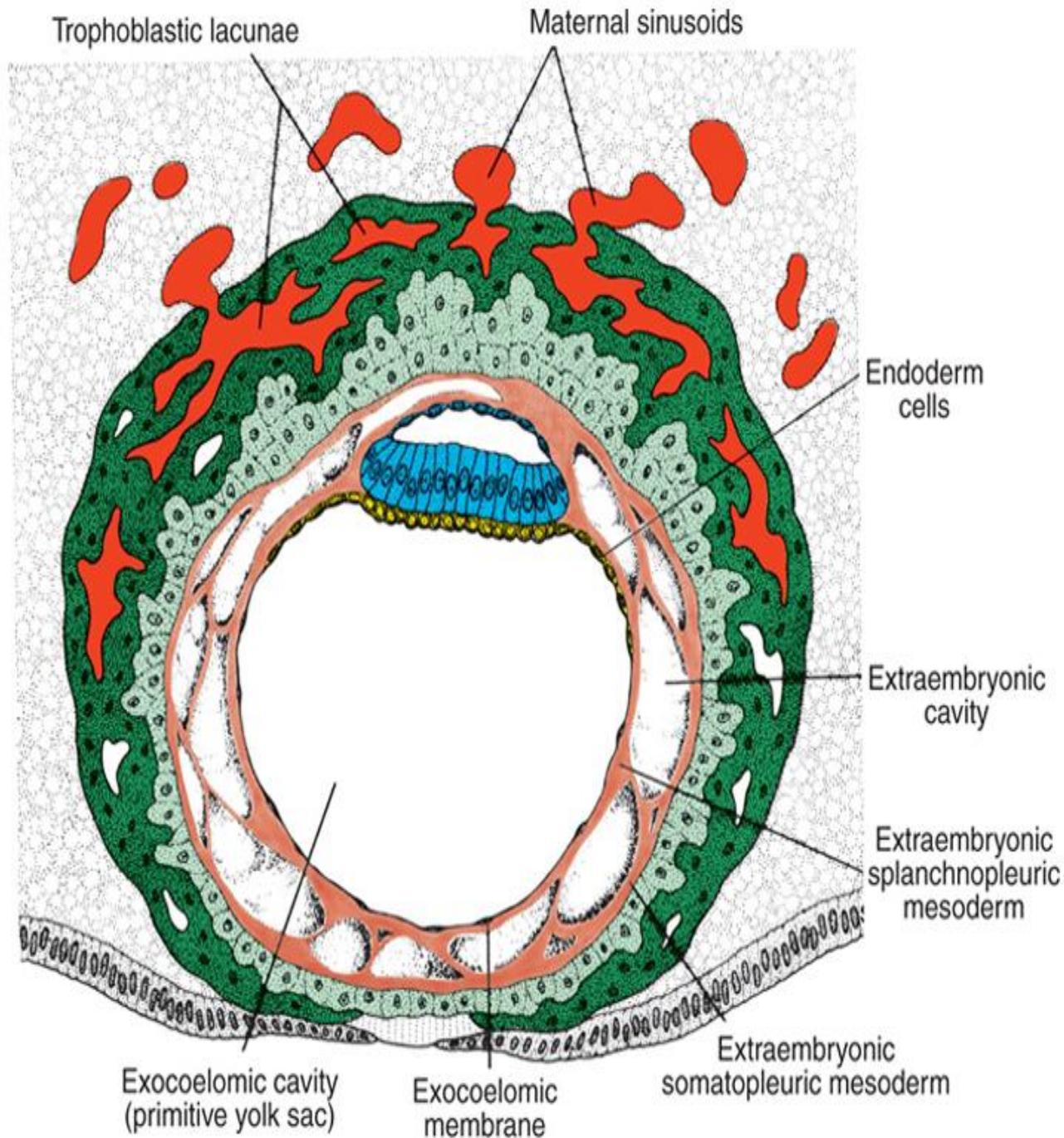
Days 11 and 12 continued

Soon, large cavities develop in the extraembryonic mesoderm, and when these become confluent, they form a new space known as

**THE
EXTRAEMBRYONIC
COELOM,**

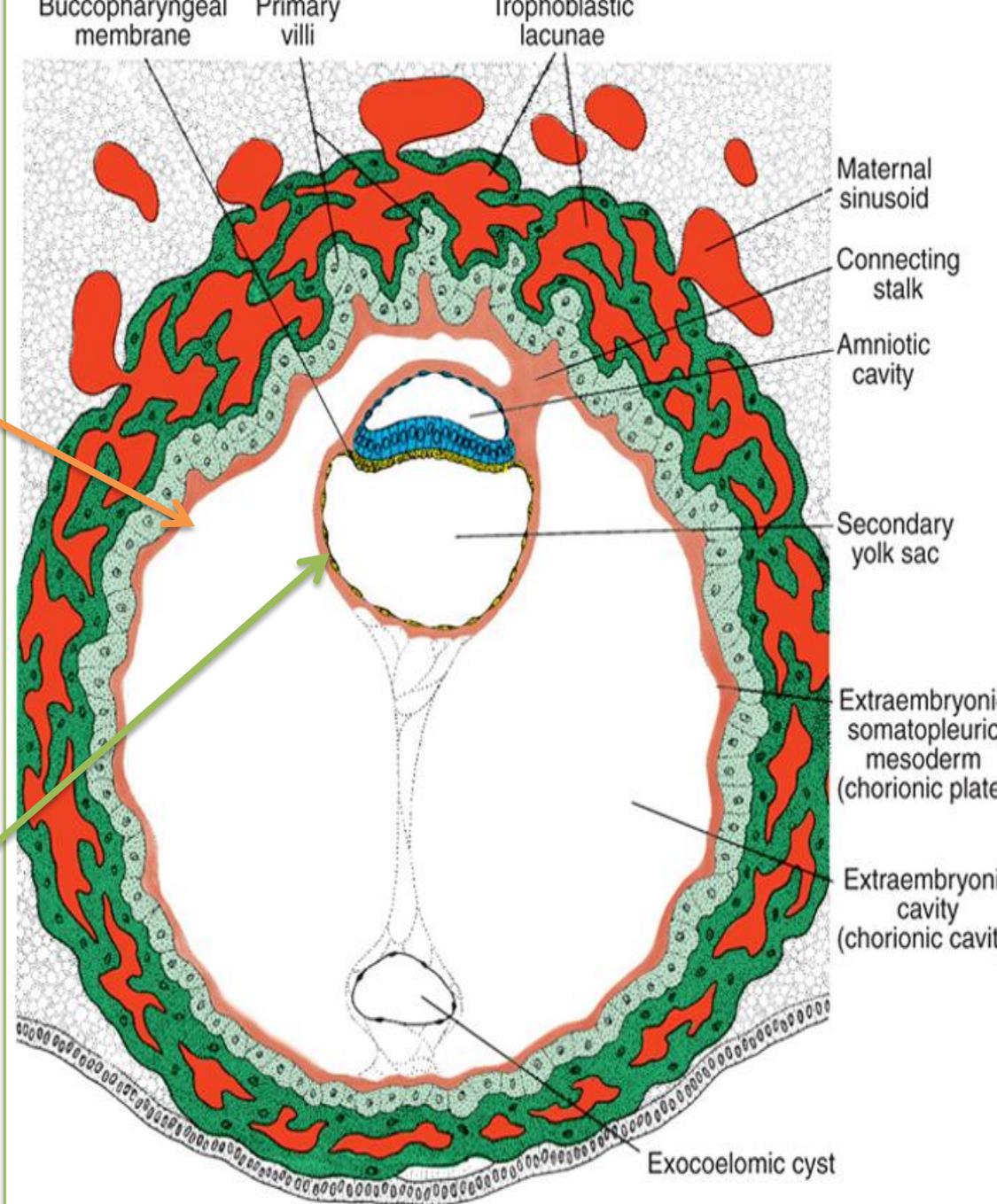
or

CHORIONIC CAVITY



The extraembryonic mesoderm lining the cytotrophoblast and amnion is called the extraembryonic **SOMATOPLEURIC** mesoderm

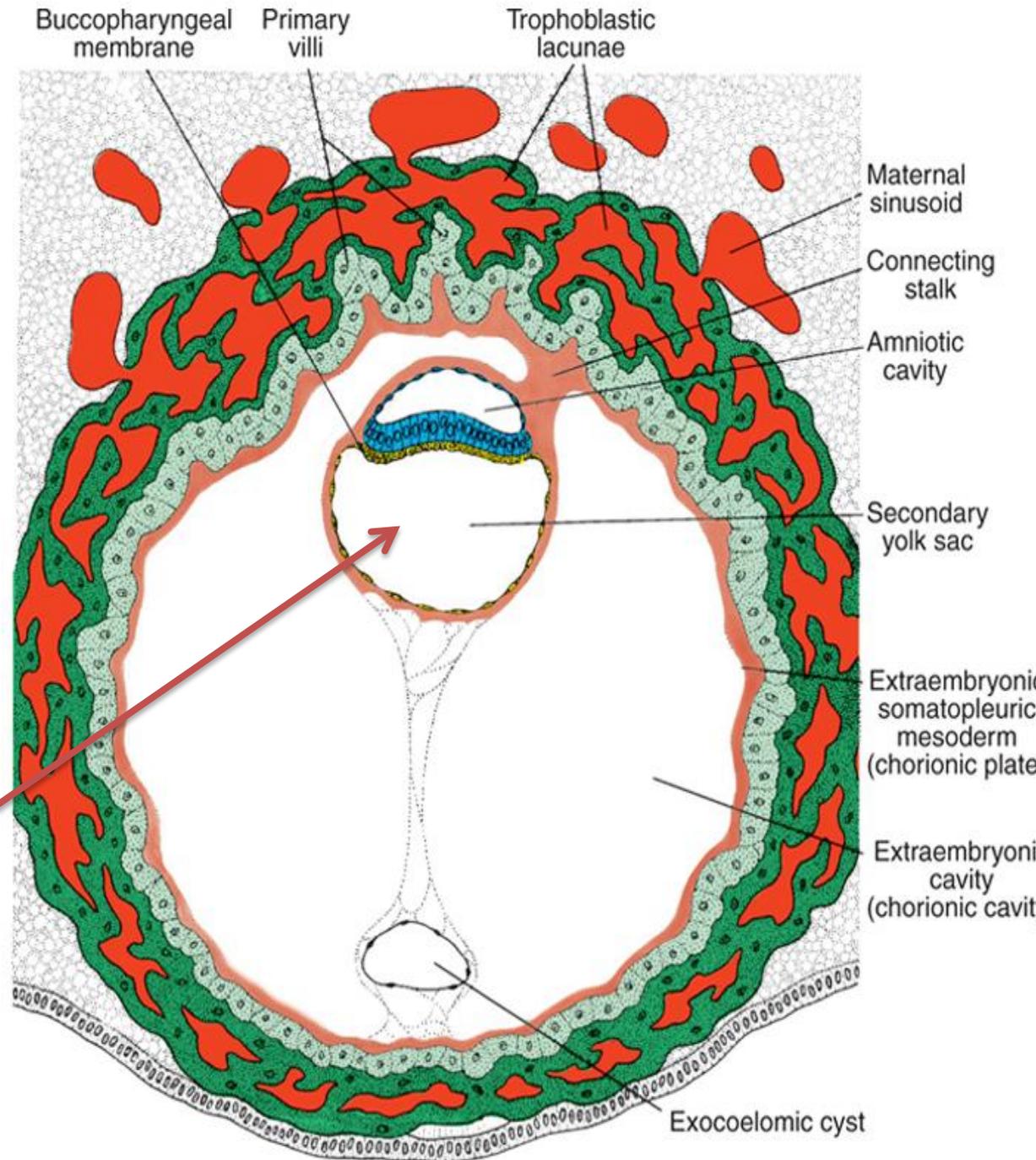
the lining covering the yolk sac is known as the extraembryonic **SPLANCHNOLEURIC** mesoderm



Day 13

The **hypoblast** produces cells that migrate along the inside of the **exocoelomic membrane**. These cells proliferate and gradually form a new cavity within the exocoelomic cavity. This new cavity is known as

THE SECONDARY YOLK SAC OR DEFINITIVE YOLK SAC



THE CHORIONIC vesicle

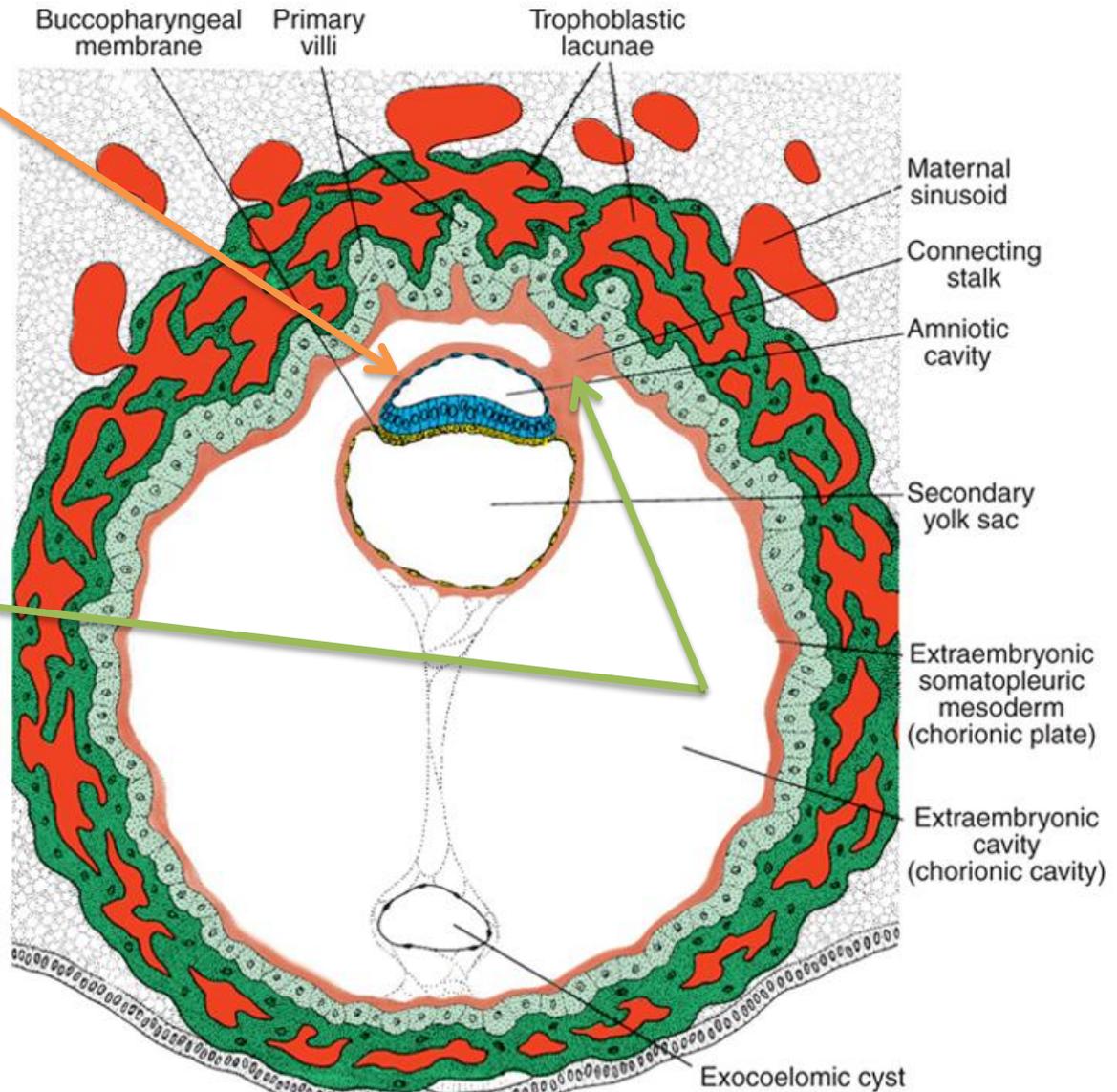
Which is hanging in the chorionic cavity by



CONNECTING STALK

With development of blood vessels, the stalk becomes

THE UMBILICAL CORD



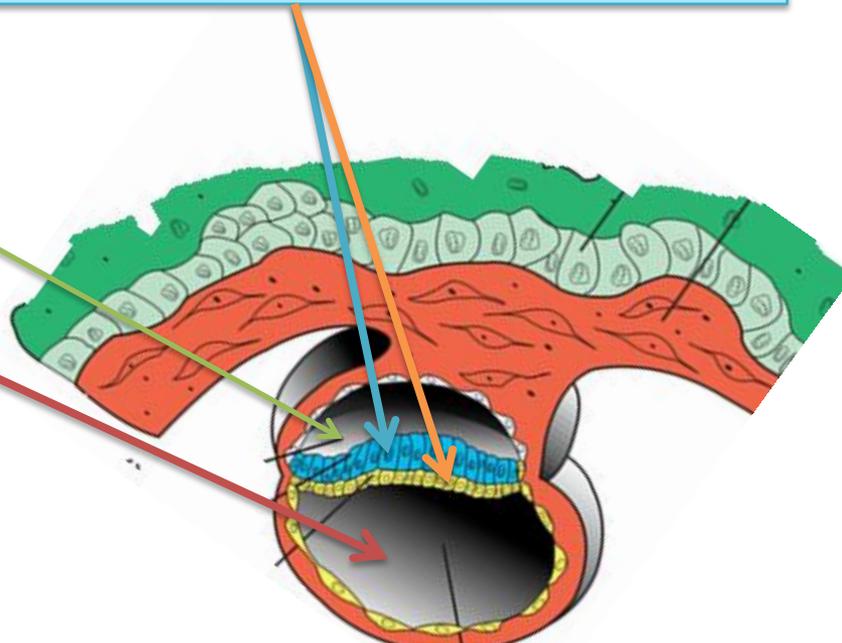
What is the final product of the second week of development?

THE CHORIONIC vesicle

What is inside the chorionic vesicle?

The embryo which is made of two layers
(Bilaminar disc)

With amniotic cavity above the epiblast and
The secondary yolk sac below the hypoblast



The **second week** of development is known as the week of twos:

The *TROPHOBLAST* differentiates into two layers

The *cytotrophoblast*
The *syncytiotrophoblast*

The *EMBRYOBLAST* forms two layers

The *epiblast*
The *hypoblast*

The *EXTRAEMBRYONIC MESODERM* splits into
two layers

The *somatopleure*
The *splanchnopleure*

Two *CAVITIES*

The *amniotic*
The *yolk sac*

Periods of susceptibility to teratogenesis

Birth defect, congenital malformation, and congenital anomaly are synonymous terms *used to describe* (structural, behavioral, functional, and metabolic disorders present at birth.)

Terms used to describe the study of these disorders
is

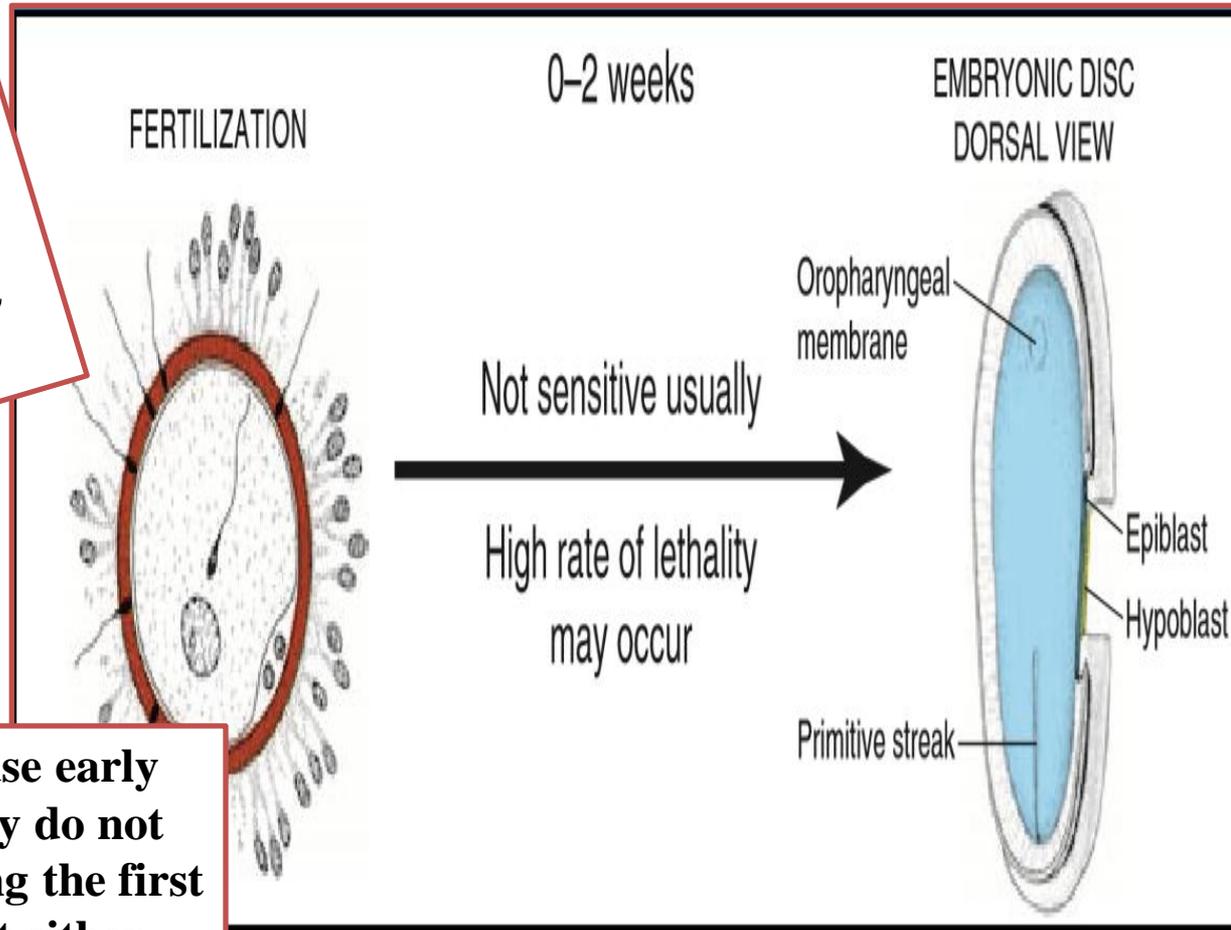
Teratology (Gr. teratos; monster) and
dysmorphology

Periods of susceptibility to teratogenesis

Bad News :
-Female doesn't know if she
pregnant.
- physician: no tests can be
done!

Good News:

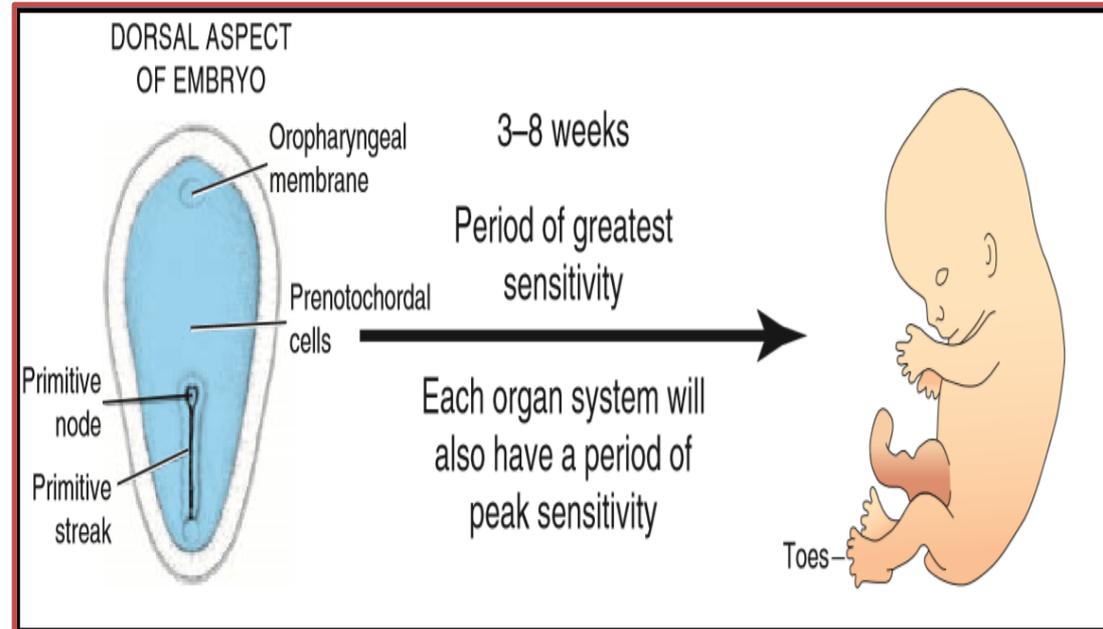
Drugs or other agents may cause early abortion of an embryo, but they do not cause birth defects if taken during the first 2 weeks. A drug or other agent either damages all the embryonic cells, killing the embryo, or injures only a few cells, in which case the embryo recovers to develop normally.



Periods of susceptibility to teratogenesis

Good news:
-Female knows she's pregnant,
-(amenorrhea)
-Physician can do tests to confirm result??

Bad News:
• Period of greatest sensitivity



Certain drugs can produce birth defects if administered during the third week

For instance, antineoplastic agents

(chemotherapy or antitumor drugs)

can produce severe skeletal and neural tube defects

in the embryo,

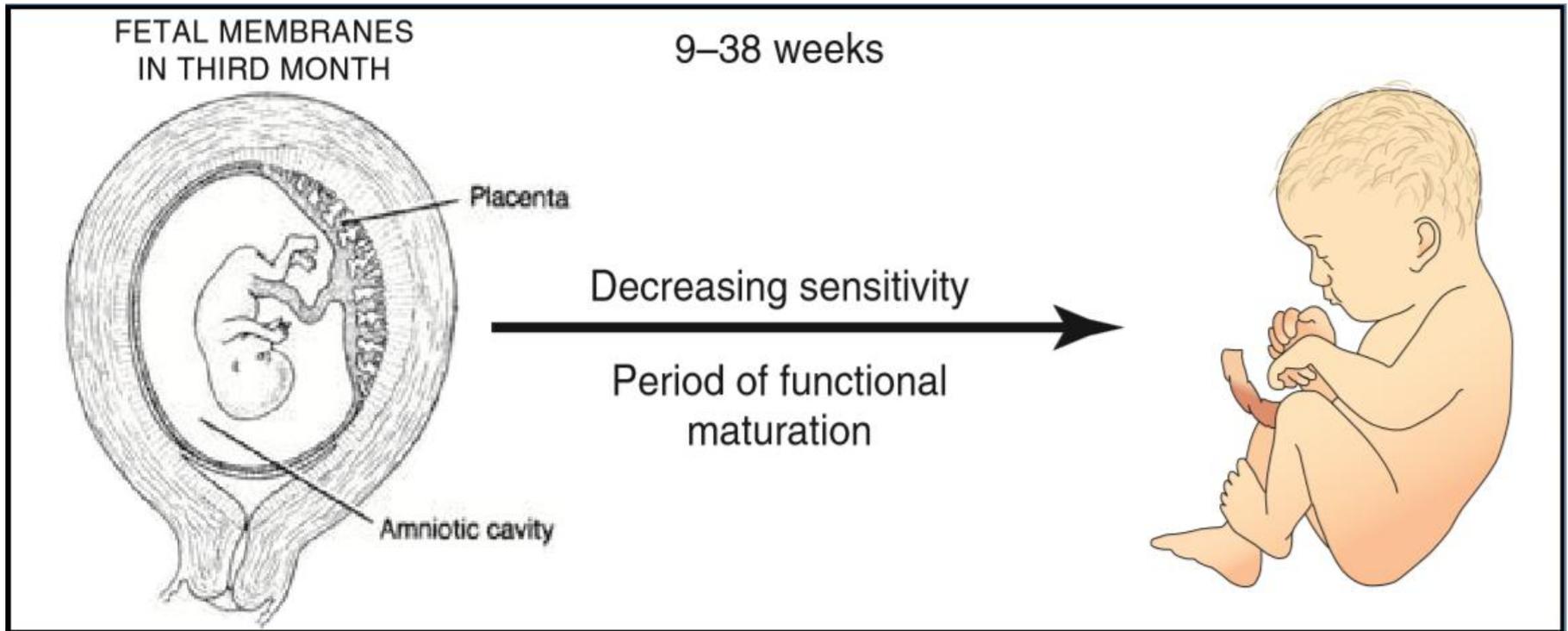
such as **acrania and meroencephaly**

(partial absence of brain),

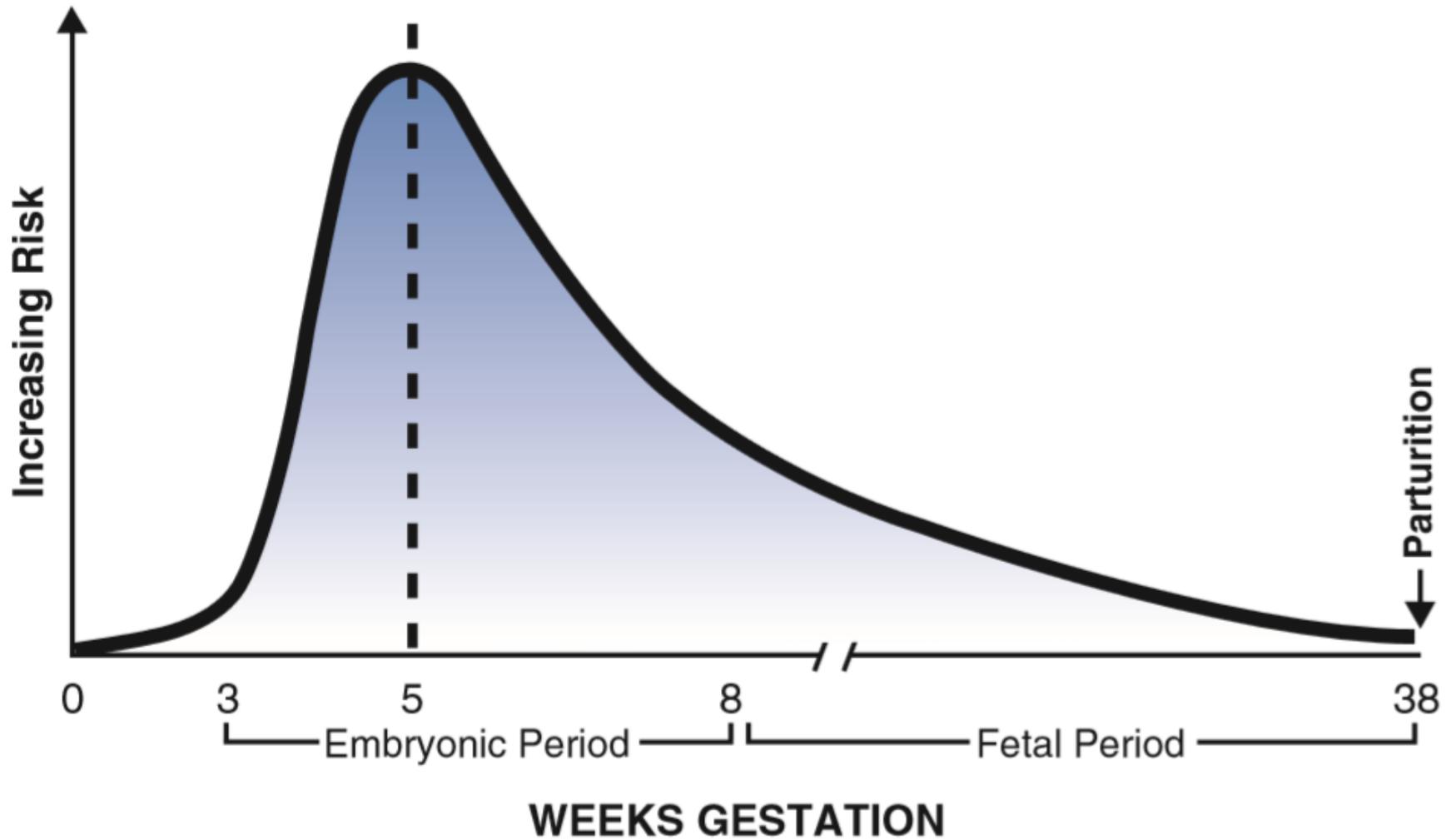
if administered during the

third week

Periods of susceptibility to teratogenesis



RISK OF BIRTH DEFECTS BEING INDUCED



Intrauterine devices are typically very effective at preventing pregnancy by altering sperm

1-Capacitation

2-Motility

3- The morphologic features of the endometrium

However, an intrauterine device does not physically block a sperm from entering the uterine tube and fertilizing an oocyte



a blastocyst could develop and implant in the uterine tube (ectopic tubal pregnancy).

If fertilization occurs in a woman who is using an intrauterine device, the risk of ectopic pregnancy is approximately 5%



READ ONLY

Abdominal pregnancies are very uncommon, but such a pregnancy may result from primary implantation of a blastocyst in the abdomen. In most cases, it is believed to result from ectopic implantation of a blastocyst that spontaneously aborts from the uterine tube and enters the peritoneal cavity. The risk of severe maternal bleeding and fetal mortality is high in cases of abdominal pregnancy. However, if the diagnosis is made late in pregnancy and the patient (mother) is free of symptoms, the pregnancy may be allowed to continue until the viability of the fetus is ensured, at which time it would be delivered by cesarean section.