

Placenta

by Sophia



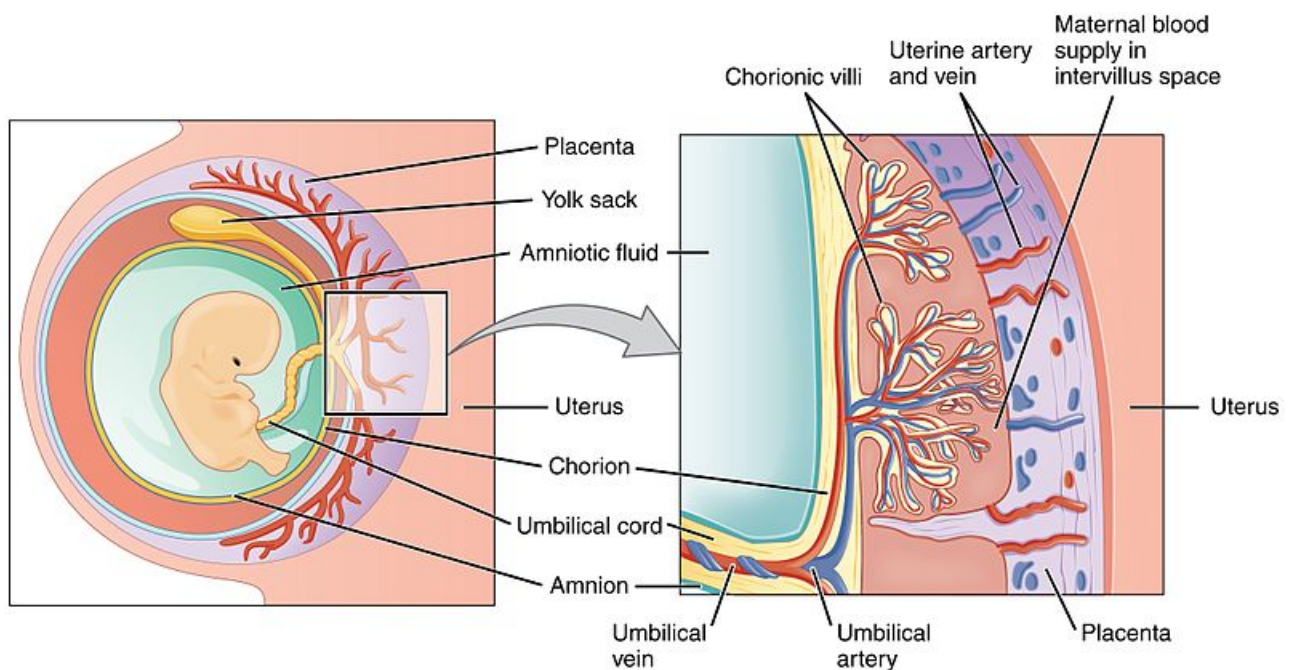
WHAT'S COVERED

In this lesson you will learn the important roles various embryonic membranes play in fetal development. Specifically, this lesson will cover:

1. The Placenta

The **placenta** provides nutrients and oxygen to an embryo or fetus and carries away waste through blood vessels. The placenta is the lifeline between the mother and the child, providing the nutrients that oxygen that the fetus needs.

The placenta is connected to the fetus via the **umbilical cord**. The umbilical cord's blood vessels carry the mother's blood supply to the fetus and carry the fetus's waste to the mother's cardiovascular system for elimination.



TERMS TO KNOW

Placenta

The blastocyst consists of the thin outer layer of cells (the trophoblast) surrounding a cavity within which is the inner cell mass (which will become the embryo). The trophoblast becomes the

placenta, which connects the fetus via the umbilical cord to the uterus. The placenta provides nutrients, gas exchange, and waste elimination via the mother's blood supply.

Umbilical Cord

The cord that connects the embryo to the placenta, the umbilical cord carries nutrients to the fetus and wastes away.

2. The Amnion & Chorion

The embryo is surrounded by a protective sac within the uterus. Within this sac are several sacs (pouch-like structures).

The outer membrane of this protective sac (the membrane between the uterus and the amniotic fluid) is the **chorion**. In addition to providing physical insulation, the chorion secretes HCG, human chorionic gonadotropin. HCG prevents the breakdown of the endometrium during menstruation, which is important because this prevents the fetus from being released from the mother's body.

The **amnion** is the sac that encloses the embryo and is filled with amniotic fluid. This amnion provides insulation and protection for the developing fetus or embryo.



TERMS TO KNOW

Chorion

An outer membrane around the fetus that protects the fetus, absorbs blood from the mother to be transferred to the embryo and secretes HCG to prevent endometrial breakdown. The amnion, chorion, yolk sac, and allantois together form the protective sac that encloses the embryo within the uterus.

Amnion

A sac that encloses the embryo and is filled with amniotic fluid that cushions and protects it. The amnion, chorion, yolk sac, and allantois together form the protective sac that encloses the embryo within the uterus.

3. The Allantois & Yolk Sac

Another structure within the protective sac is the **allantois**. The allantois is another little sac; it has a lot of blood vessels that provide the early embryo with oxygen and remove waste. Eventually, the blood vessels of the allantois will become blood vessels of the umbilical cord.

The **yolk sac** is yet another little pouch within the embryo's protective sac. It produces early blood, along with parts of the embryo's digestive tube. It's not a membrane that stays around during the entire development and actually disintegrates quite early.



TERMS TO KNOW

Allantois

An extension of the yolk sac, the allantois provides oxygen to and removes waste from the early embryo; eventually, the allantois's blood vessels will become the umbilical cord's blood vessels.

The amnion, chorion, yolk sac, and allantois together form the protective sac that encloses the embryo within the uterus.

Yolk Sac

A membranous sac attached to the embryo that provides early nourishment and develops the cardiovascular system that eventually disintegrates. The amnion, chorion, yolk sac, and allantois together form the protective sac that encloses the embryo within the uterus.



SUMMARY

This lesson has been an overview of various embryonic membranes and their structure and function. Specifically, you learned about the **placenta**, the **amnion and chorion**, and the **allantois and yolk sac**. Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND



ATTRIBUTIONS

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TERMS TO KNOW

Allantois

An extension of the yolk sac, the allantois provides oxygen to and removes waste from the early embryo; eventually, the allantois's blood vessels will become the umbilical cord's blood vessels. The amnion, chorion, yolk sac, and allantois together form the protective sac that encloses the embryo within the uterus.

Amnion

A sac or distinctive pouch that encloses the embryo and is filled with amniotic fluid that cushions and protects the embryo. The amnion, chorion, yolk sac and allantois together form the protective sac that encloses the embryo within the uterus.

Chorion

An outer membrane around the fetus that protects the fetus, absorbs blood from the mother to be transferred to the embryo and secretes HCG to prevent endometrial breakdown. The amnion, chorion, yolk sac and allantois together form the protective sac that encloses the embryo within the uterus.

Placenta

The blastocyst consists of the thin outer layer of cells (the trophoblast) surrounding a cavity within which is the inner cell mass (which will become the embryo). The trophoblast becomes the placenta, which connects the fetus via the umbilical cord to the uterus. The placenta provides nutrients, gas exchange and waste elimination via the mother's blood supply.

Umbilical Cord

The cord that connects the embryo to the placenta, the umbilical cord carries nutrients to the child and wastes away.

Yolk Sac

A membranous sac attached to the embryo that provides early nourishment and develops the cardiovascular system; the yolk sac eventually disintegrates. The amnion, chorion, yolk sac and allantois together form the protective sac that encloses the embryo within the uterus.