



SECTION 34.3 FETAL DEVELOPMENT Reinforcement

KEY CONCEPT Development progresses in stages from zygote to fetus.

The fertilized egg, or zygote, divides and forms a hollow ball of cells called the blastocyst. The blastocyst implants in the lining of the uterus and develops three layers: ectoderm, mesoderm, and endoderm. Once these structures begin to form, the ball of cells is known as an embryo.

As the pregnancy continues, membranes form to nourish and protect the embryo. The amniotic sac surrounds the embryo with fluid until birth. The chorion contains villi that help provide nutrients to the embryo. The placenta connects the mother and the baby to allow for the exchange of oxygen, nutrients, and wastes. The umbilical cord connects the embryo to the placenta. These membranes keep the blood of the mother and the fetus from mixing, which could endanger the pregnancy. Human pregnancies are divided into trimesters, or three periods of roughly three months each.

- First trimester—Many of the specialized organs and tissues that make up the human body are forming. The complete body plan is visible. The embryo at nine weeks is now called a fetus.
• Second trimester—At the end of this trimester, the fetus looks more and more like a full-sized baby. If a fetus is born prematurely during this trimester, it has a difficult time surviving.
• Third trimester—By the end of this trimester, the fetus completes its growth and all internal organs are developed.

The fetus receives all its nutrition from its mother. The mother must eat well, refrain from smoking or drinking alcohol, and avoid all types of drugs. The mother must also gain adequate weight to avoid having an underweight baby. The mother's hormone levels fluctuate, affecting her ability to maintain homeostasis. Proper diet, exercise, and regular physical checkups can help to ensure a healthy pregnancy.

1. What is the difference between a blastocyst and an embryo?

Three horizontal lines for writing the answer to question 1.

2. What structures allow the developing embryo to receive nourishment from the mother?

Three horizontal lines for writing the answer to question 2.

3. Why is it important for the mother to eat well and avoid toxic substances?

Three horizontal lines for writing the answer to question 3.