**Equator University of Science and Technology**

**Anatomy Department**

**Course: General Histology and Embryology FHS 1102**

**By: Dr. Musab Husein**

# Tutorial (7)

**Fetal Period (Week 9 to Birth)**

## 26/10/2026

**1. At the beginning of the ninth week, the developing human enters the fetal period.**

a) What is the main difference between the embryonic and fetal periods?
b) What are the major developmental processes occurring during the fetal period?
c) Why is the fetal period important for the functional maturation of organs?

**2. During the third month of development, the fetal head is relatively large compared with the rest of the body.**

a) Why is the fetal head proportionally large at this stage?
b) How do the proportions of the head and body change as fetal development progresses?
c) Which part of the fetal body shows considerable growth during the later months?

**3. During the third month, the external genitalia begin to show recognizable differences between male and female fetuses.**

a) At approximately which week can the external genitalia usually be distinguished morphologically?
b) Which hormone is primarily responsible for masculinization of the external genitalia?
c) Which fetal organ produces this hormone?

**4. During the fourth and fifth months, the fetus undergoes rapid growth, and the mother may begin to perceive fetal movements.**

a) What is the term used to describe the mother's first perception of fetal movements?
b) During approximately which weeks are these movements usually first perceived?
c) Why are fetal movements considered an important sign of fetal development?

**5. During the fifth month, the fetal skin becomes covered by fine hair and a protective substance.**

a) What is the fine hair covering the fetal body called?
b) What is the protective, whitish substance covering the fetal skin called?
c) What is the main function of this protective substance?

**6. A fetus delivered at approximately 24 weeks of gestation has immature lungs and difficulty breathing independently.**

a) Which cells of the lungs produce pulmonary surfactant?
b) What is the main function of surfactant?
c) Why are extremely premature infants at increased risk of respiratory distress syndrome?

**7. During fetal development, the kidneys begin producing urine, which is released into the surrounding fluid.**

a) At approximately which fetal week does urine production begin?
b) What is the functional significance of fetal urine production?
c) Which organ performs most waste elimination for the fetus before birth?

**8. During the sixth month, the fetal skin appears reddish and wrinkled.**

a) Why does the fetal skin appear wrinkled at this stage?
b) What type of tissue accumulates beneath the skin during the later fetal period?
c) How does this tissue contribute to survival after birth?

**9. During the fetal period, blood cell production gradually shifts between different organs.**

a) Which organ is the major site of hematopoiesis during much of early fetal life?
b) Which tissue gradually becomes the principal site of hematopoiesis during later fetal development?
c) What is the main function of hematopoiesis?

**10. A fetus is examined during the seventh month, and its nervous system shows progressive maturation.**

a) Which major organ system is responsible for coordinating fetal movements?
b) Why does maturation of the nervous system improve the fetus's ability to survive outside the uterus?
c) Name one important physiological function that depends on nervous system maturation.

**11. During fetal development, the testes normally descend from the posterior abdominal wall toward the scrotum.**

a) During approximately which months of fetal development do the testes normally reach the scrotum?
b) What is the term used when one or both testes fail to descend?
c) Name one possible complication of this condition.

**12. During the last two months of pregnancy, the fetus gains considerable weight.**

a) What is the main reason for the rapid increase in fetal weight during this period?
b) Which type of adipose tissue is particularly important for heat production in newborns?
c) Why is adequate fat accumulation important for the newborn?

**13. A pregnant woman undergoes ultrasonography to assess fetal growth.**

a) Name two fetal measurements commonly used to estimate gestational age or assess growth.
b) What is the difference between crown–rump length (CRL) and crown–heel length (CHL)?
c) Why is crown–rump length particularly useful during early pregnancy?

**14. A baby is delivered at 32 weeks of gestation and requires specialized neonatal care.**

a) Is this baby considered preterm, term, or post-term?
b) Name two organ systems that may still be functionally immature at this stage.
c) Why does the risk of complications generally decrease with increasing gestational age?

**15. At the end of the fetal period, the fetus has developed the structural and functional characteristics necessary for survival after birth.**

a) What is the approximate normal duration of pregnancy measured from the first day of the last menstrual period?
b) What is the approximate duration of development measured from fertilization to birth?
c) Why is it important to distinguish gestational age from fertilization age?