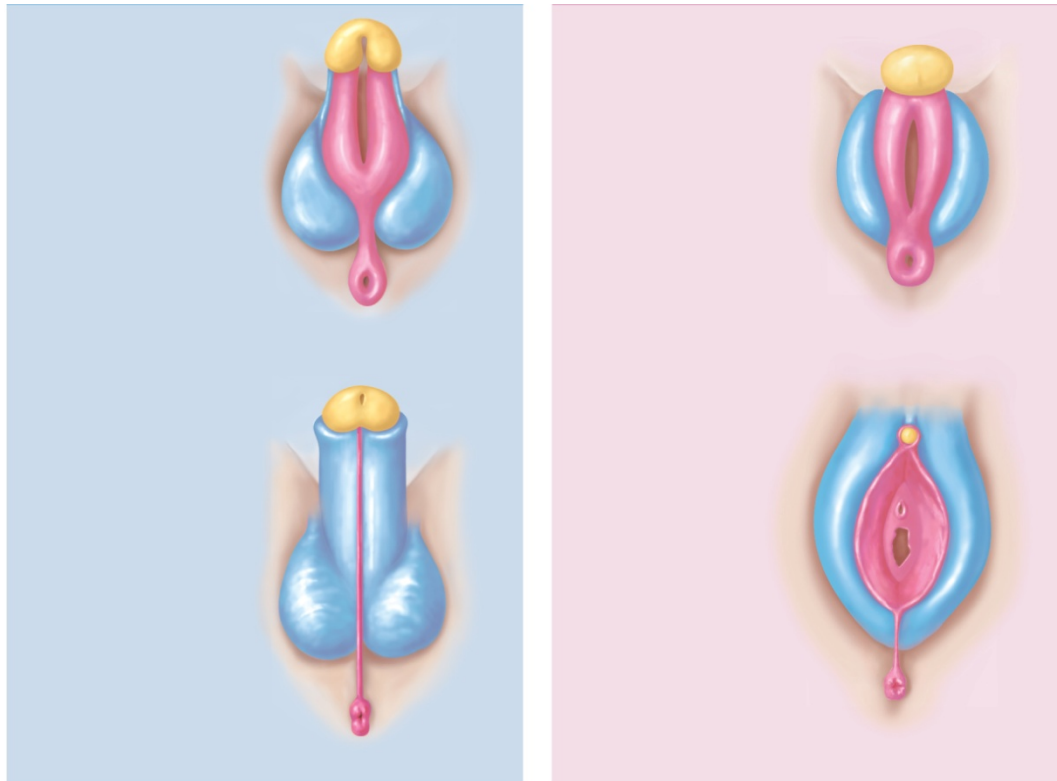


## Chapter 28

# Development of the Reproductive Tracts

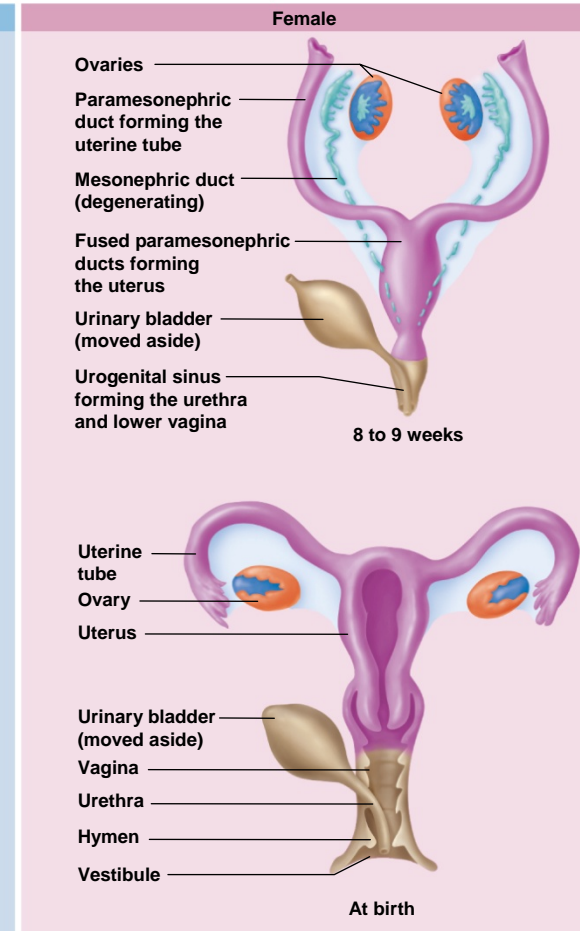
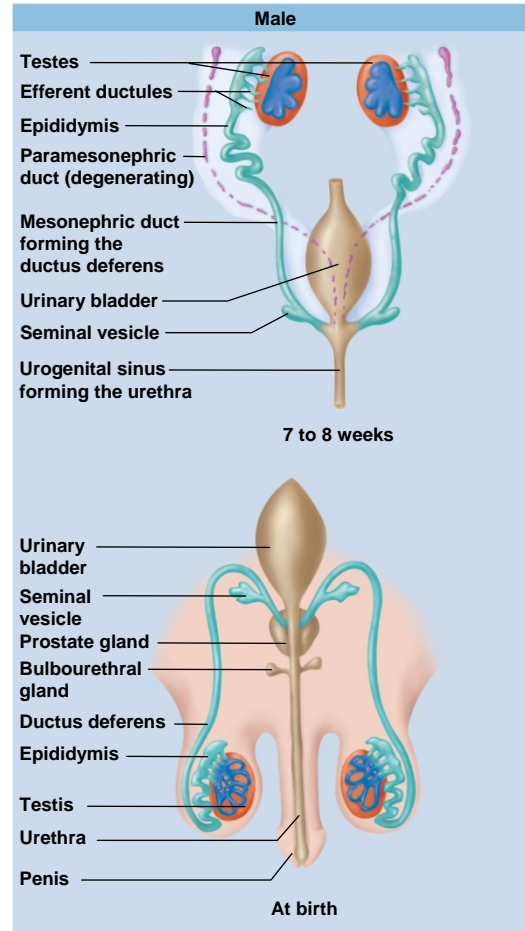
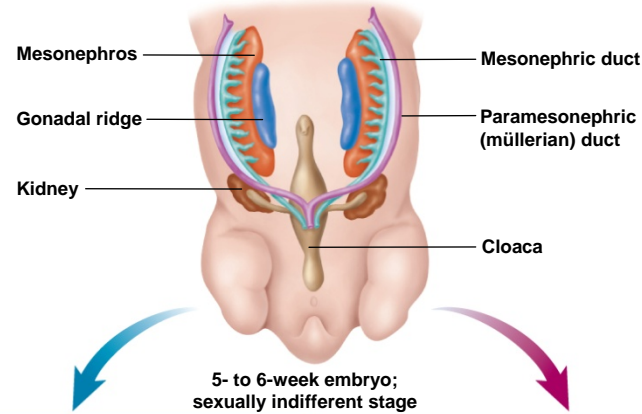


# Prenatal Hormones and Sex Differentiation

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- initially, a fetus is **sexually undifferentiated** as to which sex it will become
- gonads begin to develop at 5 or 6 weeks as gonadal ridges
- two sets of ducts adjacent to each gonadal ridge
  - **mesonephric ducts** develop into male reproductive system
    - paramesonephric ducts degenerate
  - **paramesonephric ducts (müllerian ducts)** develop into female reproductive tract
    - mesonephric ducts degenerate
- **SRY gene** (sex-determining region of Y chromosome)
  - in **males**, codes for a protein, **testes-determining factor (TDF)**, that initiates development of testes
    - begin to secrete testosterone **8 to 9 weeks**
    - stimulates mesonephric ducts to develop into the male anatomy
    - at same time the testes secrete **müllerian-inhibiting factor** causing degeneration of the paramesonephric ducts
- **estrogen levels** are always high in pregnancy
  - if estrogen was the hormone that directed the female development, all fetuses would be feminized
- female development occurs in **absence of androgen hormones**

# Development of Reproductive Tracts



# Development of External Genitalia

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- male and female organs that develop from the same embryonic structure are **homologous**
  - penis is homologous to the clitoris
  - scrotum is homologous to the labia majora
- similarity of external genitalia of both sexes
  - **genital tubercle** becomes the head (glans) of the penis or glans clitoris
  - pair of **urogenital folds** encloses urethra of male forming the penis or forms the labia minora
  - pair of **labioscrotal folds** becomes either scrotum or labia majora
- by week 12, either male or female genitalia are distinctly formed

# Development of External Genitalia

