Endocrine System & Reproduction

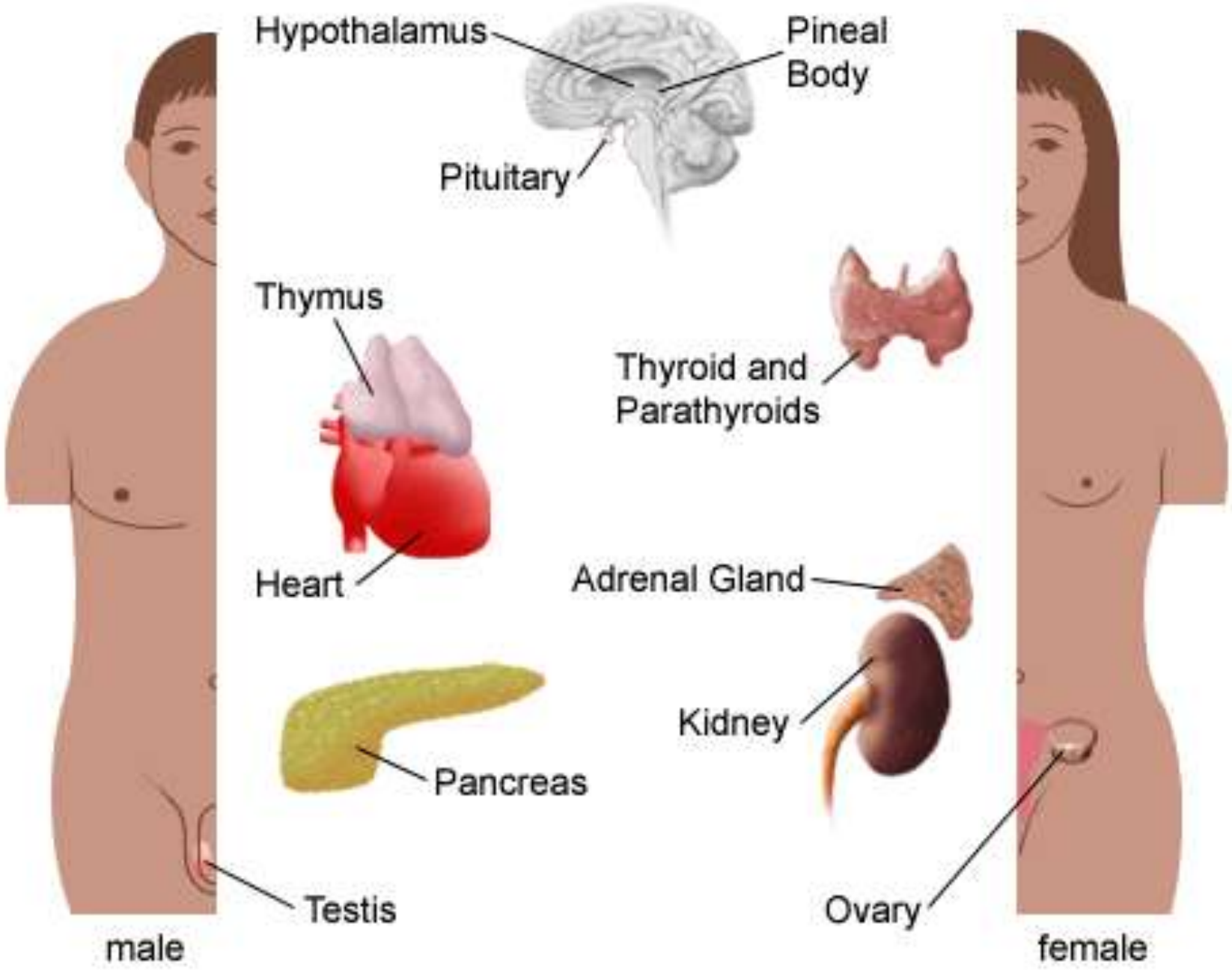
The Encocrine System

- Functions of the Endocrine System
  - Chemical Control System – Chemical response along with nervous response.
- Endocrine glands – produce hormones
  - Hormones speed up or slow down cellular processes.
  - Endocrine glands have no ducts, but just release chemicals into the blood.
  - Endocrine glands regulate the internal environment and cause cell and body responses to the environment

Glands of the Endocrine system.

- Pineal gland – gland in the brane that regulates sleep patterns
- Pituitary gland – gland in the brain that produce hormones that affect growth and reproduction
- Thymus- gland in the chest that stimulates fighting infections.
- Thyroid – gland located below larynx the regulates metabolism
- Parathyroid- gland back of the thyroid that regulate bone growth and maintenance as wess as muscle contraction and nerve transmission
- Adrenal – gives you body a bosst during physical and emotional stress and help stabilize blood sugar
- Pancreas- regulate blood sugar levels
- Ovaries- regulate human reproduction in fema le and secondary sexual characteristics
- Testes- regulate human reproduction in males and secondary sexual characteristics

Endocrine System



Endocrine System a negative feedback system

- The endocrine system responds to the amount of hormone in the blood.
- When there is not enough of a chemical in the blood the endocrine system responds and releases the chemical until there is more than enough, and that signal the gland to stop producing the hormone.

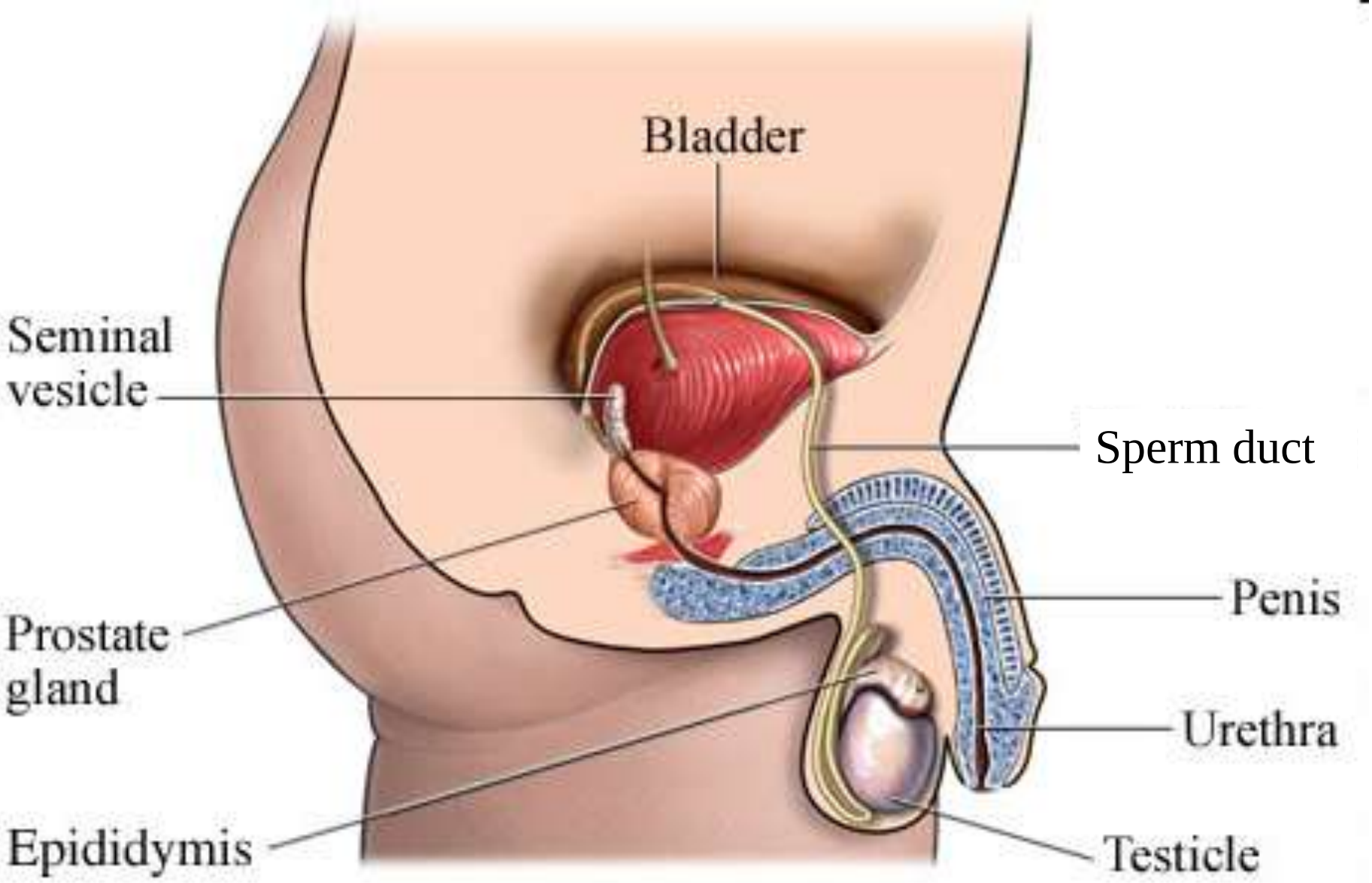
Sexual reproduction

- **In almost all animals sexual reproduction involves**
- **Gonads – the sex cell producing organs**
  - **Females have ovaries that produce eggs**
  - **Males have testes that produce sperm**
- **Fertilization is when the sperm unites with the egg to form a zygote**

THE BRAIN IS THE LARGEST SEX ORGAN OF ALL!!

Male reproductive system

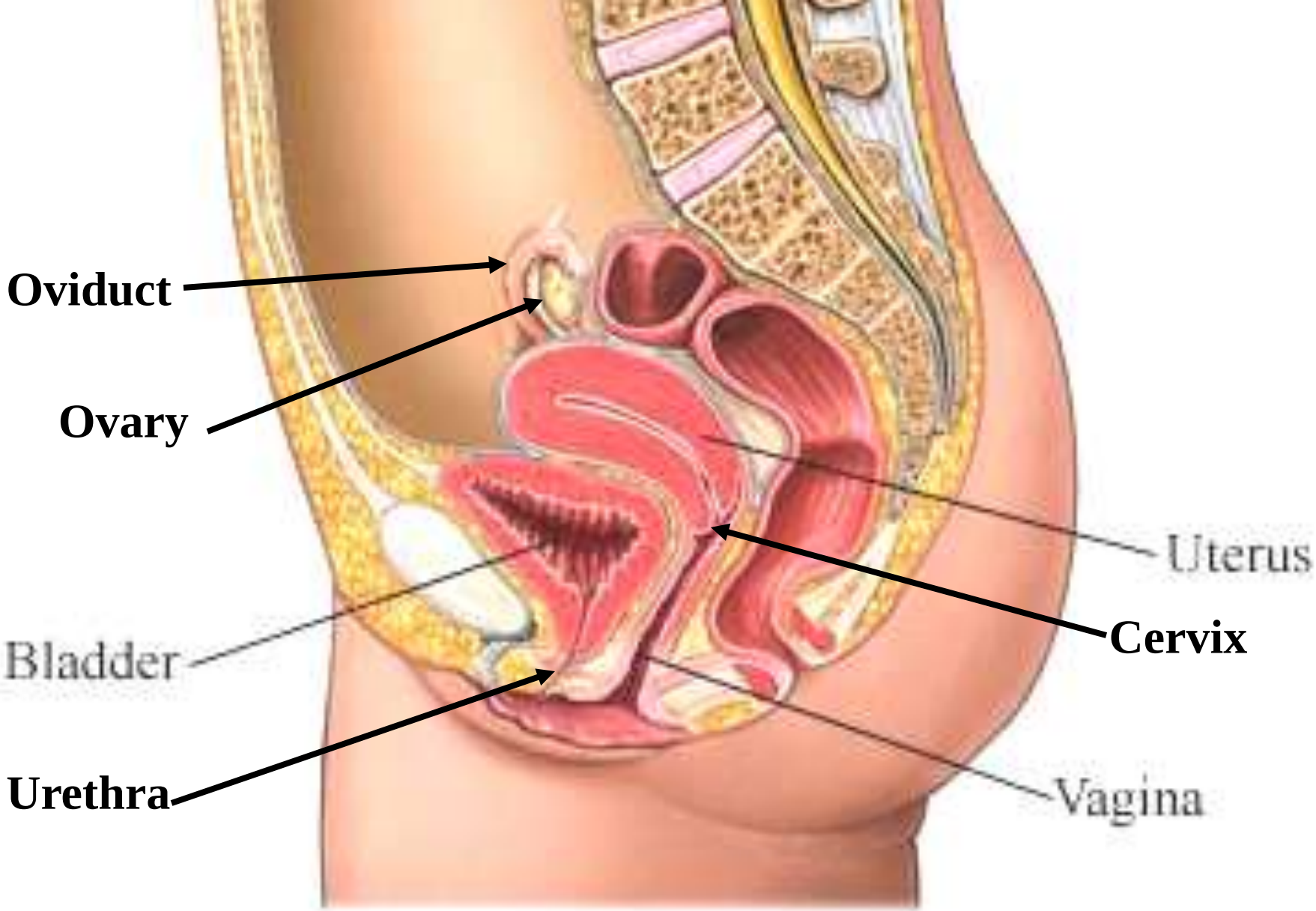
- **Testes – produce the sperm**
- **Scrotum – muscular sac that protects the testes and keeps them at the proper temperature for sperm production (slightly lower than the body temperature)**
- **Vas deferens – tubes from the testes to the urethra**
- **Prostate gland – helps regulate the release of urine or sperm**
- **Urethra – serves as a tube for both urine and semen**
- **Penis – serves as a depositor of sperm and gets sperm to the cervix of the female**



*Know the parts and functions of the male reproductive system.**

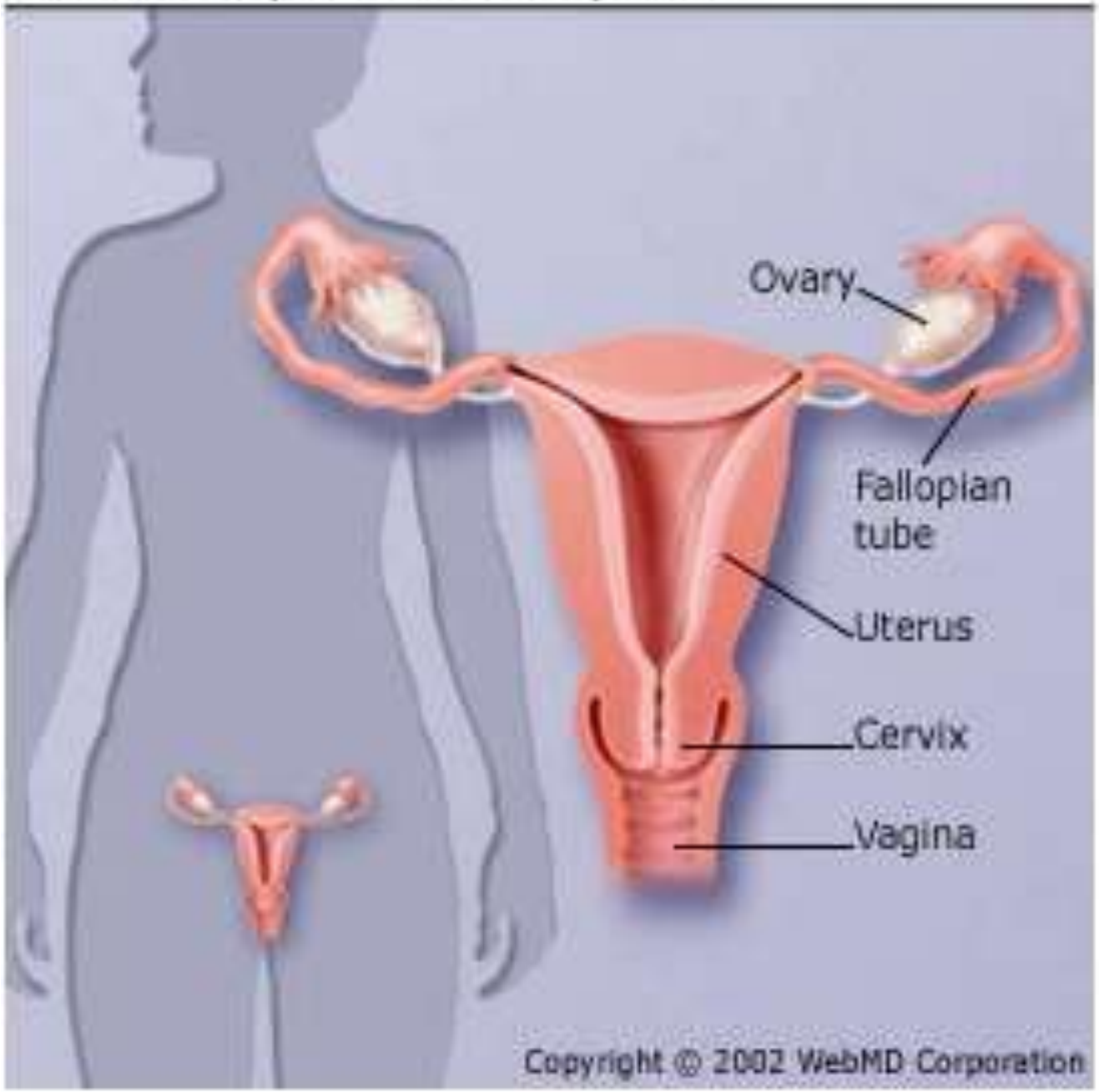
Female reproductive system

- **Ovaries – produce and release eggs**
- **Fallopian tubes (oviducts) – are the tubes for the egg to get from the ovary to the uterus**
- **Uterus – area for nourishment and development of the embryo**
- **Cervix – a muscular opening between the uterus and vagina that opens to let the baby out during the birthing process**
- **Vagina – receives the penis during sexual intercourse and is the birth canal for the baby**
- **Urethra – serves only for release of urine**
- **Endometrium – the lining of the uterus that breaks down and builds up during the menstrual cycle.**



*Know the parts and functions of the female reproductive system.**

Female Reproductive System



The Human menstrual cycle

- **The monthly cycle that the uterus goes through to prepare for a possible implanting of the zygote**

- The lining of the uterus builds up and comes off every 28 days

Pregnancy stage

- **If the egg is fertilized the zygote embeds in the uterine lining and produces a hormone that causes menstruation from taking place**
- **This stage last**
  a) 9 months, or 38 week, or 280 days

Fertilization & Early Pregnancy

Conception

- **During sexual intercourse**
- **Sperm is ejected (ejaculated) into the vagina**
- **The sperm enter the cervix**
- **Sperm go through the uterus**
- **Fertilization takes place in the oviduct**
- **The zygote then implants in the uterus wall**
- **Contraceptive – is a device or chemical that keeps conception form taking place**

Development

Twinning

- **Fraternal twins - are from separate sperm an different egg**
- **Identical twins - When the cells of the blastula or gastrula separate into two cell masses**

Function of the placenta

- **Provides food and oxygen for the embryo that is removed by diffusion from the mothers blood**
  - **Crosses a membrane and goes into the embryos blood without the two blood systems coming into contact with each other.**
- **Removes wastes from the embryos blood into the mothers blood**
- **The umbilical cord is a blood vessel filled chord that attaches the embryo to the placenta**l
- **Blood from the embryos right ventricle goes directly into the umbilical cord and to the placenta**

Human Development

- Human development begins with fertilization in the oviduct

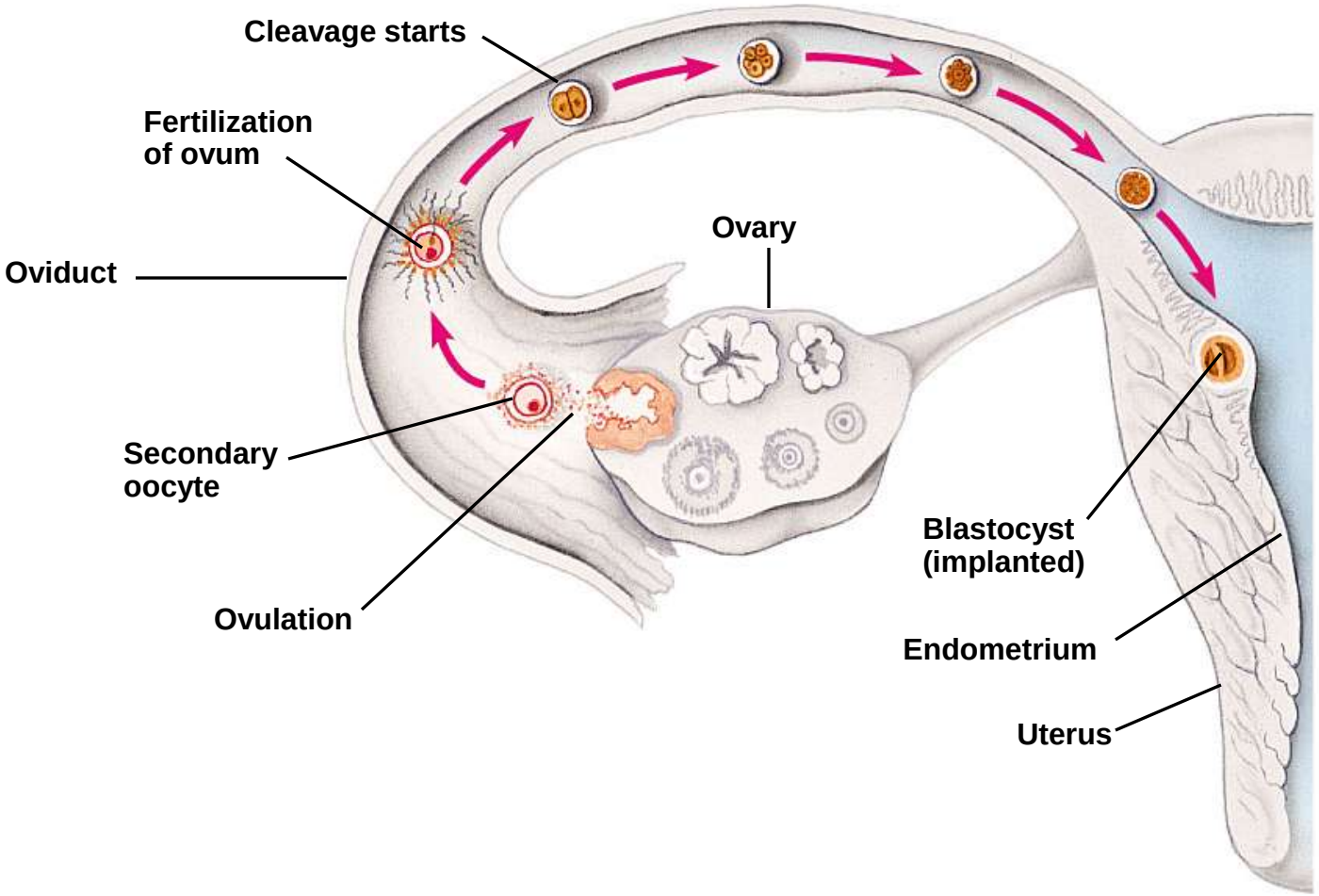


Figure 27.16A

HUMAN DEVELOPMENT
The embryo and placenta take shape during the first month of pregnancy

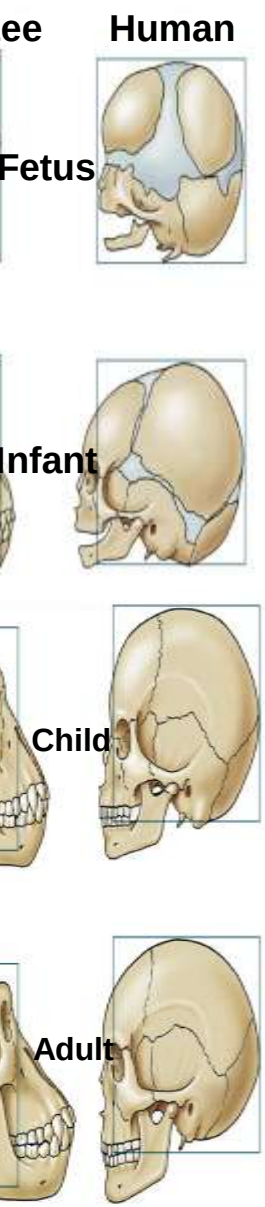
- Gestation is pregnancy
  - It begins at conception and continues until birth
  - Human gestation is 266 days (38 weeks or 9 months)
  - Mouse gestation is 1 month
  - Elephant gestation is 22 months

- Third trimester
  - Growth and preparation for birth

Childbirth

- The process that the uterus pushes the baby out through the cervix and vagina

Birth and Postnatal Development



- Postnatal development
  - Babies typically double their birth weight within a few months.
  - Neuron production occurs for six months.
  - allometric growth

Development after birth

- Infancy
- Childhood
- Adolescence
  - Puberty
- Adulthood
- Senior Citizen.