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# REPRODUCTION

## CHAPTER 18

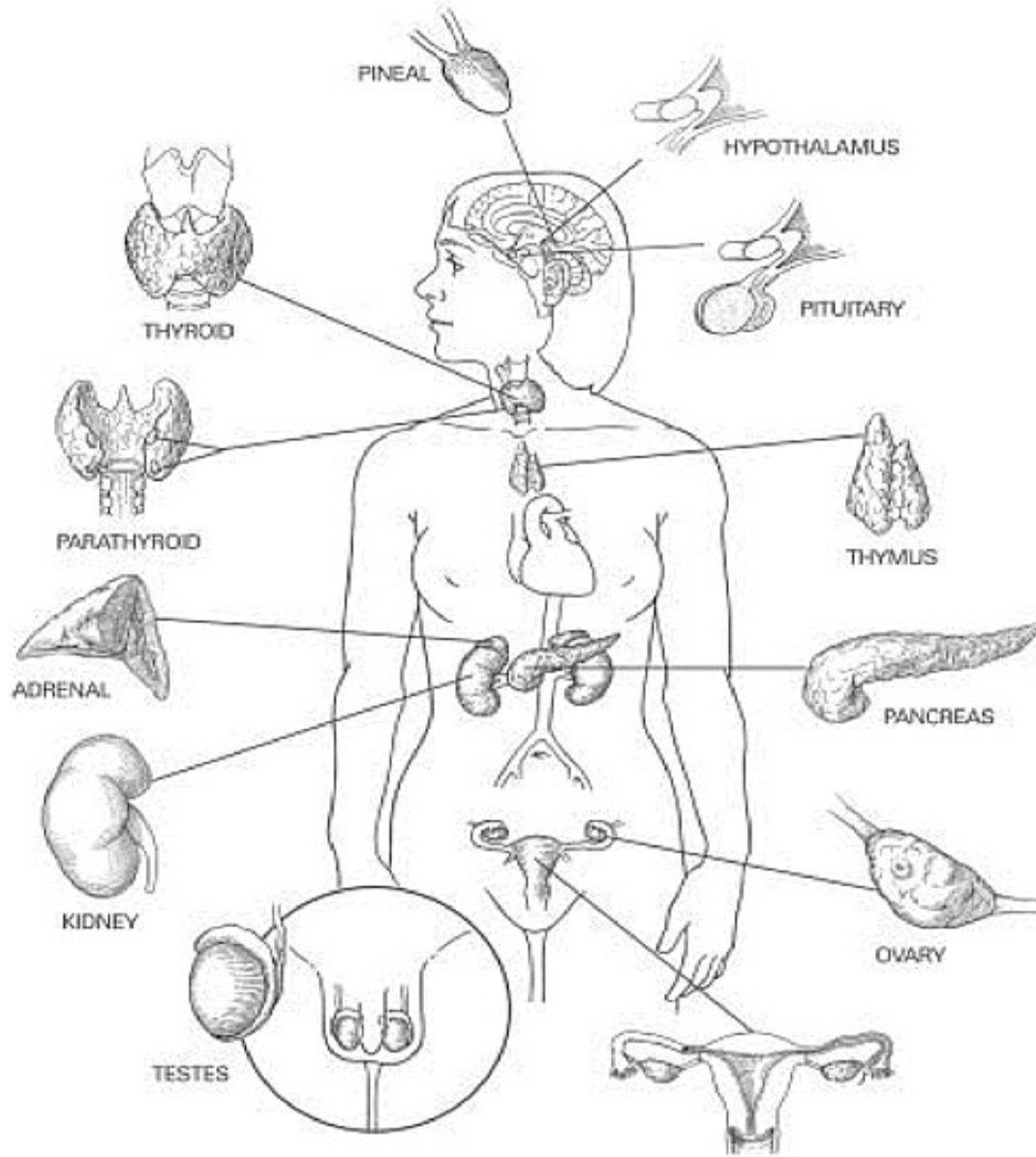
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# THE ENDOCRINE SYSTEM

- The **endocrine system** regulates long-term changes in the body such as growth and development. It also controls many of your body's daily activities.
    - System is made up of a group organs called **endocrine glands**.
      - Produces and releases chemical substances (into the blood stream) that signals changes in other parts of the body.
      - The chemicals produced by the endocrine glands is known as a **hormone**.
        1. Chemical “messenger”
        2. Example: the hormone adrenaline causes an increased heart rate, mental alertness, and muscle tension.
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The diagram shows the general location of each endocrine gland and endocrine-related organ.



# THE ENDOCRINE SYSTEM (cont.)

- Functions of Endocrine Glands
  - **Hypothalamus Gland**
    - Located in the brain
    - Part of the nervous AND endocrine system.
    - Controls feelings of sleep, hunger, and body water levels.
    - Produces “**releasing hormones**” that signal the release of hormones from the pituitary gland.
      - Luteinizing and Follicle-stimulating hormones, produced by the pituitary gland, (LH and FSH) signal the testes to begin making sperm and the ovaries to produce estrogen and progesterone



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# THE ENDOCRINE SYSTEM (cont.)

- Pituitary Gland
    - Controls growth, reproduction, and metabolism.
    - Produces growth hormones in the body.
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Igor Vovkovinskiy, 24, is a 7-foot-8-inch giant whose home in Rochester, Minn., was custom-built for his enormous frame. The house has cathedral ceilings and a nine-foot bed. When Vovkovinskiy was 3 years old, he already was nearly 5 feet tall. Doctors discovered a tumor in his **pituitary gland** that was causing his growth spurts.



Pituitary dwarfism is a result of growth hormone deficiency. The deficiency may be genetic or the result of a severe brain injury. When untreated, skeletal growth is extremely slow, and puberty may or may not occur. Development can be normalized with the regular administration of synthetic hormones.



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# THE ENDOCRINE SYSTEM (cont.)

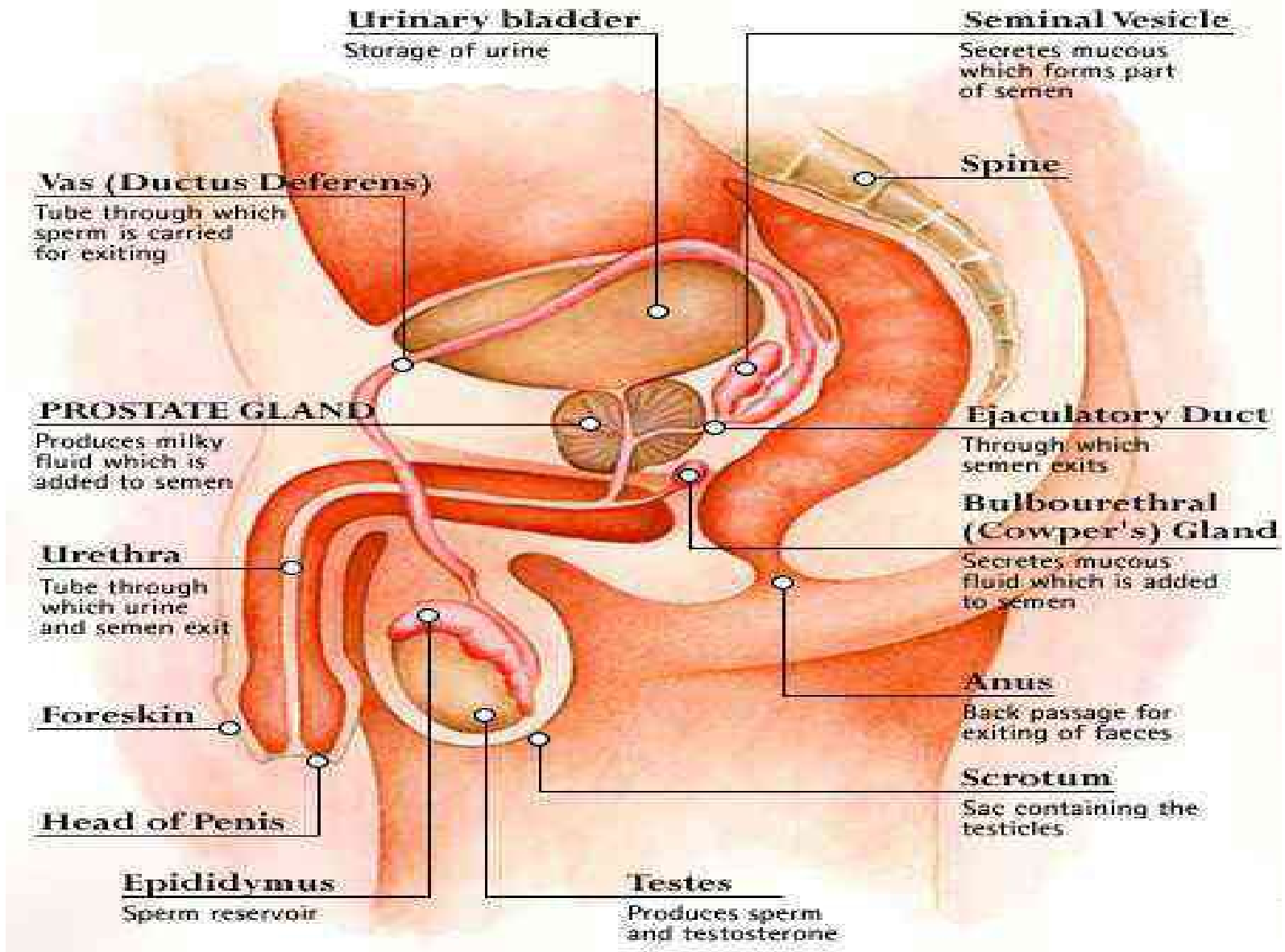
- Other Endocrine Glands
    - See figure 2 on page 462
  - Another important function of the endocrine system is **Puberty**.
    - Period of sexual development in which a person is physically able to reproduce.
    - Starts when the hypothalamus signals the pituitary gland to produce two hormones.
      - These hormones signal the reproductive glands to produce sex hormones
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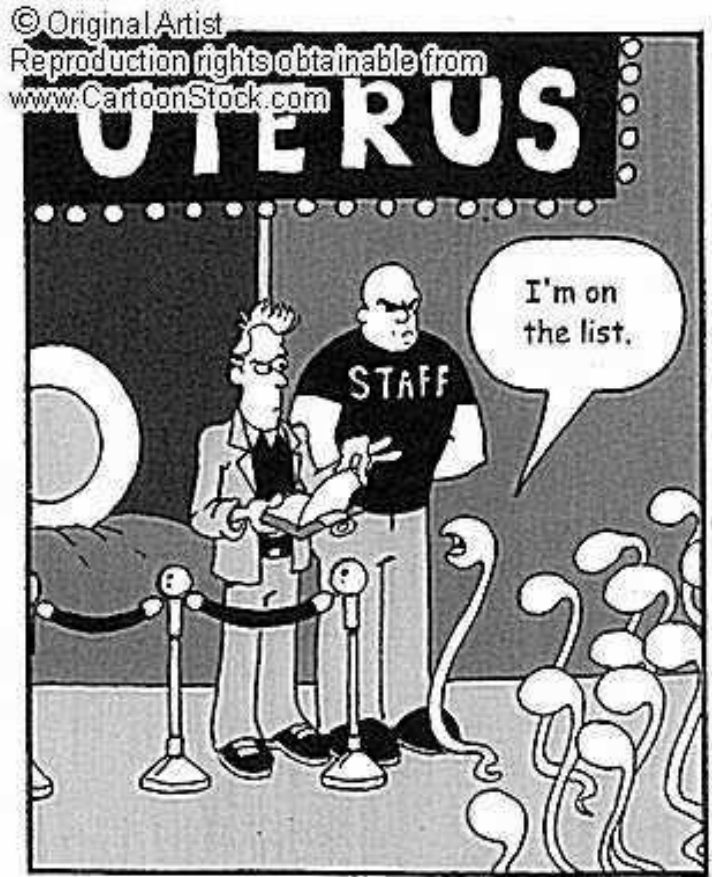


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# The Male Reproductive System

- Reproductive cells are called **sperm**.
  - Main function of MRS is to produce sex hormones, produce and store sperm, and to deliver the sperm to the female reproductive system.
    - Sperm may join with an egg in a process called **fertilization**.
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# The Male Reproductive System (cont.)

- **Testes** – male reproductive glands.
    - Produces **testosterone**, which affects the production of sperm and signals physical changes at puberty.
    - Located outside the body in a sac called the **scrotum**.
  - **Penis** – the external sexual organ through which sperm leaves the body.
  - Sperm Production
    - once a male reaches puberty (about 10 years old) millions of sperm are produced each day in the testes.
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# The Male Reproductive System (cont.)

- The Pathway of Sperm
    - ❑ 1. Sperm are produced in the testes. Once mature they are stored in the epididymis.
    - ❑ 2. Released from the epididymis where the sperm travels through the vas deferens to the seminal vesicles.
    - ❑ From the seminal vesicle through the prostate gland to the urethra.
    - ❑ See figure 4 on page 466.
    - ❑ During **ejaculation** several million sperm are released.
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# The Male Reproductive System (cont.)

- Keeping a Healthy Reproductive System
    - Clean scrotum and penis everyday. This will prevent fungus, such as jock itch
    - Sexual Abstinence
      - Choosing to not have sex until married will prevent unwanted pregnancies, as well as serious sexually transmitted infections (STIs).
  - Wear a “cup”
  - Self-Exams
    - 1/3 of testicular cancer cases occur in the late twenties and early thirties.
  - See a doctor if:
    - You have pain when urinating
    - Sores appear
    - Unusual discharge
    - You notice a hard unusual lump in the testicle
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# Female Reproductive System

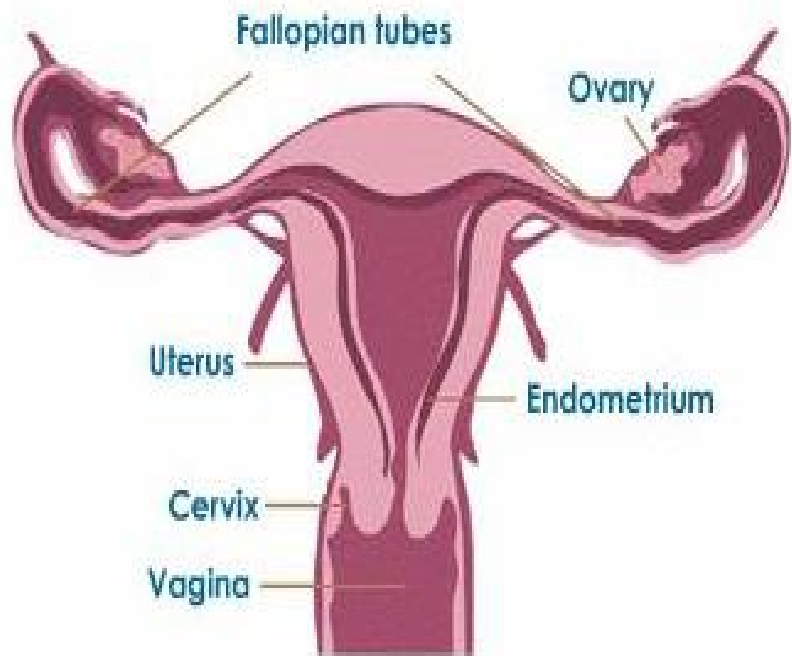
- Function
    - Produce sex hormones, eggs, and provide a nourishing environment in which a fertilized egg can develop into a baby.
  - **Ovaries** – reproductive glands in which eggs are produced.
    - Produces sex hormones **estrogen** and **progesterone**.
  - **Ovulation** – a process that occurs once a month in which a mature egg is released by an ovary.
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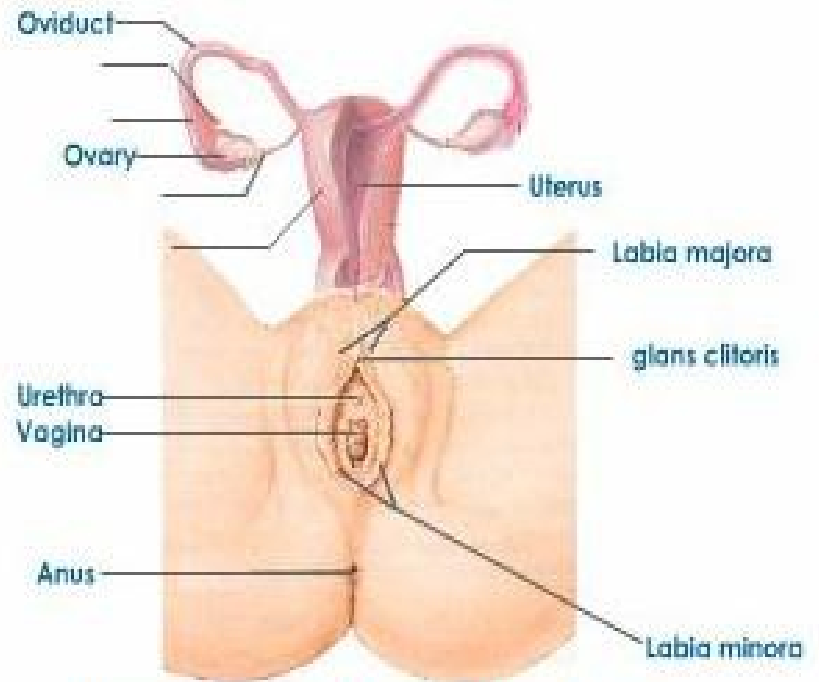
# Female Reproductive System (cont.)

- **Fallopian Tubes** – Passage way from the ovaries to the Uterus.
    - Usually this is where fertilization occurs.
  - **Uterus** – hollow, muscular, pear shaped organ.
    - Allows the fertilized egg to grow into a baby.
  - Vagina – hollow, muscular passageway, leading from the uterus to the outside of the body.
    - Sperm enters a female body through the vagina.
    - During childbirth the baby will pass through the vagina.
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**Female Reproductive System Seen from the Front**



**Human Female Reproductive System**

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# Female Reproductive System (cont.)

- The Menstrual Cycle (see pg. 472)
    - Once a month an ovary releases a mature egg.
    - If egg is not fertilized, the uterine lining will shed, and a new cycle begins.
    - Usually lasts 28 days
    - May be irregular, especially during puberty.
    - Occur each month from puberty until **menopause.**
      - Occurs about 45 to 55 years old.
      - Body no longer releases a mature egg.
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# Female Reproductive System (cont.)

- Menstrual Discomfort
  - Abdominal cramps – caused by uterus contractions.
  - Premenstrual Syndrome (PMS)
    - Occurs before the menstrual cycle.
    - Nervous tension
    - Mood swings
    - Headaches
    - Bloating
- Toxic Shock Syndrome
  - Associated with tampon use
  - Bacterial infection
  - Can be deadly
  - Symptoms include fever, rash, vomiting, diarrhea
  - To avoid, women should change tampons often.

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# Female Reproductive System (cont.)

- Sexual Abstinence
    - Choosing not to have sex until marriage, with another virgin, is the only way to avoid unwanted pregnancy, and serious sexually transmitted infections.
  - Treat infections immediately
    - Can be caused by:
      - Yeast
      - Bacteria
      - Other microorganisms
      - Symptoms
        - Discharge, odors, itching, burning sensation during urination.
          - See a doctor if any of these symptoms appear.
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# Female Reproductive System (cont.)

- Medical Checkups
    - Yearly checkup is recommended.
    - Breast Exam
      - Self exam (see page 476)
      - **Mammogram** at age 40
        - X-ray of breasts
    - Pap Smear – sample of cells taken from the cervix.
      - Tests for cervical cancer.
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