THE ENDOCRINE SYSTEM

Lesson 1
ENDOCRINE GLANDS

- Tubeless organs or groups of cells that secrete hormones directly into the bloodstream
HORMONES

- Chemical substances that are produced in glands and help regulate many of your body’s functions
THYROID GLAND

- Produces hormones that regulate metabolism, body heat, and bone growth
- Produces *thyroxine*-regulates the way cells release energy from nutrients
PARATHYROID GLANDS

- Produce a hormone that regulates the body’s calcium and phosphorus balance
This gland secretes melatonin, which regulates sleep cycles and is thought to affect the onset of puberty
PANCREAS

- A gland that serves both the digestive system and the endocrine systems
- Secretes two hormones that regulate the level of glucose in the blood-
  *Glucagon
  *Insulin
PITUITARY GLAND

- Regulates and controls activities of other endocrine glands

- Anterior Lobe (front lobe)
  * Somatotrophic, or growth hormone
  stimulates normal body growth and development by altering chemical activity in body cells
CONTINUED:

- Two hormones that stimulate the production of all other sex hormones-
  * Follicle-stimulating hormone (FSH)
  * Luteinizing hormone (LH)
GONADS

- Another name for the ovaries and testes
ADRENAL GLANDS

- Glands that help the body recover from stress and respond to emergencies
PROBLEMS WITH THE ENDOCRINE SYSTEM

- **Diabetes Mellitus** - pancreas produces too little or no insulin
- **Grave’s disease** (AKA *Hyperthyroidism*) - an overactive and enlarged thyroid gland which produces excessive amounts of thyroxine
- **Hypothyroidism** - low thyroxine production
CONTINUED:

- Cushing’s disease - overproduction of adrenal glands
- Goiter - lack of iodine (salt) in the diet
- Growth disorders - abnormal amounts of growth hormone
LESSON 2

- The Male Reproductive System
The system of organs involved in producing offspring
STRUCTURE AND FUNCTION OF THE MALE REPRODUCTIVE SYSTEM

- **Sperm** - the male reproductive cells
- **Testosterone** - the male sex hormone
- **Testes (testicles)** - two small glands that produce sperm
- **Scrotum** - an external skin sac
- **Penis** - tube-shaped organ extends from the trunk of the body just above the testes
CONTINUED:

- **Vas Deferens**-tubes that extend from each epididymis to the urethra
- **Seminal Vesicle**-produce a fluid that nourishes the sperm and makes them mobile
- **Prostate and Cowper’s Gland**-produce secretions that combine to form semen
CONTINUED:

- **Urethra** - passageway through which both semen and urine leave the male body.
- **Epididymis** - sperm matures and is stored here.
- **Semen** - a thick fluid containing sperm and other secretions from the male reproductive system.
CARE OF THE MALE REPRODUCTIVE SYSTEM

- Get regular checkups
- Bathe regularly
- Wear protective equipment
- Perform self-examination
- Practice abstinence
PROBLEMS WITH THE MALE REPRODUCTIVE SYSTEM

- **STD’s** - Sexually Transmitted Diseases
- **Inguinal Hernia** - separation of tissue that allows part of the intestine to push into the abdominal wall near the top of the scrotum

*Cause: straining of the abdominal muscles or lifting heavy objects*
CONTINUED:

- **Sterility** - the inability to reproduce (too few sperm or sperm of poor quality)
- **Testicular Cancer** - (14-40 yrs old) should perform monthly Testicular Self-Exam p.472
- **Prostate Cancer** - screening is done for males over age of 50 yrs
Lesson 3

Female Reproductive System

At birth a female’s ovaries contain more than 400,000 immature ova, or eggs
STRUCTURE AND FUNCTION OF THE FEMALE REPRODUCTIVE SYSTEM

- **Ova** (ovum)-female reproductive cells
- **Uterus**-a hollow, muscular, pear-shaped organ inside a female’s body, nourishes and protects the fertilized ovum from conception until birth
- **Ovaries**-female sex glands that store ova and produce female sex hormones
CONTINUED:

- **Ovulation** - the process of releasing a mature ovum into the fallopian tube each month (right ovary releases one month, left ovary will release the next month)
- **Fallopian Tube** - a pair of tubes with fingerlike projections that draw in the ovum
CONTINUED:

- **Vagina** - a muscular, elastic passageway that extends from the uterus to the outside of the body (AKA *birth canal*)
- **Endometrium** - the lining of the uterus
- **Cervix** - the opening to the uterus, common site of cancer in women
CONTINUED:

- **Menstruation** - shedding of the lining of the uterus
- Menstrual cycle lasts 5-7 days
- Begins between ages of 10-15
CARE OF THE FEMALE REPRODUCTIVE SYSTEM

- Practice abstinence
- Bathe regularly
- Breast Self-Exam p.477
PROBLEMS OF THE FEMALE REPRODUCTIVE SYSTEM

- Menstrual cramps - light exercise or apply a heating pad to relieve symptoms
- Premenstrual syndrome (PMS) - caused by hormonal changes,
  - Symptoms include mood swings, weight gain, bloating, fatigue
  - Regular physical activity, and good nutrition can reduce symptoms
Toxic Shock Syndrome (TSS)-a bacterial infection that affects the immune system and liver, can be fatal

- Reduce risk by using tampons with lowest absorbency, and change tampons often (3-4 hrs)
- Symptoms include fever, vomiting, red eyes, dizziness, muscle aches
PROBLEMS RELATED TO INFERTILITY

- **Endometriosis**—when tissue that lines the uterus migrates and grows in the ovaries, fallopian tubes, or the lining of the pelvic cavity

- **Pelvic Inflammatory Disease (PID)**—an infection of the fallopian tubes, ovaries, and surrounding pelvis caused by an STD

- **STD’s**—Sexually Transmitted Diseases
OTHER FEMALE REPRODUCTIVE DISORDERS

- **Vaginitis** - a bacterial vaginosis
  - Symptoms include discharge, odor, pain, itching, burning
  - Can lead to PID if not treated with antibiotics
CONTINUED:

- **Blocked fallopian tubes** - leading cause of infertility, may be caused by PID, abdominal surgery, STD’s, endometriosis
- **Ovarian Cysts** - fluid-filled sacs on the ovary
- **Cervical, Uterine, and Ovarian Cancer** - early sexual activity, and STD’s increases risk
  - Pap Smear/Pelvic Exam