Chapter 12: The Endocrine System

Study Terms

Section 1: Introduction

Endocrine glands
ductless glands that secrete hormones directly into the bloodstream

Homeostasis
maintaining the body’s internal environment

Section 2: The Functions and Classifications of Hormones

Hormones
chemical secretions from an endocrine gland

Negative feedback system
mechanism by which hormonal systems function

Section 3: The Hypothalamus of the Brain

Hypothalamus
part of the brain that controls secretions from the pituitary gland

Infundibulum
part of the hypothalamus that connects to the pituitary gland; 2. open end of fallopian tube

Releasing hormones
produced by the hypothalamus, they stimulate the release of hormones from the pituitary gland

Releasing inhibitory hormones
produced by the hypothalamus, they stimulate the release of hormones from the pituitary gland

Section 4: The Major Endocrine Glands – The Pituitary Gland

Antidiuretic hormone (ADH)/vasopressin
maintains the body’s water balance; vasopressin

Follicle-stimulating hormone (FSH)
stimulates development of the follicles in the ovaries of females, and the production of sperm cells in the seminiferous tubules of the testes

Growth hormone (GH)
stimulates cell metabolism in most tissues of the body

Hypophysis
another name for the pituitary gland

Lactogenic hormone (LTH)/Prolactin
stimulates milk production in the mammary glands after delivery; also called prolactin
Luteinizing hormone (LH) stimulates ovulation in the ovary and production of the female sex hormone progesterone.

Melanocyte-stimulating hormone (MSH) increases the production of melanin in melanocytes in the skin, causing a darkening of the skin.

Oxytocin (OT) hormone that stimulates contraction of smooth muscles in the wall of the uterus.

Pituitary gland/hypophysis hypophysis; a major gland of the endocrine system.

Thyroid-stimulating hormone (TSH) stimulates the thyroid gland to produce its hormone.

Section 5: The Major Endocrine Glands – The Thyroid and Parathyroid Glands

Calcitonin hormone secreted by the thyroid that lowers the calcium and phosphate ion concentration of the blood.

Chief cells 1. secreting cells of the parathyroid glands; 2. in the stomach secrete pepsinogen; also known as zymogenic cells.

Cretinism a lack of or low level of thyroid hormones in children, resulting in mental and sexual retardation.

Exophthalmia bulging of the eyeballs.

Goiter enlargement of the thyroid gland due to an inadequate amount of iodine in the diet.

Graves’ disease a type of hyperthyroidism caused by overproduction of thyroid hormone.

Hyperparathyroidism an abnormally high level of PTH secretion.

Hyperthyroidism too much secretion of thyroid hormone.

Hypoparathyroidism an abnormally low level of PTH.

Hypothyroidism lack of or low level of thyroid hormone.

Myxedema accumulation of fluid in subcutaneous tissues.

Oxyphil cells secreting cells of the parathyroid glands; also called chief cells.

Parathyroid glands.
four glands embedded in the thyroid gland

**Parathyroid hormone/para-thormone (PTH)**
parathormone; the hormone of the parathyroid glands

**Thyroid gland**
an endocrine gland located along the trachea

**Thyroxine or tetraiodothyronine (T4)**
a hormone of the thyroid gland that regulates the metabolism of carbohydrates, fats and proteins, also known as tetraiodothyroxine (T4)

**Triiodothyronine (T3)**
a hormone of the thyroid gland that regulates the metabolism of carbohydrates, fats and proteins

**Section 6: Other Major Endocrine Glands**

**Acidosis**
a condition caused by lowering of blood pH

**Addison’s disease**
condition in which the adrenal cortex fails to produce enough hormones

**Adrenal cortex**
outermost part of the adrenal gland

**Adrenal glands/suprarenal glands**
small glands found on top of each kidney; suprarenal glands

**Adrenal medulla**
inner part of the adrenal gland

**Adrenalin/epinephrine**
a neurotransmitter also called epinephrine used by the autonomic nervous system; a hormone

**Aldosterone**
hormone that regulates sodium reabsorption and potassium excretion by the kidneys

**Alpha cells**
secrete the hormone glucagon

**Androgens**
male sex hormones

**Beta cells**
secrete the hormone insulin

**Cortisol/hydrocortisone**
hormone that stimulates the liver to synthesize glucose from circulating amino acids

**Cortisone**
steroid closely related to cortisol given to reduce inflammation

**Cushing’s syndrome**
condition resulting from too much secretion from the adrenal cortex, resulting in obesity and puffiness in the skin

**Diabetes mellitus**
disease caused by a deficiency in insulin production
**Estrogen**
female sex hormone

**Glucagon**
a hormone produced by the pancreas that regulates blood glucose levels

**Glycosuria**
large amount of sugar in the urine

**Hyperglycemia**
chronic elevations of glucose in the blood

**Insulin**
hormone produced by the pancreas that regulates blood glucose levels

**Melatonin**
hormone produced by the pineal gland

**Noradrenalin/norepinephrine**
hormone produced by the adrenal medulla; noradrenalin

**Ovaries**
primary sex organs of the female reproductive system

**Pancreatic islets/islets of Langerhans**
islets of Langerhans; endocrine portion of the pancreas

**Pineal gland/body**
an endocrine gland located in the epithalamus of the diencephalon that produces the hormone melatonin

**Polydipsia**
excessive thirst

**Polyphagia**
intense food cravings

**Polyuria**
increase in urine production

**Progesterone**
female sex hormone

**Serotonin**
hormone secreted by the pineal gland that acts as a neurotransmitter and vasoconstrictor

**Testes**
primary sex organs of the male reproductive system that produce sperm and male sex hormones

**Testosterone**
the principal male sex hormone

**Thymosin**
hormone secreted by the thymus gland that causes the production of T lymphocytes

**Thymus gland**
an endocrine gland located beneath the sternum that is also involved in immunity as a site for lymphocyte production and maturation