SECTION 11 ENDOCRINE SYSTEM

Endocrine comes from the word elements end/o which means inside, crin- which means to secrete, and the -e, which is a noun suffix. The hormones produced by the glands included in the endocrine system are released into the bloodstream which then carries these chemical messengers throughout the body. These hormones help regulate various activities of specific cells, organs, or both. The structures included in this system are:

(1) one pituitary gland often referred to as the master gland

(2) one thyroid gland

(3) four parathyroid glands

(4) two adrenal glands, also known as suprarenals, because they are located on top of each kidney

(5) one pancreas

(6) one thymus

(7) one pineal gland

(8) two gonads called

   ovaries in females

   testes in males

Word Elements (We will first look at some of the word elements that might be used in this system. Listen as each word element is being pronounced. Practice these word elements several times before going on to the next section.)

acr/o (ak’ ro) means extremities (arms and legs)

acro
ad- means toward or in the direction of
ad

aden/o (ad’ e no) means gland
adeno

adrenal/o (ad ren a lo) means adrenal glands
adrenalo

andr/o (an dro) means male or in relationship to male
andro

anti- (an ti) means against
anti

calci- (kal si) means calcium, lime, the heel
calci

cortic/o (kor ti ko) means outer region or cortex
cortico

crin/o (krin o) means to secrete
crino
cyt/o (si to) means cell

cyto

dipsia (dip’ se a) means thirst
dipsia

duct/o (duk to) means to lead or carry as in a vessel or channel
ducto

ect/o (ek to) means outside
ecto

-ectomy (ek’ to me) means excision, to cut out, surgical removal
ectomy

-emia (e’ me a) means blood condition
emia

der/o (en do) means within or inside
endo

epi- (ep i) means upon or over
epi
eu- (u) means well or good

eu

ex/o (eks o) means outside of, without, away from

exo

fusion (fu’ shun) means to pour or join together

fusion

gen (jen) means to originate or produce

gen

gluco, glyco

gonad/o (gon a do) means the sex glands, called gonads (ovaries and testes)

gonado

gynec/o (gi ne ko, jin e ko) means female or woman

gyneeco

hyper- (hi per) means excessive, multiple, many

hyper
hyp/o (hi po) means under, below, beneath

hypo

-isim means state of or condition

ism

-itis (i’ tis) means inflammation

itis

ket/o (ke to) means ketones, which are metabolic byproducts

keto

lact/o (lak to) means milk

lacto

lute/o (lu te o) means yellow

luteo

mast/o (mas to) means breast

masto

medull/o (med u lo) means inner section, middle, medulla

medullo
-megaly (meg a le) means enlarge, great, extreme
megaly

melan/o (mel a no) means black or dark
melano

-oid (oyd) means resembling or like
oid

o/logy (ol o je) means study of
ology

-oma (o ma) means tumor
oma

oophor/o (o of o ro) means ovary
oophoro

ophthalm/o (of thal mo) means eye or vision
ophthalmo

oxy (ok se) means oxygen, sharp, acid, quick
oxy
pan- means all
pan

pancreat/o (pan kre at o) means pancreas
pancreato

para- (par a) means near, beside, to bear
para

-pathy (path e) means disease, feeling, suffering, emotion
pathy

pineal/o (pin e a lo) means pineal gland
pinealo

pituit/o (pi tu i to) means pituitary gland
pituito

poly- (pol e) means many
poly

post- means after or behind
post
prandial (pran’ de al) means pertaining to a meal

prandial

ren/o (re’ no) means kidney

reno

retin/o (ret i no) means retina or net

retino

somat/o (so mat o) means body

somato

sphen/o (sfe no) means wedge

spheno

thym/o (thi mo) means thymus

thymo

thyr/o (thi ro) means thyroid or shield

thyro

toc/o (to ko) means childbirth

toco
toxic/o (toks i ko) means poison

toxico

trans- (trans) means through or across

trans

-uria (u re a) means urine or urination

uria

Endocrine System Words

acromegaly (ak ro meg’ a le) is enlargement of the hands and feet (extremities) caused by the secretion of too much growth hormone after puberty

acr/o means extremities (hands and feet)

-megaly means enlarge

acromegaly

Addison’s disease (ad i sonz) results from a deficiency in the secretion of adrenocortical hormones

Addison’s disease

adrenal cortex (ad re’ nal kor’ teks) is the outer layer of the adrenal gland

adrenal means pertaining to the adrenal glands
cortex is the outer layer

adrenal cortex
adrenal medulla (ad re’ nal me dul’ la) is the inner portion of the adrenal gland which secretes epinephrine

adrenal means pertaining to adrenal glands
medulla means inner portion

adrenal medulla

adrenalectomy (a dren a lek’ to me) is the surgical removal of the adrenal gland

adrenal means pertaining to adrenal glands
-ectomy means surgical removal

adrenalectomy

adrenopathy (ad” ren op’ a the) is any disease of the adrenal glands

adren/o means adrenal glands
-pathy means disease

adrenopathy

aldosterone (al dos’ ter on, al do ster’ on) is the hormone secreted by the adrenal cortex that regulates the metabolism of sodium, chloride, and potassium

aldosterone

androgen (an’ dro Jen) is a substance producing or stimulating the development of male characteristics

andr/o means male
gen means to originate or produce

androgen

antidiuretic hormone (an’ ti di u ret’ ik) — abbreviated ADH — maintains the body’s water balance by promoting reabsorption of water through the kidneys

anti- means against

diuretic means to increase the secretion of urine

antidiuretic hormone

corticosteroid (kor’ ti ko ster’ oyd) — also called cortisone (kor’ ti son) — is any number of hormonal steroid substances obtained from the cortex of the adrenal gland

cortic/o means cortex

-oid means like or resemble

corticosteroid

Cushing’s disease (koosh’ ing) is a metabolic disorder characterized by increased adrenocortical secretions

Cushing’s disease

diabetes mellitus (di a be’ tez mel i’ tus) is a chronic disorder of carbohydrate metabolism, characterized by hyperglycemia and glycosuria, resulting from inadequate production or utilization of insulin

diabetes mellitus
diabetic retinopathy (di a bet’ ik  ret” in op’ a the) is a disease of the retina occurring in diabetics

retin/o means retina
-pathy means disease

diabetic retinopathy

diuretic (di” u ret’ ik) is the agent that increases the secretion of urine
diuretic

electrolyte (e lek’ tro lit) includes the sodium, potassium, and chlorine in the blood
electrolyte

derocrine gland (en’ do krin, krin, kren) is a ductless gland that produces internal secretions that are released into the blood or lymph and are circulated to all parts of the body
der/o means inside
crin means to secrete
-e is a noun suffix
derocrine gland

derocrinologist (en” do kri nol’ o jist, en” do krin ol’ o jist) is a person who specializes in the endocrine system
der/o means inside
-crin means to secrete
-olog means to study

-ist means one who

endocrinologist

endocrinopathy (en” do krin op’ a the) is any disease resulting from a disorder of an endocrine gland or glands

    end/o means inside
    crin/o means to secrete
    -pathy means disease

endocrinopathy

epinephrine (ep” i nef’ rin) —also called adrenaline (a dren’ a len) —is a hormone secreted by the medulla of the adrenal gland in response to stimulation of the sympathetic nervous system

    epi- means over, upon
    nephr/o means kidney

epinephrine, adrenaline

estrogen (es’ tro jen) is the hormone produced by the ovary. It is considered the female sex hormone.
estrogen

euthyroid (u thi’ royd) means the normal thyroid function

    eu- means good, normal

    thyr/o means shield
-oid means like, resembling

euthyroid

exocrine gland (eks’ o krin) secretes via its own duct or directly to the surface

ex/o means outside

cri in means to secrete

-e is a noun suffix

exocrine gland

exophthalmos (eks” of thal’ mus) is a condition where the eyeball is protruding

ex/o means outside

ophthalm means eye

exophthalmos

follicle-stimulating hormone—abbreviated FSH—is produced by the anterior pituitary; it stimulates growth of a follicle on the ovary and spermatogenesis in the testis

follicle-stimulating hormone

glucose tolerance test—abbreviated GTT—determines a patient’s ability to metabolize glucose

glucose tolerance test

goiter (goy’ ter) also known as thyromegaly (thi” ro meg’ a le) is the enlargement of the thyroid gland
thyr/o means thyroid

-megaly means enlargement

goiter or thyromegaly

Graves’ disease--named after the Irish physician, Robert James Graves--is an exophthalmic (eks” of thal mik) goiter

Graves’ disease

gynecomastia (ji” ne ko mas’ te a, gi” ne ko mas’ te a, jin” e ko mas’ te a) is the development of abnormally large breasts in the male

gynec/o means female

mastia means pertaining to breasts

gynecomastia

hypergonadism (hi” per go’ nad izm) means excessive secretion of sex glands

hyper- means excessive

gonad means sex glands

hypergonadism

hyperparathyroidism (hi” per par” a thi’ roy dizm) is a condition resulting from increased activity of the parathyroid glands

hyper- means excessive

parathyroid means parathyroid glands

hyperparathyroidism
hypocalcemia (hi” po kal se’ me a) is the abnormally low level of calcium in the blood

    hyp/o means under, below
    calc means calcium
    -emia means blood condition

hypocalcemia

hypoglycemia (hi” po gli se’ me a) is a deficient amount of sugar in the blood

    hyp/o means under, below
    glyc/o means sugar
    -emia means blood condition

hypoglycemia

islets of Langerhans (i’ lets of lang er hanz) are the clusters of cells in the pancreas called
alpha, beta, and delta cells

islets of Langerhans

lactogenic hormone (lak’ to jen ik) —is also known as prolactin; (abbreviated LTH) it induces the secretion of milk

    lact/o means milk
    -genic means to produce

lactogenic hormone
luteinizing hormone (lu’ te in zing, lu’ te in iz’ ing) (abbreviated LH) is secreted by the anterior lobe of the hypophysis (pituitary) and stimulates the development of the corpus luteum

      lutein means yellow

luteinizing hormone

melanocyte-stimulating hormone (mel’ an o sit, mel an’ o sit)--abbreviated MSH--regulates skin pigmentation in humans

      melan/o means dark or black

      cyt means cell

      -e is a noun suffix

melanocyte-stimulating hormone

melatonin (mel” a to’ nin) is produced by the pineal gland

      melan/o means black or dark

melatonin

oxytocin (ok” se to’ sin) is a hormone produced by the pituitary that stimulates the uterus to contract during childbirth

oxytocin

pancreatectomy (pan” kre a tek’ to me) is the removal of a part or all of the pancreas

      pancreat means pancreas

      -ectomy means surgical removal
pancreatectomy

panhypopituitarism (pan hi” po pi tu’ i tar izm) is deficient function of the pituitary gland

pan- means all

hyp/o means under, below

pituitarism refers to the pituitary gland

panhypopituitarism

parathyroid hormone (par a thi’ royd) —abbreviated PTH—means secreted by the parathyroid glands. It regulates calcium and phosphorus metabolism

para means beside

thyr/o means shield

-oid means like, resembling

parathyroid hormone

pheochromocytoma (fe o kro” mo si to’ ma) is a benign tumor occurring in the adrenal medulla

phe/o means dusty

chrom/o means color

cyt/o means cell

-oma means tumor

pheochromocytoma

pineal gland (pin’ e al) is a gland shaped like a pine cone that produces melatonin
pineal gland

pinealopathy (pín’ ə ləp’ ə the) is any disease of the pineal gland

pineal means pineal gland

-pathy means disease

pinealopathy

polydipsia (pol’ ə dip’ ə se a) means excessive thirst

poly means excessive

dipsia means thirst

polydipsia

polyuria (pol’ ə u’ re a) means excessive urination

poly means excessive

-uria means urine or urination

polyuria

postprandial blood sugar (post pran’ de al) is a test where blood sugar is taken after a high-carbohydrate meal. It screens for diabetes mellitus.

post means after, behind

prandial means relating to a meal

postprandial blood sugar
progesterone (pro jes’ ter on) is the hormone responsible for changes in the endometrium in order to prepare for pregnancy
progesterone

serotonin (ser” o ton’ in) is a vasoconstrictor helpful in sleep and sensory perception
serotonin

somatotropin (so” mat o tro’ pin) is also called the human growth hormone (HGH)

somat/o means body
tropin means growth or development
somatotropin

steroid (ster’ oyd) can refer to a hormone produced by the body as well as medications that duplicate the action of this hormone; it controls metabolism, inflammation, immune function, salt and water balance, sexual characteristic development, and the ability to withstand illness and injury
steroid

testosterone (tes tos’ ter on) is the hormone produced by the testes
testosterone

tetany (tet’a ne) is a nervous disorder frequently associated with pregnancy or lactation
tetany
thymectomy (thi mek’ to me) means surgical removal of the thymus

thym/o means thymus

-ectomy means surgical removal

thymectomy

thymitis (thi mi’ tis) means inflammation of the thymus

thym/o means thymus

-itis means inflammation

thymitis

thymoma (thi mo’ ma) is a tumor originating from the thymus

thymoma

thyroid-stimulating hormone (thi’ royd) —abbreviated TSH—is the hormone secreted by the anterior lobe of the pituitary. It stimulates the thyroid.

thyroid-stimulating hormone

thyroiditis (thi” royd i tis) is inflammation of the thyroid gland

thyroid means thyroid gland

-itis means inflammation

thyroiditis

thyroxine (T₄) (thi roks’ in) is the hormone produced by the thyroid gland

thyroxine
transsphenoidal hypophysectomy (trans” sfe noy’ dal hi pof” i sek’ to me) means removal of part of the pituitary through the sphenoid bone

\[ \text{trans- means through} \]
\[ \text{sphenoidal means pertaining to the sphenoid bone} \]
\[ \text{hypophys means hypophysis, which is another name for the pituitary} \]
\[ \text{-ectomy means surgical removal} \]

transsphenoidal hypophysectomy

triiodothyronine (T\textsubscript{3}) (tri” i o” do thi’ ro nen) is one of two principal hormones secreted by the thyroid gland

\[ \text{tri- means three} \]
\[ \text{iod/o means iodine} \]
\[ \text{thyr/o means thyroid} \]

triiodothyronine

This ends the section on the Endocrine System. If you have any questions, please ask your instructor for further clarification or refer to your textbook. You should repeat this section as many times as you feel is necessary to feel comfortable with the meaning and pronunciation of the words presented.