Endocrine System

Course
Medical Terminology

Unit XIII
Endocrine System

Essential Question
What medical terms are associated with the endocrine system?

TEKS
130.203 (c)
1 A-F
2A-C
3A-C
4A-B

Prior Student Learning
Basic understanding of roots, prefixes, and suffixes

Estimated time
4-7 hours

Rationale
Healthcare professionals must have a comprehensive medical vocabulary in order to communicate effectively with other health professionals. They should be able to use terminology of the endocrine system to discuss common conditions and diseases.

Objectives
Upon completion of this lesson, the student will be able to:

- Define and decipher common terms associated with the endocrine system
- Identify the basic anatomy of the endocrine system
- Analyze unfamiliar terms using the knowledge of word roots, suffixes and prefixes gained in the course
- Research diseases which involve the endocrine system

Engage
Mrs. Stanhope brings her 3-year-old daughter, Alecia, to Dr. Sanborn for her yearly wellness check up. Dr. Sanborn is a little concerned because Alecia is very small for her age. Dr. Sanborn decides to make a referral to Dr. McClain for an endocrine workup.

Key Points

I. Endocrine words to know:
   A. endocrin/o – endocrine (endo=within, crin=secrete)
   B. hormon/o – hormone (to set into motion)
   C. pineal (pine cone)
   D. thyr/o, thyroid/o – thyroid (shield)
   E. -physis – growth
   F. adren/o, adrenal/o – adrenal (ad=near, ren=kidney)
   G. cortic/o – cortex (outer portion)
   H. parathyroid/o – parathyroid
   I. thymus – thymus gland

II. Glands
   A. Endocrine (see the Endocrine Glands Diagram): Ductless glands that secrete hormones directly into the bloodstream as it flows through the gland
   B. Exocrine: Carried by a duct to the surface of a tissue
   C. Gland: any organ or structure that produces a secretion
      1. Exocrine: carried by a duct or organ to the tissues
      2. Endocrine: carried by blood or lymph; no ducts

III. Hormone: a biologically active chemical (steroid, amino acid,

polypeptide, glycoprotein) that combines with specific receptor proteins and regulates the function of other organs

A. Functions of Hormones
    1. Regulation of metabolism
    2. Regulation of growth and development
    3. Regulation of reproduction
    4. Regulation of stress response
    5. Regulation of cell permeability
B. Secretion and Storage of Hormones
    1. All are formed by the endoplasmic reticulum
    2. Transported by the Golgi apparatus that packages the hormones in secretory vesicles which are stored in the cytoplasm of the endocrine cells
    3. Waits for a nerve or chemical signal to initiate the secretion
        a. Hormonal stimuli
        b. Humoral stimuli
        c. Neural stimuli
C. Negative Feedback
    1. Endocrine glands tend to over-secrete their hormones so the target organ has enough to function properly
    2. When too much function occurs, some factor feeds back to the endocrine gland to cause a negative effect on the gland and decrease its secretory rate
    3. The hormone is monitored and regulated internally
D. Transport
    1. Hormones travel to target cells via carrier blood plasma proteins for specific hormones
    2. Target cells have specific receptor proteins for specific hormones
    3. Target cells become biologically active to regulate the function of other organs when binding occurs

IV. Endocrine Glands (see the Pituitary Gland Diagram)
A. Pituitary Gland: hypophysis; located in the sella turcica of the sphenoid bone; called the master gland

V. Anterior Lobe: adenohypophysis; connected to the hypothalamus by a system of vessels
A. ACTH (adrenocorticotrophic hormone): stimulates the adrenal cortex to secrete steroids
B. GH, HGH (growth hormone): somatotropin that controls body size by increasing mitosis, increasing cell size, and increasing the rate of protein synthesis
    1. Dwarfism: hyposecretion in children

2. Simmonds' disease: hyposecretion in adults – lethargy, obesity, premature senility
3. Gigantism: hypersecretion in children (tumors)
4. Acromegaly: adult hypersecretion – enlarged bones of the head/hands/feet/face

C. TSH (thyroid stimulating hormone): stimulates the thyroid to secrete thyroxin (T4)
D. Gonadotropins = FSH and LH
   1. FSH (follicle stimulating hormone): stimulates the maturation of ovarian follicles and sperm
   2. LH (luteinizing hormone): stimulates corpus luteum development (ovulation) and testosterone synthesis (ICSH)
E. LTH (prolactin): promotes growth of breast tissue and milk secretion after delivery
F. MSH (melanocyte stimulating hormone): stimulates melanin skin pigment formation

VI. Posterior Lobe: neurohypophysis; connected to the hypothalamus by a stalk of nerve tissue
   A. ADH (antidiuretic hormone/vasopressin): promotes water reabsorption by the kidney tubules, and increases blood pressure
      1. Trauma increases ADH, so the body retains fluid
      2. Alcohol decreases ADH, so diuresis occurs
      3. Diabetes insipidus: decreased ADH secretion
   B. Oxytocin: suckling stimulates oxytocin release, so milk is let down; contracts the uterus too
      1. Pitocin: synthetic oxytocin

VII. Adrenal Glands: (see the Adrenal Gland Diagram) two small glands located above the kidneys that secrete hormones made from cholesterol (LDL); ACTH secretion from the anterior pituitary regulates secretion
   A. Cortex: outer portion, secretes 30+ steroids
      1. Mineralocorticoids: aldosterone; its main function is to promote the transport of Na+ and K+ through the renal tubules so that Na+ is saved and K+ is excreted; secretion increases extracellular fluid volume
         a. Hypoadrenalism: Addison's disease
            i. Decreased blood glucose level = low energy
            ii. Decreased immune function = infections
            iii. Increased melanin pigmentation = lips and nipples darken; lots of black freckles

iv. Decreased Na+ and water = diuresis, dehydration
v. Decreased fluid volume = shock, death, and adrenal crisis

b. Hyperadrenalism: Cushing's syndrome
i. Tissue swelling and fat redistribution – "buffalo torso" and "moon face"
ii. Hirsutism: excessive facial hair
iii. Increased blood glucose – increased insulin production until the cells burn out; causes Type II diabetes mellitus
iv. Rx/Tx: adrenalectomy

2. Glucocorticoids: cortisol (cortisone, prednisone); regulate the amounts of sugars, fats, CHO in the cells; stimulates gluconeogenesis in the liver; Hyperfunction: fat deposits, "moon face"
3. Androgens, estrogens, progesterone: help supplement the other hormones to maintain secondary sexual characteristics
4. Stressful situations
a. ACTH from the anterior pituitary is secreted, which then stimulates cortisol secretion from the adrenal cortex which has an anti-inflammatory effect
b. Cortisol increases the healing rate by decreasing immune reactions (important in inflammatory diseases such as allergic reactions, rheumatoid arthritis, and rheumatic fever)

B. Medulla: the central portion; has the same effect as a direct sympathetic nerve response; called the stress hormones: the "fight or flight" response
1. Epinephrine: adrenaline, adrenalin
a. Accelerates the heart rate; increases blood pressure; increases heart output
b. Weak vasoconstriction in the skin
c. Vasodilation of the skeletal and cardiac muscles
d. Relaxes the bronchioles; treats severe respiratory distress
e. Increases respiration
f. Increases the metabolic rate of every cell
g. Increases blood glucose levels by increasing glycogen breakdown in the liver
h. Increases muscle strength and mental activity
i. Decreases GI function

2. Norepinephrine: noradrenaline
    a. Neurotransmitter; a strong vasoconstrictor
    b. Increases blood pressure, but slows the heart and dilates the pupils
3. Dopamine: dilates the systemic arteries; increases cardiac output; increases flow of blood to the kidneys; therefore, increases urinary output (used to treat shock)
    a. Pheochromocytoma: a tumor of the adrenal medulla; signs and symptoms = hypertension, headaches, sweating, nausea, vomiting, flushed face, tingling of the extremities
    b. Raynaud's disease: extreme skin vasoconstriction with exposure to cold or stress; causes ischemic pain and pallor, followed by cyanosis and redness of the hands and feet

VIII. Ovaries: hormones stimulated by FSH and LH of the anterior pituitary are then secreted by the ovarian follicles
A. Estrogen: develops and maintains the secondary sexual characteristics
1. Hypofunction (congenital): eunuch; no secondary sex characteristics, high voice, no facial hair, taller, no body fat
2. Hypofunction (adult): menopause
3. Hyperfunction: rare tumors of the pituitary gland
B. Progesterone: secreted by the corpus luteum during the last half of the menstrual cycle; prepares the uterus for pregnancy and the breasts for lactation; also secreted by the placenta during pregnancy

IX. Testes: hormone secretion stimulated by LH of the anterior pituitary, and secreted by the Leydig cells of the testes
A. Testosterone: causes the growth and maintenance of secondary sexual characteristics and spermatogenesis under FSH control
1. Hypofunction
    a. In children: eunuch; infantile secondary sex characteristics
    b. In adults: Frohlich's syndrome (obesity, muscle and hair loss, decreased sex drive)
    c. Cryptorchidism: undescended testes
    d. Castration: removal of the testes
2. Hyperfunction: usually involves tumors (teratoma)
    a. In children: increased muscle and bone growth, early closure of epiphysis, increased

secondary sex characteristics
b. In adults: gynecomastia, overgrowth of the breasts

X. Pineal Gland (body): above the roof of the 3rd ventricle of the brain
   A. Melatonin: suppresses/regulates gonadotropic hormones, controls sex drive, delays puberty; some research relates it to SAD (Seasonal Affective Disorder)

XI. Thyroid: (see the Thyroid Diagram) a butterfly-shaped gland on each side of the trachea that covers the 2nd through 4th tracheal rings; has a narrow connecting band called the "isthmus"
   A. Thyroxine (T4) and triiodothyronine (T3)
      1. Requires iodine for hormone synthesis
      2. Regulates metabolism
         a. Increased metabolic rate
         b. Increases glucose, fat, carbohydrates, and vitamin metabolism
      3. Hypofunction
         a. Fetal/congenital (cretinism): decreased mental growth, obesity, dwarfism
         b. Acquired/adult (myxedema): fatigue, increased desire to sleep, edema, bags under the eyes, rough voice, decreased heart rate
      4. Hyperfunction
         a. Graves' disease: an autoimmune disease that stimulates TSH; intolerance to heat, increased sweating, weight loss, diarrhea, fatigue, insomnia, exophthalmia (bulging eyes)
         b. Thyrotoxicosis: tachycardia, hypertension, hyperthermia, nausea, vomiting, diarrhea, confusion
         c. Goiter: without dietary iodine, there is a decreased amount of T4 and T3, so there is a high level of TSH secretion which stimulates abnormal growth of the thyroid tissue
   B. Calcitonin: regulates calcium metabolism (vitamin D is essential for calcium absorption)

XII. Parathyroid Glands: four tiny, pea-like structures embedded posterior to the thyroid gland
   A. Parathormone: PTH; regulates the amount of calcium and phosphorus in the circulating blood, and storage of calcium in the bones and teeth
      1. Hypo PTH: hypocalcemia causes tetany with laryngeal spasms
      2. Hyper PTH: hypercalcemia

a. Osteitis: weak, cystic bones and excessive stone production (nephrolithiasis)
b. Rickets: a calcium deficiency in children, usually a decrease in vitamin D in the diet
c. Osteomalacia: adult rickets/renal rickets
d. Osteoporosis: aging bones/decreased calcium

XIII. Thymus: secretes thymosin which stimulates the production of antibodies in early life by maturing the T-cells; atrophies after puberty

XIV. Pancreas: (see the Pancreas Diagram) located behind the stomach; secretions are produced by the Islets of Langerhans

A. Glucagon: secreted by the alpha cells; converts glycogen to glucose in the liver, thereby increasing blood sugar
B. Insulin: secreted by the beta cells; regulates the transport and storage of glucose into the cells; decreases blood glucose levels
C. Effects of pancreatic hormones
    1. After a meal, blood sugar increases, insulin secretion increases, and glucagon secretion decreases to lower the high plasma glucose concentration
    2. With fasting, blood sugar decreases, insulin secretion decreases, and glucagon secretion increases to keep plasma glucose concentrations up to a safe minimum level
D. Diagnostic Tests for Pancreatic Function
    1. FBS: fasting blood sugar
    2. GTT: glucose tolerance test
    3. Two-hour postprandial test
E. Diabetes Mellitus: insulin deficiency; inherited; 5 million in the USA
    1. Type I: insulin dependent diabetes (IDDM)
        a. Juvenile; rapid onset
        b. Hereditary predisposition
        c. Viral destruction of beta cells
        d. Body lacks the ability to produce insulin
            i. Rx/Tx: insulin injections
    2. Type II: non-insulin dependent diabetes (NIDDM)
        a. Adult/maturity; slow onset
        b. Obesity causes beta cells to overreact, but they become less responsive; therefore, a decrease in insulin secretion
        c. Rx/Tx: diet; oral replacements
    3. Symptoms
        a. Polydipsia: excessive thirst
        b. Polyphagia: excessive eating with weight loss

c. Polyuria: excessive urination with dehydration
d. Glycosuria: sugar in the urine due to an increase in blood glucose

4. Complications
   a. Atherosclerosis and heart disease
   b. Retinopathy: increased blood glucose destroys the retina; the second leading cause of blindness
   c. Renal disease: glucose destroys the nephrons
   d. Circulatory deficiency: gangrene and amputations
5. Side effects
   a. Diabetic coma: hyperglycemia caused by eating too much or too little insulin causes increased blood glucose (normal = 70-100 mg/100 ml)
      i. Ketoacidosis: byproduct of fat metabolism
      ii. Acetone breath: fruity odor; nausea, vomiting
      iii. Kussmaul's breathing: rapid, deep, labored
      iv. Restlessness, confusion, coma
      v. Rapid, weak pulse; low BP
      vi. Skin warm, dry, and flushed
      vii. Tx: insulin
   b. Insulin shock: hypoglycemia caused by not eating or too much exercise so that the body has too much insulin
      i. Dizziness, headache, nervousness
      ii. Full, rapid pulse
      iii. Diaphoresis
      iv. Pale, cold skin
      v. Tremors, seizures
      vi. Loss of consciousness, coma
      vii. Normal breathing, normal BP
      viii. Tx: sugar ASAP

Activity

I. Make flash cards of endocrine terms and practice putting the terms together with prefixes and suffixes to make new terms.
II. Complete the Endocrine System Worksheet.
III. Complete the Endocrine System Medical Terminology Worksheet.
IV. Review media terms with the students using review games

such as the “fly swatter game” or the “flash card drill” (See the Medical Terminology Activities Lesson Plan - http://texashste.com/documents/curriculum/principles/medical_terminology_activities.pdf).

V. Research and report on diseases and disorders of the endocrine system.

Assessment
Successful completion of activities

Materials
Endocrine System Worksheet
KEY - Endocrine System Worksheet
Endocrine System Medical Terminology Worksheet
KEY - Endocrine System Medical Terminology Worksheet

Accommodations for Learning Differences
For reinforcement, the student will practice terms of the endocrine system using flash cards.

For enrichment, the student will choose a disease related to the endocrine system and research the disease using the internet. Students will share their findings with the class.

National and State Education Standards
National Healthcare Foundation Standards and Accountability Criteria
Health care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.

TEKS
130.203 (c)(1)(A) identify abbreviations, acronyms, and symbols;
130.203 (c)(1)(B) identify the basic structure of medical words;
130.203 (c)(1)(C) practice word-building skills;
130.203 (c)(1)(D) research the origins of eponyms;
130.203 (c)(1)(E) recall directional terms and anatomical planes related to body structure;
130.203 (c)(1)(F) define and accurately spell occupationally specific terms such as those relating to the body systems, surgical and diagnostic procedures, diseases, and treatments.
130.203 (c)(2)(A) demonstrate appropriate verbal and written strategies such as correct pronunciation of medical terms and spelling in a variety of health science scenarios;
130.203 (c)(2)(B) employ increasingly precise language to communicate;

130.203 (c)(2)(C) translate technical material related to the health science industry.
130.203 (c)(3)(A) examine medical and dental dictionaries and multimedia resources;
130.203 (c)(3)(B) integrate resources to interpret technical materials;
130.203 (c)(3)(C) investigate electronic media such as the Internet with appropriate supervision.
130.203 (c)(4)(A) distinguish medical abbreviations used throughout the health science industry; and
130.203 (c)(4)(B) translate medical abbreviations in simulated technical material such as physician progress notes, radiological reports, and laboratory reports.

College and Career Readiness Standards
English/language art
B.1 Identify new words and concepts acquired through study of their relationships to other words and concepts.
B2. Apply knowledge of roots and affixes to infer the meanings of new words.
B3. Use reference guides to confirm the meanings of new words or concepts.
Cross- Disciplinary standards-Foundational Skills
A2. Use a variety of strategies to understand the meanings of new words

Endocrine System Worksheet

1. State the general functions of the endocrine system.

2. Define the term *hormone* and describe how a hormone functions.

3. Identify the major endocrine glands in terms of location.
    a. Pituitary:

    b. Thyroid:

    c. Adrenals:

    d. Pancreas:

4. Identify the endocrine gland that produces the following hormones:
    a. GH:

    b. TSH:

    c. ACTH:

    d. Thyroxine:

    e. Epinephrine (adrenaline)

    f. Norepinephrine (noradrenaline)

    g. Cortisol:

    h. Glucagon:

    i. Insulin:

5. Identify the functions of the following hormones:
    a. GH:

    b. TSH:

    c. ACTH:

    d. Thyroxine:

    e. Epinephrine (adrenaline):

    f. Norepinephrine (noradrenaline):

    g. Cortisol:

    h. Glucagon:

    i. Insulin:

6. Describe the diseases or disorders of the endocrine system.
    a. Acromegaly:

    b. Diabetes Mellitus:

    c. Dwarfism:

    d. Gigantism:

    e. Hyperthyroidism:

    f. Hypothyroidism:

KEY - Endocrine System Worksheet

1. State the general functions of the endocrine system.
   The endocrine system is responsible for coordinating and regulating bodily cells, tissues, organs, and systems to maintain homeostasis by secreting chemicals known as hormones. Unlike the nervous system, the effects of the endocrine system are sustained for longer periods of time. The endocrine system works primarily through negative feedback mechanisms.

2. Define the term *hormone* and describe how a hormone functions.
   Hormones are chemical messengers released by one tissue (gland) and transported by the bloodstream to reach other target tissues. The target tissue is where the effect of the hormone is actually observed.

3. Identify the major endocrine glands in terms of location.
   a. Pituitary: brain, attached to hypothalamus

   b. Thyroid: just below the thyroid cartilage (Adam's apple) of the larynx

   c. Adrenals: superior to each kidney

   d. Pancreas: lies in the fold of the duodenum, posterior to the stomach and the peritoneal membranes

4. Identify the endocrine gland that produces the following hormones.
   a. GH: pituitary

   b. TSH: pituitary

   c. ACTH: pituitary

   d. Thyroxine: thyroid

   e. Epinephrine (adrenaline): adrenal

   f. Norepinephrine (noradrenaline): adrenal

   g. Cortisol: adrenal

   h. Glucagon: pancreas

   i. Insulin: pancreas

5. Identify the functions of the following hormones.
    a. GH: stimulates cell growth by increasing protein synthesis

    b. TSH: triggers the release of thyroid hormones

    c. ACTH: stimulates the release of steroid hormones (glucocorticoids like cortisol) from the adrenal glands

    d. Thyroxine: acts to increase metabolism by improving energy utilization, oxygen consumption, growth, and development

    e. Epinephrine (adrenaline): helps us with our emergency and stress response

    f. Norepinephrine (noradrenaline): helps us with our emergency and stress response

    g. Cortisol: promotes glucose and glycogen and synthesis in the liver in a process called gluconeogenesis to support the body's cells with adequate glucose to produce ATP

    h. Glucagon: increases blood sugar levels by stimulating the liver to convert glycogen to glucose and form glucose from amino acids

    i. Insulin: decreases blood sugar levels by stimulating the liver to convert glucose to glycogen and facilitating the diffusion of glucose into the body's cells, where it can be used for energy or stored as lipids

6. Describe the diseases or disorders of the endocrine system.
    a. Acromegaly: a hypersecretion of the growth hormone during adulthood

    b. Diabetes Mellitus: the inability of the body to regulate its blood glucose level. Type 1 Diabetes Mellitus occurs when the body fails to produce sufficient insulin. Type 2 Diabetes Mellitus occurs when the body cells become resistant to the effects of insulin

    c. Dwarfism: a hyposecretion of the growth hormone during childhood, resulting in a small person who has a normally proportioned bodily frame

    d. Gigantism: a hypersecretion of the growth hormone during childhood, resulting in a person who grows to a very large size

    e. Hyperthyroidism: the hypersecretion of thyroid hormones

f. Hypothyroidism: the hyposecretion of thyroid hormones

Endocrine System Medical Terms Worksheet

Please write the meaning of the terms in the right column.

Prefixes, Suffixes, and Root Words

a	
acr/o	
aden/o	
adren/o	
-al	
ana	
andr/o	
angi/o	
-ary	
calc/i	
cata	
cortic/o	
-crine	
dips/o	
-dipsia	
diure	
-drome	
dys	
-ectomy	
-emia	
end/o	
endocrin/o	
-esis	
eu	
ex/o	
-gen	
gluc/o	
glyc/o	
gonad/o	
hormone	
hyper	
hypo	
-ic	
-ism	
-itis	

kal/i	
lact	
-malacia	
-megaly	
men/o	
natri	
neur/o	
-oid	
-ologist	
-ology	
-oma	
ophthalm/o	
-osis	
pancreat/o	
parathyroid	
-pathy	
-penia	
-phagia	
pineal	
pituitary	
-plasia	
poly	
pro	
-rrhea	
syn	
thym/o	
thyr/o	
-tic	
toxic/o	
-tropic	
-uria	

Medical Terms

acromegaly	
adenoma	
adenomalacia	
adrenalectomy	
adrenocorticohyperplasia	

adrenocorticotropic	
adrenopathy	
amenorrhea	
anabolism	
antidiuretic	
calcipenia	
catabolism	
dysmenorrhea	
endocrine	
endocrinologist	
endocrinopathy	
exocrine	
euthyroid	
exophthalmic	
glucocorticoid	
glycosuria	
gonadotropic	
hormone	
hypercalcemia	
hyperglycemia	
hyperkalemia	
hypernatremia	
hyperparathyroidism	
hyperthyroidism	
hypocalcemia	
hypoglycemia	
hypokalemia	
hyponatremia	
hypothyroidism	
neurohormone	
pancreatitis	
parathyroidoma	
pineal	
pituitary	
polydipsia	
polyphagia	
polyuria	
prolactin	
syndrome	

thyroidectomy	
thyrogenic	
thyroparathyroidectomy	
thyrotoxicosis	
thyrotropic	

Medical Abbreviations

BS	
FBS	
GTT	
Na+	
K	
sq	
U	
UA	
Õ	
õ	
>	
<	

KEY - Endocrine System Medical Terms Worksheet

Prefixes, Suffixes, and Root Words

a	without
acr/o	extremity or extremities
aden/o	gland
adren/o	adrenal gland
-al	pertaining to
ana	up, back, apart
andr/o	male
angi/o	vessel
-ary	pertaining to
calc/i	calcium or stone
cata	to break down or apart
cortic/o	cortex
-crine	to secrete
dips/o	thirst
-dipsia	thirst
diure	to urinate
-drome	running
dys	painful or difficult
-ectomy	removal or excision
-emia	referring to a blood condition
end/o	within
endocrin/o	endocrine
-esis	pertaining to
eu	true, good, normal
ex/o	outside, out
-gen	to produce
gluc/o	sugar
glyc/o	sugar
gonad/o	gonads or the reproductive organs
hormone	to excite; urging on
hyper	above, greater than
hypo	below, less than
-ic	pertaining to
-ism	state of or condition of
-itis	inflammation of or infection of
kal/i	potassium
lact	milk

-malacia	softening
-megaly	enlargement
men/o	menstruation
natri	sodium
neur/o	nervous, neuron
-oid	resembling
-ologist	one who studies, a specialist
-ology	the study of
-oma	tumor, mass
ophthalm/o	eye
-osis	condition of
pancreat/o	pancreas
parathyroid	four small glands on the back of the thyroid
-pathy	disease
-penia	deficiency or lack of
-phagia	eating (or swallowing)
pineal	pineal gland; shaped like a pine cone
pituitary	pituitary or master gland
-plasia	growth or development
poly	many
pro	to come before
-rrhea	discharge or flow
syn	with, together
thym/o	thymus gland
thyr/o	thyroid gland
-tic	pertaining to
toxic/o	poison
-tropic	influencing
-uria	to urinate

Medical Terms

acromegaly	enlargement of the extremities
adenoma	tumor of a gland
adenomalacia	softening of the adrenal gland
adrenalectomy	removal of the adrenal gland
adrenocorticohyperplasia	increased development of the adrenal cortex
adrenocorticotropic	pertaining to influencing the adrenal cortex
adrenopathy	disease of the adrenal gland

amenorrhea	absence of menstrual flow
anabolism	referring to a building up process (required for growth and repair of body tissues; for example, dehydration synthesis)
antidiuretic	reducing the formation of urine
calcipenia	deficiency of calcium
catabolism	referring to a destructive process or one that breaks down substances (such as hydrolysis or digestion)
dysmenorrhea	painful menstrual flow
endocrine	to secrete within or the endocrine system (refers to a system of glands that secrete their products [hormones] directly into the bloodstream)
endocrinologist	one who studies the endocrine system or an endocrine system specialist
endocrinopathy	disease(s) of the endocrine glands or system
exocrine	to secrete without (refers to those organs which secrete their products through ducts such as salivary glands and the pancreas). Please note: the pancreas is both an endocrine gland and an exocrine gland
euthyroid	resembling normal thyroid function
exophthalmic	pertaining to eyes slightly out
glucocorticoid	“resembling sugar from the cortex." Refers to a group of hormones produced by the adrenal cortex that play a role in sugar metabolism
glycosuria	sugar in the urine
gonadotropic	of a substance which encourages the development or activity of the ovaries and testes
hormone	to excite (refers to a group of chemical messengers that effect on other bodily organs, and are secreted into the blood by glands)
hypercalcemia	high levels of calcium in the blood
hyperglycemia	high levels of sugar in the blood
hyperkalemia	high levels of potassium in the blood
hypernatremia	high levels of sodium in the blood
hyperparathyroidism	a condition of excessive parathyroid secretion
hyperthyroidism	a condition of excessive thyroid secretion
hypocalcemia	low levels of calcium in the blood
hypoglycemia	low levels of sugar in the blood
hypokalemia	low levels of potassium in the blood
hyponatremia	low levels of sodium in the blood
hypothyroidism	a condition of low thyroid secretion
neurohormone	"to excite from the nerves" (refers to hormones produced by nervous tissue)
pancreatitis	inflammation of the pancreas

parathyroidoma	a mass or tumor in the parathyroids
pineal	pertaining to the pineal gland
pituitary	pertaining to the pituitary gland
polydipsia	excessive thirst
polyphagia	excessive hunger
polyuria	excessive urination Note: the three "polys" are classic symptoms of diabetes mellitus
prolactin	pertaining to before milk (this hormone stimulates the production of milk by the mammary glands)
syndrome	symptoms that run together
thyroidectomy	removal of the thyroid gland
thyrogenic	produced by the thyroid gland
thyroparathyroidectomy	removal of the thyroid and parathyroids
thyrotoxicosis	a toxic condition of the thyroid gland (this is related to hyperactivity of the thyroid gland)
thyrotropic	pertaining to influencing the thyroid gland

Medical Abbreviations

BS	blood sugar
FBS	fasting blood sugar
GTT	glucose tolerance test
Na+	sodium
K	potassium
sq	subcutaneous
U	units
UA	urinalysis
Õ	increased amount
õ	decreased amount
>	greater than
<	less than