The Endocrine System

The Endocrine System is the collection of glands that produce hormones that regulate:

metabolism

growth

development

tissue function

sexual function

reproduction

sleep

mood

and more…

The Endocrine System is made up of:

Pituitary Gland

Thyroid Gland

Parathyroid Gland

Pancreas

Adrenal Glands

Ovaries

Testicles

Endocrine System Vocabulary

**Androgen-** a group of hormones that play a role in male reproductive activity

**Estrogen-** responsible for development and regulation of female reproductive system and secondary sex characteristics like pubic hair, enlarged breasts, widened hips, facial hair

**Gamete-** is a haploid cell that fuses with another haploid cell during fertilization. Female= ovum; Male= sperm

**Genesis-** Production

**Innervate-** to furnish with nerves; grow nerves into; stimulate through nerves

**Medulla-** Most inner part of an organ; the marrow of bones

**Neurotransmitters-** brain chemicals that communicate information by relaying signals between nerve cells (neurons). For example these chemicals tell your heart to beat, your lungs to breathe, stomach to digest, etc.

**Nociception-** sensory nervous system’s response to contain harmful stimuli. Subjectively alerting by pain:

chemical

mechanical

thermal

**Parasympathetic Nervous System-**  responsible for stimulation of “rest and digest”, “feed and breed”; activities that occur when the body is at rest like sexual arousal, salivation, lacrimation, urination, digestion, defecation.

**Pathway-** chemical reaction within a cell

**Precursor-** compound that participates in a chemical reaction with another and produces another compound

**Sympathetic Nervous System-** its primary process is to stimulate the fight or flight response, raising the heart beat, dialating pupils, constricting vessels, etc.

**Neurotransmitters and Hormones**

**Neurotransmitters Hormones**

nervous endocrine

system system

transmit transmit

messages messages

across through

the synaptic the blood

cleft

hormonal hormonal

release release

produced by produced by

neurons glands

target specific can travel some

adjacent distance from the

neurons or releasing gland

other cells

action is

extremely fast action and (miliseconds) effect of

hormone is slower and

lasts longer

can stimulate can regulate

postsynaptic target organ membranes

examples: examples:

actylcholine, ADH, GH

dopamine, PHH,

noradrenaline Insuin,

Oxytocin Glucogen

**Prefixes and Suffixes**

**-gen =** substance that produces = angiotensinogen

**-kinin** = substance that moves = choleystokinin

**-poietin =** substance that forms = erythropoietin

**-stat (in)=** substance that keeps stationary= somatostatin

**somato- =** of the body

**thrombo- =** clot = thrombopoietin

**-trol** = substance that sorts out = calcitrol

**-lysis =** decomposition = electrolysis

**Exceptions:**

Like in any language there are “exceptions to the rule”. Apparently not all medical terms consist of prefix-root-word-suffix or even, root word-suffix. Some are acronyms like the hunger hormone **Ghrelin** which stands for **G**rowth **H**ormone **R**eleasing hormone, and like the hormone **Relaxin** which actually relaxes muscles in the pelvis and softens the cervix in preparation for childbirth.

**Endocrinologist**

**Diseases of the Endocrine system’s**

**Acromegaly-** a growth disorder caused by too much growth hormone (GH) leading to excesive growth.

**Cushing’s Syndrome-** result of excess production of cortisol by the adrenal glands.

**Hashimoto’s Thyroditis-** immune cells mistakenly attack health tissue causing inflamation of the Thyroid.