Endocrine Gland	Activity Stimulated by:	Regulating Hormone (Hypothalamus)	Cell Type	Hormone Produced	Target Cells	Result Of Activity	Disorders Associated w/ Hyper Secretion	Disorders Associated w/ Hypo Secretion
Anterior Pituitary	↓ Blood Sugar	GHRH	1.Somatotrophs	hGH	General Body Cells (especially muscle, cartilage, bones)	Growth, general body building, tissue repair	Child – Giantism Adult- Acromegaly	Child - Pituitary Dwarfism
	↓ Blood Cortisol	CRH	2.Corticotrophs	ACTH	Adrenal Cortex (Zona Reticularis)	Secrete Androgens (mainly DHEA)		
		CRH		ACTH	(Zona Fasciculata)	Secrete Glucocorticoids (mainly cortisol)		
		MRH		MSH	Melanocytes	Produce Melanin (Skin Pigment)		
		PRH	3.Lactotrophs	PRL	Women - Mammary Glands Men - Unknown	Women - Milk Production Men - Unknown	Women - Galactorrhea, amenorrhea Men - Erectile Dysfunction, Infertility Fluid production from Nipple	Women - ↓ milk secretion
	↓ Blood Iodine ↓ T_3, T_4	TRH	4.Thyrotrophs	TSH	Thyroid	Production of T_3, T_4		
	Estrogen		5.Gonadotrophs	FSH	Ovaries	Produce estrogen, Initiate Follicle Development.		Sterility in Men & Women
	Testosterone				Testes	Spermatogenesis		
	Estrogen alone generates GnRH	GnRH		FSH & LH	Ovaries	Maturation of the Follicle		
	↑ Very High Estrogen/ progesterone & testosterone	GnRH	LH Surge for Ovulation	LH	Ovaries Corpus Luteum Leydig's Cells	Ovulation Produce Progesterone Produce Testosterone		Women - miscarriage, irregular menses Women/Men - sterility
Thyroid Gland	Thyroid Releasing Hormone (TRH)	Thyroid Stimulating Hormone	1. Follicular cells	T_3, T_4	General Body Cells	Growth and development regulate metabolism, nervous system reactivity	Grave's Disease Exopthalmos ↑ Basal metabolic rate Goiter	Child - cretinism Adult - myxedema
		↑ Blood Ca^{++}	2. Parafollicular cells	Calcitonin	Bones (osteoblasts)	↓ Blood Ca^{++} by using the Ca^{++} to build bones	Unknown	Unknown

Endocrine Gland	Activity Stimulated by:	Endocrine Gland Affected By:	Cell Type	Hormone Produced	Target Cells	Result Of Activity	Disorders Associated w/ Hyper Secretion	Disorders Associated w/ Hypo Secretion
Parathyroid		↓ Blood Ca^{++}	1. Principle cells	PTH	Bones (osteoclasts) Kidney tubules Kidneys	Demineralize bone to ↑ Blood Ca^{++}	Excess bone demineralization = brittle bones	Muscle tetany
			2. Oxyphil cells	Unknown		Make calcitriol to ↑ Ca^{++} uptake by GI tract		
Kidneys		↓ Blood O2		Erythropoietin	Red bone marrow	↑ RBC Production	Polycythemia	Anemia
	↓ Blood Ca^{++}	PTH		Calcitriol	GI tract	↑ Dietary Ca^{++} absorption		
Thymus		Viruses		Thymopoietin & others	Foreign Bodies	Proliferation, maturation of T-Lymphocytes		Immunity
Heart Atria		↑ Blood Volume		ANP	Kidney Tubules	↓ Re-absorption of H_2O Blood Volume		
Skin		Sunlight		Vitamin D	Kidney Cells	Converts Vitamin D to calcitriol		
Pineal Gland	↓ Sunlight	Hypothalamus to secrete less norepinephrine	1. pinealocytes	↑ Melatonin	Unknown	Affects diurnal clock	Sleepiness - S.A.D. - Jet Lag	Insomnia
	↑ Sunlight	More norepinephrine	2. pinealocytes	↓ Melatonin	Unknown			
				↑ Serotonin	Neurons in various area of the brain	Inhibition of anger, aggression, body temperature, mood, sleep, vomiting, sexuality, love, and appetite.	Unknown	Increase in anger, aggression, depression, insomnia.
Posterior Pituitary		↑ Osmotic pressure (thirstiness)	Hormones made in hypothalamus are stored here	ADH	Blood Vessels Renal Tubules Sweat Glands	Vasoconstriction ↓ H2O re-absorption Sweat production		Diabetes Insipidus
		Nursing Infant/ Uterine Distention		Oxytocin	Mammary Glands Uterus (myometrium)	"Letting-Down" of Milk Uterine Contractions		

Endocrine Gland	Activity Stimulated by:	Endocrine Gland Affected By:	Cell Type	Hormone Produced	Target Cells	Result Of Activity	Disorders Associated w/ Hyper Secretion	Disorders Associated w/ Hypo Secretion
Adrenal Gland	↓ B.P., ↑ K^+	Rennin/ Angiotensin	1.Cortex a.Zona glomerulosa	Mineralcorticoids (Aldosterone)	Kidney Tubules Smooth muscle of arterioles	↑ H_2O, Na^{++} reabsorption, K^+ secretion, vasoconstriction - B.P.	Aldosteronism	Unknown
	CRH	ACTH	b.Zona fasciculata	Glucocorticoids (cortisol)	General Body Cells	Anti-inflammatory response provides resistance to stress by keeping blood in a "ready state" w/ gluconeogenesis & protein catabolism	Cushing's Syndrome	Addison's Disease
	CRH	ACTH	c.Zona reticularis	Androgens - DEHA (Which can be converted to Estrogen)	General Body Cells	Axillary, pubic hair, pre-pubertal growth, post menopausal estrogen Women - sex drive, facial hair	Men/Women - Virilizing adenoma	
	↑ Stress ↓ Blood Sugar	Hypothalamus to secrete acetylcholine	2.Medulla (Chromaffin Cells)	Epinephrine (adrenaline) Norepinephrine	General Body Cells	"Fight-or-Flight" response	State of Fatigue	
Pancreas			1. Acinar Cells	Totalling 99% of Pancreatic Cellular tissue - secretion of enzymes		Digestion of specific nutrients		
		↓ Blood Sugar	2. Islets of Langerhans a. alpha cells	Glucagon	General Body Cells, Hepatocytes, Skeletal Muscle	↑ Blood Sugar by glycogenolysis, gluconeogenesis	Hyperglycemia caused by tumor	
		↑ Blood Sugar Glucagon Acetylcholine HGH	b. beta cells	Insulin	General Body Cells	↓ Blood sugar by getting sugar into cells, glycogenesis, lipogenesis, protein anabolism	Hypoglycemia	Hyperglycemia - diabetes mellitus
			c. delta cells	Somatostatin (Paracrine)	Alpha & Beta cells	Inhibits release of both glucagon & insulin ↓ GI absorption		May lead to diabetes mellitus
		Protein Meals, Exercise	d. F cells	Pancreatic Polypeptide	Pancreatic Acinar Cells	Inhibits Pancreatic Enzymes		

Endocrine Gland	Activity Stimulated by:	Endocrine Gland Affected By:	Cell Type	Hormone Produced	Target Cells	Result Of Activity	Disorders Associated w/ Hyper Secretion	Disorders Associated w/ Hypo Secretion
Ovaries	GnRH	FSH	1.Follicle Cells 2.Follicle	Estrogen	General Body Cells	↓ Blood Cholesterol Produce "Z" Sex Characteristics, initiate follicle development		No 2^{O} sexual development, sterility (no eggs develop)
	GnRH	FSH & LH	3.Developing follicle	Estrogen	Follicle Cells	Follicle Maturation		
	GnRH	LH	4.Mature Follicle 5.Corpus Luteum	Estrogen Progesterone/ Estrogen	Graffian Follicle Endometrium/ Mammary Glands	Ovulation Prepare Uterus for Implantation Ready for Milk Secretion		Sterility - No Ovulation Insufficient endometrium for implantation/ Miscarriages Irregular Menses
				Inhibin	Cervix, Vagina	Enlarge birth canal/ inhibit release		
				Relaxin	Uterus (Myometrium)	Maintain uterus in a resting state		

Testes	GnRH	FSH LH	1.Spermatagonia (in Seminiferous Tubules) 2. Leydig's Cells	Testosterone	General Body Cells	Initiate Spermatogenesis Protein Synthesis Fetal - Responsible for male anatomy 2^{O} sexual characteristics Sex Drive		Sterility - No Sperm Fetus - Male anatomy does not develop No 2^{O} sexual development
					Immature Sperm	Cause maturation		Sterility (no mature sperm)
		Good Sperm Production	3. Sertoli Cells	Inhibin	Pituitary Gland	↓ Inhibit FSH - Spermatogenesis	Male Infertility	

Endocrine Gland	Activity Stimulated by:	Endocrine Gland Affected By:	Cell Type	Hormone Produced	Target Cells	Result Of Activity	Disorders Associated w/ Hyper Secretion	Disorders Associated w/ Hypo Secretion
Placenta				HCG Estrogens Progesterone	Corpus Luteum	Maintain estrogen and progesterone production for pregnancy		Insufficient endometrium = Miscarriage
				Relaxin	Uterus Cervix Pubic Symphysis	Relaxed state Dilation More Flexibility (at delivery)		
				Human placental Lactogen or Human Chorionic somatomamotropin	Mammary Cells	Prepare for Lactation		