ENDOCRINE GLANDS AND THEIR HORMONES

GLAND	HORMONES*	MAJOR PHYSIOLOGICAL EFFECT
PHARYNGEAL DERIVATIVES (Endodermal):		
Thyroid	Thyroxin (Iodine-rich protein)	Controls metamorphosis in amphibians, metabolic rate (excess = exophthalmic goiter; too little = cretinism or myxedema).
	Calcitonin (Pr)	Increases bone deposition; counteracts parathormone.
Parathyroids	"Parathormone" (Pr)	Controls Ca, P metabolism (hence, muscle tonus) by increasing bone resorbtion by osteoclasts.
MIDGUT DERIVATIVES (Endodermal):		
Gastric lining near pylorus	"Gastrin" (P?)	Secretion of HCl by fundus of stomach.
Intestinal lining	Secretin (Pr)	Stimulates pancreatic & liver secretions.
	Pancreozymin (P?)	Stimulates more concentrated pancreatic fluids.
	Cholecystokinin (P?)	Stimulates emptying of gall bladder.
	"Enterogasterone" (P?)	Delays emptying of stomach & secretion of HCl.
Panreas (islets)	Insulin (Pr)(beta cells)	Stimulates glucose metabolism (esp. in muscles), glycogen storage; prevents diabetes mellitus.
	Glucagon (Pr)(alpha cells)	Stimulates liver to break down glycogen to glucose.
UROGENITAL DERIVATIVES (Mesodermal):		
Adrenal cortex (hormones all steroids)	Cortisol, cortisone, corticosterone, etc. (St)	"Glucocorticoids": control carbohydrate & protein metabolism.
	Aldosterone, 11-deoxycortisol, 11-deoxycorticosterone, etc.	"Mineralocorticoids": control Na & K metabolism, thus electrolyte & water balance.
	DeHydroEpiAndrosterone =DHEA, others (all St)	Androgenic: produces male secondary sex characteristics
Testes	Testosterone (St)	Androgenic: male sex characteristics
Ovaries	Estradiol, estrone, etc. (St)	Estrogenic: female sex char.; in ovarian cycle, stimulates LH & growth of endometrium.
Corpus luteum	Progesterone (St)	Maintains endometrial wall.
Placenta	Progesterone, estrogens (St)	See above.
	Chorionic gonadotrophins (St)	Maintains uterine lining, inhibits pituitary.
Placenta or corpus luteum	Relaxin (Pr)	Relaxes pelvic ligaments to permit birth.

* Pr = protein or polypeptide hormones; St = steroid hormones; P? = chemistry uncertain, prob. protein

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GLAND	HORMONES*	MAJOR PHYSIOLOGICAL EFFECT
STOMODEAL DERIVATIVES (Ectodermal):		
Anterior pituitary (adenohypophysis, from Rathke's pouch)	GH = Growth hor. = STH = Somatotrophin (Pr)	Stimulates growth throughout body; abnormalities include giants, midgets, acromegaly.
	TSH = TTH = Thyrotrophin (Gp)	Stimulates growth & secretion of thyroid gland.
	ACTH =AdrenoCorticotrophin	Stimulates adrenal cortex.
	FSH = Follicle-Stimulating Hormone (Gp)	Stimulates growth of gonads, incl. Graafian follicle (female), seminiferous tubules (male); also stimulates secretion of estrogens in devel. & in cycles
	LH = Luteinizing hormone = Interstitial Cell Stim. Hor. = ICSH (Gp)	Ovulation, secretion of sex hormones (both sexes).
	Prolactin = Luteotrophic hor. = LTH = Lactogenic hor. (Pr)	Growth of corpus luteum; secretion of progesterone; production of milk.
Intermediate lobe	MSH = Melanocyte stim. hormone	Stimulates pigment cells (melanocytes)
NERVOUS DERIVATIVES (Ectodermal):		
Posterior pituitary (neurohypophysis, from base of brain)	Oxytocin (Pr)	Contraction of uterine muscles (hastens childbirth); secretion & ejection of milk.
	Vasopressin = ADH = Antidiuretic hormone (Pr)	Smooth muscle contraction; anti-diuretic action on kidneys (more conc. urine); prevents diabetes insipidus.
Pineal body (from diencephalon)	Melatonin (Pr)	Controls sleep/wake cycle & other circadian rhythms.
Adrenal medulla (from neural crest)	"Adrenalin" = Epinephrine + norepinephrine (catecholamines)	Mimics sympathetic nervous system: breakdown of glycogen to glucose, faster heartbeat , sweat, peripheral vasodilation (but not to viscera), inhibition of peristalsis, etc.
Chromaffin bodies	"Adrenalin"	See above.

* Pr = protein or polypeptide hormones; Gp = Glycoproteins; St = steroid hormones.