

Endocrine System: Glands and Hormones Cheat Sheet by Aya.Rivera (Aya.Rivera) via cheatography.com/216193/cs/47273/

Endocrine System

Collection of *cells*, *tissues*, and *glands* that release **chemical messengers** (*HORMONES*) into the bloodstream.

Compared to the **Nervous System** (NS), the **Endocrine System** sends out slower stimuli, but it produces *widespread effects* that last longer than *Action Potential*.

What are the similarities of the endocrine and nervous systems? Both control systems (homeostasis and other)

Endocrine System vs Nervous System

What are the similarities of the endocrine and nervous systems?

- Both control systems (homeostasis and other)
- Control and coordinate body activities through chemical messengers

Differences of NS and ES *Mode*: NS - Neurotransmitters | ES - Hormones

Speed: NS - fast | ES - slow

Duration of stimuli: NS - short-lived | ES - long-term

Endocrine Glands and Their Functions

Hypoth- alamus (contr- ol/int-	releasing hormones to the anterior pituitary (blood communication) and direct connection to posterior pituitary
egrator)	(nerve communication)
Pituitary gland	"Master Gland"; The Anterior produces hormones that regulate other endocrine glands, and the Posterior stores and releases vasopressin (ADH) and oxytocin.
Pineal gland	Sleep, thru release of <i>Melatonin</i>

Endocrine Glands and Their Functions (cont)			
Thyroid gland	follicular cells, high blood calcium, storage of calcium in bone, release <i>Thyroid Hormone</i> (<i>T3</i> & <i>T4</i>) to increase metabolism and body temperature		
Parath- yroid gland	low blood calcium, <i>Parathyroid Hormone (PTH)</i> , release calcium into blood from bone		
Adrenal glands	stress response, blood pressure response, blood osmolarity/concentration, <i>Sex Hormones</i> (<i>FSH</i> & <i>LH</i>)		
Pancreas	<i>Insulin</i> and <i>Glucagon</i>		
Ovaries	make and release <i>Oestrogen</i> and <i>Progesterone</i>		
Testes	make and release <i>Androgens</i> (e.g. <i>testosterone</i>)		
Thymus	Thymosin - programs T-cells		

3 Types of Hormones		
Amino Acid (Tyrosine)	hormones from the <i>Adrenal Medulla</i> , <i>Thyroid Gland</i> (T3 & T4)	
Protein / Peptide	most abundant; derived from Amino Acids; Pituitary hormones and Pancreas hormones	
Steroids	hormones from the <i>Adrenal Cortex</i> and <i>Gonads</i> - the <i>Ovaries</i> & <i>Testes</i>	
	tides (<100 Amino Acids)	

Hormones		
GLAND	HORMONE	FUNCTION/S
Hypoth- alamus	TRH	release TSH
	CRH	release ACTH
	GnRH	release of FSH & LH
	GHRH	release of GH & TSH
	Somato- statin	inhibits secretion of GH
	Dopamine	inhibits secretion of Prolactin
Pituitary (Anterior)	GH	growth of bones, muscles, & tissues
	TSH	release T₃ and T₄
	АСТН	production and release of cortisol
	FSH	sperm production and follicle dev.
	LH	triggers ovulation and testosterone prod.
	Prolactin	milk production
Pituitary (Poste- rior)	Oxytocin	uterine contra- ctions and milk ejection; promotes bonding
	ADH	water reabso- rption in kidneys; constricts blood vessels
Pineal	Melatonin	regulates sleep- wake cycles
Thyroid	T3 & T4	metabolism, growth, and development
	Calcitonin	lowers blood calcium



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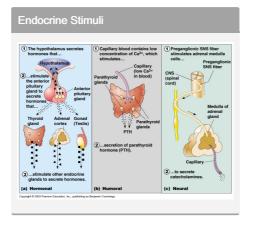
Page 1 of 2.



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Hormones	(cont)	
Parath- yroid	PTH	raises blood calcium
Adrenal Cortex	Mineraloc- orticoid (Aldos- terone)	sodium and potassium balance; maintains blood pressure
	Glucocort- icoid (Cortisol)	body response to stress; regulates metabolism
	Androgens	sex drive and development of secondary sex traits
Adrenal Medulla	Epinep- hrine	increases heart rate, breathing, and energy during stress ("fight or flight")
	Norepi- nephrine	works with epinephrine
Pancreas	Insulin	lowers blood glucose
	Glucagon	raises blood glucose
	Somato- statin	inhibits secretion of insulin and glucagon
Overies	Oestrogen	regulates menstrual cycle
	Proges- terone	maintains uterine lining and supports pregnancy
Testes	Testos- terone	supports sperm production
Thymus	Thymosin	dev. and activation of T- cells for immune response

3 Types of ES Stimuli		
Neural	nerves (Action Potential - AP)	
	stimulate hormone release	
Humoral	blood substances (e.g.	
	calcium, glucose, or sodium)	
	stimulates release of hormones	
Hormonal	hormones stimulate the	
	release of other hormones	
When a hormone ends with - tropin or		
-tropic it is usually a hormone that		
stimulates others, which means it is not the		
end of the cascade.		





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