

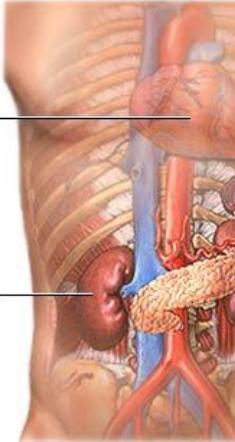
ENDOCRINE GLANDS AND FRIENDS

GLAND	LOCATION	HORMONES SECRETED	NEEDED FOR
HYPOTHALAMUS	Lower central part of brain, group of specialised cells	Many Including CRH Corticotrophin-Releasing Hormone. Under emotional stress CRH makes Pituitary Gland release ACTH	Controlling other glands, eg Pituitary
PITUITARY GLAND	Base of brain, below hypothalamus	1 Growth Hormone 2 Prolactin 3 Thyrotropin 4 ACTH	<ol style="list-style-type: none"> 1. Stimulate growth of tissues and bones 2. activate milk production during lactation 3. Stimulate thyroid gland to produce thyroid hormones 4. Stimulate the adrenal glands, promoting them make and release its hormones
THYROID GLANDS	Front of lower neck	1 Thyroxine 2 Calcitonin	<ol style="list-style-type: none"> 1 Control of growth of bones and brain. And rate at which body uses food – metabolic rate 2 Calcitonin, stimulates bones to take up calcium when blood levels are high.
PARATHYROID GLANDS	Attached to and behind Thyroid Gland in neck	Parathyroid hormone - PTH	Bone growth by regulating calcium levels. When calcium levels are low PTH stimulates bones to release more calcium.

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ADRENAL GLANDS	<p>On top of kidneys (release hormones called Catecholamines 1 2 and 3)</p> <p>And Corticosteroids (4)</p>	<p>1 Epinephrine (Adrenalin) 2 Norepinephrine (noradrenalin) 3 Dopamine</p> <p>4 Cortisol (hydrocortisone)</p>	<p>1 Causes increase in HR and S/V, causing increased Cardiac Output and redistribution of blood to muscles</p> <p>2 increased HR and increase in Arterial BP (Systolic). Effects of Norepinephrine are counteracted by Baroreceptors in walls of arteries and blood vessels</p> <p>3 Controls brain processes that control movement, emotional response, ability to experience pleasure and pain</p> <p>4 produced during physical or emotional stress in reaction with flight or fight syndrome. Also have anti-inflammatory and reduced immune function properties. Cortisol breaks down muscle tissue for energy.</p>
THYMUS (starts comparatively large then shrinks with aging)	Thoracic region behind sternum	Produces T-cells(white blood cells, lymphocytes)	Sends them to spleen and lymph nodes, ready for fighting infections. T cells look after wear and tear of organs
LIVER – Exocrine Gland (largest gland in body, only organ that can repair itself)	Right side of body, filling space behind ribcage	Makes and regulates many hormones	Has as many as 500 different functions! Including: <ul style="list-style-type: none"> - removing excess amino acids from blood, breaking them down to Ammonia, then urea - keeps blood clean, by removing used up red blood cells, making bile with them - produces bile to help break down fatty acids in digestion - helps destroy poisons, such as alcohol

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<p>PANCREAS</p>  <p>Heart</p> <p>Kidney</p>	<p>Abdomen, near kidneys</p>	<p>1 Insulin 2 Glucagon</p>	<p>1 helps reduce sugars in blood by facilitating take up of glucose by muscles 2 helps boost blood sugars by releasing more glycogen from liver if blood sugars are low</p>
<p>KIDNEYS (filter about 227litres of blood every day, producing about 2.3litres of urine)</p>	<p>Middle of back just below ribcage, about size of fist</p>	<p>1. Erythropoietin (EPO) 2. Renin 3. Calcitriol</p> <p>Nephrons: tiny filtering units that contain glomeruli. FUNCTION: to filter waste products from the blood and pass on to bladder as urine. Filter urea (produced when protein is broken down) out of the blood</p>	<p>1 boosts red blood cell production in the bone marrow 2 Regulates blood pressure 3 Active form of Vit D, helps to maintain calcium for bones and normal body balance</p>

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SPLEEN (can be removed if it becomes damaged, but ability to fight infections may be reduced)	Above stomach and below ribs, to left of body	Destroys old blood cells and stores and sends out white blood cells	A part of lymphatic system, fighting off infections within the body. Controls amount of blood in the body
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NOTES:

Endocrine Glands – deliver substances directly into the bloodstream

Exocrine Glands – deliver substances via a duct e.g. salivary glands, liver

Hormones are chemical messengers that are secreted by endocrine glands. They carry messages to areas of the body, organs, cells in response to changes detected. They maintain homeostasis – body's internal balance.

Anabolic – building up organs or structures

Catabolic – breaking down of organs or structures

Neurotransmitters – allow messages to cross from one neuron to the next across synapses, eg Acetylcholine