

# A&P Key Terms

## 17 Endocrine System

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## 4. Chapter: A&P Key Terms 17 Endocrine System

### 1. A&P Key Terms 17 Endocrine System Questions

<u><a href="#">acromegaly</a></u>	disorder in adults caused when abnormally high levels of GH trigger growth of bones in the face, hands, and feet
<u><a href="#">adenylyl cyclase</a></u>	membrane-bound enzyme that converts ATP to cyclic AMP, creating cAMP, as a result of G-protein activation
<u><a href="#">adrenal cortex</a></u>	outer region of the adrenal glands consisting of multiple layers of epithelial cells and capillary networks that produces mineralocorticoids and glucocorticoids
<u><a href="#">adrenal glands</a></u>	endocrine glands located at the top of each kidney that are important for the regulation of the stress response, blood pressure and blood volume, water homeostasis, and electrolyte levels
<u><a href="#">adrenal medulla</a></u>	inner layer of the adrenal glands that plays an important role in the stress response by producing epinephrine and norepinephrine
<u><a href="#">adrenocorticotrophic hormone</a></u>	(ACTH) anterior pituitary hormone that stimulates the adrenal cortex to secrete corticosteroid hormones (also called corticotropin)
<u><a href="#">alarm reaction</a></u>	the short-term stress, or the fight-or-flight response, of stage one of the general adaptation syndrome mediated by the hormones epinephrine and norepinephrine
<u><a href="#">aldosterone</a></u>	hormone produced and secreted by the adrenal cortex that stimulates sodium and fluid retention and increases blood volume and blood pressure
<u><a href="#">alpha cell</a></u>	pancreatic islet cell type that produces the hormone glucagon
<u><a href="#">angiotensin-converting enzyme</a></u>	the enzyme that converts angiotensin I to angiotensin II
<u><a href="#">antidiuretic hormone</a></u>	(ADH) hypothalamic hormone that is stored by the posterior pituitary and that signals the kidneys to reabsorb water
<u><a href="#">atrial natriuretic peptide</a></u>	(ANP) peptide hormone produced by the walls of the atria in response to high blood pressure, blood volume, or blood sodium that reduces the reabsorption of sodium and water in the kidneys and promotes vasodilation
<u><a href="#">autocrine</a></u>	chemical signal that elicits a response in the same cell that secreted it
<u><a href="#">beta cell</a></u>	pancreatic islet cell type that produces the hormone insulin

<a href="#">calcitonin</a>	peptide hormone produced and secreted by the parafollicular cells (C cells) of the thyroid gland that functions to decrease blood calcium levels
<a href="#">chromaffin</a>	neuroendocrine cells of the adrenal medulla
<a href="#">colloid</a>	viscous fluid in the central cavity of thyroid follicles, containing the glycoprotein thyroglobulin
<a href="#">cortisol</a>	glucocorticoid important in gluconeogenesis, the catabolism of glycogen, and downregulation of the immune system
<a href="#">cyclic adenosine monophosphate</a>	(cAMP) second messenger that, in response to adenylyl cyclase activation, triggers a phosphorylation cascade
<a href="#">delta cell</a>	minor cell type in the pancreas that secretes the hormone somatostatin
<a href="#">diabetes mellitus</a>	condition caused by destruction or dysfunction of the beta cells of the pancreas or cellular resistance to insulin that results in abnormally high blood glucose levels
<a href="#">diacylglycerol</a>	(DAG) molecule that, like cAMP, activates protein kinases, thereby initiating a phosphorylation cascade
<a href="#">downregulation</a>	decrease in the number of hormone receptors, typically in response to chronically excessive levels of a hormone
<a href="#">endocrine gland</a>	tissue or organ that secretes hormones into the blood and lymph without ducts such that they may be transported to organs distant from the site of secretion
<a href="#">endocrine system</a>	cells, tissues, and organs that secrete hormones as a primary or secondary function and play an integral role in normal bodily processes
<a href="#">epinephrine</a>	primary and most potent catecholamine hormone secreted by the adrenal medulla in response to short-term stress; also called adrenaline
<a href="#">erythropoietin</a>	(EPO) protein hormone secreted in response to low oxygen levels that triggers the bone marrow to produce red blood cells
<a href="#">estrogens</a>	class of predominantly female sex hormones important for the development and growth of the female reproductive tract, secondary sex characteristics, the female reproductive cycle, and the maintenance of pregnancy

<u>exocrine system</u>	cells, tissues, and organs that secrete substances directly to target tissues via glandular ducts
<u>first messenger</u>	hormone that binds to a cell membrane hormone receptor and triggers activation of a second messenger system
<u>follicle-stimulating hormone</u>	(FSH) anterior pituitary hormone that stimulates the production and maturation of sex cells
<u>G protein</u>	protein associated with a cell membrane hormone receptor that initiates the next step in a second messenger system upon activation by hormone-receptor binding
<u>general adaptation syndrome</u>	(GAS) the human body's three-stage response pattern to short- and long-term stress
<u>gigantism</u>	disorder in children caused when abnormally high levels of GH prompt excessive growth
<u>glucagon</u>	pancreatic hormone that stimulates the catabolism of glycogen to glucose, thereby increasing blood glucose levels
<u>glucocorticoids</u>	hormones produced by the zona fasciculata of the adrenal cortex that influence glucose metabolism
<u>goiter</u>	enlargement of the thyroid gland either as a result of iodine deficiency or hyperthyroidism
<u>gonadotropins</u>	hormones that regulate the function of the gonads
<u>growth hormone</u>	(GH) anterior pituitary hormone that promotes tissue building and influences nutrient metabolism (also called somatotropin)
<u>hormone receptor</u>	protein within a cell or on the cell membrane that binds a hormone, initiating the target cell response
<u>hormone</u>	secretion of an endocrine organ that travels via the bloodstream or lymphatics to induce a response in target cells or tissues in another part of the body
<u>hyperglycemia</u>	abnormally high blood glucose levels
<u>hyperparathyroidism</u>	disorder caused by overproduction of PTH that results in abnormally elevated blood calcium
<u>hyperthyroidism</u>	clinically abnormal, elevated level of thyroid hormone in the blood; characterized by an increased metabolic rate, excess body heat, sweating, diarrhea, weight loss, and increased heart rate



	weight loss, and increased heart rate
<a href="#">hypoparathyroidism</a>	disorder caused by underproduction of PTH that results in abnormally low blood calcium
<a href="#">hypophyseal portal system</a>	network of blood vessels that enables hypothalamic hormones to travel into the anterior lobe of the pituitary without entering the systemic circulation
<a href="#">hypothalamus</a>	region of the diencephalon inferior to the thalamus that functions in neural and endocrine signaling
<a href="#">hypothyroidism</a>	clinically abnormal, low level of thyroid hormone in the blood; characterized by low metabolic rate, weight gain, cold extremities, constipation, and reduced mental activity
<a href="#">infundibulum</a>	stalk containing vasculature and neural tissue that connects the pituitary gland to the hypothalamus (also called the pituitary stalk)
<a href="#">inhibin</a>	hormone secreted by the male and female gonads that inhibits FSH production by the anterior pituitary
<a href="#">inositol triphosphate</a>	(IP3) molecule that initiates the release of calcium ions from intracellular stores
<a href="#">insulin-like growth factors</a>	(IGF) protein that enhances cellular proliferation, inhibits apoptosis, and stimulates the cellular uptake of amino acids for protein synthesis
<a href="#">insulin</a>	pancreatic hormone that enhances the cellular uptake and utilization of glucose, thereby decreasing blood glucose levels
<a href="#">leptin</a>	protein hormone secreted by adipose tissues in response to food consumption that promotes satiety
<a href="#">luteinizing hormone</a>	(LH) anterior pituitary hormone that triggers ovulation and the production of ovarian hormones in females, and the production of testosterone in males
<a href="#">melatonin</a>	amino acid-derived hormone that is secreted in response to low light and causes drowsiness
<a href="#">mineralocorticoids</a>	hormones produced by the zona glomerulosa cells of the adrenal cortex that influence fluid and electrolyte balance
<a href="#">neonatal hypothyroidism</a>	condition characterized by cognitive deficits, short stature, and other signs and symptoms in people born to women who were iodine-deficient during pregnancy

<a href="#">norepinephrine</a>	secondary catecholamine hormone secreted by the adrenal medulla in response to short-term stress; also called noradrenaline
<a href="#">osmoreceptor</a>	hypothalamic sensory receptor that is stimulated by changes in solute concentration (osmotic pressure) in the blood
<a href="#">oxytocin</a>	hypothalamic hormone stored in the posterior pituitary gland and important in stimulating uterine contractions in labor, milk ejection during breastfeeding, and feelings of attachment (also produced in males)
<a href="#">PP cell</a>	minor cell type in the pancreas that secretes the hormone pancreatic polypeptide
<a href="#">pancreas</a>	organ with both exocrine and endocrine functions located posterior to the stomach that is important for digestion and the regulation of blood glucose
<a href="#">pancreatic islets</a>	specialized clusters of pancreatic cells that have endocrine functions; also called islets of Langerhans
<a href="#">paracrine</a>	chemical signal that elicits a response in neighboring cells; also called paracrine factor
<a href="#">parathyroid glands</a>	small, round glands embedded in the posterior thyroid gland that produce parathyroid hormone (PTH)
<a href="#">parathyroid hormone</a>	(PTH) peptide hormone produced and secreted by the parathyroid glands in response to low blood calcium levels
<a href="#">phosphodiesterase</a>	(PDE) cytosolic enzyme that deactivates and degrades cAMP
<a href="#">phosphorylation cascade</a>	signaling event in which multiple protein kinases phosphorylate the next protein substrate by transferring a phosphate group from ATP to the protein
<a href="#">pineal gland</a>	endocrine gland that secretes melatonin, which is important in regulating the sleep-wake cycle
<a href="#">pinealocyte</a>	cell of the pineal gland that produces and secretes the hormone melatonin
<a href="#">pituitary dwarfism</a>	disorder in children caused when abnormally low levels of GH result in growth retardation
<a href="#">pituitary gland</a>	bean-sized organ suspended from the hypothalamus that produces, stores, and secretes hormones in response to hypothalamic stimulation (also called hypophysis)

<u>progesterone</u>	predominantly female sex hormone important in regulating the female reproductive cycle and the maintenance of pregnancy
<u>prolactin</u>	(PRL) anterior pituitary hormone that promotes development of the mammary glands and the production of breast milk
<u>protein kinase</u>	enzyme that initiates a phosphorylation cascade upon activation
<u>second messenger</u>	molecule that initiates a signaling cascade in response to hormone binding on a cell membrane receptor and activation of a G protein
<u>stage of exhaustion</u>	stage three of the general adaptation syndrome; the body's long-term response to stress mediated by the hormones of the adrenal cortex
<u>stage of resistance</u>	stage two of the general adaptation syndrome; the body's continued response to stress after stage one diminishes
<u>testosterone</u>	steroid hormone secreted by the male testes and important in the maturation of sperm cells, growth and development of the male reproductive system, and the development of male secondary sex characteristics
<u>thymosins</u>	hormones produced and secreted by the thymus that play an important role in the development and differentiation of T cells
<u>thymus</u>	organ that is involved in the development and maturation of T-cells and is particularly active during infancy and childhood
<u>thyroid gland</u>	large endocrine gland responsible for the synthesis of thyroid hormones
<u>thyroid-stimulating hormone</u>	(TSH) anterior pituitary hormone that triggers secretion of thyroid hormones by the thyroid gland (also called thyrotropin)
<u>thyroxine</u>	(also, tetraiodothyronine, T4) amino acid-derived thyroid hormone that is more abundant but less potent than T3 and often converted to T3 by target cells
<u>triiodothyronine</u>	(also, T3) amino acid-derived thyroid hormone that is less abundant but more potent than T4
<u>upregulation</u>	increase in the number of hormone receptors, typically in response to chronically reduced levels of a hormone

zona fasciculata

intermediate region of the adrenal cortex that produce hormones called glucocorticoids

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zona glomerulosa

most superficial region of the adrenal cortex, which produces the hormones collectively referred to as mineralocorticoids

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zona reticularis

deepest region of the adrenal cortex, which produces the steroid sex hormones called androgens

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