

Examrace

Life Sciences Glossary: Local Hormones and Endocrine Glands of Man

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Local Hormones

Local hormones are secreted at one place and work upon adjacent tissue, e. g. Acetylcholine, Histamine, 5-Hydroxytryptamine, Bradykinin, etc.

Endocrine Glands of Man

The most important endocrine glands in man include:

- Pituitary (Hypothalamus)
- Thyroid
- Parathyroid
- Adrenals (Suprarenal's)
- Pineal gland
- Thymus gland
- Pancreas
- Kidneys
- Gonads
- Placenta

Pituitary Gland

Pituitary (Hypothalamus) regulates so many body activities. It has been nicknamed as the 'master gland' or 'bandmaster of endocrine orchestra'. Pituitary lies in the sella turcica of the sphenoid bone and is attached to the hypothalamus by a short infundibular stalk. In man, it normally measures about 1.3 cm in diameter and weighs about 0.5 gram. It is slightly larger in woman. On the basis of anatomy and embryology, pituitary can be divided into two parts: adenohypophysis and neurohypophysis. The hormones secreted by pituitary are proteins (peptides) or glycoproteins.

Hormones of Adenohypophysis

- Somatotrophic hormone (STH) or GH
- Thyroid stimulating hormone (TSH)

- Adrenocorticotrophic hormone (ACTH)
- Follicle stimulating hormone (FSH)
- Luteinizing hormone (LH) (ICSH in male)
- Prolactin (Galactic or LTH)
- Melanocyte stimulating hormone (MSH)

Somatotropic Hormone (Growth Hormone)

- The chief function GH is to act on the hard and soft tissues to increase the rate of growth.
- GH is the important hormone for normal growth of body. GH is more effective in the presences of thyroxin.
- The hypo secretion of GH during the growth years results in the pituitary dwarfish (Midget) .
- The hypo secretion of GH in the adult life lead to a rare condition called 'Simmonds's disease' . The patient becomes quite thin and shows signs of premature ageing.
- The hyper secretion during childhood (before the closure of epiphyseal plates at the ends of the bones) results in gigantism.
- Acromegaly patient has a gorilla-like appearance with huge hands and legs.

Thyrotrophic

Thyroid stimulating hormone (TSH) stimulates the synthesis and secretion of hormones produced by thyroid gland.

Adrenocorticotrophic Hormone (ACTH)

- This hormone controls the production and secretion of certain adrenal cortex hormones.
- If pituitary is surgically removed (hypohysectomy) blood level of sodium falls and potassium rises.
- Gonadotropic hormones include FSH, LH and LTH.

Follicle Stimulating Hormone (FSH)

- FSH promotes growth of ovarian follicles in female and stimulates ovaries to secrete estrogens or female sex hormones.
- In male, FSH stimulates the testis to initiate sperm production.

Luteinizing Hormone (LH)

- LH is called luteotropin in the female and interstitial cell- stimulating hormone (ICSH) in the male.

- In female, together with estrogens, LH stimulates the ovary to release developed ovum and prepares the uterus for implantation of a fertilized ovum.
- LH also stimulates the formation of the corpus Latium in female.
- In the male, ICSH stimulates the interstitial cells of Leyden in testis to develop and secrete large amount of testosterone.

Prolactin

- Prolactin is also known as lute tropic hormone (LTH) , or lactogenic or mammographic (MTH) hormone.
- Prolactin initiates and maintains milk secretion by mammary gland, a process called lactation.

Melanocyte Stimulating Hormone (MSH)

- MSH increases skin pigmentation by stimulating the dispersion of melanin granules in melanocytes.
- MSH is also called 'interceding' in man, it is a vestigial hormone, its secretion is doubtful.
- MSH is produced in the pars intermediate of the pituitary.
- MSH induces darkening of the skin of fish and amphibian by expanding the melanophores.

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