Animal physiology

Endocrinology
MSc.Students
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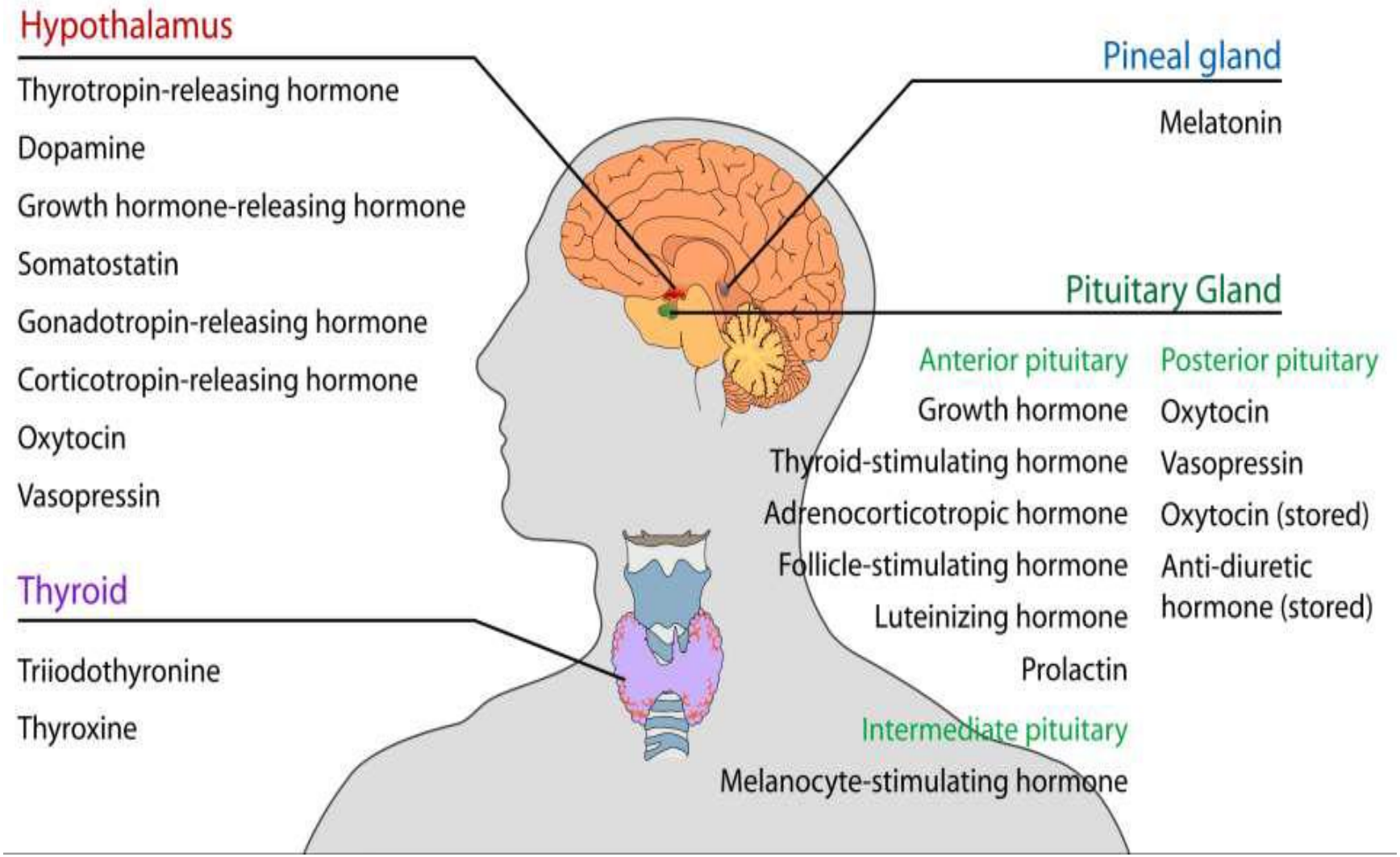
Hypothalamus
Thyrotropin-releasing hormone
Dopamine
Growth hormone-releasing hormone
Somatostatin
Gonadotropin-releasing hormone
Corticotropin-releasing hormone
Oxytocin
Vasopressin
Thyroid
Triiodothyronine
Thyroxine
Pineal gland
Melatonin
Pituitary Gland
Anterior pituitary
Growth hormone
Thyroid-stimulating hormone
Adrenocorticotropic hormone
Follicle-stimulating hormone
Luteinizing hormone
Prolactin
Intermediate pituitary
Melanocyte-stimulating hormone
Posterior pituitary
Oxytocin
Vasopressin
Oxytocin (stored)
Anti-diuretic hormone (stored)

The Pituitary Gland

What is the pituitary gland and what does it do?

- pituitary gland is about the size of a pea and is situated in a bony hollow, just behind the bridge of your nose. It is attached to the base of your brain by a thin stalk. The hypothalamus, which controls the pituitary by sending messages, is situated immediately above the pituitary gland. The pituitary gland is often called the master gland because it controls several other hormone glands in your
- body, including the thyroid and adrenals, the ovaries and testicles.

The Hypothalamus

- which serves as a communications centre for the pituitary gland, by sending messages or signals to the pituitary in the form of hormones which travel via the bloodstream and nerves down the pituitary stalk. These signals, in turn, control the production and release of further hormones from
- the pituitary gland which signal other glands and organs in the body. The hypothalamus influences the functions of temperature regulation, food intake, thirst and water intake, sleep and wake patterns, emotional behaviour and memory.

pituitary hormones

- Anterior – Front Part Hormones

Adrenocorticotrophic Hormone (ACTH)

- Stimulates the adrenal glands to produce a hormone called cortisol. ACTH is also known as corticotrophin.Cortisol promotes normal metabolism, maintains blood sugar levels and blood pressure. It provides resistance to stress and acts as an inflammatory agent. Cortisol also helps to regulate fluid balance in the body.

Thyroid Stimulating Hormone(TSH)

- Stimulates the thyroid gland to secrete its own hormone called thyroxine (T4). TSH is also known as thryrotropin. Another hormone produced from the thyroid is called tri-iodothyronine or T3. Thyroxine controls many bodily functions, including heart rate, temperature and metabolism. It also helps metabolise calcium in the body.

Lutenising Hormone (LH) and Follicle-Stimulating Hormone (FSH)

- Control reproduction and sexual characteristics. Stimulate the ovaries to produce oestrogen and progesterone and the testes to produce testosterone and sperm. LH and FSH are also known collectively as gonadatrophins. Oestrogen helps with growth of tissue of the sex organs and reproductive parts. It also strengthens bones and has a positive effect on the heart. Testosterone is responsible for the masculine characteristics including hair growth on the face and body
- and muscle development. It is essential for producing sperm and strengthening the bones.

Prolactin

- Stimulates the breasts to produce milk and is secreted in large amounts during pregnancy and breastfeeding.
- It is however present at all times in both males and females

Growth Hormone (GH)

- In children this hormone is essential for a normal rate of growth. In adults it controls energy levels and well-being.
- It is important for maintaining muscle and bone mass and appropriate fat distribution in the body.

Posterior – Back Part Hormones

- **Anti-diuretic Hormone (ADH)**

- Controls the blood fluid and mineral levels in the body by affecting water retention by the kidneys.
- This hormone is also known as vasopressin

Oxytocin

- Affects the uterine contractions in childbirth and the subsequent release of milk for breast feeding.

Refrences