

Endocrine system: Facts, functions and diseases

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Abstract

The system may be a chemical messenger system comprising feedback loops of the hormones released by internal glands of an organism directly into the cardiovascular system, regulating distant target organs. In humans, the main endocrine glands are the thyroid and therefore the adrenal glands. In vertebrates, the hypothalamus is that the neural center for all endocrine systems. The study of the system and its disorders is understood as endocrinology. Endocrinology may be a branch of general medicine. A number of glands that signal one another in sequence are usually mentioned as an axis, like the hypothalamic-pituitary-adrenal axis. additionally, to the specialized endocrine organs mentioned above, many other organs that are a part of other body systems have secondary endocrine functions, including bone, kidneys, liver, heart and gonads. for instance, the kidney secretes the endocrine hormone erythropoietin. Hormones are often aminoalkanoic acid complexes, steroids, eicosanoids, leukotrienes, or prostaglandins.

Keywords: Hypothalamic, Steroids, Eicosanoids, Leukotrienes

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Introduction

The system is often contrasted to both exocrine glands, which secrete hormones to the surface of the body, and paracrine signaling between cells over a comparatively short distance. Endocrine glands haven't any ducts, are vascular, and commonly have intracellular vacuoles or granules that store their hormones.

Function

The system is formed from the pituitary, thyroid, parathyroid glands, adrenal glands, pancreas, ovaries (in females) and testicles (in males), consistent with the Mayo Clinic.

The word endocrine derives from the Greek words "endo," meaning within, and "crinis," aiming to secrete, consistent with Health Mentor Online. generally, a gland selects and removes materials from the blood, processes them and secretes the finished chemical product to be used somewhere within the body.

The system gets some help from organs like the kidney, liver, heart and gonads, which have secondary endocrine functions. The kidney, for instance, secretes hormones like erythropoietin and renin. The thyroid also secretes a variety of hormones that affect the entire body.

Diseases of the endocrine system

Hormone levels that are too high or too low indicate a drag with the system. Hormone diseases also occur if your body doesn't answer hormones within the appropriate ways. Stress, infection and changes within the blood's fluid and balance also can influence hormone levels, consistent with the National Institutes of Health.

The most common endocrine disease within the us is diabetes, a condition during which the body doesn't properly process glucose, an easy sugar. this is often thanks to the shortage of insulin or, if the body is producing insulin, because the body isn't working effectively, consistent with Dr. Jennifer Loh, chief of the department of endocrinology for Kaiser Permanente in Hawaii.

Diabetes are often linked to obesity, diet and case history, consistent with Dr. Alyson Myers of North Shore-LIJ Health System. "To diagnose diabetes, we do an oral glucose tolerance test with fasting."

It is also important to know the patient's health history also because the case history, Myers noted. Infections and medications like blood thinners also can cause adrenal deficiencies.

Diabetes is treated with pills or insulin injections. Managing other endocrine disorders typically involves stabilizing hormone levels with medication or, if a tumor is causing an overproduction of a hormone, by removing the tumor. Treating endocrine disorders takes a really careful and personalized approach, Myers said, as adjusting the amount of 1 hormone can impact the balance of other hormones.

Hormone imbalances can have a big impact on the genital system, particularly in women, Loh explained.

Another disorder, hypothyroidism, a parathyroid disease, occurs when the thyroid doesn't produce enough hormone to satisfy the body's needs. Loh noted that insufficient hormone can cause many of the body's functions to slow or pack up completely. it's a simple treatment, though. "Parathyroid disease may be a curable explanation for kidney stones," said Dr. Melanie Goldfarb, an endocrine surgeon and director of the Endocrine Tumor Program at Providence Saint John's clinic in Santa Monica, California, and a professor of surgery at the toilet Wayne Cancer Institute in Santa Monica. The damaged a part of the gland is removed surgically.

Thyroid cancer begins within the thyroid and starts when the cells within the thyroid begin to vary, grow uncontrollably and eventually form a tumor, consistent with Loh. Tumors — both benign and cancerous — also can disrupt the functions of the system, Myers explained. Between the years of 1975 and 2013, the cases of thyroid cancer diagnosed yearly have quite tripled, consistent with a 2017 study published within the Journal of the American Medical Association (JAMA).

"While overdiagnosis could also be a crucial component to the present observed epidemic, it clearly doesn't explain the entire story," said Dr. Julie Sosa, one among the authors of the new study and therefore the chief of endocrine surgery at Duke University in North Carolina. The American Cancer Society predicts that there'll be about 53,990 new cases of thyroid cancer in 2018 and around 2,060 deaths from thyroid cancer.

Hypoglycemia, also called low blood glucose or low blood sugar, occurs when blood sugar drops below normal levels. This typically happens as a result of treatment for diabetes when an excessive amount of insulin is taken.

While Loh noted that the condition can occur in people not undergoing treatment for diabetes, such an event is fairly rare.

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