

THE ENDOCRINE GLANDS

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The majority of secreting glands in the human body have some sort of duct through which the secretion is discharged. For example, the salivary glands discharge into the mouth, and the lachrymal glands direct onto the eyes.

However, some glands have no ducts, and the secretions are passed directly into the blood. These are known as endocrine glands. Thus an endocrine gland is an organ which forms within its cells a definite chemical substance, and passes this directly into the blood stream.

The ductless glands consist of the pituitary, thyroid, parathyroid, pineal, thymus, carctid, supra-renal, and coccygeal glands. The spleen and lymphatic glands are also ductless, but no evidence is forthcoming to show that they have endocrine functions. Certain glands with ducts, such as the pancreas, testes and ovaries, are also endocrines. In these are incorporated cells having no direct relation to the main function of the gland, and so may be considered as separate entities.

Modern medical science has established that these glands have definite functions in the development of the body, due to internal secretions, known as hormones. These hormones determine sex, stature and temperament, and furnish our main defenses, not only against bacteria, but against toxins produced in the body by metabolic processes. These glands preside over our growth, development, nutrition, mental and moral character and personality. The supra-renals control the bony and muscular tissues, large vital organs and purely animal functions of digestion, assimilation, excretion and reproduction, while the central nervous system, brain and spinal cord, preside over the higher functions, and are dependent on such endocrine glands as the thyroid and pituitary for their efficiency.

Defects in the endocrine system are now known to be responsible for all manner of diseases and abnormalities which formerly presented insoluble problems. Cure or alleviation of conditions produced by hormonal deficiencies is carried out by administration of products of the necessary gland, usually as a desiccated gland substance. Such treatment is known as organo-therapy.

The thymus gland is developed in infancy, attains its maximum size at about two years of age, remains so until puberty, and then decreases until, in adult life, it has degenerated into adipose and connective tissues. Its functions have not yet been definitely identified, but it is noticed that it has some effect on sexual organs. If the thymus is removed the spleen enlarges. It is supposed by some authorities to assist in the production of white cells, lymphocytes and leukocytes, and so probably has an anti-toxic influence. It is found greatly enlarged in the fatal, but fortunately rare, condition of status lymphaticus.

The thyroid is the gland, the enlargement of which causes goiter. Its secretion is most important in the metabolism and growth of the body. It definitely controls the rapidity of tissue change. Absence, deficiency or atrophy of this gland at birth produces the congenital disease known as cretinism. Deficiency in secretion in adult life causes myxoedema. The functions of this gland are probably connected with the female generative organs, as, during pregnancy and sometimes at puberty, the gland enlarges. It probably influences all tissues, and its influence on metabolism is huge. Excessive thyroid secretion causes symptoms of Graves' disease, without being the primary cause of the condition.

The parathyroids are two pairs of small glands on the posterior surfaces of the thyroid lobes. They are in no way connected with the functions of the thyroid, and their embryonic

origin is totally different. Their functions are not definitely known, but it is believed that they regulate calcium metabolism. They also assist in regulating the accumulation of guanidine, a metabolic poison. Disturbed functioning causes twitching and muscular spasms.

The supra-renals consist of a cortex and a medulla, the latter absolutely essential to life. These glands are believed to influence development of the nervous system, and take part in muscle tone and generally assist in muscle metabolism and prevention of fatigue. With deficient functions of the cortex there is a lack of sexual development, whereas excessive action causes male characters in the female, increase of muscle tissue and growth of hair, with general rapid development. Deficient functions of the medullary portion pigmentation, asthenia and general muscular weakness. Excessive medullary action brings about vascular changes, increased blood pressure and an increase in blood sugar. Removal of the glands causes death from failure of the muscles controlling the breathing apparatus.

The pituitary body, situated at the base of the brain, consists of two lobes and an intermediate portion. The secretion of the anterior lobe influences general growth of the body, particularly bony tissue. The posterior lobe stimulates unstriped muscle. This lobe may be removed with impunity, but destruction of the anterior portion quickly causes death. Very little is known of the intermediate portion, except that removal causes increased action of the thyroid. Decreased functioning of this gland causes stunting of growth, sometimes with adiposity and deficient sexual development. Increased secretion produces acromegaly, in which condition the face, hands and feet grow to an enormous size. This is often associated with glycosuria and excessive growth of hair. It is suspected that the thyroid is also involved in this condition, and that the pituitary is affected in gigantism.

The pineal gland is a small oval body in the roof of the third ventricle of the brain. Very little is known about its functions, the results of experiments carried out being very conflicting. It is generally accepted to influence mental, bodily and sexual precocity.

The carotid gland is composed of substance like the supra-renal medulla. Nothing is known about this or the coccygeal gland.

The normal function of the spleen is to form white corpuscles and certain red cells; also to disintegrate red cells. It is undoubtedly a very active factor in nitrogenous metabolism in the formation of uric acid. The removal of the spleen is not fatal, its functions apparently being taken on by the lymphatic glands, which become enlarged. So far as observed, functional derangement of the spleen gives no definite symptoms beyond forms of anemia, or causes any bodily change or interferes with normal development.

The lymphatic glands produce lymphocytes, a type of white blood corpuscle, and filter off toxins from the lymph passing through them.

Considering that organo-therapy is in its infancy, some astonishing results have been achieved in the cure of many diseases. I have personally seen cataract, in a considerably advanced state, treated by the administration of various desiccated gland substances, and the condition has been greatly delayed, if not completely dissipated, and I am convinced that great progress will be made along these lines in the near future.□

It is interesting to note that the author of the above article mentions the use of desiccated glands for the treatment of cataract. In syntonics we use selected light frequencies for opacities, securing a high percentage of results.

It is thought that controlling the radiant energy environment of the eyes will eventually prove to be a much more effective method of overcoming ocular departures from normal.

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