INSTITUTE OF INCLUSIVE EDUCATION BSPU

ACADEMIC DISCIPLINE
«HUMAN ANATOMY, PHYSIOLOGY AND PATHOLOGY»

THE CONCEPT OF THE ENDOCRINE GLANDS

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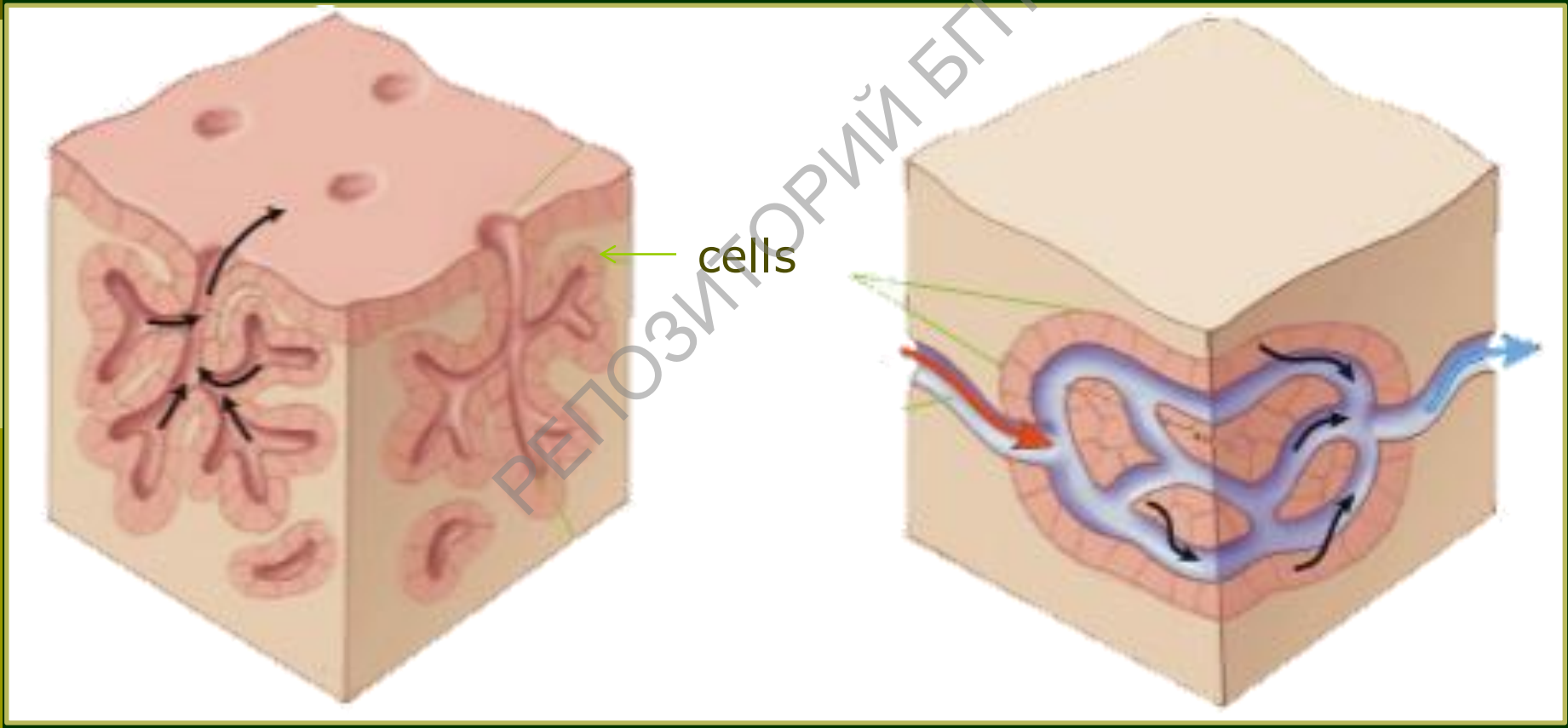
The glands are organs consisting of secretory cells that produce specific substances of different chemical nature, secreted through the excretory ducts in the body cavity, the environment or into the blood, lymph

THE SCHEME OF THE GENERAL STRUCTURE OF THE EXOCRINE AND ENDOCRINE GLANDS

EXOCRINE GLANDS **ENDOCRINE GLANDS**



The Endocrine glands (greek. *endon* – inside, *krinein* – excrete) – glands characterized by the absence of excretory ducts that excrete the produced substances into the internal environment of the body (in the intercellular space, from where they enter the blood, lymph, CSF)

THE GENERAL CHARACTERISTICS OF THE ENDOCRINE GLANDS

- small size, low mass

(from a fraction of a gram to several grams)

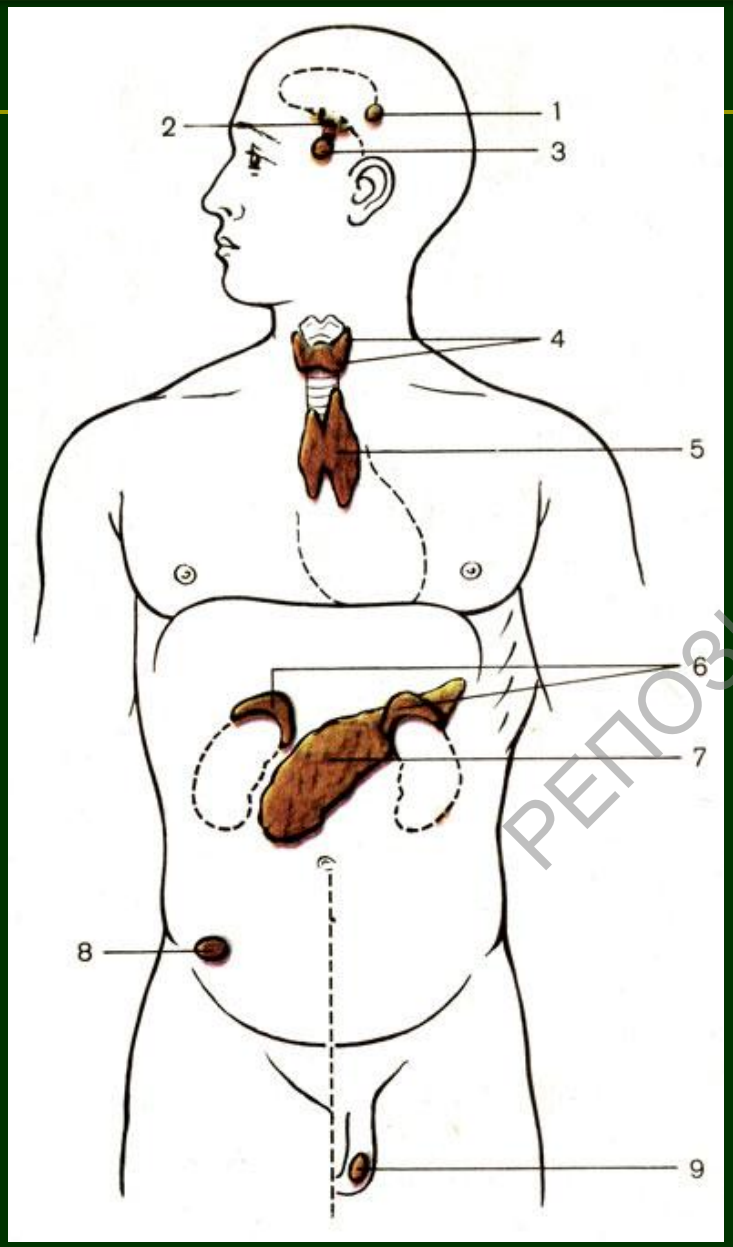
- richly supplied with blood vessels

- have an extensive network of nerve fibers innervating blood vessels

THE ROLE OF THE ENDOCRINE GLANDS IN THE BODY

- participation in the regulation of metabolic processes and maintenance of homeostasis
- providing physiological adaptation of the body
- ensuring full physical, mental and sexual development

THE TOPOGRAPHY OF ENDOCRINE GLANDS



1 - pineal gland

(corpus pineale)

2 - hypothalamic neurosecretory nuclei

3 - pituitary gland (hypophysis)

4 - thyroid and parathyroid glands (glandula thyroidea et glandulae parathyroideae)

5 - thymus gland

(thymus)

6 - adrenal gland

(glandula suprarenalis)

7 – pancreas (pancreas)

8 - ovary (ovarium)

9 - testis (testis)

Figure source: http://massagelib.ru/books/item/f00/s00/z0000044/st066.shtml

THE ORIGIN OF THE ENDOCRINE GLANDS

- from the ectoderm - pineal gland, posterior pituitary, medulla adrenal glands
- from mesoderm - adrenal cortex and gonads
- from endoderm - anterior lobe of the pituitary gland, thyroid gland, parathyroid glands, thymus gland and pancreatic islets (intrasecretory part)

THE CONCEPT OF HORMONES

The hormones (from the greek. *horman* – initiate) – products of the activity of the endocrine glands, which are biologically highly active substances that have a specific effect on metabolism, growth and development of the body

HORMONE PROPERTIES

- high biological activity
- specificactions
- rapid tissue destruction
- distant action

HORMONE CLASSIFICATION

According to Chemical Nature

Grup	Gormone
Peptide Hormones	Oxytocin, vasopressin, glucagon, thyrocalcitonin, insulin, human growth hormone, parathyroid hormone
Amino Acid-Derived Hormones	Thyroxine, triiodothyronine, epinephrine, norepinephrine, dopamine
Steroid Hormones	Cortisol, aldosterone, estradiol, progesterone, testosterone

HORMONE CLASSIFICATION

On the Basis of Stimulation of Endocrine Glands

Grup	Function
Non-tropic hormones	Have an effect on target cells
Tropic hormones	These hormones stimulate other endocrine glands for secretion
Releasing hormones	Regulate the secretion of tropic hormones

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