

LEARNING OBJECTIVES FOR ENDOCRINOLOGY & METABOLISM

BIOL 260

Endocrinology

- Identify the hormones produced by the hypothalamus, anterior and posterior pituitary
- Contrast the mechanism of hormone release by the anterior and posterior pituitary
- Define trophic and non-trophic hormones
- Describe the negative feedback controls of the hypothalamic-anterior pituitary axis
- Explain the significance of synergism, permissive and antagonistic hormones
- Diagnose whether an endocrine pathology is a primary or secondary disorder

Short-term metabolism

- Describe the metabolic fate of amino acids, monosaccharides, and fatty acids during the fed and fasted states
- Identify the roles of HDL- and LDL-cholesterol
- Identify the primary energy stores of the body
- Define the processes of glycolysis, glycogenesis, glycogenolysis, lipogenesis, lipolysis, gluconeogenesis, ketogenesis. Identify whether each predominates in the fed or fasted states.
- Explain how insulin and glucagon maintain glucose homeostasis
- Describe the role of insulin and GLUT proteins in glucose metabolism
- Identify the primary symptoms of untreated type 1 diabetes
- Compare and contrast the physiologic cause of type 1 and type 2 diabetes

Long-term metabolism

- Describe the actions of the corticosteroids and explain how the secretions of the adrenal cortex are regulated
- Identify the symptoms of corticosteroid disorders
- Explain the physiologic response to stress
- Describe the regulation of thyroid hormone, its effect on cells, and the symptoms of thyroid disorders
- Explain the different mechanisms of goiter development
- Describe the regulation of growth hormone, its metabolic effects, and the symptoms of abnormal secretion
- Compare and contrast the overall effects of cortisol, growth hormone, insulin, and glucagon