Chapter 10 – Endocrine System

Major regulatory systems in body
   Nervous & Endocrine systems

Endocrine System
   Endocrine & exocrine glands
   Hormones
      Hormone types
      Hormone signaling

Endocrine glands
   Hypothalamus
   Posterior pituitary
      Antidiuretic Hormone
      Diabetes Insipidus
      Oxytocin
      Positive feedback during childbirth
   Anterior pituitary
      Hormones & targets
      Gigantism
      Acromegaly
      Pituitary dwarfism
   Adrenal gland (cortex)
      What is the function of cortisol?
      Addison’s Disease, Cushing’s syndrome
   Thyroid gland
      Thyroid hormone
      Calcitonin
      Hypothyroidism & hyperthyroidism
   Parathyroid gland
      Parathyroid hormone
      Blood calcium homeostasis
   Pancreas
      Glucagon & insulin
      Blood glucose homeostasis
      Diabetes Mellitus

Objectives:
1. What is the difference between an endocrine and exocrine gland? Which one produces hormones?
2. What are the two major regulatory systems in the body? Which regulatory system is designed for speed? Duration?
3. Define the term hormone.
4. Why do hormones cause a response in some cells but not others?
5. Compare and contrast water-soluble and lipid-soluble hormone structure and cell signaling.
6. Describe gigantism, acromegaly, and pituitary dwarfism. Abnormal secretion of what pituitary hormone is responsible for all three conditions?
7. What are the hormones secreted by the anterior pituitary? What are the target organs of these hormones?
8. What are the hormones secreted by the posterior pituitary? What are the target organs?
9. What hormones are secreted from the thyroid gland? What are their functions?
10. What are the functions of cortisol? What endocrine organ secretes it?
11. Describe Cushing’s syndrome and Addison’s disease. Abnormal secretion of what hormone causes these disorders?
12. Describe how plasma calcium is regulated. What hormones are involved? What endocrine glands secrete these hormones?
13. Describe hypothyroidism and hyperthyroidism. Abnormal levels of what hormone results in these disorders?
14. What are the islets of Langerhans? Describe how plasma glucose is regulated.
15. Compare and contrast diabetes insipidus & diabetes mellitus.
16. What are some of the health risks associated with diabetes mellitus?