**Guided Lecture Notes, Chapter 35, The Endocrine System**

Learning Objective 1. List the glands that make up the endocrine system. (Refer to **PowerPoint slides 2 to 6**.)

* Differentiate between the terms endocrine and exocrine. Provide examples of each type of gland.
* Using an anatomic chart, point out the location of each endocrine gland in the human body.
* Have learners refer to learning activities located at the end of the chapter.

Learning Objective 2. State the main function of the endocrine system. (Refer to **PowerPoint slides 7, 8 , 30 and 31**)

* Name the body’s processes that the endocrine glands control.
* Define the term hormone and explain how secretion of these chemicals controls other glands and tissues to maintain homeostasis. You can give examples of how hormones affect a person’s ability to physically grow and mature, and how hormones help us to cope with stress.
* Explain how hormones act to cause specific reactions in the cells that bring about changes in the body.
* Describe the concept of how specific hormones are attracted to target cells.
* Have learners refer to learning activities located at the end of the chapter.

Learning Objective 3. Describe the feedback mechanism that controls the endocrine system. (Refer to **PowerPoint slide 9**.)

* Describe the feedback mechanism that helps to regulate the secretion of hormones by the endocrine glands. You can use the analogy of a thermostat/central heating system in a house.
* Have learners refer to learning activities located at the end of the chapter.

Learning Objective 4. List the hormones produced by the different glands of the endocrine system. (Refer to **PowerPoint slides 10 to 29**.)

* Discuss the function of the pituitary gland and why it is called the “master gland.” Describe the two parts of the pituitary gland.
* Describe the effect of antidiuretic hormone (ADH) and oxytocin, two hormones secreted by the posterior lobe of the pituitary gland.
* Describe the effect of the hormones secreted by the anterior lobe of the pituitary gland on the human body:
* Growth hormone
* Thyroid-stimulating hormone (TSH)
* Adrenocorticotropic hormone (ACTH)
* Prolactin
* Gonadotropins
* Explain the function of the pineal gland and the hormone that it secretes.
* Name the hormone produced by the thyroid gland (thyroxine) and state the effects of this hormone on the human body.
* Describe how the hormone thyroxine sets the rate of metabolism for the cells of the body.
* Explain that the thyroid gland needs iodine to produce thyroxine. Mention common dietary sources of iodine. Explain that a lack of iodine can cause a condition called *goiter*.
* Describe how parathyroid hormone (PTH) and calcitriol regulate the calcium level in the bloodstream.
* Discuss what can happen when the parathyroid gland is surgically removed or damaged by disease.
* Explain the structure of the adrenal glands, pointing out the medulla and the cortex. List the hormones secreted by the medulla and the cortex, respectively.
* Describe the effect of the medullary hormones on the human body. Mention the “fight-or-flight” response.
* Discuss the hormones secreted by the cortical part of the adrenal glands.
* Discuss why the pancreas is referred to as both an endocrine as well as an exocrine gland.
* Describe how insulin, a hormone secreted by the pancreas, lowers the glucose level in the blood.
* Explain briefly the process by which insulin allows glucose to be transferred from the bloodstream into the cells, where it can be converted to energy. Explain the role of glucagon on the blood glucose level.
* Explain the function of the gonads.
* Have learners refer to learning activities located at the end of the chapter.

Learning Objective 5. Explain how the aging process affects the endocrine system. (Refer to **PowerPoint slides 32, 70, and 71**)

* Describe the effect of aging on the endocrine system. You can give examples of the decrease in the growth rate, metabolism rate, and the decrease in the sexual drive with aging, all related to the secretion of hormones.
* Have learners refer to learning activities located at the end of the chapter.

Learning Objective 6. Discuss various disorders that affect the endocrine system. (Refer to **PowerPoint slides 33 to 48**.)

* Mention the factors that are responsible for the disorders of the endocrine system.
* Define the terms growth hormone deficiency, pituitary gigantism, and acromegaly.
* Discuss the general factors that cause disorders of the thyroid gland.
* Explain the disorders hyperthyroidism, hypothyroidism, and congenital hypothyroidism. Help students identify their causes, symptoms, and treatment methods.
* Describe the adrenal gland disorders, Addison’s disease, and Cushing’s syndrome.
* Discuss the causes and symptoms of Addison’s disease.
* Discuss the causes and symptoms of Cushing’s syndrome.
* Discuss the causes of diabetes mellitus and its two types, type 1 diabetes mellitus and type 2 diabetes mellitus. List risk factors for developing type 2 diabetes mellitus.
* Explain how exogenous insulin is used for people with type I diabetes mellitus.
* Discuss how too little or too much insulin in the blood can be dangerous. Explain hypoglycemia and hyperglycemia and what happens in each.
* Discuss the complications that can arise from uncontrolled diabetes mellitus.
* Discuss the steps that can be taken to prevent complications after diabetes mellitus is diagnosed.
* If possible, show the students some of the devices used to monitor the blood glucose level.
* Have learners refer to learning activities located at the end of the chapter.

Learning Objective 7. Discuss the special care needs of people who have endocrine system disorders. (Refer to **PowerPoint slides 49 to 57 and 67-69**.)

* List the precautions to be taken by a nursing assistant while monitoring a patient’s or resident’s blood glucose level using the “finger stick” method. Stress that the nursing assistant must have adequate training in how to use the equipment and record the findings.
* Explain how diet plays a role in managing diabetes. Stress the important role that the nursing assistant plays in helping to prepare and serve meals and snacks, and in monitoring the person’s intake.
* Discuss how exercise is important to a person with diabetes in helping to lose weight and use glucose in the body.
* Discuss the various signs and symptoms which should be reported to the nurse.
* Have learners refer to learning activities located at the end of the chapter.

Learning Objective 8. Demonstrate the proper technique for monitoring a person’s blood glucose level. (Refer to **PowerPoint slides 58 to 66**.)

* Describe the steps for monitoring blood glucose levels using a glucometer.
* List the safety precautions that should be observed when obtaining a blood glucose sample.