

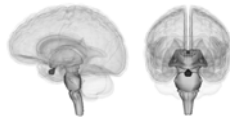
Component 3-Terminology in Healthcare and Public Health Settings

Unit 7-Endocrine System Lecture 7b-Other Organs in the Endocrine System

This material was developed by The University of Alabama at Birmingham, funded by the Department of Health and Human Services,
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Pituitary Gland Overview

- Pituitary Gland
 - Also known as the "hypophysis"
 - Located on the underside of the brain in a depression at the base of the skull
 - About the size of a pea or 1 centimeter in diameter
 - Connected to the brain by a slender stalk-like projection referred to as the "infundibulum"
 - Known as the "master gland"



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Pituitary Gland Hormones

- Hormones produced by the pituitary gland
 - **Prolactin**
 - **Growth Hormone (GW)**
 - **Adrenocorticotropin (ACTH)**
 - **Thyroid-stimulating hormone (TSH)**
 - Antidiuretic hormone (ADH)
 - Luteinizing hormone (LH)
 - Follicle-stimulating hormone (FSH)

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Pituitary Gland Disorders

- Growth Disorders
 - Growth Hormone (GH) in the pituitary gland stimulates the growth of bone and other tissues.
 - Too little GH results in dwarfism
 - A person of short stature, under 4'10", as an adult
 - Achondroplasia causes about 70% of all dwarfism
 - Too much GH results in gigantism
 - Children -- bones and body grow too much
 - Adults -- acromegaly (hands, feet and face are larger than normal)

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Pituitary Gland Disorders

- Diabetes Insipidus
 - Also called DI
 - Symptoms
 - Frequent urination
 - Extreme thirst
 - Different from diabetes mellitus (DM)
 - Less common than DM
 - Result of a problem with the pituitary gland or kidneys
 - Treatment depends on the cause of the disorder
 - Medications may be helpful

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Pituitary Gland Tumors

- Pituitary tumors are fairly common
 - 1 in 10,000
- Characteristics
 - Grow slowly
 - Do not spread
 - Usually not cancerous
- Most common tumors produce hormones and may result in conditions such as:
 - Cushing's Syndrome
 - Hyperthyroidism

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Pituitary Gland Diagnostic Tests

- Diagnostic Tests
 - Adrenocorticohormone Test
 - Aldosterone and Renin Tests
 - Follicle-stimulating Hormone Test
 - Growth Hormone Test
 - Insulin-like Growth Factor-1 Test
 - Lutenizing Hormone Test
 - MRI of the Head

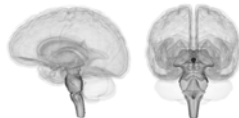
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Pineal Gland

- Pineal Gland
 - Also called the pineal body or epiphysis cerebri
 - Small cone-shaped structure attached to a portion of the brain (cerebrum) by a stalk



SEER Training Modules, Anatomy & Physiology, U.S.
National Institutes of Health, National Cancer Institute.
6/27/2010
<<http://training.seer.cancer.gov/anatomy/endorine/glands/pituitary.html>>

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Pineal Gland Structure

- Neurons
- Neuroglial cells
- Pinealocytes, specialized secretory cells
 - Secrete the hormone melatonin into the cerebrospinal fluid, which carries it into the bloodstream
 - Melatonin affects reproductive development and daily physiologic cycles

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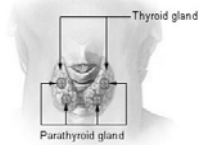
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Thyroid Gland Overview

- Located in the front of the neck on either side of the trachea
- Consists of two lobes
- Connected by a band of tissue called the "isthmus"

Thyroid and Parathyroid Glands



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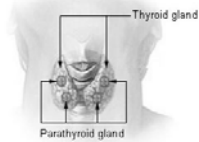
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Thyroid Gland Overview

- Helps the body generate energy from the food we eat
- Parathyroid glands -- located on the thyroid gland -- secrete parathyroid hormone

Thyroid and Parathyroid Glands



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Thyroid Gland Overview

- Follicles that produce chemicals or hormones that contain iodine
 - Thyroxine – 95%
 - Triiodothyronine – 5%
- Both require the presence of iodine to be synthesized
- Thyroid hormone is also produced in response to another hormone released in the pituitary gland
- Simple goiter or iodine deficiency goiter

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Thyroid Diseases

- Four main types of disease
 - **Hyperthyroidism**
 - **Hypothyroidism**
 - **Benign (non-cancerous) thyroid disease**
 - Thyroid cancer

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Thyroid Diseases

- Four main types of disease
 - Hyperthyroidism
 - Hypothyroidism
 - Benign (non-cancerous) thyroid disease
 - **Thyroid cancer**
 - Risk Factors
 - Symptoms
 - Treatments
 - Surgery, radioactive iodine, hormone treatment, radiation therapy or chemotherapy, or a combination

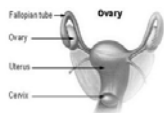
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Reproductive Organs Endocrine Function Overview

- Ovaries
 - Produce female sex hormones
 - Estrogen
 - Progesterone
 - Part of the female reproductive organs
 - Secondary sexual characteristics at puberty from estrogens include:
 - Development of breasts
 - Distribution of fat
 - Maturation of reproductive organs
 - Other hormone functions from progesterone include:
 - Thickening of uterine lining



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Female Reproductive System Disorders/Treatments

- **Amenorrhea**
- **Premature Ovarian Failure (POF)**
- **Premenstrual Syndrome**
- **Dysfunctional Uterine Bleeding**
- Ectopic pregnancy
- Polycystic Ovary Syndrome
- Uterine fibroids

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Female Reproductive System Disorders/Treatments

- Amenorrhea
- Premature Ovarian Failure (POF)
- Premenstrual Syndrome
- Dysfunctional Uterine Bleeding
- **Ectopic pregnancy**
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- **Uterine fibroids**

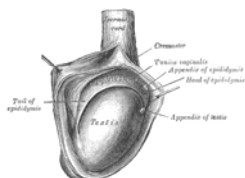
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Reproductive Organs Endocrine Function Overview

- Testes
 - Male sex hormones
 - “Androgens”
 - Testosterone is main hormone secreted by the testes and its production
 - Begins during fetal development
 - Responsible for
 - Male reproductive structures
 - Skeletal and muscular growth
 - Enlargement of the larynx
 - Body hair
 - Sexual drive



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Male Reproductive System Disorders/Treatments

- Anorchia
- Hypogonadotropic hypogonadism
- Reifenstein syndrome

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Thymus Gland Overview

Thymus Gland

Location

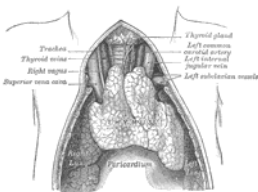
- Small organ in your upper chest, under your breastbone

Function

- Before birth and during childhood, the thymus helps the body make a type of white blood cell, lymphocytes, which help protect you from infection

Hormone

- Produces thymosin, a hormone that plays an important role in the development of the body's immune system



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Diseases of the Thymus

- Cancer of the thymus is rare
 - Symptoms include:
 - A cough that doesn't go away
 - Chest pain
 - Trouble breathing
 - Treatment: the most common treatment is surgery to remove the tumor; other options include radiation and hormone therapy

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Endocrine System Combining Forms

<u>Word Part</u>	<u>Meaning</u>	<u>Key Term</u>
adrenal/o	adrenal gland	adrenalectomy
oophor/o	ovary	oophoritis
orchi/o	testis	orchitis
pancreat/o	pancreas	pancreatectomy
pituitar/o	pituitary gland	hypopituitarism
thym/o	thymus gland	thymoma
thyroid/o	thyroid gland	thyroidectomy

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Unit 7

Tell me Detective....

A patient is referred by her primary care physician to the Endocrine Clinic because she has recent weight loss, an increased heart rate and has noticed that she is very sensitive to heat. Which of the disorders of thyroid gland should he test for?



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For additional information on content covered in this unit, please visit:
<<http://www.nlm.nih.gov/medlineplus/endocri nesystem.html>>
