

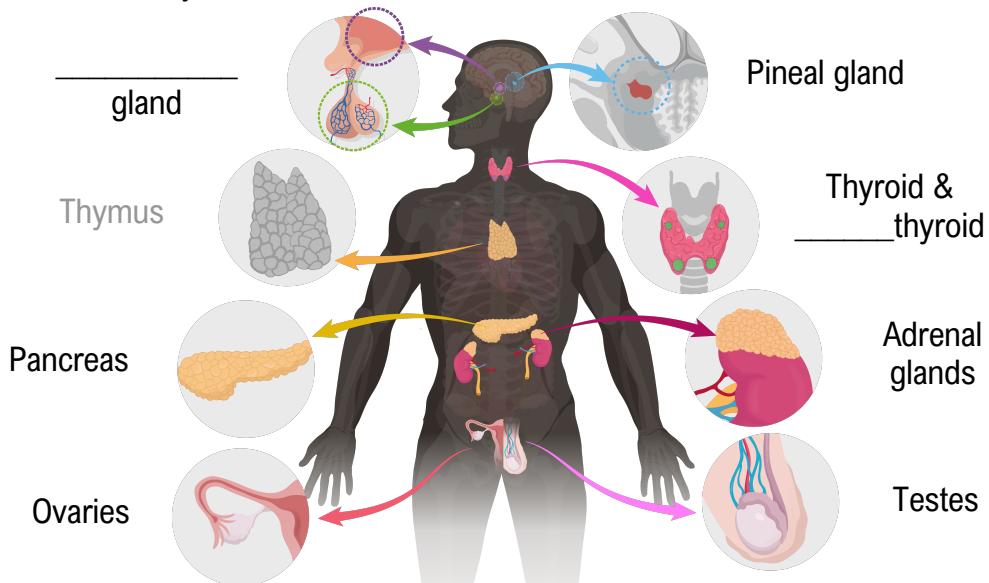
## **CONCEPT: OVERVIEW OF THE ENDOCRINE SYSTEM**

### **Components of the Endocrine System**

◆ **Endocrine System:** Collection of glands that secrete *hormones* \_\_\_\_\_ into the bloodstream.

▪ **Hormone:** \_\_\_\_\_ substance transferred through blood to a target tissue/organ.

◆ Endocrine glands of the body:



### **EXAMPLE**

Which of the following is not a true statement?

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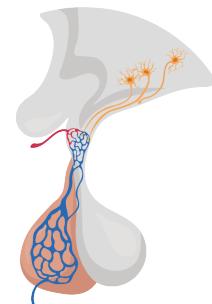
- a) Human body has 2 adrenal glands, one on top of each kidney.
- b) Hormones are released by one organ and act on another near or distant organ.
- c) Endocrine glands are ductless because they secrete directly into the bloodstream.
- d) Pituitary gland in the hypothalamus controls involuntary movements of the body.

## **CONCEPT: OVERVIEW OF THE ENDOCRINE SYSTEM**

### **Pituitary Gland**

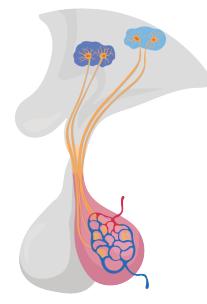
- ◆ **Master Gland:** Releases hormones to \_\_\_\_\_ other endocrine glands.
  - Divided into **anterior** & **posterior** lobes.
  - Directly connected to & controlled by hypothalamus.

<b>Anterior Pituitary</b>		
<b>Hormone</b>	<b>Target Tissue/Organ</b>	<b>Function</b>
<b>Follicle-Stimulating Hormone (FSH)</b>	Gonads (Ovaries & Testes)	<ul style="list-style-type: none"> <li>▪ ____ Development.</li> <li>▪ Sperm formation.</li> </ul>
<b>Luteinizing Hormone (LH)</b>	Gonads (Ovaries & Testes)	<ul style="list-style-type: none"> <li>▪ Stimulates ____ hormone secretion.</li> </ul>
<b>Adrenocorticotropic Hormone (ACTH)</b>	Adrenal Cortex	<ul style="list-style-type: none"> <li>▪ Regulates adrenal cortex.</li> </ul>
<b>Thyroid-Stimulating Hormone (TSH)</b>	Thyroid	<ul style="list-style-type: none"> <li>▪ Regulates thyroid.</li> </ul>
<b>Prolactin (PRL)</b>	Breast	<ul style="list-style-type: none"> <li>▪ Stimulates _____ production.</li> </ul>
<b>Growth Hormone (GH)</b>	Liver, Bones, Cartilage, etc.	<ul style="list-style-type: none"> <li>▪ ____ Cell division.</li> </ul>



**A FLAT PeG**

<b>Posterior Pituitary</b>		
<b>Hormone</b>	<b>Target Tissue/Organ</b>	<b>Function</b>
<b>Oxytocin (OT)</b>	Uterus & Breast	<ul style="list-style-type: none"> <li>▪ _____ contractions.</li> <li>▪ Milk secretion.</li> </ul>
<b>Vasopressin (VP)</b> Antidiuretic Hormone (ADH)	Kidneys & Blood Vessels	<ul style="list-style-type: none"> <li>▪ ____ Blood pressure.</li> <li>▪ ____ Urine production.</li> </ul>



**P O V**

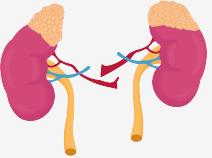
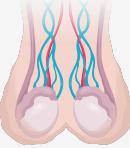
### **EXAMPLE**

Which of the following statements is incorrect?

- Posterior pituitary secretes thyroid-stimulating hormone (TSH) that regulates activity of thyroid gland.
- Anterior pituitary secretes growth hormone that stimulates growth by speeding up cell division.
- Posterior pituitary secretes vasopressin that causes vasodilation and increases blood pressure.
- Anterior pituitary secretes hormones to control the activity of the sex organs (gonads).

## CONCEPT: OVERVIEW OF THE ENDOCRINE SYSTEM

### Major Hormones Overview

 <p><b>1 Pineal Gland</b></p> <p>PM Sleep</p>	
<b>Melatonin</b>	Regulates _____ cycle.
 <p><b>2 Thyroid &amp; Parathyroid</b></p> <p>Thyroid</p> <p>Tirelessly Triggers Calories</p>	
<b>T<sub>4</sub> (Thyroxine) &amp; T<sub>3</sub> (Triiodothyronine)</b>	Major _____ hormones.
<b>Calcitonin</b>	_____ blood calcium.
<b>Parathyroid Hormone</b>	_____ blood calcium.
 <p><b>3 Pancreas</b></p> <p>Pen In Glue</p>	
<b>Insulin</b>	_____ blood sugar.
<b>Glucagon</b>	_____ blood sugar.
 <p><b>4 Adrenal Glands</b></p> <p>A Gladiator wants More Adrenaline Now</p>	
<b>Glucocorticoids</b>	Carbohydrate metabolism. Stress response.
<b>Mineralocorticoids</b>	Electrolyte & _____ balance. Stress response.
<b>Adrenaline (Epinephrine) &amp; Norepinephrine</b>	Fight-or-flight response.
 <p><b>5 Gonads (Ovaries &amp; Testes)</b></p>	
<b>Estrogen &amp; Progesterone</b>	_____ sex hormone.
<b>Testosterone</b>	_____ sex hormone.

### EXAMPLE

Identify the hormone released by each of the following organs.

1) Pancreas	
2) Ovary	
3) Pineal gland	
4) Adrenal glands	
5) Thyroid	

- a) Melatonin
- b) Thyroxine (T<sub>4</sub>)
- c) Glucagon
- d) Calcitonin
- e) Norepinephrine
- f) Progesterone

## **CONCEPT: OVERVIEW OF THE ENDOCRINE SYSTEM**

### **PRACTICE**

Which of the following hormones is not produced by the anterior pituitary?

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- a) Adrenocorticotropic Hormone (ACTH)
- b) Prolactin
- c) Growth Hormone (GH)
- d) Follicle-Stimulating Hormone (FSH)
- e) Melatonin
- f) Thyroid-Stimulating Hormone (TSH)

### **PRACTICE**

Which of the following statements is incorrect?

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- a) Pineal gland secretes melatonin which is essential to maintain circadian rhythm.
- b) Anterior pituitary maintains fluid balance by regulating the adrenal glands.
- c) Pancreas regulates blood sugar levels by secreting or absorbing insulin and glucagon.
- d) Thyroid gland secretes  $T_3$  and  $T_4$  which are critical in the regulation of metabolism.