

## PLN103: Chapter 18 Endocrine System Study Guide

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**Which of the following statements would NOT be considered a mechanism of action of hormones?**

B) Adjacent cells coordinate cellular activities by exchanging ions and molecules across gap junctions.

**Which of the following is an example of an autocrine communication?**

B) Smooth muscle cells secreting prostaglandins that cause contraction of the smooth muscle cell

**What type of hormones bind to receptors located on the cell membrane?**

B) water-soluble hormones such as insulin and epinephrine

**Which intracellular substance degrades cAMP, thus inactivating the response to a hormone?**

D) phosphodiesterase

**Growth factor hormones, such as insulin, bind to which type of receptor?**

A) tyrosine kinase receptors

**Which is the correct order of events for hormones activating G<sub>s</sub> proteins?**

B) activation of G protein, binding of GTP, activation of adenylate cyclase, conversion of ATP to cAMP

**Which second messenger causes the release of calcium from the endoplasmic reticulum?**

C) IP<sub>3</sub>

**Which of the following adrenergic receptors increase cAMP levels?**

A)  $\beta$  receptors

**Which of the following hormones has intracellular receptors?**

B) Cortisol

**What is the mechanism of action of lipid-soluble hormones?**

C) activation of genes, which increases protein synthesis in the cell

**The amplification of the signal from a water-soluble hormone is achieved through an increase in \_\_\_\_\_.**

D) cAMP in the cytoplasm

**Water-soluble hormones affect target cells by binding to \_\_\_\_\_.**

B) plasma membrane receptors

**What is the role of activated protein kinases?**

B) Phosphorylate proteins

**When adenylyl cyclase is activated \_\_\_\_\_.**

E) ATP is consumed and cAMP is formed.

Which of these hormones is NOT derived from an amino acid?

A) insulin

If a hormone does NOT directly affect cellular activities, it is most likely a \_\_\_\_\_.

D) peptide hormone

How is  $\text{Ca}^{2+}$  used as a second messenger?

B) an activated G protein opens  $\text{Ca}^{2+}$  channels, allowing  $\text{Ca}^{2+}$  to enter the cell and bind to calmodulin, causing enzyme activation

Which type of long distance intercellular communication do hormones like parathyroid hormone (PTH) fall into?

A) Endocrine

Where would you find the receptor for PTH?

D) on the plasma membrane of target cells

Where in the parathyroid gland is PTH produced?

C) principal cells

What tropic hormone stimulates cortisol from the adrenal gland?

C) adrenocorticotrophic hormone (ACTH)

What is the function of the ventral hypothalamic neurons?

A) to secrete TSH

Insulin-like growth factors (IGFs) are intermediary hormones stimulated by which of the following hormones?

B) Growth hormone

Which of the following hormones is regulated by a neuroendocrine ("letdown") reflex?

C) Oxytocin

Where is antidiuretic hormone (ADH), also known as vasopressin, synthesized?

A) hypothalamus

Which of these hormones exerts a strong effect on adrenal steroid production?

C) ACTH

Which of these is released by the neurohypophysis?

D) ADH

Diabetes insipidus occurs when the \_\_\_\_\_ lobe of the pituitary gland no longer releases \_\_\_\_\_.

A) Posterior; ADH

What is the significance of the slight swelling (called a goiter) in Krista's neck?

D) It's a sign that her thyroid is over active

Under normal conditions, increased levels of thyroid hormone in the blood will cause \_\_\_\_\_.

C) a decrease in TSH levels

Saturday, February 20, 2021

Suppose Krista's hyperthyroidism was a result of a tumor that causes the anterior pituitary gland to become overactive. Which of the following would Krista's lab reports likely show?

B) high thyroid hormone, high TSH

Krista's treatment will likely involve destroying or surgically removing her thyroid gland. What effect will this have on her level of TSH?

B) TSH will decrease

Which of the following correctly lists the hormones produced by the thyroid gland?

**D) thyroxine, triiodothyronine, calcitonin**

Which gland is named for a nearby prominent cartilage?

A) thyroid

Which of these might result from excessive parathyroid hormone release?

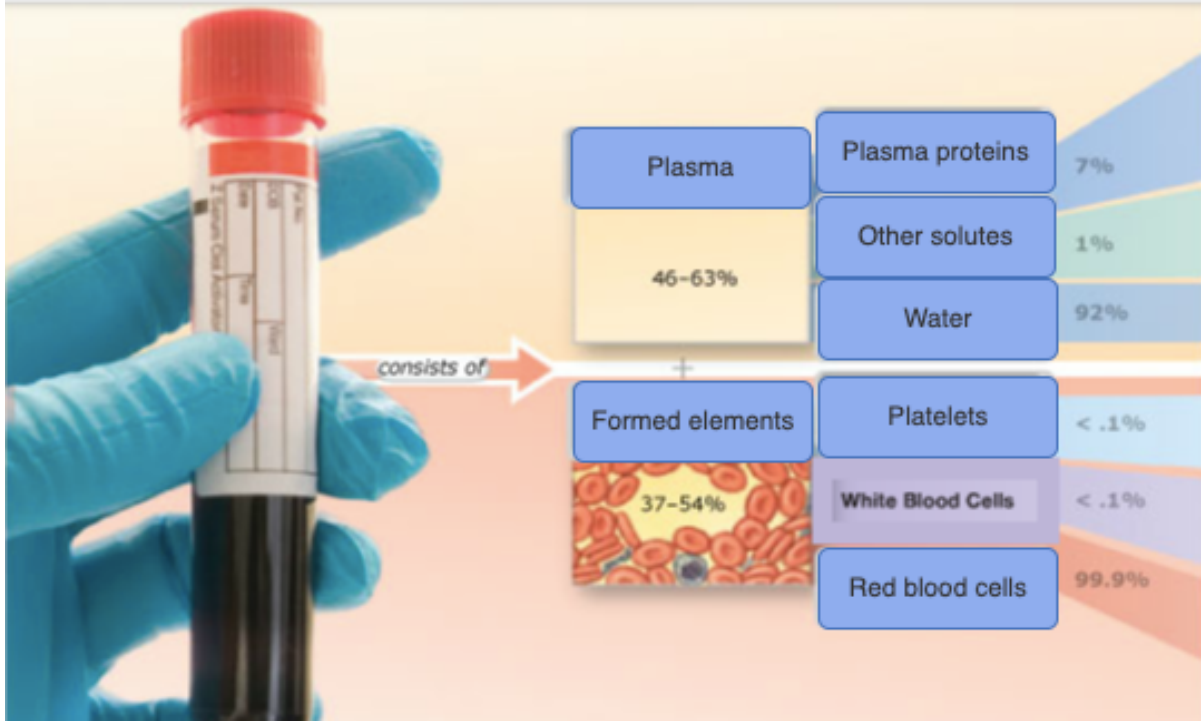
B) An increase in the loss of bone minerals

Iatrogenic Cushing's syndrome is \_\_\_\_\_.

often referred to as "steroid diabetes"
a result of treatment with glucocorticoid hormones
physician induced

Tropic hormones include which of the following?

D) both ACTH and CRH



20, 2021

**Which type of WBC is found in greatest numbers in an infected cut?**

B) neutrophils

**Monocytes transform into \_\_\_\_\_ in tissues, where they \_\_\_\_\_.**

C) macrophages; are phagocytic and release chemicals that attract neutrophils.

**Sam has an infestation of large parasitic worms. Which of the following will happen?**

A) Eosinophils will release cytotoxic enzymes from their granules.

**The following statements about blood are true EXCEPT that \_\_\_\_\_.**

B) the pH is slightly acidic (it is slightly alkaline 7.35-7.45)

**There are ~280 million Hb molecules in one RBC. A single Hb molecule carries \_\_\_ molecule(s) of O<sub>2</sub>, which means that a single RBC carries about \_\_\_ O<sub>2</sub> molecules.**

D) 4; 1 billion

**All of the following EXCEPT \_\_\_ are characteristics of all types of WBCs.**

- a. can leave capillaries by diapedesis
- b. are capable of amoeboid movement
- C) are phagocytic
- d. are attracted to specific chemical stimuli

**The most abundant plasma protein is \_\_\_\_\_.**

- C) albumin

**Plasma makes up approximately what percentage of whole blood?**

- B) 55%

Plasma expanders are used to temporarily increase the volume of blood in a patient. Oftentimes these expanders are components that are naturally found within plasma. Which of the following substances would NOT likely be used as a plasma expander?

- C) erythrocytes