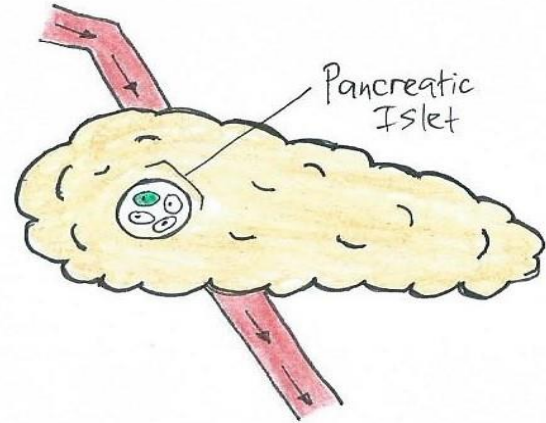


Class Activity #12 Physiology

The Endocrine System

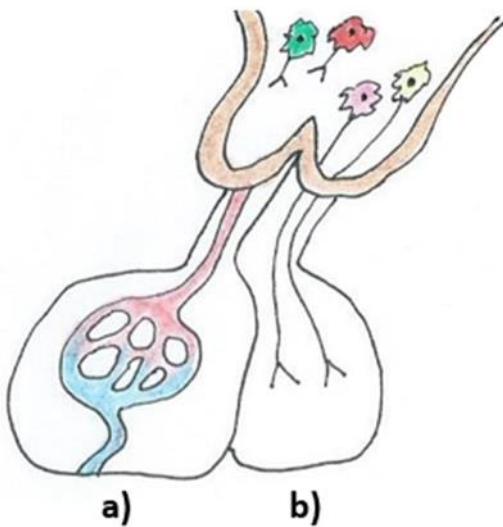
Review of the Pancreas

Summarize the Endocrine roles of the Pancreas in the body by outlining the functions of cells in the pancreatic islets.



Review of the Pituitary Gland

Summarize the role of the a) Anterior and b) Posterior Pituitary glands in the body.



Complete the information that is missing below regarding the endocrine system.

Table 1. Fill in the information about the hormone, gland or action that is compatible.

Hormone	Secreted by	Actions
Luteinizing Hormone (LH)		
	Posterior Pituitary (for water regulation)	
		Stimulates cortisol release. +
Melatonin		
		Stimulates follicular growth in females; required for sperm production in males.
	Pancreas (α cells)	
Cortisol		
		Stimulates release of T_3 and T_4 and helps regulate metabolic rate.

Based on the information provided about these endocrine glands and their function, for each hormone in **Column A**, select the appropriate endocrine gland that makes it from **Column B**.

The various endocrine glands in **Column B** may be used more than once or not at all.

Column A

- | | | |
|------------------|----------------------|--------------------------------|
| ___ 1. LH | ___ 7. T_4/T_3 | ___ 13. Calcitonin |
| ___ 2. oxytocin | ___ 8. FSH | ___ 14. Vasopressin |
| ___ 3. DMT | ___ 9. thymosine | ___ 15. hGH |
| ___ 4. prolactin | ___ 10. TSH | ___ 16. ANP |
| ___ 5. PTH | ___ 11. melatonin | ___ 17. T-cell differentiation |
| ___ 6. renin | ___ 12. somatostatin | ___ 18. Cortisol |

Column B

- | | | |
|-----------------------|--------------------|--------------------|
| A. Parathyroid glands | E. Thyroid gland | I. Adrenal cortex |
| B. Pineal gland | F. Heart | J. Kidneys |
| C. Neurohypophysis | G. Pineal gland | K. Pancreas |
| D. Thymus | H. Adenohypophysis | L. Adrenal medulla |

Multiple Choice Questions. Use OER, class notes, and worksheet to complete these questions.

- Which of the following is true about **Cortisol**? It: _____ Select all that apply _____.
 a) is released by ACTH b) promotes gluconeogenesis c) causes vasodilation
 d) suppresses the immune system e) decreases blood glucose f) is released by the hypothalamus
- Which of these substances are released by the **anterior pituitary**? Select all that apply _____.
 a) PRL b) testosterone c) thyroxine d) luteinizing hormone e) cortisol f) CRH
- The hormone **glucagon** stimulates _____ in order to _____ blood glucose.
 a) gluconeogenesis: decrease
 b) glycogen synthesis: increase
 c) glycogenolysis: decrease
 d) gluconeogenesis: increase
 e) lipid synthesis: increase
- Along with **growth hormone**, which of the following is also an important regulator of metabolism?
 a) hGH b) thyroxine c) ADH d) testosterone stimulating hormone e) luteinizing hormone
- The **posterior pituitary** gland is not truly considered an endocrine gland because it
 a) has a rich blood supply b) is not located near the brain c) has no real blood supply
 d) contains ducts e) does not synthesize hormones
- Hormones can fall into two basic categories: _____ and _____.
 a) stimulator and receptor hormones b) proteins and sugars c) growth and metabolic hormones
 d) male hormones and female hormones e) non-steroid (peptide) and steroid hormones
- Which hormone is responsible for **ovulation** in females?
 a) hGH b) TSH c) LH d) PRL e) ACTH
- Which of the following produce **testosterone**?
 1) the adrenal medulla 2) interstitial cells of Leydig 3) the adrenal cortex 4) the hypothalamus
 5) the posterior pituitary gland 6) the anterior pituitary gland
 a) 2 only b) 2 and 4 c) 4, 3 and 6 d) 3 and 2 e) 2, 6 and 3
- The hormone _____ is made by the thyroid gland to regulate Ca^{2+} in the blood; It is released when Ca^{2+} in the blood is too _____.
 a) Thyroxine; low
 b) Calcitonin; high
 c) Calcitriol; low
 d) parathyroid hormone; low
 e) parathyroid hormone; high
- Which of the following hormones can elevate blood glucose levels?
 1) epinephrine 2) glucagon 3) insulin 4) cortisol 5) thyroxine 6) calcitonin
 a) 1, 3 and 5 b) 2 and 4 c) 1, 2 and 4 d) 4, 6 and 5 e) 2 and 3