



## Pathophysiology of the Endocrine System

### Second Exam Material

### Revision Questions

For every question there are four or five possible answers. Choose the **one** you consider correct.

Answers are available on page (6).

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1. Which of these hormones synthesized and secreted by the kidneys stimulates bone marrow production of red blood cells?

- A Creatine
  - B Aldosteron
  - C Erythropoietin
  - D Renin
- 

2. A 19-year-old female with type 1 diabetes mellitus was admitted to the hospital with the following lab values: serum glucose 50- mg/dl (high); urine glucose and ketones 4+ (high); arterial pH 7.20 (low). Her parents state that she has been sick with the "flu" for a week. Which of the following statements best explain her acidotic state?

- A Increased insulin levels promote protein breakdown and ketone formation
  - B Her uncontrolled diabetes has led to renal failure
  - C Low serum promotes lipid storage and a corresponding release of ketones
  - D Insulin deficiency promotes lipid metabolism and ketone formation
- 

3. A 13-year-old male uses insulin to control his type 1 diabetes experiences hunger, lightheadedness, tachycardia, pallor, headache, and confusion during gym class. The most probable cause of these symptoms is:

- A Hyperglycemia resulting from incorrect insulin administration
  - B Dawn phenomenon caused by eating a snack before gym class
  - C Hypoglycemia caused by increased exercise
  - D Somogyi effect by insulin sensitivity
-



4. A 55-years-old female is admitted to the medical unit for complications of long-term, poorly controlled type 2 diabetes mellitus. Which of the following would be expected in addition to elevated glucose?

- A Elevated serum lipids
  - B Metabolic alkalosis
  - C Elevated liver enzymes
  - D Low red blood cell count
- 

5. Which of the following hormones are produced in the hypothalamus?

- a) ACTH
  - b) Oxytocin
  - c) PRL
  - d) TSH
- 

6. Target cells for Oxytocin are located in the:

- a) Renal tubules
  - b) Thymus
  - c) Liver
  - d) Uterus
- 

7. A 50-years-old male patient is deficient in ADH production. Which of the following would be an expected symptom?

- a) Increased blood volume
  - b) Increased urine osmolality
  - c) Increased urine volume
  - d) Increased arterial vasoconstriction
-



8. An essential ingredient for thyroid hormone synthesis is:

- a) Zinc
  - b) Sodium
  - c) Iodine
  - d) Calcium
- 

9. Which of the following alterations would slow down the rate of parathyroid hormone secretion?

- a) Increased serum calcium levels
  - b) Decreased serum calcium levels
  - c) Decreased levels of TSH
  - d) Increased levels of TSH
- 

10. A 40-year-old male undergoes surgery for a parathyroid hormone-secreting tumor. Which of the following would be expected following surgery?

- a) Increased serum calcium
  - b) Decreased bone formation
  - c) Decreased calcium reabsorption in the kidney
  - d) Increased calcitonin
- 

11. Insulin is primarily regulated by:

- a) Metabolic rate
  - b) Serum glucose levels
  - c) Prostaglandins
  - d) Enzyme activation
-



12. Insulin has an effect on which of the following groups of electrolytes?

- a) Sodium, chloride, phosphate
  - b) Calcium, magnesium, potassium
  - c) Hydrogen, bicarbonate, chloride
  - d) Potassium, magnesium, phosphate
- 

13. The most potent naturally occurring glucocorticoid is:

- a) Aldosterone
  - b) Testosterone
  - c) Cortisol
  - d) Prolactin
- 

14. Prolactin-inhibiting factor's target tissue is the:

- a) Hypothalamus
  - b) Anterior pituitary
  - c) Mammary gland
  - d) Posterior pituitary
- 

15. Removal of the posterior pituitary would cause a decrease in the release of which hormone?

- a) PRL
  - b) ADH
  - c) ACTH
  - d) GH
- 

16. Natriuretic hormones affect the balance of:

- a) Calcium
  - b) Sodium
  - c) Magnesium
  - d) Potassium
-



17. Adrenocorticotrophic hormones (ACTH) release can be stimulated by:

- a) High serum levels of Cortisol
  - b) Hypotension
  - c) Hypoglycemia
  - d) Stress
- 

18. A 15-year-old male took an illicit drug that acts by directly inhibiting phenylethanolamine N-methyltransferase. Secretion of which of the following hormones would be inhibited?

- a) Dopamine
  - b) Epinephrine
  - c) Norepinephrine
  - d) Tyrosine
- 

19. A 39-year-old female underwent surgery to remove an adrenal tumor. To completely remove it, the *zona glomerulosa* had to be removed. Secretion of which of the following hormones would be expected to decrease?

- a) Aldosterone
  - b) Cortisol
  - c) Epinephrine
  - d) Testosterone
- 

20. A 50-year-old female presents with lightheadedness and overall abnormal feelings. CT scan reveals an adrenal cortical tumor. Lab tests reveal that the tumor is hormone secreting. Which of the following would be expected?

- a) Increased renin levels
  - b) Hypotension
  - c) Hypokalemia
  - d) Hyponatremia
-



21. The body's inability to conserve water and sodium when affected by Addison disease is explained by which of the following conditions?

- a) Low levels of Cortisol
- b) High levels of ACTH
- c) Hypersecretion of ADH
- d) Aldosteron deficiency

22. Regulation of the release of epinephrine from the adrenal medulla is an example of \_\_\_\_\_ regulation.

- a) Negative feedback
- b) Positive feedback
- c) Neural
- d) Substrate level dependent

**Answers:**

1	C	13	C
2	D	14	B
3	C	15	B
4	A	16	B
5	B	17	D
6	D	18	B
7	C	19	A
8	C	20	C
9.	A	21	D
10	C	22	C
11	B		
12	D		