

Evolve Endocrine Practice Test (Sample)

Study Guide



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SAMPLE

Questions

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- 1. What is a common test used to assess adrenal function?**
 - A. ACTH stimulation test**
 - B. Glucose tolerance test**
 - C. Thyroid function test**
 - D. Liver function test**
- 2. What is a key symptom of Addison's disease?**
 - A. Increased muscle mass**
 - B. Fatigue and muscle weakness**
 - C. Excess body hair**
 - D. Rapid weight gain**
- 3. What clinical findings should a nurse document for a client experiencing diabetic ketoacidosis?**
 - A. Increased blood pressure**
 - B. Acetone breath and decreased arterial carbon dioxide level**
 - C. Rapid weight gain**
 - D. Hyperkalemia and bradycardia**
- 4. What advice should a nurse give to a client with type 2 diabetes who has developed the flu?**
 - A. Skip the oral medication and focus on rest**
 - B. Take the oral medication, drink fluids, and monitor glucose levels**
 - C. Increase insulin dosage**
 - D. Stop all medications until well**
- 5. What is a characteristic feature of metabolic syndrome?**
 - A. Central obesity**
 - B. Insulin sensitivity**
 - C. Low blood pressure**
 - D. High physical activity level**

- 6. What is often the first-line treatment for hyperthyroidism?**
- A. Surgery to remove the thyroid**
 - B. Antithyroid medications**
 - C. Radioactive iodine therapy**
 - D. Beta-blockers**
- 7. Which hormone primarily regulates metabolism?**
- A. Insulin**
 - B. Thyroid hormones**
 - C. Cortisol**
 - D. Adrenaline**
- 8. Which diagnostic tests should be discussed with a client who has hyperthyroidism?**
- A. Thyroid stimulating hormone (TSH) assay and triiodothyronine (T3)**
 - B. Complete blood count and electrolyte panel**
 - C. Adrenal function tests**
 - D. Insulin tolerance tests**
- 9. What is the primary function of glucagon?**
- A. Decrease blood glucose levels**
 - B. Increase blood glucose levels**
 - C. Stimulate thyroid hormone production**
 - D. Regulate electrolyte balance**
- 10. What is the action of calcitonin?**
- A. Increases blood calcium levels**
 - B. Inhibits insulin production**
 - C. Lowers blood calcium levels**
 - D. Stimulates vitamin D production**

Answers

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1. A
2. B
3. B
4. B
5. A
6. B
7. B
8. A
9. B
10. C

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Explanations

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1. What is a common test used to assess adrenal function?

- A. ACTH stimulation test**
- B. Glucose tolerance test
- C. Thyroid function test
- D. Liver function test

The ACTH stimulation test is a common and crucial assessment used to evaluate adrenal function. This test measures how well the adrenal glands respond to adrenocorticotropic hormone (ACTH), which is produced by the pituitary gland. During the test, synthetic ACTH is administered, and blood samples are taken to measure cortisol levels before and after the injection. A healthy adrenal response would show an increase in cortisol levels following the ACTH administration, indicating that the adrenal glands are functioning properly. In contrast, the glucose tolerance test is primarily used to assess insulin response and glucose metabolism, while thyroid function tests evaluate hormone levels related to the thyroid gland. Liver function tests focus on the performance of the liver and do not provide information on adrenal activity. Therefore, the ACTH stimulation test is specifically tailored to assess the function of the adrenal glands, making it the appropriate choice for this question.

2. What is a key symptom of Addison's disease?

- A. Increased muscle mass
- B. Fatigue and muscle weakness**
- C. Excess body hair
- D. Rapid weight gain

Fatigue and muscle weakness are key symptoms of Addison's disease due to the adrenal glands' insufficient production of cortisol and aldosterone. Cortisol plays a critical role in maintaining energy levels, responding to stress, and regulating metabolism. When these hormones are low, individuals can experience significant fatigue and overall weakness in their muscles, which impacts daily activities and quality of life. This symptom can also result from electrolyte imbalances caused by low aldosterone levels, leading to dehydration and exacerbating feelings of weakness and fatigue. Other options like increased muscle mass, excess body hair, and rapid weight gain do not align with Addison's disease, as the condition typically presents with weight loss and decreased muscle mass rather than increases. Understanding the hallmark symptoms related to hormonal imbalances is crucial for recognizing and diagnosing conditions like Addison's disease.

3. What clinical findings should a nurse document for a client experiencing diabetic ketoacidosis?

- A. Increased blood pressure**
- B. Acetone breath and decreased arterial carbon dioxide level**
- C. Rapid weight gain**
- D. Hyperkalemia and bradycardia**

For a client experiencing diabetic ketoacidosis (DKA), it's important to recognize the specific clinical findings associated with this condition. One of the hallmark signs of DKA is the presence of ketones in the body due to fat breakdown, leading to the production of acetone, which can cause a characteristic sweet or fruity odor on the breath. This phenomenon is often referred to as "acetone breath." Additionally, in DKA, the body may respond to metabolic acidosis by attempting to compensate, which often results in a decreased arterial carbon dioxide level due to hyperventilation. This reflects the body's mechanism to counteract the acidosis by blowing off CO₂. Increased blood pressure is not a typical finding in DKA; often, the opposite occurs due to potential dehydration and shock states. Rapid weight gain would not be observed in DKA; instead, clients usually experience weight loss due to the breakdown of fat and proteins and fluid losses. While hyperkalemia can occur due to shifts in potassium, bradycardia is not a direct finding of DKA; rather, tachycardia is often noted due to dehydration or other compensatory responses. Therefore, documenting acetone breath along with a decreased arterial carbon dioxide level accurately reflects the underlying physiological

4. What advice should a nurse give to a client with type 2 diabetes who has developed the flu?

- A. Skip the oral medication and focus on rest**
- B. Take the oral medication, drink fluids, and monitor glucose levels**
- C. Increase insulin dosage**
- D. Stop all medications until well**

For a client with type 2 diabetes who has developed the flu, maintaining control over blood glucose levels is crucial, especially during illness. When the body is fighting an infection like the flu, it can lead to elevated blood glucose levels due to stress hormones, which can complicate diabetes management. Taking oral medications as prescribed is important to prevent blood sugar from rising too high. Staying hydrated by drinking fluids is essential, as dehydration can worsen blood sugar control. Additionally, monitoring glucose levels regularly allows for timely adjustments to the treatment plan if necessary. This proactive approach helps in managing both the diabetes and the effects of the illness, ensuring better overall health outcomes during recovery. In contrast, other options may overlook the critical need for glucose management during illness, either by reducing or stopping necessary medications, which could lead to complications. Therefore, the advice to take oral medication, drink fluids, and monitor glucose levels is the most appropriate for the situation.

5. What is a characteristic feature of metabolic syndrome?

- A. Central obesity**
- B. Insulin sensitivity**
- C. Low blood pressure**
- D. High physical activity level**

Central obesity is indeed a characteristic feature of metabolic syndrome. It refers to the accumulation of excess fat in the abdominal area, which is associated with an increased risk of cardiovascular diseases, type 2 diabetes, and other metabolic disorders. Central obesity is often measured by waist circumference, and its presence can indicate the distribution of body fat that poses health risks. In the context of metabolic syndrome, central obesity is part of a cluster of conditions, which also includes high blood pressure, high blood sugar levels, and abnormal lipid profiles. The presence of central obesity contributes to insulin resistance, inflamed tissues, and hormonal imbalances, all of which are critical factors in the pathophysiology of metabolic syndrome. Thus, recognizing central obesity is essential in identifying and managing this syndrome effectively.

6. What is often the first-line treatment for hyperthyroidism?

- A. Surgery to remove the thyroid**
- B. Antithyroid medications**
- C. Radioactive iodine therapy**
- D. Beta-blockers**

The first-line treatment for hyperthyroidism is typically antithyroid medications, which include drugs such as methimazole and propylthiouracil. These medications work by inhibiting the synthesis of thyroid hormones, thus reducing the levels of thyroid hormones in the bloodstream. This approach is often preferred, especially for conditions such as Graves' disease, as it is a non-invasive method that allows for the management of symptoms and hormone levels without the immediate need for surgery or radiation. Antithyroid medications can also be used to stabilize patients prior to other treatments, such as radioactive iodine therapy or surgery, making them a versatile option in the management of hyperthyroidism. They enable physicians to control hyperthyroid symptoms and hormone levels while monitoring the patient's progress. Other treatments for hyperthyroidism, such as surgery or radioactive iodine, are typically considered in specific cases where medications are ineffective, not tolerated, or when there is a desire for definitive treatment. Beta-blockers, while they can help manage symptoms such as tachycardia and anxiety, do not address the underlying hyperthyroidism and are often used in conjunction with other therapies rather than as a primary treatment.

7. Which hormone primarily regulates metabolism?

- A. Insulin
- B. Thyroid hormones**
- C. Cortisol
- D. Adrenaline

Thyroid hormones, primarily thyroxine (T4) and triiodothyronine (T3), are the main regulators of metabolism in the body. These hormones are produced by the thyroid gland and play a crucial role in controlling the rate of metabolic processes, including how the body utilizes energy. They influence the metabolic rate of nearly every cell in the body, affecting the conversion of nutrients into energy and the overall energy expenditure. By promoting the metabolism of carbohydrates, fats, and proteins, thyroid hormones ensure that energy production is aligned with the body's needs, which is essential for maintaining homeostasis, growth, and development. When there is an imbalance in thyroid hormone levels—such as in hyperthyroidism or hypothyroidism—metabolism can be significantly altered, leading to various health issues. Insulin, cortisol, and adrenaline also contribute to metabolic processes but in more specific contexts. Insulin primarily regulates glucose metabolism and promotes the storage of energy, while cortisol is more involved in the stress response and modulating metabolism during times of stress. Adrenaline serves to increase energy availability during 'fight or flight' situations but does not have the broad regulatory role that thyroid hormones do in day-to-day metabolic function.

8. Which diagnostic tests should be discussed with a client who has hyperthyroidism?

- A. Thyroid stimulating hormone (TSH) assay and triiodothyronine (T3)**
- B. Complete blood count and electrolyte panel
- C. Adrenal function tests
- D. Insulin tolerance tests

In the context of hyperthyroidism, a thorough understanding of thyroid function is essential for diagnosis and management. The thyroid stimulating hormone (TSH) assay is particularly important because it helps assess the feedback mechanism of the thyroid gland. In hyperthyroidism, TSH levels are typically low due to high levels of circulating thyroid hormones. Triiodothyronine (T3) is also crucial to measure because it is one of the primary hormones produced by the thyroid gland, and its elevated levels are often seen in hyperthyroid patients. The combination of measuring these two markers provides a comprehensive view of the thyroid status. Evaluating TSH and T3 allows healthcare providers to confirm hyperthyroidism and help determine its possible causes, which is critical for appropriate treatment planning. Other tests might be relevant in different contexts, such as evaluating overall health or ruling out other conditions, but in the case of hyperthyroidism specifically, focusing on thyroid-specific tests like TSH and T3 is paramount.

9. What is the primary function of glucagon?

- A. Decrease blood glucose levels
- B. Increase blood glucose levels**
- C. Stimulate thyroid hormone production
- D. Regulate electrolyte balance

The primary function of glucagon is to increase blood glucose levels. Glucagon is a peptide hormone produced by the alpha cells of the pancreas. When blood glucose levels drop, glucagon is released into the bloodstream and acts primarily on the liver. Its primary mechanism of action involves stimulating the liver to convert stored glycogen into glucose, a process known as glycogenolysis. Additionally, glucagon promotes gluconeogenesis, which is the synthesis of glucose from non-carbohydrate sources. This increase in glucose production helps raise blood sugar levels back to normal, ensuring that the body has a sufficient supply of energy, particularly for vital organs like the brain that rely heavily on glucose. The other functions mentioned in the options, such as stimulating thyroid hormone production or regulating electrolyte balance, are not associated with glucagon's role, marking an important distinction in the physiological functions of different hormones in the endocrine system.

10. What is the action of calcitonin?

- A. Increases blood calcium levels
- B. Inhibits insulin production
- C. Lowers blood calcium levels**
- D. Stimulates vitamin D production

Calcitonin is a hormone produced by the thyroid gland that plays a crucial role in regulating calcium levels in the body. Its primary action is to lower blood calcium levels. It achieves this by inhibiting osteoclast activity, which are cells that break down bone and release calcium into the bloodstream. Additionally, calcitonin promotes the activity of osteoblasts, which are cells that synthesize bone and can help to take calcium from the blood and incorporate it into the bone matrix. By reducing the rate of bone resorption and promoting bone formation, calcitonin helps maintain calcium homeostasis, especially during periods when blood calcium levels are elevated. Therefore, the correct answer highlights calcitonin's role in reducing serum calcium levels, contrasting with other hormones like parathyroid hormone (PTH), which works to increase blood calcium concentrations.