

Nursing care for Disorders of the Endocrine and Exocrine Systems (NDEE) Practice Test (Sample)

Study Guide



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SAMPLE

Questions

SAMPLE

- 1. How does the body react to low blood sugar levels?**
 - A. By increasing insulin production**
 - B. By releasing glucagon**
 - C. By lowering metabolic rate**
 - D. By increasing activity of the pancreas**
- 2. What medication class is commonly used to treat hypothyroidism?**
 - A. Corticosteroids**
 - B. Thyroid hormone replacement therapy**
 - C. Beta-blockers**
 - D. Insulin therapy**
- 3. What is the primary hormone that regulates calcium levels in the blood?**
 - A. Cortisol**
 - B. Insulin**
 - C. Parathyroid hormone (PTH)**
 - D. Aldosterone**
- 4. Why should a nurse monitor a client with Cushing syndrome for clinical indicators of diabetes mellitus?**
 - A. Cortical hormones stimulate rapid weight loss**
 - B. Excessive ACTH damages pancreatic tissue**
 - C. Glucocorticoids accelerate gluconeogenesis**
 - D. Tissue catabolism results in a negative nitrogen balance**
- 5. Which type of diabetes is characterized by insulin resistance?**
 - A. Type 1 diabetes**
 - B. Type 2 diabetes**
 - C. Gestational diabetes**
 - D. Latent autoimmune diabetes**

- 6. Which hormone is primarily responsible for fluid balance in the body?**
- A. Aldosterone**
 - B. Insulin**
 - C. Thyroxine**
 - D. Glucagon**
- 7. Which clinical manifestation is typical for a client with diabetes insipidus?**
- A. Increased blood glucose**
 - B. Decreased serum sodium**
 - C. Increased specific gravity**
 - D. Decreased urine osmolarity**
- 8. Which assessment finding is consistent with the effects of SIADH?**
- A. Elevated serum potassium**
 - B. Increased urine output**
 - C. Hypoosmolar serum state**
 - D. Hyperosmolar urine state**
- 9. The main symptom of hyperglycemia includes which of the following?**
- A. Increased appetite**
 - B. Increased thirst and frequent urination**
 - C. Nausea and vomiting**
 - D. Muscle cramps**
- 10. What symptom is commonly associated with hyperthyroidism?**
- A. Weight loss**
 - B. Weight gain**
 - C. Cold intolerance**
 - D. Fatigue**

Answers

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

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Explanations

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1. How does the body react to low blood sugar levels?

- A. By increasing insulin production
- B. By releasing glucagon**
- C. By lowering metabolic rate
- D. By increasing activity of the pancreas

The body responds to low blood sugar levels primarily by releasing glucagon. Glucagon is a hormone produced by the alpha cells of the pancreas that acts as a counter-regulatory hormone to insulin. When blood glucose levels drop, glucagon is secreted into the bloodstream, where it stimulates the liver to convert stored glycogen into glucose and release it into circulation. This process is known as glycogenolysis. Additionally, glucagon promotes gluconeogenesis, which is the synthesis of glucose from non-carbohydrate sources, further increasing blood glucose levels. This response is critical for maintaining energy homeostasis and preventing hypoglycemia, which can lead to serious symptoms like confusion, weakness, and even loss of consciousness if not addressed. This mechanism ensures that even under conditions of low glucose availability, the body can mobilize energy stores and restore normal glucose levels efficiently.

2. What medication class is commonly used to treat hypothyroidism?

- A. Corticosteroids
- B. Thyroid hormone replacement therapy**
- C. Beta-blockers
- D. Insulin therapy

Thyroid hormone replacement therapy is the standard treatment for hypothyroidism. This condition occurs when the thyroid gland does not produce enough thyroid hormones, which are crucial for regulating metabolism, energy generation, and overall hormonal balance in the body. The goal of treatment is to restore normal hormone levels, and this is typically achieved through medications such as levothyroxine, which is a synthetic form of thyroxine (T4), one of the hormones normally produced by the thyroid gland. By administering thyroid hormone replacement therapy, patients can alleviate symptoms associated with hypothyroidism, such as fatigue, weight gain, and depression, and improve their quality of life. The therapy is monitored regularly through blood tests to ensure that hormone levels remain within a target range, thus maintaining proper bodily functions.

3. What is the primary hormone that regulates calcium levels in the blood?

A. Cortisol

B. Insulin

C. Parathyroid hormone (PTH)

D. Aldosterone

The primary hormone that regulates calcium levels in the blood is parathyroid hormone (PTH). PTH is secreted by the parathyroid glands and plays a crucial role in maintaining calcium homeostasis. When calcium levels in the blood are low, PTH is released, which stimulates several processes to increase calcium concentration. These include promoting the release of calcium from bones into the bloodstream, enhancing the absorption of calcium from the intestines (with the help of vitamin D), and reducing the loss of calcium in urine by acting on the kidneys. This hormone ensures that calcium levels remain within a narrow range, which is essential for various physiological processes, including bone health, muscle function, and nerve transmission. Other hormones like cortisol, insulin, and aldosterone do not primarily regulate calcium levels. Cortisol is involved in the stress response and metabolism; insulin regulates blood glucose levels; and aldosterone is crucial for sodium and potassium balance. Therefore, their roles do not directly affect calcium homeostasis in the same way that PTH does.

4. Why should a nurse monitor a client with Cushing syndrome for clinical indicators of diabetes mellitus?

A. Cortical hormones stimulate rapid weight loss

B. Excessive ACTH damages pancreatic tissue

C. Glucocorticoids accelerate gluconeogenesis

D. Tissue catabolism results in a negative nitrogen balance

Monitoring a client with Cushing syndrome for clinical indicators of diabetes mellitus is essential because glucocorticoids, which are elevated in this condition, accelerate gluconeogenesis. Gluconeogenesis is the process by which the liver generates glucose from non-carbohydrate sources, such as proteins. The increased production of glucose can lead to elevated blood sugar levels, a key factor in the development of diabetes mellitus. Clients with Cushing syndrome often experience insulin resistance due to the high levels of glucocorticoids, which can inhibit the action of insulin and impair glucose uptake by the cells. As a result, these individuals are at increased risk of hyperglycemia and, consequently, diabetes mellitus. Regular monitoring allows for early intervention and management of any glucose metabolism abnormalities that may arise as a result of the hormonal changes associated with Cushing syndrome.

5. Which type of diabetes is characterized by insulin resistance?

- A. Type 1 diabetes**
- B. Type 2 diabetes**
- C. Gestational diabetes**
- D. Latent autoimmune diabetes**

Type 2 diabetes is characterized by insulin resistance, which means that the body's cells do not respond effectively to insulin. As a result, the pancreas produces more insulin to compensate for this resistance. Over time, the pancreas may become unable to keep up with the increased demand for insulin, leading to higher blood glucose levels. This form of diabetes is often associated with obesity, physical inactivity, and genetic factors. In contrast, Type 1 diabetes is primarily an autoimmune condition where the body attacks and destroys insulin-producing beta cells in the pancreas, leading to little or no insulin production. Gestational diabetes occurs during pregnancy when the body cannot produce enough insulin to meet the increased demands, but it is not characterized by insulin resistance in the same way as Type 2. Latent autoimmune diabetes is often mistaken for Type 2 diabetes due to its gradual onset; however, it is characterized by autoimmune destruction of the pancreatic cells and may later require insulin therapy. Understanding these differences is crucial for appropriate management and treatment of these diabetes types.

6. Which hormone is primarily responsible for fluid balance in the body?

- A. Aldosterone**
- B. Insulin**
- C. Thyroxine**
- D. Glucagon**

Aldosterone plays a crucial role in regulating fluid balance within the body. It is a steroid hormone produced by the adrenal glands, specifically in the zona glomerulosa. Aldosterone is essential for maintaining sodium and potassium levels, as it promotes sodium reabsorption and potassium excretion in the kidneys. By facilitating the reabsorption of sodium, aldosterone indirectly influences water retention, because water follows sodium osmotically. This process helps maintain blood volume and blood pressure, thereby ensuring that the body's fluid balance is preserved. An increase in aldosterone leads to more sodium being retained, which in turn leads to increased water retention, assisting the body in managing its overall fluid balance. In contrast, insulin is primarily involved in glucose metabolism and regulating blood sugar levels, while thyroxine influences overall metabolism and growth; neither of these hormones directly impacts fluid balance. Glucagon primarily works to raise blood glucose levels during fasting states and also does not directly regulate fluid balance. Therefore, the primary responsibility for fluid balance in the body lies with aldosterone.

7. Which clinical manifestation is typical for a client with diabetes insipidus?

- A. Increased blood glucose**
- B. Decreased serum sodium**
- C. Increased specific gravity**
- D. Decreased urine osmolality**

In diabetes insipidus, one of the hallmark clinical manifestations is decreased urine osmolality. This condition occurs due to a deficiency of antidiuretic hormone (ADH), which is crucial for regulating water retention by the kidneys. When there is insufficient ADH, the kidneys are unable to concentrate urine effectively, leading to the excretion of large volumes of dilute urine. As a result, the urine produced has low osmolality, reflecting the inability of the renal tubules to reabsorb water appropriately. This dilution of urine is what differentiates diabetes insipidus from conditions where fluid balance is impaired due to other factors, such as diabetes mellitus, wherein one may see increased blood glucose levels and consequently, osmotic diuresis. The other manifestations mentioned in the options do not align with the primary characteristics of diabetes insipidus. For instance, increased blood glucose levels pertain to diabetes mellitus rather than diabetes insipidus. Similarly, decreased serum sodium might suggest overhydration or other specific pathological conditions, while increased specific gravity is typically indicative of concentrated urine, which again does not occur in diabetes insipidus. Thus, decreased urine osmolality is the key clinical manifestation that correctly characterizes this disorder.

8. Which assessment finding is consistent with the effects of SIADH?

- A. Elevated serum potassium**
- B. Increased urine output**
- C. Hypoosmolar serum state**
- D. Hyperosmolar urine state**

The assessment finding consistent with the effects of Syndrome of Inappropriate Antidiuretic Hormone secretion (SIADH) is a hypoosmolar serum state. In SIADH, there is excessive secretion of antidiuretic hormone (ADH), which leads to the retention of water by the kidneys. This increased water retention dilutes the serum, causing a decrease in serum osmolality, resulting in a hypoosmolar state. In SIADH, the body retains water, leading to diluted serum sodium levels, which can cause hyponatremia. This condition results in low serum sodium concentration, and thus the serum will be hypoosmolar. The other options do not reflect typical findings associated with SIADH. Elevated serum potassium is not directly related to SIADH; it is more often linked with other conditions affecting renal function. Increased urine output would be expected in conditions where ADH is low or absent, which is contrary to the water retention seen in SIADH. Hyperosmolar urine state, on the other hand, is not consistent with SIADH; rather, the urine would be concentrated due to water being retained in the body, which usually makes the urine hypoosmolar.

9. The main symptom of hyperglycemia includes which of the following?

A. Increased appetite

B. Increased thirst and frequent urination

C. Nausea and vomiting

D. Muscle cramps

The primary symptom of hyperglycemia is increased thirst and frequent urination. When blood glucose levels rise significantly, the kidneys begin to filter out the excess glucose from the bloodstream. This process leads to an increase in urine production, a condition known as osmotic diuresis. As the body loses more fluid through urination, it results in dehydration, which in turn causes excessive thirst, prompting individuals to drink more liquids. The other symptoms mentioned, such as increased appetite, nausea, vomiting, and muscle cramps, can occur with various conditions but are not the hallmark symptoms of hyperglycemia. Increased appetite is more associated with conditions like uncontrolled diabetes or reactive hypoglycemia rather than a direct result of hyperglycemia. Nausea, vomiting, and muscle cramps can be caused by other factors and are not specific indicators of elevated blood glucose levels. Therefore, the combination of increased thirst and frequent urination is key in identifying hyperglycemia.

10. What symptom is commonly associated with hyperthyroidism?

A. Weight loss

B. Weight gain

C. Cold intolerance

D. Fatigue

Weight loss is a common symptom associated with hyperthyroidism due to the increased metabolic rate that occurs with elevated thyroid hormone levels. In hyperthyroidism, the body's metabolism accelerates, leading to the consumption of energy reserves and breakdown of body tissues, which can result in weight loss despite normal or increased appetite. This symptom is often accompanied by others such as increased heart rate, anxiety, and sweating. Conversely, weight gain is typically associated with hypothyroidism, where a decrease in metabolic rate leads to weight retention. Cold intolerance is also more characteristic of hypothyroidism, as the body struggles to generate heat. Fatigue can occur in hyperthyroidism but is often more pronounced in hypothyroidism due to overall body sluggishness and lack of energy. Thus, weight loss distinctly marks hyperthyroidism's clinical presentation.