

# NCO Fluid and Electrolytes Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

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# Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

# How to Use This Guide

**This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:**

## **1. Start with a Diagnostic Review**

**Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.**

## **2. Study in Short, Focused Sessions**

**Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.**

## **3. Learn from the Explanations**

**After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.**

## **4. Track Your Progress**

**Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.**

## **5. Simulate the Real Exam**

**Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.**

## **6. Repeat and Review**

**Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.**

**There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!**

## Questions

- 1. What is the primary reason for excessive bilateral +4 peripheral edema in heart failure?**
  - A. Shift of fluid into the interstitial spaces**
  - B. Weakening of the cell wall**
  - C. Increased intravascular compliance**
  - D. Increased intracellular fluid volume**
- 2. Which electrolyte levels are typically monitored in patients with cardiovascular diseases?**
  - A. Phosphate**
  - B. Potassium**
  - C. Magnesium**
  - D. Calcium**
- 3. What role does magnesium play in the body?**
  - A. Important for digestion**
  - B. Important for muscle function, nerve transmission, and enzymatic reactions**
  - C. Important for blood oxygenation**
  - D. Important for immune function**
- 4. What might cause pitting edema on the dorsum of the foot?**
  - A. Endocrine imbalance**
  - B. Excessive collagen production**
  - C. Fluid and electrolyte imbalance**
  - D. Autonomic nervous system stimulation**
- 5. How does dehydration affect electrolyte balance?**
  - A. It decreases fluid volume**
  - B. It increases the concentration of electrolytes in the body**
  - C. It causes electrolyte loss via urine**
  - D. It has no effect on electrolytes**

- 6. During hemodialysis, which substance is primarily removed from the blood?**
- A. Blood**
  - B. Sodium**
  - C. Glucose**
  - D. Bacteria**
- 7. In the context of kidney function, what is the primary purpose of the renal cortex?**
- A. Filtration of waste**
  - B. Collection of urine**
  - C. Regulation of blood flow**
  - D. Reabsorption of nutrients**
- 8. What is the calculated fluid balance after an 8-hour shift for a client who drinks a 6-oz cup of tea and 360 mL of water, vomits 100 mL, and has equal IV fluid and urinary output?**
- A. 240 mL**
  - B. 440 mL**
  - C. 340 mL**
  - D. 540 mL**
- 9. Why does metabolic acidosis develop in a patient with kidney failure?**
- A. Inability of the renal tubules to secrete hydrogen ions and conserve bicarbonate**
  - B. Depressed respiratory rate due to metabolic wastes, causing carbon dioxide retention**
  - C. Inability of the renal tubules to reabsorb water to dilute the acid contents of blood**
  - D. Impaired glomerular filtration, causing retention of sodium and metabolic waste products**
- 10. What is the initial symptom of fluid overload the nurse should monitor in a client receiving IV fluids for burns?**
- A. Crackles in the lungs**
  - B. Decreased heart rate**
  - C. Cyanosis of nailbeds**
  - D. Increased blood pressure**



## **Answers**

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

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## **Explanations**

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**1. What is the primary reason for excessive bilateral +4 peripheral edema in heart failure?**

**A. Shift of fluid into the interstitial spaces**

**B. Weakening of the cell wall**

**C. Increased intravascular compliance**

**D. Increased intracellular fluid volume**

In heart failure, the primary reason for excessive bilateral +4 peripheral edema is the shift of fluid into the interstitial spaces. When the heart is unable to pump effectively, it leads to poor circulation and elevated pressure in the blood vessels, particularly in the venous system. This elevated pressure causes fluid to leak out of the blood vessels and accumulate in the interstitial space, resulting in edema. The body's compensatory mechanisms, including activation of the renin-angiotensin-aldosterone system (RAAS), further contribute to fluid retention and exacerbation of edema. While worsening kidney function may play a role, the fundamental issue leading to peripheral edema is the movement of fluid from the vascular compartment into the surrounding tissues. The other options do not adequately address the underlying physiological processes associated with heart failure and peripheral edema. For instance, a weakening of the cell wall does not have a direct connection to fluid movement in heart failure, and increased intravascular compliance pertains more to the ability of blood vessels to expand rather than fluid accumulation in interstitial spaces. Moreover, although increased intracellular fluid volume might relate to certain conditions, it does not directly explain the excessive edema observed in heart failure, which is primarily interstitial in nature.

**2. Which electrolyte levels are typically monitored in patients with cardiovascular diseases?**

**A. Phosphate**

**B. Potassium**

**C. Magnesium**

**D. Calcium**

In patients with cardiovascular diseases, potassium levels are particularly important to monitor due to the critical role potassium plays in cardiac function. Potassium is essential for maintaining normal heart rhythm and is a key component in the electrical signaling of the heart. Abnormal potassium levels, whether too high (hyperkalemia) or too low (hypokalemia), can lead to serious complications, including arrhythmias, which can be life-threatening. Maintaining appropriate potassium levels is crucial for patients with cardiovascular conditions because these imbalances can exacerbate heart failure, lead to increased risk of sudden cardiac arrest, and impact the effectiveness of certain cardiovascular medications, such as diuretics that can alter electrolyte levels. Hence, monitoring potassium is a vital component of managing cardiovascular health in these patients. While phosphate, magnesium, and calcium are also important electrolytes and can affect cardiovascular health, potassium monitoring is particularly emphasized due to its direct involvement in cardiac electrical activity and potential to influence life-threatening arrhythmias.

### 3. What role does magnesium play in the body?

- A. Important for digestion
- B. Important for muscle function, nerve transmission, and enzymatic reactions**
- C. Important for blood oxygenation
- D. Important for immune function

Magnesium plays a crucial role in several key physiological processes in the body, particularly in relation to muscle function, nerve transmission, and enzymatic reactions. Muscle function relies heavily on magnesium, as it assists in muscle contraction and relaxation. It acts as a natural calcium blocker to help muscles relax after contracting. This balance of magnesium and calcium is vital for maintaining muscle health and preventing cramping or spasms. In terms of nerve transmission, magnesium is essential for the proper functioning of synapses and aiding in the transmission of electrical signals between nerve cells. It helps regulate neurotransmitter release, ensuring that communication between the brain and the body is efficient. Additionally, magnesium serves as a cofactor in over 300 enzymatic reactions in the body. These enzymes are involved in various metabolic processes, including energy production, protein synthesis, and DNA synthesis. This extensive involvement in enzymatic reactions underscores magnesium's importance in overall metabolic health. The other options, while highlighting important aspects of human health, do not accurately reflect the most significant roles of magnesium. For instance, digestion, blood oxygenation, and immune function are more closely associated with other nutrients and elements in the body, such as fiber, iron, and vitamins, rather than magnesium specifically. Thus, the emphasis

### 4. What might cause pitting edema on the dorsum of the foot?

- A. Endocrine imbalance
- B. Excessive collagen production
- C. Fluid and electrolyte imbalance**
- D. Autonomic nervous system stimulation

Pitting edema on the dorsum of the foot is primarily associated with fluid and electrolyte imbalance. This condition occurs when there is an abnormal accumulation of fluid in the interstitial spaces of the body, which can be caused by various factors such as heart failure, kidney disease, or liver dysfunction. When the balance between fluid intake and output is disrupted, excess fluid can build up, leading to swelling in areas like the feet. The characteristic feature of pitting edema is that when pressure is applied to the swollen area, it leaves a temporary indentation (pit) that persists for a few moments after the pressure is released. This occurs because the excess fluid is trapped in the tissues and creates an increase in interstitial pressure. In contrast, while endocrine imbalances can influence fluid retention, their direct connection to pitting edema is less pronounced compared to fluid and electrolyte imbalances. Similarly, excessive collagen production is related to fibrotic changes in tissues rather than fluid accumulation, and autonomic nervous system stimulation typically does not directly cause pitting edema, although it may influence vascular responses and fluid dynamics in a roundabout way. Understanding the role of fluid and electrolyte balance is crucial in addressing conditions that lead to such edema.

## 5. How does dehydration affect electrolyte balance?

- A. It decreases fluid volume
- B. It increases the concentration of electrolytes in the body**
- C. It causes electrolyte loss via urine
- D. It has no effect on electrolytes

Dehydration significantly impacts the balance of electrolytes in the body, primarily by increasing their concentration. When a person becomes dehydrated, there is a reduction in overall fluid volume within the body. This decrease in fluid leads to a more concentrated solution of electrolytes, such as sodium, potassium, and chloride, in the remaining body fluids. As the body retains water due to the loss of fluid, the electrolytes present are not eliminated in proportion to how fluid is lost. Therefore, the ratios of electrolytes in the bloodstream become higher, which can lead to electrolyte imbalances. This concentration effect can affect various bodily functions, including muscle contractions and nerve signaling, potentially resulting in symptoms related to electrolyte disturbances, such as cramps or confusion. Understanding how dehydration influences electrolyte concentration is essential for recognizing the physiological challenges that arise during states of fluid loss, whether through sweating, illness, or inadequate fluid intake.

## 6. During hemodialysis, which substance is primarily removed from the blood?

- A. Blood
- B. Sodium**
- C. Glucose
- D. Bacteria

During hemodialysis, the primary purpose is to remove waste products and excess substances from the blood, particularly those that accumulate in the setting of kidney failure. Urea and creatinine are the key waste products that clinicians aim to reduce through the dialysis process. While sodium can also be removed during dialysis, it is not the primary substance targeted. The process uses a semipermeable membrane that allows certain small molecules and ions to pass through, while retaining larger blood components like red blood cells and proteins. Sodium, a critical electrolyte, is indeed regulated and can be exchanged during dialysis; however, the focus is more on removing toxins and waste rather than on sodium levels alone. In this context, even though sodium is removed during hemodialysis, the more significant takeaway is the removal of nitrogenous waste products, particularly urea, which is indicative of the patient's metabolic state and kidney function. Therefore, while sodium removal is an important aspect, it represents a secondary focus in hemodialysis when compared to the elimination of primary waste products.

**7. In the context of kidney function, what is the primary purpose of the renal cortex?**

- A. Filtration of waste**
- B. Collection of urine**
- C. Regulation of blood flow**
- D. Reabsorption of nutrients**

The renal cortex is primarily responsible for the reabsorption of nutrients, which is a crucial function of the kidneys. In the nephron, the functional unit of the kidney, the renal cortex houses the glomeruli and the proximal convoluted tubules. These structures play a significant role in filtering blood and then selectively reabsorbing nutrients, electrolytes, and water back into the bloodstream. During the filtration process, waste products and excess substances are removed from the blood, but many essential nutrients and water are also filtered out. The proximal convoluted tubule, located in the renal cortex, is where most reabsorption occurs, including glucose, amino acids, sodium, and bicarbonate ions. This reabsorption ensures that valuable substances are returned to the body while waste products and excess substances remain in the tubular fluid to be excreted as urine. Understanding the primary function of the renal cortex in nutrient reabsorption is critical for recognizing how the kidneys maintain homeostasis and support overall bodily functions by regulating the composition of blood and bodily fluids.

**8. What is the calculated fluid balance after an 8-hour shift for a client who drinks a 6-oz cup of tea and 360 mL of water, vomits 100 mL, and has equal IV fluid and urinary output?**

- A. 240 mL**
- B. 440 mL**
- C. 340 mL**
- D. 540 mL**

To determine the calculated fluid balance for the client, it's essential to analyze the total intake and total output over the 8-hour shift. The client ingests a total of 6 ounces of tea, which converts to approximately 180 mL (since 1 ounce equals about 30 mL). Therefore, together with the 360 mL of water, the total fluid intake amounts to: - Tea: 180 mL - Water: 360 mL Adding these gives a total fluid intake of 540 mL. Next, we need to consider the fluid output. The client vomits 100 mL, which directly affects the total fluid output. Additionally, there is equal IV fluid and urinary output, but since the amount of these is not specified, we can denote this combined output as X mL for both IV fluids and urine. The sum of all outputs includes this fluid output (X) along with the vomiting: - Vomiting: 100 mL - Total Output: X (IV and urinary output combined) + 100 mL Since it's stated that the IV fluids and urinary output are equal, we know that any excess fluid they received will balance with the fluids lost through urine output. To find

**9. Why does metabolic acidosis develop in a patient with kidney failure?**

- A. Inability of the renal tubules to secrete hydrogen ions and conserve bicarbonate**
- B. Depressed respiratory rate due to metabolic wastes, causing carbon dioxide retention**
- C. Inability of the renal tubules to reabsorb water to dilute the acid contents of blood**
- D. Impaired glomerular filtration, causing retention of sodium and metabolic waste products**

Metabolic acidosis develops in patients with kidney failure primarily due to the inability of the renal tubules to effectively secrete hydrogen ions and conserve bicarbonate. In a healthy kidney, renal tubules play a crucial role in maintaining acid-base balance by actively excreting excess hydrogen ions into the urine and reabsorbing bicarbonate back into the bloodstream. When the kidneys are failing, this process is compromised. As a result, hydrogen ions accumulate in the blood, leading to a decrease in pH and the development of acidosis. Additionally, the reduced ability to retain bicarbonate further contributes to this condition, since bicarbonate is a key buffer that helps neutralize acid in the body. In contrast, depressed respiratory rates or issues related to the reabsorption of water, although they impact overall fluid and electrolyte balance, do not directly cause metabolic acidosis. The retention of sodium and metabolic waste products might complicate the clinical scenario but is not the primary mechanism leading to the acidotic state seen in kidney failure.

**10. What is the initial symptom of fluid overload the nurse should monitor in a client receiving IV fluids for burns?**

- A. Crackles in the lungs**
- B. Decreased heart rate**
- C. Cyanosis of nailbeds**
- D. Increased blood pressure**

The initial symptom of fluid overload that the nurse should monitor in a client receiving IV fluids for burns is the presence of crackles in the lungs. Fluid overload can lead to pulmonary congestion, where excess fluid accumulates in the lungs, making it challenging for the patient to breathe effectively. Crackles are abnormal lung sounds that can indicate the accumulation of fluid in the alveoli, which occurs with conditions like pulmonary edema. Monitoring lung sounds and being vigilant for crackles is crucial, particularly in patients receiving large volumes of IV fluids, as it can be an early indicator of complications. While elevated blood pressure can occur with fluid overload, it is not the most immediate or specific symptom that reflects pulmonary involvement. Similarly, changes like cyanosis or decreased heart rate are also critical, but crackles provide a direct assessment of lung function and fluid status. Therefore, recognizing crackles as a sign of fluid overload enables timely intervention to manage the patient's respiratory status effectively.



## Next Steps

**Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.**

**As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.**

**If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at [hello@examzify.com](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://ncofluid electrolytes.examzify.com>**

**We wish you the very best on your exam journey. You've got this!**