

# Kettering Neonatal/Pediatric Specialist (NPS) 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**

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- 1. A child presenting with failure to thrive might indicate which underlying issue?**
  - A. Gastroesophageal reflux disease**
  - B. Allergies**
  - C. Autism spectrum disorder**
  - D. Cognitive impairment**
- 2. A 3-year-old child receiving positive pressure ventilation shows coarse crackles in both upper lobes. What should the specialist recommend?**
  - A. Endotracheal suction**
  - B. Bronchial hygiene**
  - C. Aerosolized bronchodilator**
  - D. Diuretic therapy**
- 3. A 3-year-old child exhibits poor air exchange and a high-pitched noise during inspiration while clutching their neck. This situation is best described as:**
  - A. Mild airway obstruction**
  - B. Moderate airway obstruction**
  - C. Severe airway obstruction**
  - D. Aspiration pneumonitis**
- 4. In a motor vehicle accident case, which condition should the specialist suspect based on the pulmonary artery catheter readings?**
  - A. Left ventricular failure**
  - B. Tricuspid valve stenosis**
  - C. Pulmonary hypertension**
  - D. Hypovolemia**
- 5. According to the American Heart Association, high-quality CPR includes which of the following?**
  - A. A compression rate of at least 80/min**
  - B. Minimizing interruptions in chest compressions**
  - C. Allowing complete chest recoil after each compression**
  - D. Rotating compressors every 5 minutes**

**6. A chest x-ray reveals irregular bubbles in a 1-month-old infant with poor oxygenation. What should the specialist recommend?**

- A. Subambient oxygen therapy**
- B. High frequency ventilation**
- C. 100% oxygen for 6-12 hours**
- D. Chest tube insertion**

**7. Which assessment finding would indicate the need for immediate airway management in a pediatric patient?**

- A. Increased respiratory rate**
- B. Stridor during expiration**
- C. Use of accessory muscles for breathing**
- D. Absence of breath sounds**

**8. What standard is used by neonatal/pediatric specialists to assess preoperative spirometry results?**

- A. Vital capacity**
- B. Inspiratory capacity**
- C. Functional residual capacity**
- D. Expiratory reserve volume**

**9. A 4-year-old child with stridor, drooling, and a fever is suspected of having what condition?**

- A. Racemic epinephrine administration**
- B. Cool mist aerosol therapy**
- C. Antimicrobial therapy**
- D. Endotracheal intubation**

**10. In mechanical ventilation management, what does a high PaCO<sub>2</sub> indicate that might require adjustment to the ventilator settings?**

- A. Increased oxygen delivery**
- B. Decreased patient effort**
- C. Risk of respiratory acidosis**
- D. Increased lung compliance**

## **Answers**

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

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## **Explanations**

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**1. A child presenting with failure to thrive might indicate which underlying issue?**

- A. Gastroesophageal reflux disease**
- B. Allergies**
- C. Autism spectrum disorder**
- D. Cognitive impairment**

A child presenting with failure to thrive can indicate several underlying issues, and in this context, gastroesophageal reflux disease (GERD) is a significant consideration. GERD can lead to poor feeding and inadequate caloric intake due to discomfort associated with eating. When a child experiences reflux, they may refuse to eat or eat less than necessary, which can result in inadequate weight gain and growth, manifesting as failure to thrive. In the case of GERD, the regular backflow of stomach contents can cause pain and irritation in the esophagus, making feeding difficult. Parents may notice the child being fussy during feedings, arching their back, or showing signs of discomfort after eating, all of which can adversely affect their nutritional intake and growth. Therefore, recognizing GERD as a potential cause of failure to thrive is crucial for proper intervention and treatment. Although other conditions like allergies, autism spectrum disorder, and cognitive impairment can contribute to failure to thrive, GERD is directly related to feeding and growth through its impact on the child's ability to consume food comfortably.

**2. A 3-year-old child receiving positive pressure ventilation shows coarse crackles in both upper lobes. What should the specialist recommend?**

- A. Endotracheal suction**
- B. Bronchial hygiene**
- C. Aerosolized bronchodilator**
- D. Diuretic therapy**

In cases of a child receiving positive pressure ventilation and exhibiting coarse crackles in both upper lobes, the presence of these crackles typically indicates the presence of secretions in the airways. Endotracheal suctioning is a direct and effective method to clear these secretions, thus improving airway patency and facilitating better ventilation. The technique is particularly important in a ventilated child, as positive pressure can contribute to mucus build-up, and ineffective clearance can lead to atelectasis or infection. By performing endotracheal suctioning, the specialist can remove obstructive secretions, reduce the risk of further respiratory complications, and enhance the overall respiratory function of the child. Other approaches, while potentially beneficial in different circumstances, do not address the immediate concern of secretions. For instance, bronchial hygiene might incorporate various methods, such as chest physiotherapy, but may not provide the same immediate resolution as suctioning. Aerosolized bronchodilators can help in cases of bronchospasm but would not be as effective if the primary issue is secretions. Diuretics might be useful in managing fluid overload but do not directly target airway clearance. Therefore, endotracheal suctioning is the most appropriate intervention in this scenario.

**3. A 3-year-old child exhibits poor air exchange and a high-pitched noise during inspiration while clutching their neck. This situation is best described as:**

- A. Mild airway obstruction**
- B. Moderate airway obstruction**
- C. Severe airway obstruction**
- D. Aspiration pneumonitis**

The scenario presented describes a 3-year-old child experiencing poor air exchange, a high-pitched noise during inspiration (known as stridor), and clutching their neck, which suggests significant distress. This combination of signs indicates a critical level of obstruction in the airway. Severe airway obstruction is characterized by the following signs and symptoms: inadequate air exchange, stridor (which indicates that the air is struggling to pass through a narrowed airway), and typically signs of respiratory distress, such as the child grasping at their neck, which may be a reflexive action to indicate that they are having difficulty breathing. In this case, the presence of a high-pitched noise is particularly concerning and suggests a major compromise in airflow, often resulting from severe obstruction. The context of the child's age and the symptoms aligns with a medical emergency, where immediate intervention is necessary to prevent progression to respiratory failure or complete airway blockage. Hence, labeling this situation as severe airway obstruction is fitting, reflecting the urgency of the condition.

**4. In a motor vehicle accident case, which condition should the specialist suspect based on the pulmonary artery catheter readings?**

- A. Left ventricular failure**
- B. Tricuspid valve stenosis**
- C. Pulmonary hypertension**
- D. Hypovolemia**

The correct choice, pulmonary hypertension, is supported by specific pulmonary artery catheter readings that can indicate increased pressures in the pulmonary artery. In a motor vehicle accident case, if the readings show elevated pulmonary artery pressures, it suggests that there may be an underlying condition leading to increased vascular resistance in the pulmonary circulation. Pulmonary hypertension can occur as a result of various factors including trauma leading to lung injury, blood clots in the pulmonary arteries, or a severe pulmonary vascular response to injury. The catheter readings would display elevated pulmonary artery pressures, which are a hallmark of pulmonary hypertension, helping to confirm this diagnosis. For context, while left ventricular failure, tricuspid valve stenosis, and hypovolemia can all alter hemodynamic readings, they would present differently on catheterization. Left ventricular failure may show elevated pressures in both the left atrium and pulmonary capillary wedge pressure, indicating congestive heart failure. Tricuspid valve stenosis could lead to elevated right atrial pressures without necessarily causing significant changes in the pulmonary artery pressures. Hypovolemia, on the other hand, is usually indicated by low pressures and could lead to an overall reduction in cardiac output, rather than the pulmonary pressures indicative of pulmonary hypertension. Thus, these conditions would not

**5. According to the American Heart Association, high-quality CPR includes which of the following?**

- A. A compression rate of at least 80/min**
- B. Minimizing interruptions in chest compressions**
- C. Allowing complete chest recoil after each compression**
- D. Rotating compressors every 5 minutes**

High-quality CPR is critical in improving the chances of survival during a cardiac arrest scenario. One of the key components is allowing complete chest recoil after each compression. This is vital because it enables adequate venous return to the heart, thereby improving blood flow during the next compression cycle. If chest recoil is not allowed, the heart does not refill efficiently with blood, leading to decreased cardiac output and reduced effectiveness of CPR. Although minimizing interruptions in chest compressions and rotating compressors every 5 minutes are also important practices, they don't specifically address the mechanics of compressions in the same way that complete chest recoil does. Ensuring that the chest fully rebounds between compressions allows the heart to adequately fill with blood, which is crucial for maintaining blood circulation during resuscitation efforts. Therefore, complete chest recoil is recognized as essential for delivering high-quality CPR, making it a key component endorsed by the American Heart Association.

**6. A chest x-ray reveals irregular bubbles in a 1-month-old infant with poor oxygenation. What should the specialist recommend?**

- A. Subambient oxygen therapy**
- B. High frequency ventilation**
- C. 100% oxygen for 6-12 hours**
- D. Chest tube insertion**

In the scenario presented, a 1-month-old infant with poor oxygenation and a chest X-ray showing irregular bubbles is indicative of a condition like pulmonary edema or possibly other forms of obstructive lung pathology, such as surfactant deficiency or pneumonia. High-frequency ventilation is often recommended in such cases because it can improve oxygenation and ventilation while minimizing the risk of barotrauma, which can occur with conventional mechanical ventilation. High-frequency ventilation operates at a much higher rate with lower tidal volumes compared to traditional ventilation strategies, which can enhance gas exchange and reduce the work of breathing. This approach is particularly beneficial for infants with compromised lung function, as it allows for more effective management of their respiratory needs without overstressing fragile lung tissue. In contrast, while subambient oxygen therapy and providing 100% oxygen can occasionally be used, they do not address the underlying mechanical ventilation challenges that the infant is facing. Chest tube insertion may be warranted in cases of significant pleural effusion or tension pneumothorax but is unlikely to be the first line of intervention based solely on irregular bubbles noted on X-ray without further evidence of fluid accumulation or air trapping. Thus, recommending high-frequency ventilation is the most appropriate course of action considering the clinical presentation and the

**7. Which assessment finding would indicate the need for immediate airway management in a pediatric patient?**

- A. Increased respiratory rate**
- B. Stridor during expiration**
- C. Use of accessory muscles for breathing**
- D. Absence of breath sounds**

The absence of breath sounds is a critical finding that indicates the need for immediate airway management in a pediatric patient. This assessment suggests that the patient may have a complete obstruction of the airway, which is a life-threatening emergency. When breath sounds are absent, it typically shows that air is not reaching the lungs, which can lead to hypoxia and respiratory failure if not promptly addressed. In this scenario, airway management might involve interventions such as suctioning, bag-mask ventilation, or advanced airway placement to ensure that the patient can breathe effectively and receive adequate oxygenation. Recognizing this lack of breath sounds is crucial for rapidly intervening to prevent serious complications. Increased respiratory rate, stridor during expiration, and the use of accessory muscles for breathing can indicate respiratory distress or obstruction but do not necessarily demand immediate airway intervention in the same urgent manner. While these findings warrant attention and further assessment, they may not immediately signify that the airway is compromised to the extent necessitating emergency management.

**8. What standard is used by neonatal/pediatric specialists to assess preoperative spirometry results?**

- A. Vital capacity**
- B. Inspiratory capacity**
- C. Functional residual capacity**
- D. Expiratory reserve volume**

Vital capacity is a key standard used by neonatal and pediatric specialists when assessing preoperative spirometry results. This measurement reflects the maximum amount of air that a person can expel from the lungs after a deep inhalation. It is particularly important in a preoperative context because it provides valuable information regarding lung function and respiratory health, which can influence surgical risk and postoperative recovery. In the context of pediatric and neonatal assessment, vital capacity can be an effective indicator of respiratory capability, especially in smaller or younger patients where other measures may not provide as clear a snapshot. This can assist healthcare providers in identifying any potential breathing difficulties that may require intervention before proceeding with surgery. The other options, while related to lung function, serve different purposes or are less commonly emphasized in preoperative evaluations. Inspiratory capacity measures the maximum amount of air that can be inhaled after a normal expiration, while functional residual capacity and expiratory reserve volume focus on air remaining in the lungs after exhalation. These measures are valuable but do not provide the same comprehensive insight into overall respiratory health as vital capacity does in the preoperative setting.

**9. A 4-year-old child with stridor, drooling, and a fever is suspected of having what condition?**

- A. Racemic epinephrine administration**
- B. Cool mist aerosol therapy**
- C. Antimicrobial therapy**
- D. Endotracheal intubation**

In the context of a 4-year-old child presenting with stridor, drooling, and a fever, the clinical presentation is highly suggestive of acute epiglottitis. This condition often results from bacterial infection, leading to inflammation and airway obstruction. The presence of stridor indicates upper airway obstruction, drooling suggests difficulty swallowing due to pain or swelling, and fever is commonly associated with infection. Given these symptoms, endotracheal intubation is often necessary to secure the airway in cases where there is a significant risk of obstruction. This critical intervention helps prevent respiratory failure and can occur as the condition rapidly progresses. It is essential in managing airway patency when there is severe swelling due to the infection. The other options, while relevant to airway management and treatment of respiratory issues, do not directly address the urgency required in a situation with signs of significant airway compromise. Racemic epinephrine administration may be used for other forms of airway swelling but would not be the first-line treatment in suspected epiglottitis. Cool mist aerosol therapy could provide symptomatic relief but does not resolve the underlying obstruction. Antimicrobial therapy is essential in treating the underlying infection but is secondary to ensuring the airway remains open in an emergency setting.

**10. In mechanical ventilation management, what does a high PaCO<sub>2</sub> indicate that might require adjustment to the ventilator settings?**

- A. Increased oxygen delivery**
- B. Decreased patient effort**
- C. Risk of respiratory acidosis**
- D. Increased lung compliance**

A high partial pressure of carbon dioxide in arterial blood (PaCO<sub>2</sub>) primarily indicates that the body is retaining CO<sub>2</sub>, which is commonly associated with respiratory acidosis. This condition occurs when the lungs cannot remove CO<sub>2</sub> adequately, leading to its accumulation in the bloodstream. When mechanical ventilation management reveals elevated PaCO<sub>2</sub>, it typically necessitates adjustments to the ventilator settings to promote better gas exchange and reduce the level of carbon dioxide in the blood. This might include increasing the minute ventilation by adjusting the tidal volume or respiratory rate. The rationale behind this is to enhance the elimination of CO<sub>2</sub>, therefore alleviating the risk of respiratory acidosis and improving the patient's overall respiratory status. While increased oxygen delivery, decreased patient effort, and increased lung compliance could be relevant considerations in different contexts of mechanical ventilation management, they do not directly correlate with the implications of a high PaCO<sub>2</sub> in the same way that the risk of respiratory acidosis does. The primary concern with high PaCO<sub>2</sub> is to ensure appropriate management to prevent the complications associated with the acid-base imbalance caused by CO<sub>2</sub> retention.

# 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://ketteringnps.examzify.com>**

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

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