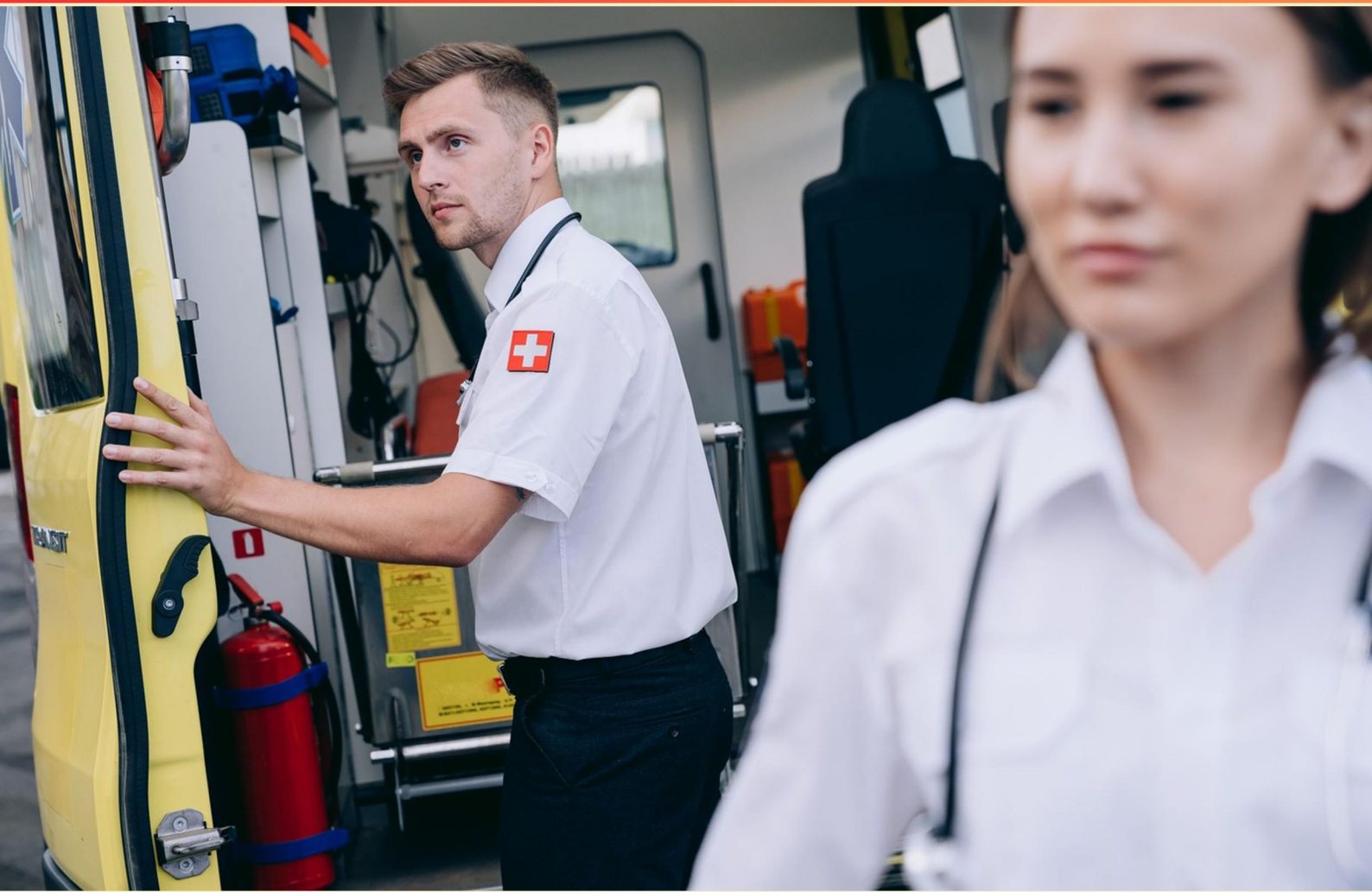


TRAUMA CARE AFTER RESUSCITATION (TCAR) PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. Which of the following are examples of secondary brain injuries?**
 - A. Tissue ischemia/hypoxia
 - B. Inflammation
 - C. Edema
 - D. All of the above

- 2. In simple pneumothorax, where is the primary problem in the tissue oxygenation cascade?**
 - A. Perfusion
 - B. Ventilation
 - C. Diffusion
 - D. Oxygen utilization

- 3. Which finding indicates a great vessel injury in thoracic trauma?**
 - A. Fever
 - B. Pneumothorax only
 - C. Clear chest radiograph
 - D. Massive hemothorax

- 4. Test of choice for the initial screening of bony structures**
 - A. CT
 - B. MRI
 - C. X-ray
 - D. Ultrasound

- 5. Approximately how thick is the cribiform plate, making it a weak point?**
 - A. 0.5 millimeters
 - B. 2 millimeters
 - C. 5 millimeters
 - D. 10 millimeters

- 6. The P:F ratio refers to which measurement?**
 - A. $\text{PaCO}_2/\text{FiO}_2$
 - B. $\text{PaO}_2/\text{FiO}_2$
 - C. Oxygen saturation index
 - D. Alveolar-arterial gradient

7. What fraction of body water is intracellular?

- A. 1/3
- B. 2/3
- C. 1/2
- D. 3/4

8. Late sepsis typically involves which combination of pathophysiology?

- A. Distributive vasodilation only
- B. Hypovolemia due to fluid losses
- C. Cardiogenic component
- D. Combined distributive, hypovolemia, and cardiogenic with cellular metabolic dysfunction

9. Which are the three categories of structures involved in traumatic brain injury (TBI)?

- A. Vascular, Neural, Muscular
- B. Bony (bone), Spinal cord (neuro), Associated structures
- C. Skin, Fat, Muscle
- D. Organs, Vessels, Nerves

10. Which dermatome level corresponds to the umbilicus?

- A. T9
- B. T11
- C. T12
- D. T10

Answers

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

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Explanations

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1. Which of the following are examples of secondary brain injuries?

- A. Tissue ischemia/hypoxia
- B. Inflammation
- C. Edema
- D. All of the above**

Secondary brain injury refers to damage that evolves after the initial insult and worsens outcome. The listed processes—tissue ischemia/hypoxia, inflammation, and edema—are all examples of secondary injury. Ischemia or hypoxia reduces oxygen delivery to brain tissue after the injury, often from systemic hypotension, impaired blood flow, or swelling that compresses vessels. Inflammation is a post-injury response involving microglial activation and cytokine release that can expand the injury area and damage neurons and glia. Edema arises from disruption of the blood-brain barrier and cellular injury, increasing intracranial pressure and further reducing perfusion. These processes often interact, fueling a cycle that amplifies injury beyond the initial event. Thus, all of the listed phenomena are secondary brain injuries.

2. In simple pneumothorax, where is the primary problem in the tissue oxygenation cascade?

- A. Perfusion
- B. Ventilation**
- C. Diffusion
- D. Oxygen utilization

Ventilation is the primary problem because a simple pneumothorax collapses part of the lung, reducing the amount of air that reaches the alveoli. With less alveolar air, the oxygen partial pressure in the alveoli falls, so the gradient for diffusion into the capillary blood diminishes. Even if perfusion and cellular oxygen use are still present, the starting point of the cascade—oxygen entering the alveoli—is impaired. In short, impaired ventilation drives the downstream limitations in oxygen transfer, making ventilation the best explanation for the tissue oxygenation deficit in this scenario.

3. Which finding indicates a great vessel injury in thoracic trauma?

- A. Fever
- B. Pneumothorax only
- C. Clear chest radiograph
- D. Massive hemothorax**

In thoracic trauma, signs of a great vessel injury are tied to rapid, large-volume bleeding into the chest. A massive hemothorax fits that pattern perfectly: tearing a major vessel dumps a lot of blood into the pleural space quickly, leading to shock and respiratory compromise. Fever points to infection or inflammation, not acute vascular injury. Pneumothorax alone is air in the pleural space from other injury and doesn't specifically indicate a great vessel tear, and a clear chest radiograph reduces suspicion of significant intrathoracic bleeding. Thus, experiencing a massive hemothorax best signals a great vessel injury.

4. Test of choice for the initial screening of bony structures

- A. CT**
- B. MRI
- C. X-ray
- D. Ultrasound

Computed tomography is the imaging modality of choice for initial screening of bony structures in acute trauma because it delivers rapid, high-resolution, cross-sectional images of the skeleton and can reveal fractures that may be occult on plain radiographs. It provides detailed visualization of complex fracture lines, displacement, and involvement of joints, and its ability to generate 3D reconstructions helps clarify anatomy and guide urgent management or surgical planning in a single study. While X-ray is quick and inexpensive, its sensitivity for fractures—especially subtle or complex ones—is limited, and MRI, though excellent for soft tissue and marrow assessment, is less practical for immediate screening due to longer scan times and availability. Ultrasound is useful for superficial or soft-tissue assessment but does not reliably evaluate deeper bone structures.

5. Approximately how thick is the cribriform plate, making it a weak point?

- A. 0.5 millimeters**
- B. 2 millimeters
- C. 5 millimeters
- D. 10 millimeters

The cribriform plate is an extremely thin portion of the anterior skull base that separates the nasal cavity from the anterior cranial fossa. It is about 0.5 millimeters thick, which makes it a natural weak point in trauma. That ultra-thin thickness means a fracture can readily traverse this plate, potentially causing CSF rhinorrhea and increasing the risk of infection, while also risking damage to the olfactory nerves. In contrast, thicker options like 2, 5, or 10 millimeters would imply a much sturdier bone and are not characteristic of the most vulnerable skull-base regions in injury.

6. The P:F ratio refers to which measurement?

- A. $\text{PaCO}_2/\text{FiO}_2$
- B. $\text{PaO}_2/\text{FiO}_2$**
- C. Oxygen saturation index
- D. Alveolar-arterial gradient

Focus is on how well the lungs oxygenate blood by comparing the arterial oxygen level to what's being delivered to the lungs. The P/F ratio is calculated as PaO_2 divided by FiO_2 . PaO_2 is the partial pressure of oxygen in arterial blood, measured from an arterial blood gas. FiO_2 is the fraction of inspired oxygen given to the patient (expressed as a decimal, e.g., room air is 0.21, 50% oxygen is 0.50). So the ratio tells you how effectively oxygen is transferring from the air into the blood. A higher ratio means good oxygenation; a lower ratio indicates impaired oxygen transfer. This ratio is central in assessing hypoxemia and the severity of conditions like ARDS: roughly, higher values (above ~300) are mild or no significant oxygenation failure, while lower values fall into more severe categories. Other options don't fit because the first uses PaCO_2 (ventilation, not oxygenation), the third uses a saturation measure rather than PaO_2 , and the fourth is the alveolar-arterial gradient, which is a different way of describing oxygen transfer.

7. What fraction of body water is intracellular?

- A. 1/3
- B. 2/3**
- C. 1/2
- D. 3/4

Water inside cells makes up the majority of the body's water, with about two-thirds of total body water residing intracellularly. In adults, total body water is roughly 60% of body weight, so intracellular water is about 40% of body weight and extracellular water about 20%. This distribution reflects the membranes that separate intracellular and extracellular spaces and the different solute compositions inside versus outside cells.

8. Late sepsis typically involves which combination of pathophysiology?

- A. Distributive vasodilation only
- B. Hypovolemia due to fluid losses
- C. Cardiogenic component
- D. Combined distributive, hypovolemia, and cardiogenic with cellular metabolic dysfunction**

Late sepsis is a mixed shock state, where inflammation drives widespread vasodilation and capillary leak (distributive component) that leads to intravascular volume depletion (hypovolemia). At the same time, septic cardiomyopathy can develop, causing reduced cardiac contractility and output (cardiogenic component). Adding to this, cellular metabolism becomes deranged: mitochondria struggle to utilize oxygen, leading to impaired aerobic metabolism and anaerobic energy production. Together, these elements—distributive vasodilation, hypovolemia, cardiogenic depression, and cellular metabolic dysfunction—best describe late sepsis.

9. Which are the three categories of structures involved in traumatic brain injury (TBI)?

- A. Vascular, Neural, Muscular
- B. Bony (bone), Spinal cord (neuro), Associated structures**
- C. Skin, Fat, Muscle
- D. Organs, Vessels, Nerves

Traumatic brain injury involves three broad structural domains: the bony housing that can be fractured, the neural tissue itself (brain and, in the broader nervous system context, the spinal cord), and the associated structures that surround or connect to the brain and influence injury and outcome (meninges, blood vessels, cranial nerves, and other supporting tissues). This three-part framework explains how injuries can range from skull fractures to brain parenchymal damage to vascular or meningeal injuries, and it guides priorities in assessment and treatment—stabilizing the patient, imaging for fractures and intracranial hemorrhage, and addressing vascular or meningeal injuries as needed. Other groupings miss these key domains specific to head trauma and don't capture the full picture of what can be involved in TBI.

10. Which dermatome level corresponds to the umbilicus?

- A. T9
- B. T11
- C. T12
- D. T10**

Dermatomes are skin zones innervated by specific spinal nerve roots. The umbilicus sits at the level of the T10 dermatome, meaning the cutaneous sensation there is carried by the T10 nerve fibers. As you move upward, the upper abdominal skin corresponds to higher thoracic levels (roughly T7–T9), and as you move downward from the umbilicus, sensations map to lower levels like T11 and T12 toward the groin. So the umbilicus is best matched to T10.

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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.

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

<https://tcar.examzify.com>

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

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