REGISTERED PHYSICIAN IN VASCULAR INTERPRETATION (RPVI) 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

1. **In graft hemodynamics, inflow obstruction generally refers to a blockage located where?**

   A. Blockage within the graft

   B. Blockage after the graft

   C. Blockage before the graft

   D. No blockage; only flow velocity changes

2. **Minimal spectral broadening in minimal stenosis is:**

   A. Minimal Spectral Broadening

   B. Moderate Spectral Broadening

   C. Severe Spectral Broadening

   D. No Spectral Broadening

3. **What Doppler pattern suggests collateral flow compensating contralateral ICA stenosis?**

   A. Increased flow everywhere including the ipsilateral ICA and CCA without turbulence.

   B. Increased flow only on the contralateral ICA with turbulence.

   C. Normal flow in both sides with no turbulence.

   D. Decreased flow on the contralateral side with normal on the ipsilateral.

4. **Transmit power reduced by factor 100; how many decibels?**

   A. -10 dB

   B. -20 dB

   C. -30 dB

   D. -40 dB

5. **In ICA stenosis with ipsilateral ECA internalization, how does the ECA appear on Doppler?**

   A. ECA mimics ICA with forward diastolic flow

   B. ECA becomes occluded

   C. ECA shows high-resistance pattern with no diastolic flow

   D. ECA flow ceases

6. What finding on color Doppler would indicate an ulcerated plaque?

A. Absence of color within the plaque

B. Flow within the plaque

C. Uniform color in the lumen

D. No color flow near plaque

7. Which statement about celiac artery velocity during median arcuate ligament compression is true?

A. Velocity decreases during expiration

B. Velocity increases during deep inspiration only

C. Velocity increases during normal respiration and may decrease with deep inspiration

D. Velocity remains unchanged during respiration

8. Power Doppler encodes color based on which property?

A. Amplitude of the Doppler signal

B. Frequency shift

C. Phase shift

D. Velocity

9. In resistive index calculation, which formula defines RI?

A. RI = PSV / EDV

B. RI = EDV / PSV

C. RI = PSV - EDV

D. RI = (PSV - EDV) / PSV

10. Which vessel is described as fasting when evaluating mesenteric arteries?

A. Renal Artery

B. Common Hepatic Artery

C. Superior Mesenteric Artery

D. Inferior Mesenteric Artery

Answers

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

Explanations

1. In graft hemodynamics, inflow obstruction generally refers to a blockage located where?

A. Blockage within the graft

B. Blockage after the graft

C. Blockage before the graft

D. No blockage; only flow velocity changes

Inflow refers to the arterial supply that feeds the graft, coming from upstream before the graft begins. An obstruction in that region means the blockage is proximal to the graft—in the native inflow artery or at the proximal anastomosis—so less blood is able to enter the graft. This is why the best answer is that the blockage is located before the graft. Blockage inside the graft would be an intra-graft obstruction, and blockage after the graft would be an outflow obstruction. Saying there's no blockage and only velocity changes would miss the location-based definition of inflow obstruction.

2. Minimal spectral broadening in minimal stenosis is:

A. Minimal Spectral Broadening

B. Moderate Spectral Broadening

C. Severe Spectral Broadening

D. No Spectral Broadening

When stenosis is minimal, the flow through the vessel stays largely laminar, with only a small acceleration through the narrowed segment. This produces only a tiny spread of velocities within the sample volume, seen on the Doppler spectrum as minimal spectral broadening. As stenosis worsens, turbulence increases and spectral broadening becomes moderate to severe. No spectral broadening would imply an almost perfectly mono-velocity flow, which is not typical even with minimal narrowing. Therefore, the best description for minimal stenosis is minimal spectral broadening.

3. What Doppler pattern suggests collateral flow compensating contralateral ICA stenosis?

A. Increased flow everywhere including the ipsilateral ICA and CCA without turbulence.

B. Increased flow only on the contralateral ICA with turbulence.

C. Normal flow in both sides with no turbulence.

D. Decreased flow on the contralateral side with normal on the ipsilateral.

Collateral flow through the circle of Willis can compensate when one ICA is stenosed, so the brain relies on the opposite side to supply blood. On Doppler, this shows up as higher flow volumes and velocities in both carotid systems because more blood is being delivered through shared pathways to the affected hemisphere. The key clue is that the spectra would be smooth and laminar, without the turbulent jet that comes from a locally significant stenosis. So seeing increased flow in both ICAs and CCAs with no turbulence points to redistribution of flow via collateral pathways rather than a single artery with a high-grade stenosis causing a turbulent jet. If flow were increased only on the contralateral side with turbulence, that would suggest a focal stenotic jet rather than collateral compensation. Normal flow on both sides or decreased contralateral flow would not reflect active collateral redistribution.

4. Transmit power reduced by factor 100; how many decibels?

A. -10 dB

B. -20 dB

C. -30 dB

D. -40 dB

Decibels express ratios on a log scale, and for power the formula is dB = 10 log10(P2/P1). If power is reduced by a factor of 100, P2/P1 = 1/100. So dB = 10 log10(1/100) = 10 × (-2) = -20 dB. The negative sign simply indicates attenuation. In words: a 100× reduction in power corresponds to a 20 dB drop.

5. In ICA stenosis with ipsilateral ECA internalization, how does the ECA appear on Doppler?

A. ECA mimics ICA with forward diastolic flow

B. ECA becomes occluded

C. ECA shows high-resistance pattern with no diastolic flow

D. ECA flow ceases

In ICA stenosis, the brain can recruit collateral pathways from the external carotid artery to perfuse intracranial vessels. When the ECA becomes a major source of intracranial flow, it is effectively internalized, and most of its flow is directed into intracranial collaterals rather than distally through the ECA branches. On Doppler, this redistribution often results in little or no detectable forward flow in the ECA itself, appearing as flow ceasing. This pattern reflects collateral circulation taking over the intracranial supply rather than a normal or occlusive pattern of the ECA.

6. What finding on color Doppler would indicate an ulcerated plaque?

A. Absence of color within the plaque

B. Flow within the plaque

C. Uniform color in the lumen

D. No color flow near plaque

Ulcerated plaques show a breach that creates a crater on the plaque surface, allowing blood to enter and flow within the plaque itself. On color Doppler this appears as color signals extending into or inside the plaque boundaries, i.e., flow within the plaque. This intraplaque flow reflects a channel through the plaque and is a hallmark of ulceration and instability. Absence of color within the plaque wouldn't indicate an ulcer, since there's no intraplaque flow; uniform color in the lumen is just normal laminar flow in the vessel, not intraplaque flow; and no color flow near the plaque wouldn't demonstrate an ulcer either and could be due to sampling or signal issues.

7. Which statement about celiac artery velocity during median arcuate ligament compression is true?

A. Velocity decreases during expiration

B. Velocity increases during deep inspiration only

C. Velocity increases during normal respiration and may decrease with deep inspiration

D. Velocity remains unchanged during respiration

Dynamic extrinsic compression of the celiac artery by the median arcuate ligament changes with breathing. As you exhale, the diaphragm rises and the ligament presses more firmly on the celiac trunk, narrowing the lumen and driving up flow velocity to get through the tighter segment. With deep inspiration, the diaphragm drops, the compression eases, the lumen opens a bit, and the velocity can decrease. This respiration dependent pattern—velocity rising with normal breathing and potentially falling with deep inspiration—best fits MAL compression. In other words, the flow is dynamic, not fixed, and the expiratory phase tends to show higher velocities.

8. Power Doppler encodes color based on which property?

A. Amplitude of the Doppler signal

B. Frequency shift

C. Phase shift

D. Velocity

Power Doppler encodes color based on the amplitude (power) of the Doppler signal. The color intensity on the display reflects how strong the Doppler signal from moving red blood cells is, which increases with the amount of moving blood and the scatter from those cells. Because it's driven by signal power rather than the actual frequency shift, Power Doppler is more sensitive to slow flow and is relatively angle-insensitive, but it does not provide information about flow direction or exact velocity. This makes it particularly useful for detecting vascularity and perfusion in areas where conventional color Doppler might miss flow.

9. In resistive index calculation, which formula defines RI?

A. RI = PSV / EDV

B. RI = EDV / PSV

C. RI = PSV - EDV

D. RI = (PSV - EDV) / PSV

Resistive index measures how pulsatile the blood flow is and reflects downstream resistance. It uses the peak systolic velocity (PSV) and the end-diastolic velocity (EDV) to quantify this pulsatility as a ratio. The correct formula takes the difference between PSV and EDV and divides by PSV, giving RI = (PSV − EDV) / PSV. This creates a value between 0 and 1, increasing as resistance rises (EDV drops relative to PSV). For example, with PSV 100 and EDV 20, RI = (100−20)/100 = 0.8, indicating higher resistance. Using PSV/EDV or EDV/PSV or simply PSV − EDV does not normalize the measure to PSV, fails to consistently reflect physiologic resistance, and can yield misleading values.

10. Which vessel is described as fasting when evaluating mesenteric arteries?

A. Renal Artery

B. Common Hepatic Artery

C. Superior Mesenteric Artery

D. Inferior Mesenteric Artery

The superior mesenteric artery is the one described as fasting in this context. When evaluating mesenteric arteries with Doppler, imaging is typically done in a fasting state because the gut's blood flow rises after a meal (postprandial hyperemia). This meal-induced increase mainly affects the SMA, raising flow and velocity and potentially masking or mimicking stenosis. Scanning while fasting provides a lower, baseline flow, making abnormal velocities due to true narrowing more reliable to identify. The other vessels listed are not the focus of the fasting evaluation for mesenteric ischemia.

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://rpvi.examzify.com

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