REGISTERED PHYSICIAN IN VASCULAR INTERPRETATION (RPVI) PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Table of Contents

Copyright 1
Table of Contents 2
Introduction 3
How to Use This Guide 4
Questions 5
Answers 8
Explanations 10
Next Steps 15

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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.

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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!

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Questions

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1. What waveform characteristics in CCA with distal disease?

A. Sharp, Narrow Systolic Peaks With Absent Diastolic

B. Broad Systolic Peak With Preserved Diastolic

C. Normal Triphasic

D. Low Diastolic Flow

2. Which color Doppler velocity setting is commonly used to detect low-velocity Type II endoleaks?

A. 2 cm/sec

B. 7 cm/sec

C. 15 cm/sec

D. 25 cm/sec

3. In venous duplex, which feature helps determine DVT when the vein does not fully collapse?

A. Echogenicity of the thrombus

B. Compression alone

C. Flow pattern on color Doppler

D. Vein diameter

4. The normal flow of the renal vein at the hilum is:

A. Pulsatile

B. Non-pulsatile

C. Highly pulsatile

D. Reversed

5. How does a plaque ulceration appear on color Doppler imaging compared with grayscale?

A. It often appears smoother on color Doppler than on grayscale

B. It appears the same on both

C. It appears rougher on color Doppler

D. Color Doppler cannot visualize plaque

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6. Compliance is defined as which of the following?

A. Volume Change / Time Change

B. Volume Change / Pressure Change

C. Pressure Change / Time Change

D. Flow Change / Volume Change

7. What explains color speckling on Doppler color flow imaging?

A. Vibration of surrounding soft tissue due to turbulence in the fistula channel; relatively low velocities show up darker red and blue

B. Color aliasing due to high velocity

C. Motion artifact from patient movement

D. Color bleed due to angle

8. Which Doppler control has the greatest impact on accuracy of pulsatility or resistive index measurements?

A. Wall Filters

B. PRF

C. Gain

D. Doppler angle

9. In the systemic circulation, which segment has the highest vascular resistance?

A. Vena cava

B. Aorta

C. Capillaries

D. Arterioles

10. Have velocity measurements or velocity ratios been validated for carotid artery disease stenosis greater than 50%?

A. Yes

B. No

C. Only in select research studies

D. Not studied at all

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Answers

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

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Explanations

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1. What waveform characteristics in CCA with distal disease?

A. Sharp, Narrow Systolic Peaks With Absent Diastolic

B. Broad Systolic Peak With Preserved Diastolic

C. Normal Triphasic

D. Low Diastolic Flow

When the disease is distal to where you're measuring, the downstream vascular bed has higher resistance. That reduces runoff during diastole, so diastolic forward flow becomes diminished or absent. At the same time, the systolic portion of the waveform can appear as a brief, sharp peak because the forward flow is concentrated into a shorter systolic window. This combination—an abrupt, narrow systolic peak with no diastolic flow—fits a distal high-resistance pattern. Normal triphasic or a broad, rounded systolic peak with preserved diastolic suggests normal or low-resistance downstream flow, and simply having low diastolic flow without the accompanying abrupt systolic peak wouldn't as specifically reflect distal disease.

2. Which color Doppler velocity setting is commonly used to detect low-velocity Type II endoleaks?

A. 2 cm/sec

B. 7 cm/sec

C. 15 cm/sec

D. 25 cm/sec

Detecting low-velocity Type II endoleaks relies on making slow flow visible on color Doppler. The velocity scale (color Doppler sensitivity) defines the maximum velocity that will be encoded as color. If the scale is too high, slow leaks may not colorize and can be missed. Type II endoleaks usually come from lumbar or mesenteric branches and flow into the aneurysm sac at a low velocity, so you want a low sensitivity setting to reveal those subtle jets. A value around 7 cm/s strikes a good balance: it's low enough to show slow leaks but not so low that noise and tissue movement overwhelm the signal. Choosing a setting as low as 2 cm/s can increase susceptibility to noise, while higher settings like 15 or 25 cm/s may suppress the slow flow entirely, making the endoleak harder to detect.

3. In venous duplex, which feature helps determine DVT when the vein does not fully collapse?

A. Echogenicity of the thrombus

B. Compression alone

C. Flow pattern on color Doppler

D. Vein diameter

When a vein doesn't fully collapse, you still need direct evidence of clot inside the lumen. Echogenicity of the thrombus provides that evidence: you can see material within the vein that has distinct echogenic characteristics consistent with a thrombus, confirming DVT even if compression isn't entirely successful. Relying on compression alone can be misleading in this scenario, since factors like technique, patient habitus, or edema can make a vein appear noncompressible without a thrombus. Color Doppler flow patterns can be helpful but are not as specific—flow can be altered for several reasons and may not clearly differentiate a partial thrombus from other causes of altered flow. Vein diameter alone isn't diagnostic because enlargement can result from nonthrombotic processes. So the presence of intraluminal echogenic material is the best indicator of DVT when full collapse isn't achieved.

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4. The normal flow of the renal vein at the hilum is:

A. Pulsatile

B. Non-pulsatile

C. Highly pulsatile

D. Reversed

Venous flow is non-pulsatile because veins are low-pressure, capacitance vessels that return blood to the heart with a steady, continuous velocity. In Doppler imaging at the renal hilum, this appears as continuous, low-velocity flow toward the heart with only minor variations from respiration, not the distinct pulsations seen in arteries. Pulsatile flow would reflect arterial systole and is not expected in a vein, while highly pulsatile or reversed flow would indicate abnormal or pathologic conditions. So the normal renal vein flow pattern is non-pulsatile.

5. How does a plaque ulceration appear on color Doppler imaging compared with grayscale?

A. It often appears smoother on color Doppler than on grayscale

B. It appears the same on both

C. It appears rougher on color Doppler

D. Color Doppler cannot visualize plaque

Color Doppler tends to smooth out fine surface details because the color encoding is superimposed on the grayscale image and uses lower spatial resolution. Grayscale (b-mode) shows the actual plaque surface with high detail, so irregularities and crater-like ulcerations appear more pronounced. With color Doppler, subtle surface irregularities are less conspicuous, so the ulceration can look smoother, unless there is flow entering the ulcer crater, which would show as a color jet within the defect indicating communication with the lumen. This combination makes the plaque appear smoother on color Doppler than on grayscale.

6. Compliance is defined as which of the following?

A. Volume Change / Time Change

B. Volume Change / Pressure Change

C. Pressure Change / Time Change

D. Flow Change / Volume Change

Compliance describes how much a vessel's volume changes for a given change in pressure. In practice, it is defined as $\Delta V/\Delta P$, the change in volume per unit pressure change. That's why Volume Change divided by Pressure Change is the best description. A vessel with high compliance expands readily with small increases in pressure, while a stiff vessel has low compliance and requires a larger pressure change for the same volume increase. The units are typically mL per mmHg. This is the inverse of elastance ($\Delta P/\Delta V$), which reflects stiffness rather than distensibility. The other options mix in time or flow, which are not part of the definition of compliance.

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7. What explains color speckling on Doppler color flow imaging?

A. Vibration of surrounding soft tissue due to turbulence in the fistula channel; relatively low velocities show up darker red and blue

B. Color aliasing due to high velocity

C. Motion artifact from patient movement

D. Color bleed due to angle

Color speckling comes from the motion of tissue caused by turbulent flow in a high-flow channel, such as a fistula. The turbulence creates rapid, small velocity components within the Doppler sample volume, so the color Doppler algorithm sees a mix of forward and backward velocities in a single area. This random mix produces a speckled, mosaic appearance rather than a uniform color. The low-velocity components tend to appear as darker red or blue tones because their Doppler shifts are smaller and register as weaker on the color map. Aliasing would cause a distinct color wrap when velocities exceed the Nyquist limit, rather than a speckled pattern. Motion artifact from patient movement generally looks like overall image smear, not localized speckle tied to turbulent flow. Color bleed from an unfavorable angle would extend color along a vessel boundary, not create a speckled patch around turbulent flow.

8. Which Doppler control has the greatest impact on accuracy of pulsatility or resistive index measurements?

A. Wall Filters

B. PRF

C. Gain

D. Doppler angle

Accurate pulsatility and resistive indices depend on reliable measurement of both peak systolic and end-diastolic velocities. Wall filters remove low-frequency signals from tissue motion and slow flow. If the filter is set too aggressively, the end-diastolic velocity, which is often very small, can be attenuated or lost. That directly skews the RI and PI calculations because the end-diastolic component is in the denominator for RI and in the numerator for PI. Even modest loss or distortion of diastolic velocity can markedly alter these indices, making wall filter settings the most influential factor for their accuracy. In comparison, PRF mainly governs the risk of aliasing and how well high velocities are sampled, which matters for peak velocities but doesn't inherently bias the relationship between systolic and diastolic velocities. Gain affects overall signal brightness but not the actual velocity values used in the indices. Doppler angle alters measured velocity via the cos theta term, but RI and PI are ratios that partly cancel angle effects, so angle errors tend to have a smaller impact on these indices than the diastolic signal loss caused by an improper wall filter.

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9. In the systemic circulation, which segment has the highest vascular resistance?

A. Vena cava

B. Aorta

C. Capillaries

D. Arterioles

The segment that contributes most to systemic vascular resistance is the arterioles. These small, muscular vessels sit right before the capillary beds and contain a lot of smooth muscle that can constrict or dilate in response to neural, hormonal, and local metabolic signals. Because resistance depends extremely strongly on radius (small changes in radius cause large changes in resistance), the arterioles' ability to adjust their diameter makes them the major determinant of total peripheral resistance and thus the pressure drop across the systemic circulation. Capillaries, while numerous, are arranged in parallel across the network, so their combined effect lowers the overall resistance despite each one having a small radius. The vena cava are large, compliant veins with relatively low resistance and function mainly as capacitance vessels, not as the primary resistance sites. The aorta is a large-diameter elastic vessel with high conductance and likewise presents low resistance compared with the arterioles.

10. Have velocity measurements or velocity ratios been validated for carotid artery disease stenosis greater than 50%?

A. Yes

B. No

C. Only in select research studies

D. Not studied at all

Velocity-based criteria in carotid duplex are most well-validated for higher-grade stenosis, but there isn't a universally accepted validation for measurements or velocity ratios when stenosis is greater than 50%. In practice, robust, standardized thresholds are established for more severe disease, yet the accuracy and reliability of using velocity alone—or even ICA/CCA velocity ratios—to quantify stenosis above 50% are not consistently validated across broad patient populations. This means that when the stenosis could be over 50%, velocity data alone are not considered fully validated for precise grading, and additional imaging confirmation (such as CTA or MRA) is typically used to make a definitive assessment.

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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://rpvi.examzify.com

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

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