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ScoreCards for

Vascular Technology

QUESTION/ANSWER FLASHCARD STUDY SYSTEM

SECOND EDITION



**1-2-3 Step
Ultrasound Education**

Step 1
Review text

Step 2
Mock examination

Step 3
Q&A memory skills
flashcard drill

Image Gallery | Exam Updates | Bonus Physics Coverage

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Continuing Education Activity
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CINDY OWEN

D.E. STRANDNESS

ready to...

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ScoreCards™ for

Vascular Technology

**A Q&A Flashcard Study System for
Vascular Technology**

2nd Edition

The logo for Davies Publishing, featuring the word "DAVIES" in a bold, white, sans-serif font set against a dark gray square background.

DAVIES

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HOW TO USE SCORECARDS

As part of our 1-2-3 Step Ultrasound Education and Test Preparation program, *ScoreCards for Vascular Technology* systematically prepares you to pass the Vascular Technology exam for the Registered Vascular Technologist (RVT) credential. It also helps you to master the facts, problem-solving skills, and habits of mind that form the foundation of success not only on your registry exams but also in your career as an ultrasound professional. And it's fun.

ScoreCards covers core concepts and principles topic by topic—facts you must master to pass the RVT exam. At the bottom of every question page is a “footer key,” indicating the study topic's place within the exam coverage—from cerebrovascular to peripheral arterial, pathology to protocols—so you always know where you are and how you are doing. And at the end of the book you'll find a handy list of all the flashcards cross-referenced to the task-oriented ARDMS exam topics.*

In addition, all questions specifically designed to prep you for the ARDMS “Advanced Item Type” (AIT) questions are identified. This is a new class of question that tests practical sonographic skills by simulating hands-on clinical experience. (See “Examinations and Certifications” at www.ARDMS.org.)

*We use the last best ARDMS content outline for test preparation, updated to ensure complete coverage. The latest exam outlines from ARDMS provide a generalized categorical overview together with very specific clinical tasks, but they can miss key intermediate topics you must know to pass your exam—hence our hybrid approach to study outlines. Here you get it both ways: The table of contents reflects the key topics you need to know to pass the exam; at the end of the book, “*ScoreCards* Questions Cross-Referenced to the ARDMS Exam Content Outline” lists the questions under the ARDMS exam outline categories that were current as of press time.

The AIT questions include three types, which are identified where applicable in a *ScoreCard*'s footer key as indicated in quotation marks below:

- **“AIT–SIC” (Semi-Interactive Console) items:** These questions require the examinee to use a semi-interactive console to correct a problem with the image presented. In the *ScoreCards* system, similar questions are addressed similarly, by asking candidates what is wrong with an image or how to correct a problem. SIC questions are currently used in the SPI exam. We have included some here to provide bonus Physics coverage for Vascular.
- **“AIT–Hotspot” items** require examinees to indicate the answer to a question by pointing at or marking directly on an image. In *ScoreCards*, similar questions ask examinees to indicate the label on an image that corresponds to the correct answer. Hotspot questions appear on the RVT specialty exam.
- **“AIT–PACSim” items:** For reading physicians taking the Physician in Vascular Interpretation (PVI) exam, there are the highly interactive case-based Picture Archive and Communication Simulation (PACSim) questions. These simulate a reading station and require examinees to read a patient's clinical history, evaluate existing image(s), and complete a diagnostic ultrasound report by selecting from the options presented.

ScoreCards for Vascular Technology also contains an image gallery of challenging case-based problems and coverage of physiology and fluid dynamics—the vascular-specific physical principles that you must know to pass the Vascular Technology exam. These physical principles are key to understanding the physiologic bases of the indirect vascular tests, Doppler technology and its clinical applications, and other clinically important issues and applications.

Here are some tips for maximizing the value of the *ScoreCards* system:

Take it with you. The pocket-sized *ScoreCards* study system is designed to be portable. Use it on breaks or between patients. You can review a dozen question/answer items in five minutes.

Study, test yourself, review. As you study vascular technology, *ScoreCards* drills you on key facts and figures, it tests your knowledge of those facts in practical situations, and it provides clear explanations and references for further study. Each Q&A card is keyed to a helpful study outline so that you always know where you are, how you are doing, and how important the topic is to your overall success on the exam.

Triangulate on your target. By itself, the *ScoreCards* study system is a powerful, convenient, and fun way of learning and testing yourself. It is especially effective when used with *Vascular Technology: An Illustrated Review* (Step 1: review text) and *Vascular Technology Review* (Step 2: mock examination). Just as each ScoreCard tells you which study topic it covers, it also indicates exactly where in the Step 1 text you can find further information about the subject. So do the Davies mock examinations. This integrated, systematic strategy triangulates on your target—exam and career success!

Shuffle it! After using the flipcard format for a while, consider removing the spiral binding and mixing up the cards to vary the order in which they challenge you.

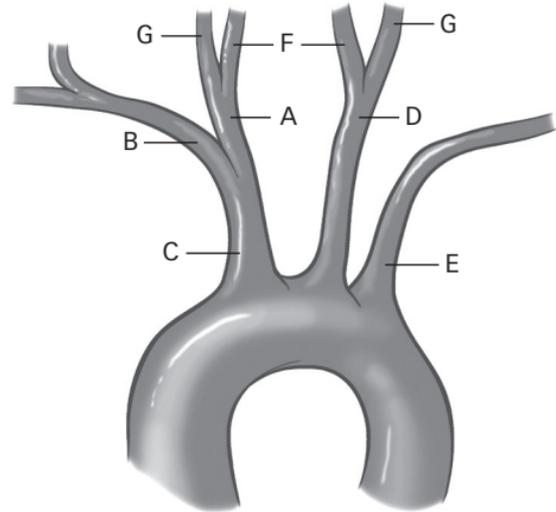
Earn CME credit. The *ScoreCards* study system is an SDMS-approved CME activity that can help meet the CME requirements necessary to maintain your registry status once you pass your exams. Use the CME application that follows the last question in this book. You may use the CME application anywhere, anytime, at your convenience.

Check our website. The latest news about your exams, continuing medical education, and diagnostic testing—as well as catalogs of additional resources and online help—is just a click away. Visit us at **DaviesPublishing.com**.

Whether you are a budding vascular technologist or a seasoned cross-training sonographer, mastery of these *ScoreCards* forms a solid foundation for success. For best results, we strongly urge you to combine *ScoreCards* with *Vascular Technology: An Illustrated Review* and either *Vascular Technology Review* (the book form of the mock exam) or *Vascular Technology CD-ROM Mock Exam*.

Q 1

Identify the vessels labeled A–G in this illustration of the aortic arch.



- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____





- A. Right common carotid artery.
- B. Right subclavian artery
- C. Innominate (brachiocephalic) artery.
- D. Left common carotid artery.
- E. Left subclavian artery.
- F. External carotid arteries.
- G. Internal carotid arteries.

This classic pattern of the aortic arch is seen in approximately 70% of individuals. The first of these branches is the innominate or brachiocephalic trunk, which usually courses 3–4 cm before dividing into the right common carotid and subclavian arteries. The second branch is the left common carotid artery. The common carotid arteries divide into the left and right internal and external carotid arteries. The last branch of the aortic arch is the left subclavian artery.

- ▶ Rumwell C, McPharlin M: *Vascular Technology: An Illustrated Review*, 5th edition. Pasadena, Davies Publishing, 2015, p 4.
- ▶ Kadir S: Regional anatomy of the thoracic aorta. In *Atlas of Normal and Variant Angiographic Anatomy*. Philadelphia, Saunders, 1991, pp 19–54.

Q

2

The most common anatomic variant of the aortic arch is:

- a. an origin of the left vertebral from the aortic arch
- b. an origin of the right subclavian from the aortic arch
- c. a common origin of the innominate and left common carotid arteries
- d. an origin of the right common carotid from the aortic arch



C. A common origin of the innominate and left common carotid arteries.

A frequent origin of the innominate and left common carotid arteries is by far the most common variant anatomy of the aortic arch, occurring in approximately 22% of individuals.



After it crosses the lateral margin of the first rib the subclavian artery becomes known as the:

- a. brachiocephalic artery
- b. axillary artery
- c. brachial artery
- d. vertebral artery



B. Axillary artery.

The subclavian artery continues as the axillary artery after it passes the lateral margin of the first rib. The axillary artery in turn becomes the brachial artery.

- ▶ Rumwell C, McPharlin M: *Vascular Technology: An Illustrated Review*, 4th edition. Pasadena, Davies Publishing, 2009, p 4.
- ▶ Rumwell C, McPharlin M: *Vascular Technology: An Illustrated Review*, 5th edition. Pasadena, Davies Publishing, 2015, p 4.

ScoreCards for Vascular Technology

Cindy Owen, RDMS, RVT, FSDMS | D. E. Strandness, MD

SECOND EDITION

The sophisticated ScoreCards flip-and flashcard study system yields maximum gain with minimum pain, and it's fun. Exercise your ability to think fast and recall key facts wherever you are—at lunch, on weekend outings, or between patients. Written by well-known experts, these handy ScoreCards deliver nearly 500 questions keyed to the registry's own exam outline, plus answers, explanations, and quick references. More than sixty image-based cases prepare you to tackle scans on the exam. Step 3 in Davies' CME-approved 1-2-3 Step Ultrasound Education and Test Preparation program, *ScoreCards for Vascular Technology* is very effective in combination with *Vascular Technology: An Illustrated Review* (Step 1—review text), *Vascular Technology Review*, and *Ultrasound Physics Review* (Step 2—mock exams).

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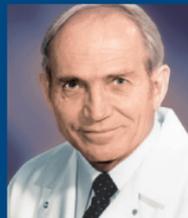
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Cindy Owen, RT, RVT, RDMS, FSDMS, is the author of *Ultrasound Physics Review* and *Abdominal Sonography Review*. A former ARDMS and ICAVL board

member, Cindy is currently Research Manager for Global Ultrasound at GE Healthcare and Director of Clinical Insights and Development at GE Healthcare Point of Care Ultrasound.

A pioneer in the development of duplex ultrasonography, the late Dr. Strandness played a seminal role in the first edition of this publication. He was professor of surgery and chair of the department of vascular surgery at the University of Washington.



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