

How to Prepare for Cardiology Boards

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Disclosures

- I own no stock in any of the board review materials included in my talk
- I receive no fee from the ACC to give this lecture
- I only feel strongly that if fellows and early faculty must pay over 1900 bucks to take this exam, they should not have to take it more than once

Outline

- When they are offered
- Format
- How you are scored
- Sources to help you prepare
- Pitfalls
- Tips
- Questions / answers

When they are offered

- For this year:
 - Exam is Nov. 4-5, or Nov. 5-6, 2009
 - Half-day session is Nov. 5, full day is either Nov. 4 or Nov. 6
 - Registration: b/w Mar. 1 and May 1 (registration fee: \$1905 – up from \$1655 last year, and \$1,245 four years ago!)
 - Late registration: b/w May 2-June 1 (will cost an extra non-refundable \$400)
 - Additional \$500 if taking exam outside USA
 - Cancel by Sept. 1, 2009 (for 85% refund)
 - Score reports by early Feb. 2010
- Register at www.abim.org
- Register early to secure your testing center!

Format

- All computer-based (with a marker board so you can take down notes)
- ABIM contracts with Pearson VUE computer testing centers to administer the exam
- 1 ½ day exam
- One day – Four 2-hour sections (total 8 hours) to complete a total of 200 MCQ's
- Half day – Two sections, total 4 hrs, 15 min.
 - ECG section: 35-40 tracings in 2:15
 - Images section: 35-40 video images (echoes, v-grams or aortograms, and angiograms) in 2 hours

Content area of the boards

Medical Content Category	Relative Percentage
Arrhythmias	12.0
Coronary artery disease	12.5
Acute coronary syndromes/Acute myocardial infarction	12.0
Valvular disorders	12.0
Congenital disorders	7.0
Pericardial disease	3.0
Aorta/Peripheral vascular disease	9.0
Hypertension/Pulmonary disorders	7.0
Pharmacology	5.0
Congestive heart failure	13.0
Physiology/Biochemistry	6.0
Miscellaneous	1.5
Total	100%

How you are scored

- Must pass BOTH of two parts:
 - 1) ECG's alone
 - 2) MCQ's and images (together they count as one part)
- Most candidates who fail, fail the ECG part of the boards (do NOT underestimate this section!)
- Images section can be challenging; fortunately, if you do poorly in this section but well on MCQ's, you can still pass
- No penalty for guessing on MCQ's
- There is a penalty for guessing on ECG and imaging sections; don't overcode!

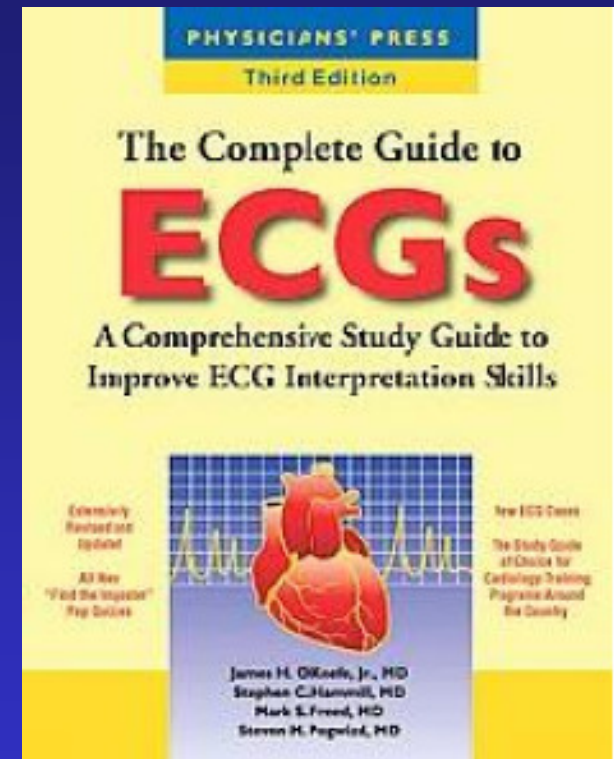
Cardiology boards passing rate

	2003	2004	2005	2006	2007	2008
Number of first-time test takers	710	746	762	767	783	764
Pass rate (%)	83	84	84	86	88	87

Repeat test takers: In 2008, there were 228 repeat test-takers, with a pass rate of 44%

Sources to use to prepare – ECG's

- O'Keefe – The Complete Guide to ECG's – get this book and go through it in its entirety at least TWICE
 - Over 80 practice ECG's; the coding sheet is nearly identical to the one used on the boards
 - Approach to ECG interpretation
 - ECG differential diagnosis
 - ECG criteria
 - Common dilemmas to ECG interpretation
- ECG-SAP – If you want extra practice, but not essential. Coding sheet in this module is very different from what is used on the Boards. Use this ONLY after going through O'Keefe's book at least TWICE.



ECG coding sheet – know it cold

ECG Sample Case: A 64-year-old man in the ER because of chest pain.

GENERAL FEATURES

- 1. Normal ECG
- 2. Borderline normal ECG or normal variant
- 3. Incorrect electrode placement
- 4. Artifact

P WAVE ABNORMALITIES

- 5. Right atrial abnormality/enlargement
- 6. Left atrial abnormality/enlargement

ATRIAL RHYTHMS

- 7. Sinus rhythm
- 8. Sinus arrhythmia
- 9. Sinus bradycardia (<60)
- 10. Sinus tachycardia (>100)
- 11. Sinus pause or arrest
- 12. Sinoatrial exit block
- 13. Atrial premature complexes
- 14. Atrial parasystole
- 15. Atrial tachycardia
- 16. Atrial tachycardia, multifocal
- 17. Supraventricular tachycardia
- 18. Atrial flutter
- 19. Atrial fibrillation

AV JUNCTIONAL RHYTHMS

- 20. AV junctional premature complexes
- 21. AV junctional escape complexes
- 22. AV junctional rhythm/tachycardia

VENTRICULAR RHYTHMS

- 23. Ventricular premature complex(es)
- 24. Ventricular parasystole
- 25. Ventricular tachycardia (3 or more consecutive complexes)
- 26. Accelerated idioventricular rhythm
- 27. Ventricular escape complexes or rhythm
- 28. Ventricular fibrillation

AV CONDUCTION

- 29. AV block, 1*
- 30. AV block, 2* — Mobitz type I (Wenckebach)
- 31. AV block, 2* — Mobitz type II
- 32. AV block, 2:1
- 33. AV block, 3*
- 34. Wolff-Parkinson-White pattern
- 35. AV dissociation

ABNORMALITIES OF QRS VOLTAGE OR AXIS

- 36. Low voltage
- 37. Left axis deviation (> -30°)
- 38. Right axis deviation (>+100°)
- 39. Electrical alternans

VENTRICULAR HYPERTROPHY

- 40. Left ventricular hypertrophy
- 41. Right ventricular hypertrophy
- 42. Combined ventricular hypertrophy

INTRAVENTRICULAR CONDUCTION

- 43. RBBB, complete
- 44. RBBB, incomplete
- 45. Left anterior fascicular block
- 46. Left posterior fascicular block
- 47. LBBB, complete
- 48. LBBB, incomplete
- 49. Intraventricular conduction disturbance, nonspecific type
- 50. Functional (rate-related) aberrancy

Q WAVE MYOCARDIAL INFARCTION

- | | Age recent, or
probably acute | Age indeterminate,
or probably old |
|--------------------------|----------------------------------|---------------------------------------|
| Anterolateral | <input type="checkbox"/> 51. | <input type="checkbox"/> 52. |
| Anterior or anteroseptal | <input type="checkbox"/> 53. | <input type="checkbox"/> 54. |
| Lateral | <input type="checkbox"/> 55. | <input type="checkbox"/> 56. |
| Inferior | <input type="checkbox"/> 57. | <input type="checkbox"/> 58. |
| Posterior | <input type="checkbox"/> 59. | <input type="checkbox"/> 60. |

ST, T, U WAVE ABNORMALITIES

- 61. Normal variant, early repolarization
- 62. Normal variant, juvenile T waves
- 63. Nonspecific ST and/or T wave abnormalities
- 64. ST and/or T wave abnormalities suggesting myocardial ischemia
- 65. ST and/or T wave abnormalities suggesting myocardial injury
- 66. ST and/or T wave abnormalities suggesting electrolyte disturbances
- 67. ST and/or T wave abnormalities secondary to hypertrophy
- 68. Prolonged Q-T interval
- 69. Prominent U waves

CLINICAL DISORDERS

- 70. Digitalis effect
- 71. Digitalis toxicity
- 72. Antiarrhythmic drug effect
- 73. Antiarrhythmic drug toxicity
- 74. Hyperkalemia
- 75. Hypokalemia
- 76. Hypercalcemia
- 77. Hypocalcemia
- 78. Atrial septal defect, secundum
- 79. Atrial septal defect, primum
- 80. Dextrocardia, mirror image
- 81. Chronic lung disease
- 82. Acute cor pulmonale including pulmonary embolus
- 83. Pericardial effusion
- 84. Acute pericarditis
- 85. Hypertrophic cardiomyopathy
- 86. Central nervous system disorder
- 87. Myxedema
- 88. Hypothermia
- 89. Sick sinus syndrome

PACEMAKER FUNCTION

- 90. Atrial or coronary sinus pacing
- 91. Ventricular demand pacemaker (VVI), normally functioning
- 92. Dual-chamber pacemaker (DDD), normally functioning
- 93. Pacemaker malfunction, not constantly capturing (atrium or ventricle)
- 94. Pacemaker malfunction, not constantly sensing (atrium or ventricle)

[Click here for illustrations](#)

Tips for ECG section

- Don't underestimate it!
- Pay attention to the clinical heading above each ECG. It often gives away the diagnosis.
 - Example: 60 yo woman with acute renal failure → hyperkalemia
- Generally know your electrolyte disorders
- Again, go through O'Keefe's book TWICE cover to cover
- Time is of the essence

Sources to use to prepare – MCQ's

- ACCSAP 6 (ACCSAP 7 is now available)
 - Great sections on valvular heart disease, adult congenital, arrhythmias and EP (including drugs)
 - 264 practice questions are high-yield, very representative of MCQ's on the boards
- Mayo Clinic Cardiology Review (Murphy)
 - Great sections for physical exam, valvular heart disease, congenital, EP
 - Old editions (1 and 2) are good for the MCQ's at end of each chapter; 3rd edition does not have MCQ's
- Braunwald board Review question book
 - Questions are difficult but it is a great review with well referenced answers
- Cleveland Clinic Board Review book
 - Questions are okay, but there are some errors

Tips for MCQ sections

- Know your class I and your class III recommendations
- Focus on common diagnostic and therapeutic problems that may be presented in a complex manner, rather than the zebras
- Themes of emphasis may differ from year to year (devices and HF management; pregnancy and heart disease; congenital heart disease management)
- There may be curve ball questions that the ABIM is trying out – don't be psyched out

Sources to use to prepare – images

- Mayo Clinic Cardiology Review
 - Study the atlas of all images well (echo, cath, v-grams, EP tracings, hemodynamic tracings, CXR's)
- Echo Manual (Oh et al, from Mayo)
 - Nice compendium of still-frame echo images
- Mayo Clinic DVD series

Sources to use to prepare – board review courses

- Not necessary (I didn't take one)
- Expensive (registration and hotel > \$2000)
- Mayo Board Review course – content is excellent, format is geared towards the Boards specifically
- Mayo Clinic Board Review DVD's – same content as the actual course, many fellows swear by these DVD's. Allot ample time if you plan to go through all of them (over 40 hours of content).
- ACC Board review course – a thorough review of general cardiology, but not targeted to boards format

Sources to use to prepare – other

- Be very familiar with the tutorial materials that the ABIM releases (don't wait for them to send you by mail; some people reportedly got nothing in the mail)
- Go to the website www.abim.org to download sample cases, and the online tutorial
- ACC website – sample MCQ's and answers
 - http://www.acc.org/education/programs/brochures/question/questions_0902.htm
 - http://www.acc.org/education/programs/brochures/question/answers_0902.htm

Pitfalls

- Not being familiar with the ABIM tutorial materials (go to www.abim.org; don't wait to receive sample test material in the mail)
- Underestimating the ECG part of the Boards (prepare well, know the coding sheet, don't overcode, and keep track of time)
- Overuse of the electronic calipers for ECG section (time-sink). I barely used them.
- Not studying imaging coding sheets in advance
- Not budgeting your time properly during the exam
- Not registering early to take the test locally

Final tips

- Take Boards as soon as you are eligible – don't wait
- Don't let the testing center people or computer glitches get to you
- Don't overcode the ECG's and imaging section
- Suggest starting to prepare at least 3 months in advance where you can set aside some days each week and some weekends to study
- You don't need to be a genius to pass. Have a study plan and stick to it.

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Questions???

