Cardiovascular Disease Blueprint

Certification Examination (CERT)

Blueprint for the Full-Day, Multiple-Choice Questions Component of the Exam:

Purpose of the exam

The exam is designed to evaluate the knowledge, diagnostic reasoning, and clinical judgment skills expected of the certified cardiovascular disease specialist in the broad domain of the discipline. The ability to make appropriate diagnostic and management decisions that have important consequences for patients will be assessed. The exam may require recognition of common as well as rare clinical problems for which patients may consult a certified cardiovascular disease specialist.

Exam content

Exam content is determined by a pre-established blueprint, or table of specifications. The blueprint is developed by ABIM and is reviewed annually and updated as needed for currency. Trainees, training program directors, and certified practitioners in the discipline are surveyed periodically to provide feedback and inform the blueprinting process.

The primary medical content categories of the blueprint are shown below, with the percentage assigned to each for a typical exam:

Medical Content Category	% of Exam
Arrhythmias	15%
Coronary Artery Disease	21.5%
Heart Failure and Cardiomyopathy	17%
Valvular Disease	15%
Pericardial Disease	4%
Congenital Heart Disease	5%
Vascular Diseases	6%
Systemic Hypertension and Hypotension	7.5%
Pulmonary Circulation Disorders	3%
Systemic Disorders Affecting the Circulatory System	4%
Normal Cardiovascular Anatomy and Physiology	2%
	100%

Exam questions in the content areas above may also address clinical topics in:

- Preventive and rehabilitative cardiology
- Cardiovascular disease in women
- Geriatric cardiovascular disease
- Preoperative assessment for noncardiac surgery
- Postoperative cardiac care
- Critical care medicine, cardiovascular surgery, and general internal medicine as encountered in the practice of cardiology (including some general pediatrics with an emphasis on adolescent medicine)

ABIM is committed to working toward health equity and believes that board-certified physicians should have an understanding of health care disparities. Therefore, health equity content that is clinically important to each discipline will be included in assessments, and the use of gender, race, and ethnicity identifiers will be re-evaluated.

Exam format

The exam is composed of up to 240 single-best-answer multiple-choice questions, of which approximately 40 are new questions that do not count in the examinee's score. Most questions describe patient scenarios and ask about the work done (that is, tasks performed) by physicians in the course of practice:

- Making a diagnosis
- Ordering and interpreting results of tests
- Recommending treatment or other patient care
- Assessing risk, determining prognosis, and applying principles from epidemiologic studies
- Understanding the underlying pathophysiology of disease and basic science knowledge applicable to patient care

Some questions require interpretation of pictorial material including electrocardiograms, intracardiac electrograms, hemodynamic recordings, chest radiographs, photomicrographs, and imaging studies such as coronary angiograms, echocardiograms, ventriculograms, myocardial perfusion studies, computed tomograms, magnetic resonance images, and intravascular ultrasound images. Some questions may also require recognition and interpretation of recorded heart sounds. Learn more information on how exams are developed.

A tutorial including examples of ABIM exam question format can be found at http://www.abim.org/certification/exam-information/cardiovascular-disease/exam-tutorial.aspx.

The blueprint can be expanded for additional detail as shown below. Each of the medical content categories is listed there, and below each major category are the content subsections and specific topics that *may* appear in the exam. Please note: actual exam content may vary.

Arrhythmias	**15%** of Exam
Atrioventricular conduction disease	<2%
Atrioventricular block, 1st degree	
Atrioventricular block, 2nd degree	
Atrioventricular block, complete	
Left bundle branch block	
Right bundle branch block	
Left anterior fascicular block	
Left posterior fascicular block	
Sinus node dysfunction	<2%
Sinus bradycardia	
Sinus pauses	
Bradycardia-tachycardia syndrome	
Supraventricular arrhythmias	2%
Atrioventricular nodal reentrant tachycardia	
Pre-excitation syndromes (including Wolff-Parkinson-White)	
Atrioventricular reciprocating tachycardia	
Ventricular arrhythmias	2%
Ventricular tachycardia, monomorphic	
Ventricular tachycardia, polymorphic	
With prolonged Q-T interval	
Without prolonged Q-T interval	
Ventricular fibrillation (including idiopathic and non-idiopathic varieties)	
Premature ventricular complexes	
Atrial arrhythmias	3.5%
Atrial fibrillation	
Atrial flutter	
Atrial tachycardia	
Ectopic atrial rhythms	
Premature atrial contractions	
Channelopathies	<2%
Long Q-T, congenital or acquired	
Brugada syndrome	
Early repolarization	

Sudden cardiac death	<2%
Syncope	<2%
Pacemaker and ICD function	<2%
Antiarrhythmic drug effects	<2%

Coronary Artery Disease	**21.5%** of Exam

Angina pectoris	5%
Unstable angina	
Vasospastic angina	
Angina equivalent	
Exertional angina	
Angina with microvascular disease	
Chronic ischemic heart disease	5%
Coronary atherosclerosis	
Remote myocardial infarction	
Aneurysm of the heart	
Coronary artery aneurysm	
Silent myocardial ischemia	
Acute myocardial infarction	9.5%
STEMI of the anterior wall	
STEMI of the inferior wall	
Right ventricular involvement	
STEMI of the lateral wall	
STEMI of the posterior wall (including inferoposterior wall)	
Type I Non-STEMI	
Type II myocardial infarction	
Spontaneous coronary artery dissection	
STEMI, other	
Early complications following acute myocardial infarction	<2%
Ventricular septal rupture	
Rupture of the cardiac wall	
Rupture of papillary muscle	
Postinfarction angina	
Postinfarction arrhythmias	
Left ventricular pseudoaneurysm	
Dynamic left ventricular outflow tract obstruction	
Postinfarction systolic heart failure	
Atypical angina or noncardiac chest pain	<2%

Heart Failure and Cardiomyopathy	**17%** of Exam
Heart failure	7%
Acute decompensated ventricular failure	
Systolic heart failure (heart failure with reduced ejection fraction)	
Diastolic heart failure (heart failure with preserved ejection fraction)	
Heart failure with improved ejection fraction	
Cardiogenic shock	
Cardiomyopathies	8%
Dilated cardiomyopathies	
Hypertrophic cardiomyopathies	
Restrictive and infiltrative cardiomyopathies	
Chemotherapy-related cardiomyopathy	
Stress-induced cardiomyopathy (Takotsubo syndrome)	
Myocarditis	
Noncompaction cardiomyopathy	
Arrhythmogenic right ventricular dysplasia	
Transplanted heart	<2%
Mechanical circulatory support	<2%

Valvular Disease	**15%** of Exam
Mitral valve disorders	5.5%
Mitral valve regurgitation, native	
Mitral valve stenosis, native	
Mitral valve prolapse, native	
Prosthetic mitral valve	
Systolic anterior motion	
Aortic valve disorders	4.5%
Aortic valve regurgitation, native	
Aortic valve stenosis, native	
Prosthetic aortic valve	
Tricuspid valve disorders	<2%
Tricuspid valve regurgitation, native	
Tricuspid valve stenosis, native	
Prosthetic tricuspid valve	

Pulmonary valve disorders	<2%
Pulmonary valve regurgitation, native	
Pulmonary valve stenosis, native	
Prosthetic pulmonary valve	
Endocarditis	2%
Cardiac murmurs and other cardiac sounds	<2%

Pericardial Disease — **4%** of Exam

Acute pericarditis	<2%
Chronic pericarditis (including relapsing)	<2%
Pericardial constriction and effusion	<2%
Pericardial effusion	
Cardiac tamponade	
Constrictive pericarditis	
Effusive-constrictive pericarditis	
Abnormalities of the pericardium	<2%

Congenital Heart Disease — **5%** of Exam

Congenital malformations of cardiac chambers and connections	<2%
Complete transposition of the great vessels	
Corrected transposition of the great vessels	
Tricuspid atresia	
Anomalous origin or course of coronary artery	
Tetralogy of Fallot	
Congenital malformations of cardiac septa	<2%
Ventricular septal defect	
Atrial septal defect	
Patent foramen ovale	
Atrioventricular septal defect	
Congenital malformations of pulmonary and tricuspid valves	<2%
Congenital pulmonary valve stenosis	
Ebstein anomaly	
Congenital malformations of aortic and mitral valves	<2%
Other congenital malformations of the heart	<2%
Dextrocardia	
Congenital heart block	

Congenital malformations of the great arteries	<2%
Patent ductus arteriosus	
Coarctation of the aorta	
Aneurysm of the sinus of Valsalva	
Congenital malformation of the aortic arch	
Pulmonary artery malformation	
Congenital malformations of the great veins	<2%
Persistent left superior vena cava	
Anomalous pulmonary venous connections	
Congenital disorders with cardiovascular implications	<2%
Eisenmenger syndrome	<2%

Vascular Diseases — **6%** of Exam

Cerebrovascular diseases	<2%
Cerebral infarction, including cardiovascular manifestations	
Extracranial cervical (carotid and vertebral)	
Subclavian steal syndrome with vertebral artery steal	
Carotid artery dissection	
Diseases of the arteries, arterioles, and capillaries	3%
Peripheral atherosclerosis	
Aortic aneurysm and dissection	
Raynaud's phenomenon	
Thromboangiitis obliterans (Buerger's disease)	
Claudication	
Acute limb ischemia	
Critical limb ischemia	
Atheroembolism	
Septic arterial embolism	
Polyarteritis nodosa	
Mucocutaneous lymph node syndrome (Kawasaki disease)	
Takayasu arteritis	
Giant cell arteritis with polymyalgia rheumatica	
Mesenteric arterial insufficiency	
Subclavian steal syndrome with internal mammary artery steal	
Fibromuscular dysplasia	
Diseases of the veins, lymphatic vessels, and lymph nodes	<2%
Deep vein thrombosis	
Portal vein thrombosis	

Iliac vein compression syndrome (May-Thurner syndrome)
Varicose veins of the lower extremities
Chronic venous insufficiency
Chronic idiopathic venous hypertension
Lymphedema

Systemic Hypertension and Hypotension — **7.5%** of Exam

Hypertensive diseases 7%
- Essential (primary) hypertension
- Hypertensive heart disease
- Hypertensive chronic kidney disease
- Severe or resistant hypertension
- Urgent/emergent hypertension
- Secondary hypertension
- Hypertension in pregnancy

Hypotensive diseases <2%
- Hypotensive syndrome
- Drug-induced hypotension

Pulmonary Circulation Disorders — **3%** of Exam

Pulmonary embolism <2%
- Pulmonary embolism with acute cor pulmonale
- Pulmonary embolism without acute cor pulmonale
- Chronic pulmonary embolism

Pulmonary hypertension <2%
- Pulmonary arterial hypertension (WHO Group 1)
- Pulmonary hypertension associated with other diseases (WHO Groups 2–5)

Systemic Disorders Affecting the Circulatory System — **4%** of Exam

Musculoskeletal and connective tissue <2%
- Systemic lupus erythematosus
- Systemic sclerosis

Endocrine, nutritional, metabolic, and hematologic disorders <2%
- Dyslipidemias

- Diabetes
- Obesity
- Electrolyte and endocrine abnormalities
- Hematologic disorders

Renal disorders <2%

Injury and poisoning <2%

- Toxic effects of alcohol
- Toxic effects of tobacco and nicotine
- Toxic effects of drugs other than alcohol and tobacco
- Anaphylactic shock
- Angioedema

Cardio-Oncology <2%

- Cardiovascular effects of pharmacological cancer therapy
- Cardiovascular effects of radiation therapy
- Neoplasms
  - Malignant neoplasm of the heart and pericardium
  - Benign neoplasms (including myxoma, fibroma, and fibroelastoma)

Normal Cardiovascular Anatomy and Physiology	**2%** of Exam

January 2025

Blueprint for the Half-Day, Electrocardiograms and Imaging Studies Component of the Exam:

Purpose of the exam

The exam is designed to evaluate the abilities expected of the certified cardiovascular disease specialist to interpret electrocardiograms and imaging studies. The ability to make appropriate diagnostic decisions that have important consequences for patients will be assessed. The exam may require recognition of common as well as rare clinical problems for which patients may consult a certified cardiovascular disease specialist.

Exam content

Exam content is determined by a pre-established blueprint, or table of specifications. The blueprint is developed by ABIM and is reviewed annually and updated as needed for currency. Trainees, training program directors, and certified practitioners in the discipline are surveyed periodically to provide feedback and inform the blueprinting process.

The content categories of the blueprint are shown below, with the percentage assigned to each for a typical exam:

Content Category	% of Exam
Electrocardiograms	48%
Echocardiograms	37%
Coronary Angiograms	15%
	100%

The exam is composed of up to 75 questions, of which approximately 10 are new questions that do not count in the examinee's score. Special question formats are used in this exam, requiring diagnostic interpretation of electrocardiograms, echocardiograms, and coronary angiograms. The format comprises a brief patient description and one (or multiple) images. To see examples of the answer options lists, view the Sample Cases - Electrocardiograms and Imaging Studies.

The interactive exam tutorial and ECG and Imaging Studies tutorial allows you to practice navigating the answer option lists.

The blueprint can be expanded for additional detail as shown below. Each of the content categories is listed there, and below each major category are the content subsections and specific topics that *may* appear in the exam. Please note: actual exam content may vary.

Electrocardiograms	**48%** of Exam
General features	2.5 %
P wave abnormalities	<2%
Rhythms	10.5%
Atrial rhythms	
Atrioventricular junctional rhythms	
Ventricular rhythms	
Atrioventricular conduction	6%
Abnormal QRS voltage or axis	3%
Ventricular hypertrophy	<2%
Intraventricular conduction	4.5%
Myocardial infarction	7.5%
S-T, T, and U wave abnormalities	4.5%
Clinical disorders	5%
Pacemaker function	3%

Echocardiograms	**37%** of Exam
Left ventricular size, function, and structure	11%
Right ventricular size, function, and structure	<2%
Diseases of the atria	<2%
Valvular heart disease	11%
Cardiomyopathy	4%
Systemic disease	<2%
Pulmonary disease	<2%
Diseases of the aorta	2%
Pericardial and pleural diseases	3%
Congenital heart disease	<2%

Coronary Angiograms	**15%** of Exam
Normal	<2%
Stenoses	3%
Insignificant stenosis	
Moderate stenosis	
Severe stenosis	
Total occlusion	
Filled by collateral vessels	<2%
Spasm	<2%
Thrombus	<2%
Myocardial bridge	<2%
Anomalous origin	<2%
Fistula	<2%
Aneurysm	<2%
Bypass graft	<2%
Dissection	<2%
Stents	<2%
Patent stent	
Occluded stent	

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