

ABIM invites diplomates to help develop the Cardiovascular Disease MOC exam blueprint

Based on feedback from physicians that MOC assessments should better reflect what they see in practice, in 2016 the American Board of Internal Medicine (ABIM) invited certified cardiovascular disease specialists to provide ratings of the relative frequency and importance of blueprint topics in practice.

This review process, which resulted in a new MOC exam blueprint, will be used on a periodic basis to inform and update all MOC assessments created by ABIM, including the Knowledge Check-In introduced in 2019. No matter what form ABIM's assessments ultimately take, they will need to be informed by front-line clinicians sharing their perspective on what is important to know.

A sample of over 500 cardiovascular disease specialists, similar to the total invited population of cardiovascular disease specialists in age, gender, geographic region of practice, and time spent in direct patient care, provided the blueprint topic ratings. The ABIM Cardiovascular Disease Exam Committee and Cardiovascular Board have used this feedback to update the blueprint for MOC assessments (beginning with the Fall 2016 administration of the 10-year MOC exam).

To inform how exam content should be distributed across the major blueprint content categories, ABIM considered the average respondent ratings of topic frequency and importance in each of the content categories. A second source of information was the relative frequency of patient conditions seen in these categories by certified cardiovascular disease specialists as documented by national health care data (described further under *Content distribution* below).

To determine prioritization of specific exam content within each major medical content category, ABIM used the respondent ratings of topic frequency and importance to set thresholds for these parameters in the exam assembly process (described further under *Detailed content outline* below).

Purpose of the Cardiovascular Disease MOC exam

MOC assessments are designed to evaluate whether a certified cardiovascular disease specialist has maintained competence and currency in the knowledge and judgment required for practice. The MOC assessments emphasize diagnosis and management of prevalent conditions, particularly in areas where practice has changed in recent years. As a result of the blueprint review by ABIM diplomates, MOC assessments place less emphasis on rare conditions and focus more on situations in which physician intervention can have important consequences for patients. For conditions that are usually managed by other specialists, the focus is on recognition rather than on management.

Exam format

The ten-year MOC exam contains up to 220 single-best-answer multiple-choice questions, of which up to 50 are new questions that do not count in the examinee's score. The Knowledge Check-In is composed of up to 90 single-best-answer multiple-choice questions, of which a small portion are new questions that do not count in the examinee's score (more information on how exams are developed can be found at abim.org/about/exam-information/exam-development.aspx). Examinees taking the traditional ten-year MOC exam or Knowledge Check-In will have access to an external resource (e.g., UpToDate®) for the entire exam. Most questions describe patient scenarios and ask about the work done (that is, tasks performed) by physicians in the course of practice:

- **Diagnosis:** making a diagnosis or identifying an underlying condition
- **Testing:** ordering tests for diagnosis, staging, or follow-up
- **Treatment/Care Decisions:** recommending treatment or other patient care
- **Risk Assessment/Prognosis/Epidemiology:** assessing risk, determining prognosis, and applying principles from epidemiologic studies
- **Pathophysiology/Basic Science:** understanding the pathophysiology of disease and basic science knowledge applicable to patient care

Clinical scenarios presented take place in outpatient or inpatient settings as appropriate to a typical cardiovascular disease practice. 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 images, computed tomographs, magnetic resonance images, and intravascular ultrasound images. Some questions may also require recognition and interpretation of recorded heart sounds. Tutorials for the traditional ten-year MOC exam and for the Knowledge Check-In, including examples of ABIM exam question format, can be found at abim.org/maintenance-of-certification/exam-information/cardiovascular-disease/exam-tutorial.aspx.

Content distribution

Listed below are the major medical content categories that define the domain for the Cardiovascular Disease ten-year MOC exam and the Knowledge Check-In. The relative distribution of content is expressed as a percentage of the total exam. To determine the content distribution, ABIM considered the average respondent ratings of topic frequency and importance. To cross-validate these self-reported ratings, ABIM also considered the relative frequency of conditions seen in Medicare patients by a cohort of certified cardiovascular disease specialists. Informed by these data, the Cardiovascular Disease Exam Committee and Cardiovascular Board have determined the medical content category targets shown below.

MEDICAL CONTENT CATEGORY	Target %
Arrhythmias	15%
Coronary Artery Disease	21.5%
Heart Failure and Cardiomyopathy	19%
Valvular Disease	15%
Pericardial Disease	3%
Congenital Heart Disease	3%
Vascular Diseases	5%
Systemic Hypertension and Hypotension	8.5%
Pulmonary Circulation Disorders	3%
Systemic Disorders Affecting the Circulatory System	7%
Total	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)

How the blueprint ratings are used to assemble the MOC exam

Blueprint reviewers provided ratings of relative frequency in practice for each of the detailed content topics in the blueprint and provided ratings of the relative importance of the topics for each of the tasks described in *Exam format* above. In rating importance, reviewers were asked to consider factors such as the following:

- High risk of a significant adverse outcome
- Cost of care and stewardship of resources
- Common errors in diagnosis or management
- Effect on population health
- Effect on quality of life
- When failure to intervene by the physician deprives a patient of significant benefit

Frequency and importance were rated on a three-point scale corresponding to low, medium, or high. The median importance ratings are reflected in the *Detailed content outline* below. The Cardiovascular Disease Exam Committee and Cardiovascular Board, in partnership with the physician community, have set the following parameters for selecting MOC exam questions according to the blueprint review ratings:

- At least 88% of exam questions will address high-importance content (indicated in green)
- No more than 12% of exam questions will address medium-importance content (indicated in yellow)
- No exam questions will address low-importance content (indicated in red).

Independent of the importance and task ratings, no more than 18% of exam questions will address low-frequency content (indicated by “LF” following the topic description).

The content selection priorities below are applicable beginning with the Fall 2016 MOC exam and are subject to change in response to future blueprint review.

Note: The same topic may appear in more than one medical content category.

Detailed content outline for the Cardiovascular Disease MOC exam and Knowledge Check-In

✔ – **High Importance:** At least 88% of exam questions will address topics and tasks with this designation.

⚡ – **Medium Importance:** No more than 12% of exam questions will address topics and tasks with this designation.

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ARRHYTHMIAS (15% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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ATRIOVENTRICULAR CONDUCTION DISEASE (<2% of exam)

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 LF	⚡	⚡	⚡	⚡	⚡

SINUS NODE DYSFUNCTION (<2% of exam)

Sinus bradycardia	✔	✔	✔	✔	⚡
Sinus pauses	✔	✔	✔	⚡	⚡
Bradycardia-tachycardia syndrome	✔	✔	✔	✔	⚡

SUPRAVENTRICULAR ARRHYTHMIAS (2% of exam)

Atrioventricular reentrant nodal tachycardia	✔	✔	✔	✔	⚡
Pre-excitation syndromes (including Wolff-Parkinson-White) LF	✔	✔	✔	✔	⚡
Atrioventricular reciprocating tachycardia LF	⚡	⚡	✔	⚡	⚡

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ARRHYTHMIAS <i>continued...</i> (15% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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VENTRICULAR ARRHYTHMIAS (2% of exam)

Ventricular tachycardia, monomorphic	✔	✔	✔	✔	✔
Ventricular tachycardia, polymorphic					
With prolonged Q-T interval	✔	✔	✔	✔	✔
Without prolonged Q-T interval	✔	✔	✔	✔	⚡
Ventricular fibrillation (including idiopathic and non-idiopathic varieties) LF	✔	✔	✔	✔	✔
Premature ventricular complex	✔	✔	✔	✔	✔

ATRIAL ARRHYTHMIAS (3.5% of exam)

Paroxysmal atrial fibrillation	✔	✔	✔	✔	✔
Persistent atrial fibrillation	✔	✔	✔	✔	✔
Permanent atrial fibrillation	✔	✔	✔	✔	✔
Typical atrial flutter (Type I)	✔	✔	✔	✔	✔
Atypical atrial flutter (Type II)	✔	✔	✔	✔	⚡
Atrial tachycardia	✔	✔	✔	✔	⚡
Ectopic atrial rhythms	⚡	⚡	⚡	⚡	⚡

CHANNELOPATHIES (<2% of exam)

Long Q-T syndrome LF	✔	✔	✔	✔	⚡
Brugada syndrome LF	✔	✔	✔	✔	⚡
Early repolarization syndrome	⚡	⚡	⚡	⚡	⚡

SUDDEN CARDIAC DEATH (<2% of exam)

Sudden cardiac death	✔	✔	✔	✔	✔
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ARRHYTHMIAS <i>continued...</i> (15% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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SYNCOPE (<2% of exam)

Syncope	✔	✔	✔	✔	✔
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PACEMAKER AND ICD FUNCTION (<2% of exam)

Pacemaker and ICD function	✔	✔	✔	✔	✔
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ANTIARRHYTHMIC DRUG EFFECTS (<2% of exam)

Antiarrhythmic drug effects	✔	✔	✔	✔	✔
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CORONARY ARTERY DISEASE (21.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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ANGINA PECTORIS (5% of exam)

Unstable angina	✔	✔	✔	✔	✔
Vasospastic angina LF	✔	✔	✔	✔	⚠
Angina equivalent	✔	✔	✔	✔	⚠
Exertional angina	✔	✔	✔	✔	✔
Angina with microvascular disease	✔	✔	✔	✔	✔

CHRONIC ISCHEMIC HEART DISEASE (5% of exam)

Coronary atherosclerosis	✔	✔	✔	✔	✔
Remote myocardial infarction	✔	✔	✔	✔	⚠
Aneurysm of the heart LF	✔	✔	✔	⚠	⚠
Coronary artery aneurysm LF	⚠	⚠	⚠	⚠	⚠
Silent myocardial ischemia	✔	✔	✔	✔	⚠

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CORONARY ARTERY DISEASE <i>continued...</i> (21.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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ACUTE MYOCARDIAL INFARCTION (9.5% of exam)

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 LF	✔	✔	✔	✔	✔
STEMI, other	✔	✔	✔	✔	✔

EARLY COMPLICATIONS FOLLOWING ACUTE MYOCARDIAL INFARCTION (<2% of exam)

Ventricular septal rupture LF	✔	✔	✔	✔	⚠
Rupture of the cardiac wall LF	✔	✔	✔	✔	⚠
Rupture of papillary muscle LF	✔	✔	✔	✔	⚠
Postinfarction angina	✔	✔	✔	✔	⚠
Postinfarction arrhythmias	✔	✔	✔	✔	✔
Left ventricular pseudoaneurysm LF	✔	✔	✔	✔	⚠
Dynamic left ventricular outflow tract obstruction LF	✔	✔	✔	✔	⚠
Postinfarction systolic heart failure	✔	✔	✔	✔	✔

ATYPICAL CHEST PAIN (<2% of exam)

Atypical chest pain	✔	✔	✔	✔	⚠
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HEART FAILURE AND CARDIOMYOPATHY (19% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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HEART FAILURE (9% of exam)

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% of exam)

Dilated cardiomyopathies	✔	✔	✔	✔	⚠
Hypertrophic cardiomyopathies	✔	✔	✔	✔	⚠
Restrictive and infiltrative cardiomyopathies	LF	✔	✔	⚠	⚠
Chemotherapy-related cardiomyopathy	LF	✔	✔	⚠	⚠
Stress-induced cardiomyopathy (takotsubo syndrome)		✔	✔	✔	⚠
Myocarditis	LF	✔	✔	✔	⚠
Noncompaction cardiomyopathy	LF	⚠	⚠	⚠	⚠
Arrhythmogenic right ventricular dysplasia	LF	✔	✔	✔	⚠

TRANSPLANTED HEART (<2% of exam)

Transplanted heart	LF	⚠	⚠	⚠	⚠	✘
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MECHANICAL CIRCULATORY SUPPORT (<2% of exam)

Mechanical circulatory support	LF	✔	✘	⚠	✘	✘
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VALVULAR DISEASE (15% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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MITRAL VALVE DISORDERS (5.5% of exam)

Mitral valve regurgitation, native	✔	✔	✔	✔	⚠
Mitral valve stenosis, native	✔	✔	✔	✔	⚠
Mitral valve prolapse, native	✔	✔	✔	✔	⚠
Prosthetic mitral valve	✔	✔	✔	✔	⚠

AORTIC VALVE DISORDERS (4.5% of exam)

Aortic valve regurgitation, native	✔	✔	✔	✔	⚠
Aortic valve stenosis, native	✔	✔	✔	✔	⚠
Prosthetic aortic valve	✔	✔	✔	✔	⚠

TRICUSPID VALVE DISORDERS (<2% of exam)

Tricuspid valve regurgitation, native	✔	✔	⚠	⚠	⚠
Tricuspid valve stenosis, native	⚠	⚠	⚠	⚠	✘
Prosthetic tricuspid valve	⚠	⚠	⚠	⚠	✘

PULMONARY VALVE DISORDERS (<2% of exam)

Pulmonary valve regurgitation, native	⚠	⚠	⚠	⚠	✘
Pulmonary valve stenosis, native	⚠	⚠	⚠	⚠	✘
Prosthetic pulmonary valve	⚠	⚠	⚠	✘	✘

ENDOCARDITIS (2% of exam)

Endocarditis	✔	✔	✔	✔	⚠
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CARDIAC MURMURS AND OTHER CARDIAC SOUNDS (<2% of exam)

Cardiac murmurs and other cardiac sounds	✔	✔	✔	✔	⚠
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PERICARDIAL DISEASE (3% of exam)		Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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ACUTE PERICARDITIS (<2% of exam)

Acute pericarditis		✔	✔	✔	✔	⚠
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CHRONIC PERICARDITIS (INCLUDING RELAPSING) (<2% of exam)

Chronic pericarditis (including relapsing)	LF	⚠	⚠	✔	⚠	⚠
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PERICARDIAL CONSTRICTION AND EFFUSION (<2% of exam)

Pericardial effusion		✔	✔	✔	✔	⚠
Cardiac tamponade	LF	✔	✔	✔	✔	✔
Constrictive pericarditis	LF	✔	✔	✔	⚠	⚠
Effusive-constrictive pericarditis	LF	✔	✔	⚠	⚠	⚠

ABNORMALITIES OF THE PERICARDIUM (<2% of exam)

Abnormalities of the pericardium	LF	✘	✘	✘	✘	✘
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CONGENITAL HEART DISEASE (3% of exam)		Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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CONGENITAL MALFORMATIONS OF CARDIAC CHAMBERS AND CONNECTIONS (<2% of exam)

Complete transposition of the great vessels	LF	⚠	⚠	⚠	✘	✘
Corrected transposition of the great vessels	LF	⚠	⚠	⚠	✘	✘
Tricuspid atresia	LF	✘	✘	✘	✘	✘
Anomalous origin of coronary artery	LF	✘	✘	✘	✘	✘
Tetralogy of Fallot	LF	⚠	⚠	⚠	⚠	✘

CONGENITAL MALFORMATIONS OF CARDIAC SEPTA (<2% of exam)

Ventricular septal defect	LF	✔	⚠	⚠	⚠	⚠
Atrial septal defect		✔	✔	✔	⚠	⚠
Patent foramen ovale		✔	✔	✔	⚠	⚠
Atrioventricular septal defect	LF	⚠	⚠	⚠	⚠	✘

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CONGENITAL HEART DISEASE <i>continued...</i> (3% of exam)		Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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CONGENITAL MALFORMATIONS OF PULMONARY AND TRICUSPID VALVES (<2% of exam)

Congenital pulmonary valve stenosis	LF	⚠	⚠	⚠	✘	✘
Ebstein anomaly	LF	⚠	⚠	⚠	⚠	✘

CONGENITAL MALFORMATIONS OF AORTIC AND MITRAL VALVES (<2% of exam)

Congenital malformations of aortic and mitral valves		✔	✔	✔	✔	⚠
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OTHER CONGENITAL MALFORMATIONS OF THE HEART (<2% of exam)

Dextrocardia	LF	✘	✘	✘	✘	✘
Congenital heart block	LF	✘	✘	✘	✘	✘

CONGENITAL MALFORMATIONS OF THE GREAT ARTERIES (<2% of exam)

Patent ductus arteriosus	LF	⚠	⚠	⚠	✘	✘
Coarctation of the aorta	LF	⚠	⚠	⚠	⚠	✘
Aneurysm of the sinus of Valsalva	LF	✘	✘	✘	✘	✘
Congenital malformation of the aortic arch	LF	✘	✘	✘	✘	✘
Pulmonary artery malformation	LF	✘	✘	✘	✘	✘

CONGENITAL MALFORMATIONS OF THE GREAT VEINS (<2% of exam)

Persistent left superior vena cava	LF	✘	✘	✘	✘	✘
Anomalous pulmonary venous connections	LF	⚠	⚠	⚠	✘	✘

CONGENITAL DISORDERS WITH CARDIOVASCULAR IMPLICATIONS (<2% of exam)

Congenital disorders with cardiovascular implications		✔	✔	✔	⚠	⚠
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EISENMENGER SYNDROME (<2% of exam)

Eisenmenger syndrome	LF	⚠	⚠	⚠	⚠	⚠
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VASCULAR DISEASES (5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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CEREBROVASCULAR DISEASES (<2% of exam)

Cerebral infarction	✔	✔	✔	⚠	⚠
Extracranial cervical (carotid and vertebral)	✔	✔	✔	✔	⚠
Subclavian steal syndrome with vertebral artery steal	LF	⚠	⚠	⚠	✘
Carotid artery dissection	LF	⚠	⚠	⚠	✘

DISEASES OF THE ARTERIES, ARTERIOLES AND CAPILLARIES (3% of exam)

Peripheral atherosclerosis	✔	✔	✔	✔	⚠
Aortic aneurysm and dissection	✔	✔	✔	✔	⚠
Raynaud's phenomenon	LF	⚠	⚠	⚠	✘
Thromboangiitis obliterans (Buerger's disease)	LF	⚠	⚠	⚠	✘
Claudication	✔	✔	✔	✔	⚠
Acute limb ischemia	LF	✔	✔	✔	⚠
Critical limb ischemia	LF	✔	✔	✔	⚠
Atheroembolism	LF	✔	✔	⚠	⚠
Septic arterial embolism	LF	⚠	⚠	⚠	✘
Polyarteritis nodosa	LF	⚠	✘	✘	✘
Mucocutaneous lymph node syndrome (Kawasaki disease)	LF	⚠	✘	✘	✘
Takayasu arteritis	LF	⚠	⚠	⚠	✘
Giant cell arteritis with polymyalgia rheumatica	LF	⚠	⚠	⚠	✘
Mesenteric arterial insufficiency	LF	⚠	⚠	⚠	✘
Subclavian steal syndrome with internal mammary artery steal	LF	⚠	⚠	⚠	⚠
Fibromuscular dysplasia	LF	✔	✔	✔	✘

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⚠ – **Medium Importance:** No more than 12% of exam questions will address topics and tasks with this designation.

✘ – **Low Importance:** No exam questions will address topics and tasks with this designation.

LF – Low Frequency: No more than 18% of exam questions will address topics with this designation, regardless of task or importance.

VASCULAR DISEASES <i>continued...</i> (5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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DISEASES OF THE VEINS, LYMPHATIC VESSELS, AND LYMPH NODES (<2% of exam)

Deep vein thrombosis	✔	✔	✔	✔	⚠
Portal vein thrombosis	LF ✘	✘	✘	✘	✘
Iliac vein compression syndrome (May-Thurner syndrome)	LF ⚠	⚠	✘	✘	✘
Varicose veins of the lower extremities	⚠	⚠	⚠	✘	✘
Chronic venous insufficiency	⚠	⚠	⚠	⚠	⚠
Chronic idiopathic venous hypertension	LF ✘	✘	✘	✘	✘
Lymphedema	LF ⚠	⚠	⚠	✘	✘

SYSTEMIC HYPERTENSION AND HYPOTENSION (8.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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HYPERTENSIVE DISEASES (8% of exam)

Essential (primary) hypertension	✔	✔	✔	✔	✔
Hypertensive heart disease	✔	✔	✔	✔	✔
Hypertensive chronic kidney disease	✔	✔	✔	⚠	⚠
Severe or resistant hypertension	✔	✔	✔	✔	⚠
Malignant hypertension	✔	✔	✔	✔	⚠
Secondary hypertension	LF ✔	✔	✔	⚠	⚠
Hypertension in pregnancy	LF ⚠	⚠	⚠	⚠	⚠

HYPOTENSIVE DISEASES (<2% of exam)

Hypotensive syndromes	✔	✔	✔	✔	⚠
Drug-induced hypotension	✔	✔	✔	✔	⚠

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PULMONARY CIRCULATION DISORDERS (3% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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PULMONARY EMBOLISM (<2% of exam)

Pulmonary embolism with acute cor pulmonale	✔	✔	✔	✔	⚠
Pulmonary embolism without acute cor pulmonale	✔	✔	✔	✔	⚠
Chronic pulmonary embolism LF	✔	✔	✔	⚠	⚠

PULMONARY HYPERTENSION (<2% of exam)

Pulmonary arterial hypertension (WHO Group 1)	✔	✔	⚠	⚠	⚠
Pulmonary hypertension associated with other diseases (WHO Groups 2-5)	✔	✔	✔	⚠	⚠

SYSTEMIC DISORDERS AFFECTING THE CIRCULATORY SYSTEM (7% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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MUSCULOSKELETAL AND CONNECTIVE TISSUE (<2% of exam)

Systemic lupus erythematosus LF	⚠	⚠	⚠	⚠	✘
Systemic sclerosis LF	⚠	⚠	⚠	⚠	✘

ENDOCRINE, NUTRITIONAL, METABOLIC, AND HEMATOLOGIC DISORDERS (4% of exam)

Dyslipidemias	✔	✔	✔	✔	⚠
Diabetes	✔	✔	✔	✔	⚠
Obesity	✔	✔	✔	✔	⚠
Electrolyte and endocrine abnormalities	✔	✔	✔	✔	⚠
Hematologic disorders	⚠	⚠	⚠	⚠	⚠

RENAL DISORDERS (<2% of exam)

Renal disorders	✔	⚠	⚠	⚠	⚠
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SYSTEMIC DISORDERS AFFECTING THE CIRCULATORY SYSTEM <i>continued...</i> (7% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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INJURY AND POISONING (<2% of exam)

Toxic effects of alcohol		⚠	⚠	⚠	⚠	✘
Toxic effects of drugs other than alcohol and tobacco	LF	⚠	⚠	⚠	⚠	⚠
Toxic effects of tobacco and nicotine		✔	✔	✔	✔	⚠
Anaphylactic shock	LF	✔	⚠	✔	⚠	⚠
Angioedema	LF	✔	⚠	⚠	⚠	⚠

CARDIO-ONCOLOGY (<2% of exam)

Cardiovascular effect of pharmacological cancer therapy	LF	✔	✔	✔	⚠	⚠
Cardiovascular effect of radiation therapy	LF	⚠	⚠	⚠	⚠	⚠
Neoplasms						
Malignant neoplasm of the heart and pericardium	LF	⚠	⚠	⚠	⚠	✘
Benign neoplasms (including myxoma, fibroma, and fibroelastoma)	LF	⚠	⚠	⚠	⚠	⚠