



CLINICAL CARDIAC ELECTROPHYSIOLOGY Blueprint

For traditional, 10-year Maintenance of Certification (MOC) exam

ABIM invites diplomates to help develop the Clinical Cardiac Electrophysiology 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 all certified electrophysiologists 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 an ongoing basis to inform and update all MOC assessments created by ABIM. 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 160 electrophysiologists, similar to the total invited population of electrophysiologists in age, gender, time spent in direct patient care, and geographic region of practice, provided the blueprint topic ratings. ABIM used this feedback to update the blueprint for the MOC assessment (beginning with the Fall 2017 administration).

To inform how assessment 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.

To determine prioritization of specific assessment 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 Clinical Cardiac Electrophysiology MOC Assessment

The MOC assessment is designed to evaluate whether a certified electrophysiologist has maintained competence and currency in the knowledge and judgment required for practice. The assessment emphasizes 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, the MOC assessment places less emphasis on rare conditions and focuses more on situations in which physician intervention can have important consequences for patients. For conditions that are usually managed by other specialists, the focus will be on recognition rather than on management.

Assessment format

The assessment contains up to 190 single-best-answer multiple-choice questions, of which up to 45 are new questions that do not count in the examinee's score. Examinees taking the traditional, 10-year MOC exam will have access to an external resource (i.e., UpToDate®) for the entire exam. More information on how assessments are developed can be found at abim.org/about/exam-information/exam-development.aspx.

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

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.

Clinical scenarios presented take place in outpatient or inpatient settings as appropriate to a typical electrophysiology practice. Clinical information may include pictorial material, radiographs, electrocardiograms, echocardiograms, venograms, fluoroscopy images, and other media to illustrate relevant patient findings.

A tutorial, including examples of ABIM assessment question format, can be found at abim.org/maintenance-of-certification/exam-information/clinical-cardiac-electrophysiology/exam-tutorial.aspx.

Content distribution

Listed below are the major medical content categories that define the domain for the Clinical Cardiac Electrophysiology traditional, 10-year MOC exam. The relative distribution of content is expressed as a percentage of the total assessment. To determine the content distribution, ABIM considered the average respondent ratings of topic frequency and importance. Informed by these data, the Clinical Cardiac Electrophysiology Approval Committee and Cardiovascular Board have determined the medical content category targets shown below.

| CONTENT CATEGORY | TARGET % |
|---|-------------|
| Basic Physiology, Anatomy, Pharmacology, and Genetics | 10% |
| Clinical Arrhythmias: Core Concepts | 6% |
| Clinical Arrhythmias: Bradycardias | 6% |
| Clinical Arrhythmias: Atrial | 14% |
| Clinical Arrhythmias: Supraventricular Tachycardias | 17% |
| Clinical Arrhythmias: Ventricular | 17% |
| Devices | 22% |
| Clinical Scenarios and Syndromes | 8% |
| Total | 100% |

How the blueprint ratings are used to assemble the MOC assessment

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 *Assessment 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 Clinical Cardiac Electrophysiology Approval Committee and Cardiovascular Board, in partnership with the physician community, have set the following parameters for selecting MOC assessment questions according to the blueprint review ratings:

- At least 75% of questions will address high-importance content (indicated in green)
- No more than 25% of 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 20% of questions will address low-frequency content (indicated by “LF” following the topic description).

The content selection priorities below are applicable beginning with the Fall 2017 traditional, 10-year 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 Clinical Cardiac Electrophysiology traditional, 10-year MOC exam

| | | |
|--|--|--|
|  – High Importance: At least 75% of questions will address topics and tasks with this designation. |  – Medium Importance: No more than 25% of questions will address topics and tasks with this designation. |  – Low Importance: No questions will address topics and tasks with this designation. |
| LF – Low Frequency: No more than 20% of questions will address topics with this designation, regardless of task or importance. | | |

| BASIC PHYSIOLOGY, ANATOMY, PHARMACOLOGY, AND GENETICS (10% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---|------------------|----------------|--------------------------------------|---|---|
|---|------------------|----------------|--------------------------------------|---|---|

CELLULAR ELECTROPHYSIOLOGY (<2% of exam)

| | | | | | |
|---------------------------|----|---|----------------|---|---|
| Action potentials | LF | Not Applicable | |  |  |
| Ion channels and currents | LF |  | Not Applicable | |  |
| Receptors | LF | Not Applicable | | |  |
| Gap junctions | | Not Applicable | | |  |

CARDIAC ANATOMY (<2% of exam)

| | | | | | |
|-----------------|----------------|--|--|--|---|
| Cardiac anatomy | Not Applicable | | | |  |
|-----------------|----------------|--|--|--|---|

CARDIAC TISSUE PHYSIOLOGY (5% of exam)

| | | | | | |
|--|---|----------------|---|----------------|---|
| Refractory periods | Not Applicable | | | |  |
| Neuronal control – sympathetic nervous system and catecholamines | Not Applicable | | | |  |
| Atrioventricular (AV) and ventriculoatrial (VA) conduction delay and block |  | Not Applicable |  | Not Applicable |  |
| Mechanisms of arrhythmias |  | Not Applicable | | |  |
| Electrical and structural remodeling | Not Applicable | | | |  |
| Repolarization – dispersion and reserve | Not Applicable | | | |  |
| Other physiologic phenomena (retrograde block, ACE inhibitors, fractionated electrograms, pseudonormalization) |  | Not Applicable | | |  |

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| BASIC PHYSIOLOGY, ANATOMY, PHARMACOLOGY, AND GENETICS <i>continued...</i> (10% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|--|-----------|---------|------------------------------|--|-----------------------------------|
|--|-----------|---------|------------------------------|--|-----------------------------------|

PHARMACOLOGY (3% of exam)

| | | | | | |
|-------------------------------------|---|----------------|---|----------------|---|
| Pharmacokinetics | ⚠ | Not Applicable | ✔ | Not Applicable | ⚠ |
| Use and reverse use dependence | ⚠ | Not Applicable | | | ⚠ |
| Properties of antiarrhythmic agents | ✔ | Not Applicable | ✔ | Not Applicable | ✔ |

GENETICS (<2% of exam)

| | | | | | |
|------------------|----------------|---|----------------|--|---|
| Ion channels | Not Applicable | | | | ⚠ |
| Non-ion channels | ⚠ | ⚠ | Not Applicable | | ⚠ |

| CLINICAL ARRHYTHMIAS: CORE CONCEPTS (6% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|--|-----------|---------|------------------------------|--|-----------------------------------|
|--|-----------|---------|------------------------------|--|-----------------------------------|

RECOGNITION OF ARTIFACT (<2% of exam)

| | | | | | |
|-------------------------|---|---|---|----------------|--|
| Recognition of artifact | ✔ | ✔ | ✔ | Not Applicable | |
|-------------------------|---|---|---|----------------|--|

PACING, SIGNAL RECORDING, AND MAPPING SYSTEMS (ELECTROPHYSIOLOGY LABORATORY) (<2% of exam)

| | | | | | |
|--|----------------|---|----------------|--|--|
| Pacing, signal recording, and mapping systems (electrophysiology laboratory) | Not Applicable | ✔ | Not Applicable | | |
|--|----------------|---|----------------|--|--|

NONINVASIVE TESTING (2% of exam)

| | | | | | |
|--|---|----------------|---|----------------|----------------|
| Indications | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Tilt-table testing | ⚠ | Not Applicable | | | |
| Interpretation of wide QRS tachycardias | ✔ | Not Applicable | ✔ | Not Applicable | ✔ |
| Ambulatory electrocardiographic monitoring | ✔ | Not Applicable | | | |

INVASIVE ELECTROPHYSIOLOGIC TESTING (2% of exam)

| | | | | | |
|-----------------|---|----------------|---|---|----------------|
| Indications | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Interpretations | ✔ | ✔ | ✔ | ✔ | ✔ |

BIOPHYSICS OF ABLATION (<2% of exam)

| | | | | | |
|------------------------|----------------|---|----------------|--|--|
| Biophysics of ablation | Not Applicable | ⚠ | Not Applicable | | |
|------------------------|----------------|---|----------------|--|--|

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| CLINICAL ARRHYTHMIAS: CORE CONCEPTS <i>continued...</i> (6% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---|-----------|---------|------------------------------|--|-----------------------------------|
|---|-----------|---------|------------------------------|--|-----------------------------------|

TRANSEPTAL CATHETERIZATION AND PERICARDIAL ACCESS (<2% of exam)

| | | | | | |
|--|----------------|---|---|----------------|--|
| Transseptal catheterization and pericardial access | Not Applicable | ✔ | ✔ | Not Applicable | |
|--|----------------|---|---|----------------|--|

CARDIAC AND INTRACARDIAC IMAGING (<2% of exam)

| | | | | | |
|----------------------------------|---|----------------|---|----------------|--|
| Cardiac and intracardiac imaging | ✔ | Not Applicable | ✔ | Not Applicable | |
|----------------------------------|---|----------------|---|----------------|--|

| CLINICAL ARRHYTHMIAS: BRADYCARDIAS (6% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---|-----------|---------|------------------------------|--|-----------------------------------|
|---|-----------|---------|------------------------------|--|-----------------------------------|

SINUS NODE DYSFUNCTION (<2% of exam)

| | | | | | |
|------------------------|---|----------------|---|----------------|---|
| Sinus node dysfunction | ✔ | Not Applicable | ✔ | Not Applicable | ✔ |
|------------------------|---|----------------|---|----------------|---|

AV BLOCK (4% of exam)

| | | | | | |
|---------------------|---|---|---|---|---|
| AV nodal block | ✔ | ✔ | ✔ | ✔ | ✔ |
| Infranodal AV block | ✔ | ✔ | ✔ | ✔ | ✔ |

ESCAPE AND ACCELERATED RHYTHMS (<2% of exam)

| | | | | | |
|--------------------------------|---|----------------|---|----------------|--|
| Escape and accelerated rhythms | ✔ | Not Applicable | ✔ | Not Applicable | |
|--------------------------------|---|----------------|---|----------------|--|

| CLINICAL ARRHYTHMIAS: ATRIAL (14% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|--|-----------|---------|------------------------------|--|-----------------------------------|
|--|-----------|---------|------------------------------|--|-----------------------------------|

ATRIAL FIBRILLATION (6% of exam)

| | | | | | |
|------------------------------------|----------------|----------------|---|----------------|----------------|
| Mechanism and etiology | Not Applicable | | | | ✔ |
| ECG monitors and remote monitoring | ✔ | Not Applicable | ✔ | Not Applicable | |
| Pharmacologic treatment | Not Applicable | | ✔ | Not Applicable | |
| Postoperative atrial fibrillation | Not Applicable | | ✔ | ✔ | Not Applicable |
| Stroke prevention | Not Applicable | | ✔ | ✔ | Not Applicable |

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| CLINICAL ARRHYTHMIAS: ATRIAL <i>continued...</i> (14% of exam) | | | | | |
|--|-----------|---------|------------------------------|--|-----------------------------------|
| | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |

ATRIAL FIBRILLATION *continued...* (6% of exam)

| | | | | | |
|----------------------|----------------|---|---|----------------|----------------|
| Cardioversion | Not Applicable | | ✔ | ✔ | Not Applicable |
| Catheter ablation | ✔ | ✔ | ✔ | Not Applicable | ✔ |
| Surgical ablation | Not Applicable | | ⚡ | Not Applicable | |
| AV junction ablation | Not Applicable | | ✔ | Not Applicable | |

ATRIAL FLUTTER (4% of exam)

| | | | | | |
|--|----------------|----------------|---|----------------|----------------|
| ECG monitors and remote monitoring | ✔ | Not Applicable | | | ✔ |
| Pharmacologic treatment | Not Applicable | | ✔ | Not Applicable | |
| Stroke prevention | Not Applicable | | ✔ | ✔ | Not Applicable |
| Cardioversion | Not Applicable | | ✔ | ✔ | Not Applicable |
| Cavotricuspid isthmus (CTI) dependent atrial flutter | ✔ | Not Applicable | ✔ | Not Applicable | ✔ |
| Atypical right atrial flutter | ✔ | Not Applicable | ✔ | Not Applicable | |
| Atypical left atrial flutter | ✔ | ✔ | ✔ | Not Applicable | ✔ |

FOCAL ATRIAL TACHYCARDIAS (4% of exam)

| | | | | | |
|------------------------------------|----------------|----------------|---|----------------|----------------|
| ECG monitors and remote monitoring | ✔ | Not Applicable | ✔ | Not Applicable | ✔ |
| Pharmacologic treatment | Not Applicable | | ✔ | Not Applicable | |
| Catheter ablation | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |

| CLINICAL ARRHYTHMIAS: SUPRAVENTRICULAR TACHYCARDIAS (17% of exam) | | | | | |
|--|-----------|---------|------------------------------|--|-----------------------------------|
| | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |

ACCESSORY PATHWAY SYNDROMES (11% of exam)

| | | | | | |
|--|----------------|----------------|---|----------------|---|
| ECG monitors and remote monitoring | ✔ | Not Applicable | ✔ | ✔ | ✔ |
| Pharmacologic treatment | Not Applicable | | ✔ | Not Applicable | |
| Electrophysiologic studies in ventricular preexcitation | ✔ | Not Applicable | | | ✔ |
| Electrophysiologic studies in orthodromic AVRT (typical and atypical pathways) | ✔ | ✔ | ✔ | ✔ | ✔ |

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| CLINICAL ARRHYTHMIAS: SUPRAVENTRICULAR TACHYCARDIAS <i>continued...</i> (17% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---|-----------|---------|------------------------------|--|-----------------------------------|
|---|-----------|---------|------------------------------|--|-----------------------------------|

ACCESSORY PATHWAY SYNDROMES *continued...* (11% of exam)

| | | | | | |
|---|---|-----------------------|---|-----------------------|---|
| Electrophysiologic studies in antidromic AVRT (typical and atypical pathways) | ✔ | ✔ | ✔ | <i>Not Applicable</i> | ✔ |
| Ablation of accessory pathways | ✔ | <i>Not Applicable</i> | ✔ | ✔ | ✔ |
| Fasciculoventricular pathways LF | ⚠ | <i>Not Applicable</i> | | | |
| Multiple pathways LF | ✔ | <i>Not Applicable</i> | | | |

AV NODAL REENTRY TACHYCARDIA (AVNRT) (5% of exam)

| | | | | | |
|---|---|---|---|---|---|
| Typical AVNRT (ECGs, pharmacologic treatment, intracardiac recordings, and ablation) | ✔ | ✔ | ✔ | ✔ | ✔ |
| Atypical AVNRT (ECGs, pharmacologic treatment, intracardiac recordings, and ablation) | ✔ | ✔ | ✔ | ✔ | ✔ |

JUNCTIONAL TACHYCARDIAS (<2% of exam)

| | | | | | |
|---|-----------------------|-----------------------|---|-----------------------|--|
| ECG monitors and remote monitoring | ✔ | <i>Not Applicable</i> | | | |
| Pharmacologic treatment LF | <i>Not Applicable</i> | | ⚠ | <i>Not Applicable</i> | |
| Interpretation of electrophysiology recordings | ⚠ | <i>Not Applicable</i> | ⚠ | <i>Not Applicable</i> | |
| Ablation LF | <i>Not Applicable</i> | | ⚠ | <i>Not Applicable</i> | |

MULTIPLE SVT MECHANISMS (<2% of exam)

| | | | | | |
|--|-----------------------|-----------------------|---|-----------------------|--|
| ECG monitors and remote monitoring | ✔ | <i>Not Applicable</i> | | | |
| Pharmacologic treatment | <i>Not Applicable</i> | | ✔ | <i>Not Applicable</i> | |
| Interpretation of electrophysiology recordings | ✔ | <i>Not Applicable</i> | | | |
| Ablation | <i>Not Applicable</i> | | ✔ | <i>Not Applicable</i> | |

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| CLINICAL ARRHYTHMIAS: VENTRICULAR (17% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---|-----------|---------|------------------------------|--|-----------------------------------|
|---|-----------|---------|------------------------------|--|-----------------------------------|

ECGS AND AMBULATORY MONITORING (4% of exam)

| | | | | | |
|---|---|----------------|---|----------------|---|
| Ambulatory monitor recordings | ✔ | Not Applicable | | | |
| ECG localization – premature ventricular complexes (PVC) and VT | ✔ | Not Applicable | ✔ | Not Applicable | ⚡ |

CORE CONCEPTS (5.5% of exam)

| | | | | | |
|---|----------------|----------------|---|----------------|---|
| Indications for invasive electrophysiologic studies | ✔ | Not Applicable | ✔ | ✔ | ⚡ |
| Interpretation of intracardiac recordings | ✔ | Not Applicable | ✔ | Not Applicable | |
| Pharmacologic treatment | Not Applicable | ✔ | ✔ | Not Applicable | |
| Principles of entrainment | ✔ | ✔ | ✔ | Not Applicable | ✔ |

VENTRICULAR TACHYCARDIAS AND ISCHEMIC HEART DISEASE (2% of exam)

| | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|
| Physiology | Not Applicable | | | | ⚡ |
| Endocardial ablation | ✔ | Not Applicable | ✔ | Not Applicable | ✔ |
| Epicardial ablation | LF | ⚡ | Not Applicable | ⚡ | Not Applicable |
| Arrhythmias in patients with a left ventricular assist device (LVAD)* | LF | ⚡ | Not Applicable | ⚡ | Not Applicable |
| Hemodynamic support during ablation* | LF | ⚡ | Not Applicable | ⚡ | Not Applicable |

VENTRICULAR TACHYCARDIAS AND NONISCHEMIC CARDIOMYOPATHY (<2% of exam)

| | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|
| Physiology | Not Applicable | | | | ✔ |
| Endocardial ablation | ✔ | Not Applicable | ✔ | Not Applicable | ⚡ |
| Epicardial ablation | LF | ⚡ | Not Applicable | ⚡ | ⚡ |
| Arrhythmias in patients with a left ventricular assist device (LVAD)* | LF | ⚡ | Not Applicable | ⚡ | Not Applicable |
| Hemodynamic support during ablation* | LF | ⚡ | Not Applicable | ⚡ | Not Applicable |

VENTRICULAR TACHYCARDIAS AND PREMATURE VENTRICULAR COMPLEXES AND THE NORMAL HEART (3% of exam)

| | | | | | |
|----------------------|----|----------------|----------------|----------------|----------------|
| Physiology | ✔ | Not Applicable | ✔ | ✔ | ⚡ |
| Endocardial ablation | ✔ | Not Applicable | ✔ | Not Applicable | |
| Epicardial ablation | LF | ⚡ | Not Applicable | ⚡ | Not Applicable |

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| CLINICAL ARRHYTHMIAS: VENTRICULAR <i>continued...</i> (17% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|--|-----------|---------|------------------------------|--|-----------------------------------|
|--|-----------|---------|------------------------------|--|-----------------------------------|

VENTRICULAR FIBRILLATION AND POLYMORPHIC VENTRICULAR TACHYCARDIAS (<2% of exam)

| | | | | | |
|---|----------------|----------------|---|----------------|----------------|
| Physiology | Not Applicable | | | | ✔ |
| ECG monitors and remote monitoring | ✔ | Not Applicable | ✔ | Not Applicable | |
| Pharmacologic treatment | Not Applicable | | ✔ | Not Applicable | |
| Bradycardia-dependent | ✔ | Not Applicable | ✔ | Not Applicable | |
| Drug-induced | ✔ | Not Applicable | ✔ | Not Applicable | |
| Ischemic | ✔ | Not Applicable | ✔ | Not Applicable | |
| Indications for invasive electrophysiologic studies | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Ablation LF | ⚡ | Not Applicable | ⚡ | Not Applicable | |

| DEVICES (22% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---------------------------------|-----------|---------|------------------------------|--|-----------------------------------|
|---------------------------------|-----------|---------|------------------------------|--|-----------------------------------|

GENERAL CONCEPTS (<2% of exam)

| | | | | | |
|--|----------------|----------------|---|----------------|----------------|
| Electromagnetic interference | ✔ | Not Applicable | | | |
| Biophysics and bioengineering LF | Not Applicable | ⚡ | ⚡ | Not Applicable | |
| Lead extraction | Not Applicable | | ✔ | ✔ | Not Applicable |
| Infection | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Automatic external and wearable defibrillators | ✔ | ⚡ | ⚡ | ⚡ | Not Applicable |

PACEMAKERS (7% of exam)

| | | | | | |
|----------------------------|----------------|----------------|---|----------------|----------------|
| Indications | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Implantation techniques | Not Applicable | | ✔ | Not Applicable | |
| Programming and follow-up | ✔ | Not Applicable | ✔ | Not Applicable | |
| Complications | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Leadless pacing* LF | ⚡ | Not Applicable | ⚡ | Not Applicable | |

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| DEVICES <i>continued...</i> (22% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---|-----------|---------|------------------------------|--|-----------------------------------|
|---|-----------|---------|------------------------------|--|-----------------------------------|

IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR (ICD) THERAPY (8% of exam)

| | | | | | |
|---|---|----------------|---|----------------|----------------|
| Indications | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Implantation techniques | | Not Applicable | ✔ | Not Applicable | |
| ECG monitors and remote monitoring | ✔ | Not Applicable | ✔ | Not Applicable | |
| Programming | ✔ | Not Applicable | ✔ | Not Applicable | |
| Follow-up | ✔ | Not Applicable | ✔ | ✔ | ✔ |
| Complications | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Subcutaneous implantable defibrillator* | ✔ | Not Applicable | ✔ | Not Applicable | |

CARDIAC RESYNCHRONIZATION (5% of exam)

| | | | | | |
|------------------------------------|----------------|----------------|---|----------------|----------------|
| Indications | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Implantation techniques | Not Applicable | ✔ | ✔ | Not Applicable | |
| ECG monitors and remote monitoring | ✔ | Not Applicable | ✔ | Not Applicable | |
| Programming | ✔ | Not Applicable | ✔ | Not Applicable | |
| Leads | ✔ | Not Applicable | ✔ | Not Applicable | |
| Follow-up | ✔ | Not Applicable | ✔ | ✔ | Not Applicable |
| Complications | ✔ | ✔ | ✔ | Not Applicable | |

INSERTABLE LOOP RECORDERS (<2% of exam)

| | | | | | |
|---------------------------|---|----------------|---|----------------|--|
| Insertable loop recorders | ✔ | Not Applicable | ✔ | Not Applicable | |
|---------------------------|---|----------------|---|----------------|--|

✔ – **High Importance:** At least 75% of questions will address topics and tasks with this designation.

⚠ – **Medium Importance:** No more than 25% of questions will address topics and tasks with this designation.

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

LF – Low Frequency: No more than 20% of questions will address topics with this designation, regardless of task or importance.

| CLINICAL SCENARIOS AND SYNDROMES (8% of exam) | Diagnosis | Testing | Treatment/ Care Decisions | Risk Assessment/ Prognosis/ Epidemiology | Pathophysiology/ Basic Science |
|---|------------------|----------------|--------------------------------------|---|---|
|---|------------------|----------------|--------------------------------------|---|---|

COMMON SCENARIOS (2% of exam)

| | | | | | |
|-------------------------------|----------------|---|---|---|----------------|
| Syncope | ✔ | ✔ | ✔ | ✔ | Not Applicable |
| Palpitations | ✔ | ✔ | ✔ | ✔ | Not Applicable |
| Sudden cardiac death | ✔ | ✔ | ✔ | ✔ | Not Applicable |
| Ethics | Not Applicable | | ✔ | ⚠ | Not Applicable |
| Manage advisories and recalls | Not Applicable | ⚠ | ✔ | ✔ | ⚠ |

SPECIFIC SYNDROMES (6% of exam)

| | | | | | | |
|---|----|---|----------------|---|---|----------------|
| Long QT syndrome | LF | ✔ | ✔ | ✔ | ✔ | ⚠ |
| Brugada syndrome | LF | ✔ | ✔ | ✔ | ✔ | ⚠ |
| Catecholaminergic polymorphic VT | LF | ✔ | ✔ | ✔ | ✔ | ⚠ |
| Hypertrophic cardiomyopathy | | ✔ | ✔ | ✔ | ✔ | ⚠ |
| Arrhythmogenic right ventricular cardiomyopathy | LF | ✔ | ✔ | ✔ | ✔ | ⚠ |
| Dilated cardiomyopathy | | ✔ | Not Applicable | ✔ | ✔ | ✔ |
| Sarcoidosis | LF | ✔ | Not Applicable | ✔ | ✔ | ⚠ |
| Other arrhythmia substrates (musculoskeletal, short QT syndrome, early repolarization syndrome) | LF | ⚠ | ⚠ | ⚠ | ⚠ | ⚠ |
| Arrhythmias in pregnancy | LF | ✔ | ⚠ | ✔ | ⚠ | Not Applicable |
| Arrhythmias in athletes | | ✔ | ✔ | ✔ | ⚠ | Not Applicable |
| Congenital heart disease | LF | ⚠ | ⚠ | ⚠ | ⚠ | Not Applicable |