

2024 Electrophysiology Study (EPS)

Cardiology

CARD-CEPS-HH

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Electrophysiology Study (EPS)



NCD 20.11

See also, **NCD 20.11**: Intraoperative Ventricular Mapping at <https://www.cms.gov/medicare-coverage-database/search.aspx> if applicable to individual's healthplan membership.



NCD 20.12

See also, **NCD 20.12**: Diagnostic Endocardial Electrical Stimulation (Pacing) at <https://www.cms.gov/medicare-coverage-database/search.aspx> if applicable to individual's healthplan membership.



NCD 20.13

See also, **NCD 20.13**: HIS Bundle Study at <https://www.cms.gov/medicare-coverage-database/search.aspx> if applicable to individual's healthplan membership.

EPS Guideline

An electrophysiology study (EPS) is considered medically appropriate when the documentation demonstrates **ANY** of the following: [10] [2] [15] [13] [5]

1. Atrial fibrillation or atrial flutter that terminated spontaneously (eg, within 7 days or within 48 hours or less of electrical or pharmacological cardioversion) and **ALL** of the following: [8]
 - a. Cardiac ablation is planned.
 - b. Symptoms status is **EITHER** of the following:
 - i. Asymptomatic and individual is treatment resistant **OR** medical treatment is **NOT** tolerated.
 - ii. Symptomatic (eg, severe fatigue, near-syncope or syncope) **AND** at least 1 antiarrhythmic treatment medication attempted with poor response/intolerance **OR** antiarrhythmic is **contraindicated**.
2. Atrial flutter is recurrent and **ALL** of the following: [8]

- a. Antiarrhythmic medication (at least 1) was attempted with poor response/intolerance.
 - b. Cardiac ablation is planned.
3. Atrioventricular (AV) nodal reentrant tachycardia (AVNRT) **AND** a catheter ablation is planned.
4. AV block is known and prior testing was non-diagnostic or indeterminate. [14]
5. Bifascicular block or bundle branch block with unexplained syncope [14] [9]
6. Bradycardia is suspected with symptoms **AND** initial non-invasive evaluation is non-diagnostic (eg, ambulatory electrocardiographic monitoring, ECG, echocardiogram [ECHO], tilt table testing) or indeterminate. [9]
7. Cardiac arrest and/or structural heart disease is suspected and initial evaluation is non-diagnostic or indeterminate. (***NOTE:** *Initial evaluation may include:* 12-lead electrocardiogram [ECG], echocardiography, signal-averaged ECG, cardiac magnetic resonance [MR], provocative exercised-based or pharmacological tests, with or **WITHOUT** ventricular biopsy, with or without genetic testing) [3] [17]
8. Cardiac sarcoidosis, with syncopal episode is known **AND** arrhythmic etiology is suspected. [1]
9. Congenital heart disease and evaluation needed for **ANY** of the following: [9] [16] [4]
 - a. Arrhythmias that may be life threatening.
 - b. Arrhythmogenic right ventricular cardiomyopathy
 - c. Cardiac arrest risk
 - d. Dilated cardiomyopathy (DCM) and sustained monomorphic ventricular tachycardia (VT), to guide a cardiac ablation procedure
 - e. Hypertrophic cardiomyopathy (HCM), candidate for cardiac ablation and **ANY** of the following:
 - i. Supraventricular tachycardia (SVT) (atrial flutter [AFL], atrial tachycardia [AT], AVNRT and accessory AV pathway-mediated tachycardias) is persistent or recurrent.
 - ii. Ventricular pre-excitation
 - iii. Ventricular tachycardia (VT), symptomatic, monomorphic and sustained (greater than 30 sec)
 - f. Intraprocedural therapeutic intervention is likely.
 - g. Sudden cardiac death that was resuscitated and individual is **WITHOUT** apparent structural heart disease.

- h. Spontaneous sustained ventricular tachycardia **AND** a cardiac ablation is planned.
 - i. Syncope is unexplained, with high-risk predisposing conditions associated with primary arrhythmias **OR** poorly tolerated atrial tachyarrhythmias (eg, significant systemic or single ventricular dysfunction, Tetralogy of Fallot, transposition of the great arteries with atrial switch surgery).
- 10. Muscular dystrophy is known, to identify conduction disorders. [7]
- 11. Ischemic heart disease with suspected arrhythmic cause, unexplained syncope **AND WITHOUT** an established indication for implantable cardioverter defibrillator (ICD)
- 12. Palpitation evaluation with **ALL** of the following:
 - a. Monitor (eg, event, Holter, implantable loop) does **NOT** demonstrate a documented cause.
 - b. Pulse inappropriately rapid at more than 100 beats per minute (BPM).
 - c. Syncope or near syncope
- 13. Post-antiarrhythmic surgery, to test for inducibility of ventricular tachycardia **OR** for implantable cardio-defibrillator (ICD) candidacy selection.
- 14. Structural heart disease is known, to assess the need for ICD.
- 15. SVT evaluation for proarrhythmic effect (new or increased occurrence of pre-existing arrhythmias) paradoxically precipitated by antiarrhythmic therapy.
- 16. SVT evaluation prior to a planned catheter ablation. [6] [11]
- 17. Tachycardia evaluation for **ANY** of the following: [17]
 - a. Premature ventricular contractions (PVC), couplets or non-sustained ventricular tachycardia and **EITHER** left ventricular ejection fraction (LVEF) is 40% or lower **OR** symptomatic and a candidate for catheter ablation.
 - b. Tachycardia with frequent or poorly tolerated episodes, that is medication resistant and heart monitor demonstrates a narrow complex tachycardia.
 - c. Tachycardia with infrequent episodes, that is medication resistant and cardiac ablation is planned (rather than pharmacologic treatment).
 - d. Ventricular tachycardia (VT), sustained monomorphic, is suspected and **ALL** of the following conditions are met: (***NOTE:** Preferred during procedure) [12]
 - i. Catheter ablation candidate
 - ii. ECG tracings are non-diagnostic or indeterminate.
 - iii. Symptomatic

- e. Wolff-Parkinson-White syndrome (WPW) or other accessory pathways for **ANY** of the following:
 - i. Asymptomatic with arrhythmic events (eg, atrial fibrillation) suspected.
 - ii. Cardiac arrest survival
 - iii. Catheter ablation treatment is planned.
 - iv. Treatment planning (eg, cardiac ablation)
 - v. **NO** cardiac arrest and unexplained syncope

EPS Procedure Codes

Table 1. Electrophysiology Study (EPS) Associated Procedure Codes

CODE	DESCRIPTION
93600	Bundle of His recording
93602	Intra-atrial recording
93603	Right ventricular recording
93610	Intra-atrial pacing
93612	Intraventricular pacing
93615	Esophageal recording of atrial electrogram with or without ventricular electrogram(s);
93616	Esophageal recording of atrial electrogram with or without ventricular electrogram(s); with pacing
93618	Induction of arrhythmia by electrical pacing
93619	Comprehensive electrophysiologic evaluation with right atrial pacing and recording, right ventricular pacing and recording, His bundle recording, including insertion and repositioning of multiple electrode catheters, without induction or attempted induction of arrhythmia
93620	Comprehensive electrophysiologic evaluation including insertion and repositioning of multiple electrode catheters with induction or attempted induction of arrhythmia; with right atrial pacing and recording, right ventricular pacing and recording, His bundle recording
93624	Electrophysiologic follow-up study with pacing and recording to test effectiveness of therapy, including induction or attempted induction of arrhythmia
93631	Intra-operative epicardial and endocardial pacing and mapping to localize the site of tachycardia or zone of slow conduction for surgical correction
93640	Electrophysiologic evaluation of single or dual chamber pacing cardioverter-defibrillator leads including defibrillation threshold evaluation (induction of arrhythmia, evaluation of sensing and pacing for arrhythmia termination) at time of initial implantation or replacement
93641	Electrophysiologic evaluation of single or dual chamber pacing cardioverter-defibrillator leads including defibrillation threshold evaluation (induction of arrhythmia, evaluation of sensing and pacing for arrhythmia termination) at time of initial implantation or replacement; with testing of single or dual chamber pacing cardioverter-defibrillator pulse generator
93642	Electrophysiologic evaluation of single or dual chamber transvenous pacing cardioverter-defibrillator (includes defibrillation threshold evaluation, induction of arrhythmia, evaluation of sensing and pacing for arrhythmia termination, and programming or reprogramming of sensing or therapeutic parameters)

CODE	DESCRIPTION
93644	Electrophysiologic evaluation of subcutaneous implantable defibrillator (includes defibrillation threshold evaluation, induction of arrhythmia, evaluation of sensing for arrhythmia termination, and programming or reprogramming of sensing or therapeutic parameters)
0577T	Electrophysiologic evaluation of implantable cardioverter-defibrillator system with substernal electrode (includes defibrillation threshold evaluation, induction of arrhythmia, evaluation of sensing for arrhythmia termination, and programming or reprogramming of sensing or therapeutic parameters)

EPS Summary of Changes

Electrophysiology study (EPS) clinical guidelines from 2023 to 2024 had the following version changes:

- Added the following to keep in line with current evidence:
 - "AV block is known"
 - "Muscular dystrophy"
- Citations updated per the evidence.

EPS Definitions

Ablation is a procedure performed in a cardiac catheterization laboratory during an electrophysiology study (EPS) for the purpose of destroying myocardial tissue by delivery of radio-frequency energy, electrical or cryo-energy. The procedure is used to correct heart arrhythmias.

Arrhythmogenic right ventricular cardiomyopathy (ARVC) is a form of heart disease that usually appears in adulthood. ARVC is a disorder of the myocardium, which is the muscular wall of the heart. This condition causes part of the myocardium to break down over time, increasing the risk of an abnormal heartbeat (arrhythmia) and sudden death.

Atrial fibrillation (AF) is a cardiac rhythm disorder characterized by uncontrolled atrial activation without effective atrial contraction. On the electrocardiogram (ECG), P waves are absent. AF is characterized by rapid oscillations or fibrillatory waves that vary in amplitude, shape and timing associated with an irregular ventricular response.

- **Paroxysmal AF** terminates spontaneously or with intervention within 7 days of onset. Episodes typically convert back to sinus rhythm within 48 hours.
- **Persistent AF** is continuous AF sustained beyond 7 days.

Atrial flutter is a rhythm disorder characterized by coordinated electrical activity in the atria, and the electrocardiogram (ECG) shows a saw tooth pattern of the flutter waves.

- Typical atrial flutter is localized to the right atrium.

- Atypical atrial flutter refers to atrial flutter arising in the left atrium.

Atrioventricular nodal reentry tachycardia (AVNRT) is a cardiac rhythm disorder due to a functional (slow or fast pathway) reentry circuit in or around the atrioventricular (AV) node. The most common electrocardiogram (ECG) pattern is a narrow QRS complex tachycardia without visible P waves and with regular RR intervals. AVNRT is the most common type of paroxysmal supraventricular tachycardia.

Atrioventricular reentrant tachycardia (AVRT) is an abnormal fast heart rhythm, classified as a type of supraventricular tachycardia (SVT). In AVRT an accessory pathway allows electrical signals from the heart's ventricles to enter the atria and cause earlier than normal contraction, which leads to repeated stimulation of the atrioventricular (AV) node.

Bifascicular block is a conduction disturbance below the atrioventricular (AV) node in which the right bundle branch and one of the two fascicles (anterior or posterior) of the left bundle branch are involved.

Bradycardia is a heart rate that is too slow. What is considered too slow can depend on age and physical condition. In general, for adults, a resting heart rate of fewer than 60 beats per minute (BPM) qualifies as bradycardia. Causes for bradycardia may include: problems with the sinoatrial (SA) node, sometimes called the heart's natural pacemaker, problems in the conduction pathways of the heart that do not allow electrical impulses to pass properly from the atria to the ventricles, metabolic problems (eg, hypothyroidism), damage to the heart from heart disease or heart attack, and certain heart medications that can cause the side effect of bradycardia.

Bundle branch block is a type of conduction disorder involving partial or complete interruption of the flow of electrical impulses through the right or left bundle branches. Normally, electrical impulses travel down the right and left branches of the ventricles at the same speed, allowing both ventricles to contract simultaneously. When there is a "block" in one of the branches, electrical signals have to take a different path through the ventricle and one ventricle contracts a fraction of a second slower than the other, causing an arrhythmia.

Bundle branch reentrant tachycardia is an uncommon form of ventricular tachycardia (VT) incorporating both bundle branches in the reentry circuit. This often occurs as a result of His-Purkinje disease associated with left ventricular (LV) enlargement and heart failure (HF). People typically present with presyncope, syncope or sudden death because of VT, with fast rates frequently more than 200 beats per minute.

Cardiac sarcoidosis is an inflammatory granulomatous disease that can affect the heart. Up to one-quarter of the population with systemic sarcoidosis may have evidence of cardiac involvement. The clinical manifestations of cardiac sarcoidosis (CS) include heart block, atrial arrhythmias, ventricular arrhythmias and heart failure.

Dilated cardiomyopathy is a condition in which the left ventricle, the heart's main pumping chamber, is enlarged (dilated). As the chamber gets bigger, its thick muscular wall stretches,

becoming thinner and weaker. This affects the heart's ability to pump enough oxygen-rich blood to the rest of the body.

Congenital heart disease (CHD) is a term for a variety of birth defects that affect heart anatomy and function. Congenital is defined as present since birth. CHD occurs when the heart, or blood vessels near the heart, do not develop normally. Common heart defects include: atrial septal defect, coarctation of the aorta, d-transposition of the great arteries, Ebstein's anomaly, patent ductus arteriosus, tetralogy of fallot, total anomalous pulmonary venous connection and ventricular septal defect.

Coronary artery disease (CAD) is caused by plaque buildup in the walls of the arteries that supply blood to the heart (called coronary arteries) and other parts of the body.

Cardiomyopathy is a disease of the heart muscle that makes it harder for the heart to pump blood to the rest of the body. Cardiomyopathy can lead to heart failure. The main types of cardiomyopathy include dilated, hypertrophic and restrictive cardiomyopathy.

Dilated cardiomyopathy is a condition in which the left ventricle, the heart's main pumping chamber, is enlarged (dilated). As the chamber gets bigger, its thick muscular wall stretches, becoming thinner and weaker. This affects the heart's ability to pump enough oxygen-rich blood to the rest of the body.

Echocardiogram (ECHO) is a test that uses high frequency sound waves (ultrasound) to make pictures of the heart. The test is also called echocardiography or diagnostic cardiac ultrasound. An echo uses sound waves to create pictures of the heart's chambers, valves, walls and the blood vessels (aorta, arteries, veins). A probe called a transducer is passed over the chest. The probe produces sound waves that bounce off the heart and "echo" back to the probe. These waves are changed into pictures viewed on a video monitor.

Electrocardiogram (ECG or EKG) is a test that measures and records the electrical activity of the heart. The ECG electrical activity is divided into the P wave, PR interval, QRS complex, QT interval, ST segment, T wave and U wave. An ECG is useful in establishing many cardiac diagnoses.

Electrophysiology study (EPS) is a minimally invasive procedure that evaluates the electrical conduction system of the heart to assess the electrical activity, conduction pathways and abnormal heart beats. During an EPS, the sinus rhythm, and supraventricular and ventricular arrhythmias of baseline cardiac intervals, are recorded. The study is indicated to investigate the cause, location of origin and best treatment (drug therapy, catheter ablation or implantable cardioverter-defibrillator), for various abnormal heart rhythms.

Hypertrophic cardiomyopathy (HCM) is any of several structural or functional diseases of heart muscle characterized by ventricular hypertrophy, especially of the left ventricle, which affects the interventricular septum more than the free ventricular wall, that may cause mitral insufficiency or obstructed left ventricle outflow, and that is symptomized chest pain, syncope and palpitations.

Left ventricular ejection fraction (LVEF), also known as ejection fraction (EF), measures the amount of blood the left ventricle of the heart pumps out to the body with each heartbeat.

Muscular dystrophy is a group of more than 30 genetic diseases characterized by progressive weakness and degeneration of the skeletal muscles that control movement.

Myocardial infarction (MI), also called a heart attack, occurs when the blood flow that brings oxygen to the heart muscle is severely reduced or cut off completely. The coronary arteries that supply the heart muscle with blood flow can become narrowed from a buildup of fat, cholesterol and other substances that together are called plaque. This process is known as atherosclerosis. When plaque within a coronary artery breaks, a blood clot forms around the plaque and can block the flow of blood through the artery to the heart muscle. Ischemia results when there is an inadequate blood supply to the heart muscle causing damage or death of part of the heart muscle, resulting in an MI.

Palpitations are rapid or irregular heartbeats that a person can feel.

Pre-excitation syndrome is a heart condition that causes the ventricles to activate too early. It's a congenital anomaly that occurs when an abnormal pathway conducts electrical impulses between the atria and ventricles. This pathway bypasses the atrioventricular node.

Premature ventricular contractions (PVC) are extra heartbeats that begin in one of the heart's two lower pumping chambers (ventricles), which disrupt the regular heart rhythm, sometimes causing a sensation of a fluttering or a skipped beat in the chest.

Right ventricular outflow tract (RVOT) is a tubular structure that extends from the tricuspid annulus to the pulmonary valve, directing blood flow from the right ventricle to the pulmonary artery.

Sudden cardiac death (SCD) occurs when the heart malfunctions and unexpectedly and suddenly stops beating due to electrical impulse problems. Myocardial infarction increases the risk of SCD. Conditions associated with SCD include arrhythmogenic right ventricular dysplasia (ARVD), long QT syndrome, hypertrophic obstructive cardiomyopathy (HOCM) or Brugada syndrome.

Supraventricular tachycardia (SVT) is a rapid rhythm with atrial and/or ventricular rates of more than 100 beat per minute (bpm) at rest, which originate and are sustained in atrial or atrioventricular node tissue above the bundle of His. The condition is caused by reentry phenomena or automaticity at or above the atrioventricular node and includes atrioventricular (AV) nodal reentrant tachycardia, atrioventricular reciprocating and atrial tachycardia.

Syncope is a transient loss of consciousness and postural tone (ability to maintain or change position intentionally) due to insufficient cerebral perfusion. The loss of consciousness is associated with prompt recovery, not needing resuscitation.

Tachycardia is an accelerated heart rate of more than 100 beats per minute in adults.

Tilt table test is a test to determine the cause of syncope by creating changes in posture from lying to standing; it consists of lying flat on a special bed or table with special safety belts and a footrest while connected to electrocardiogram (ECG) and blood pressure monitors.

Ventricular pre-excitation is a condition in which some or all of the ventricular muscle of the heart undergoes electrical activation (or depolarization) earlier, in relation to atrial events than would be expected, had the electrical impulses travelled normally by way of the atrioventricular (AV) conduction system.

Ventricular tachycardia (VT) is a rhythm disorder caused by abnormal electrical signals in the ventricles of the heart.

- **Monomorphic ventricular tachycardia** is ventricular tachycardia with stable QRS morphology.
- **Non-sustained ventricular tachycardia (NSVT)** is defined as 3 or more consecutive beats originating from the ventricle, lasting less than 30 seconds, at a rate more than 100 beats per minute (bpm).
- **Polymorphic ventricular tachycardia** is a ventricular rhythm, with a rate greater than 100 bpm with a varying QRS pattern that terminates spontaneously (causing syncope if lasting more than a few seconds) or will deteriorate into ventricular fibrillation, causing cardiac arrest.
- **Sustained ventricular tachycardia (SVT)** is defined as a ventricular rhythm more than 100 bpm (widened QRS complex with duration greater than 120 ms) lasting more than 30 seconds or requiring termination due to hemodynamic instability.

Wolff-Parkinson-White (WPW) is a congenital condition involving abnormal electrical conduction via an accessory pathway between the atria and the ventricles, which causes ventricular pre-excitation. The electrocardiogram (ECG) shows a short PR interval and a widened QRS with an initial delta wave, that reflects the accelerated ventricular contraction. WPW results in a predisposition to atrioventricular reentry tachycardia, atrial fibrillation and atrial flutter.

EPS References

- [1] Adhaduk, M., Paudel, B., . . . Giudici, M. (2021). The role of electrophysiology study in risk stratification of cardiac sarcoidosis patients: Meta-analyses and systemic review. *International Journal of Cardiology*, 349, 55-61.
- [2] Al-Khatib, S.M., Stevenson, W.G., . . . Page, R.L. (2018). 2017 AHA/ACC/HRS Guideline for Management of Patients With Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death. *Journal of the American College of Cardiology*, 72(14), e91-e220.
- [3] Al-Khatib, S.M., Yancy, C.W., . . . Varosy, P.D. (2017). 2017 2016 AHA/ACC Clinical Performance and Quality Measures for Prevention of Sudden Cardiac Death: A Report of the American College of Cardiology/American Heart Association Task Force on Performance Measures. *Journal of the American College of Cardiology*, 69(6), 712–744.

- [4] Baumgartner, H., De Backer, J., . . . Zeppenfeld, K. (2021). 2020 ESC Guidelines for the management of adult congenital heart disease. *European Heart Journal*, 42(6), 563-645.
- [5] Brignole, M., Moya, A., . . . van Dijk, J.G. (2018). 2018 ESC Guidelines for the diagnosis and management of syncope. *European Heart Journal*, 39(21), 1883-1948.
- [6] Brugada, J., Katriotis, D.G., . . . Zaza, A. (2020). 2019 ESC Guidelines for the management of patients with supraventricular tachycardia: The Task Force for the management of patients with supraventricular tachycardia of the European Society of Cardiology (ESC). *European Heart Journal*, 41(5), 655-720.
- [7] Cesar, S., Campuzano, O., . . . Sarquella-Brugada, G. (2023). Characterization of cardiac involvement in children with LMNA-related muscular dystrophy. *Frontiers in Cell and Developmental Biology*, 11, 1142937.
- [8] Joglar, J.A., Chung, M.K., . . . Van Wagoner, D.R. (2024). 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation. *Circulation*, 83(1), 110-278.
- [9] Kusumoto, F.M., Schoenfeld, M.H., . . . Varosy, P.D. (2018). 2018 ACC/AHA/HRS Guideline on the Evaluation and Management of Patients With Bradycardia and Cardiac Conduction Delay. *Circulation*, 140(8), e382-e482.
- [10] Muresan, L., Cismaru, G., . . . de Chillou, C. (2019). Recommendations for the use of electrophysiological study: Update 2018. *Hellenic Journal of Cardiology*, 60(2), 82-100.
- [11] Page, R.L., Joglar, J.A., . . . Al-Khatib, S.M. (2016). 2015 ACC/AHA/HRS guideline for the management of adult patients with supraventricular tachycardia: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *Circulation*, 133(14), e471-505.
- [12] Roberts, J.D., Gollob, M.H., . . . Scheinman, M.M. (2017). Bundle Branch Re-Entrant Ventricular Tachycardia: Novel Genetic Mechanisms in a Life-Threatening Arrhythmia. *JACC: Clinical Electrophysiology*, 3(3), 276-288.
- [13] Sandhu, R.K., Raj, S.R., . . . Sivilotti, M. (2020). Canadian Cardiovascular Society Clinical Practice Update on the Assessment and Management of Syncope. *Canadian Journal of Cardiology*, 36(8), 1167-1177.
- [14] Sheldon, R.S., Lei, L.Y., . . . Sandhu, R.K. (2021). Electrophysiology studies for predicting atrioventricular block in patients with syncope: A systematic review and meta-analysis. *Heart Rhythm*, 18(8), 1310-1317.
- [15] Shen, W.K., Sheldon, R.S., . . . Yancy, C.W. (2017). 2017 ACC/AHA/HRS guideline for the evaluation and management of patients with syncope. *Journal of the American College of Cardiology*, 70(5), e39-e110.
- [16] Stout, K.K., Daniels, C.J., . . . Van Hare, G.F. (2019). 2018 AHA/ACC Guideline for the Management of Adults With Congenital Heart Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*, 139(14), e698-e800.

- [17] Zeppenfeld, K., Tfelt-Hansen, J., . . . Volterrani, M. (2022). ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death. *European Heart Journal*, 43(40), 3997–4126.

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