

European Heart Rhythm Association

Certification in Invasive Cardiac Electrophysiology (EP)

Suggested reading list

Atrial arrhythmias

Spontaneous initiation of atrial fibrillation by ectopic beats originating in the pulmonary veins. *Haissaguerre M, Jais P, Shaw DC, Takahashi A, Hocini M, Quiniou G, Garrigue S, Le Mouroux A, Le Métayer P, Clémenty J.*

N Engl J Med. 1998;339:659–666

Treatment of atrial fibrillation with antiarrhythmic drugs or radiofrequency ablation: two systematic literature reviews and meta-analyses.

Calkins H, Reynolds MR, Spector P, Sondhi M, Xu Y, Martin A, Williams CJ, Sledge I.

Circ Arrhythm Electrophysiol. 2009 Aug;2(4):349-61.

Long-term results of catheter ablation in paroxysmal atrial fibrillation: lessons from a 5-year follow-up.

Ouyang F, Tilz R, Chun J, Schmidt B, Wissner E, Zerm T, Neven K, Köktürk B, Konstantinidou M, Metzner A, Fuernkranz A, Kuck KH.

Circulation. 2010 Dec 7;122(23):2368-77.

Mapping and ablation of left atrial tachycardias occurring after atrial fibrillation ablation.

Gerstenfeld EP, Marchlinski FE.

Heart Rhythm. 2007 Mar;4(3 Suppl):S65-72.

Long-term outcomes after catheter ablation of cavo-tricuspid isthmus dependent atrial flutter: a meta- analysis.

Pérez FJ, Schubert CM, Parvez B, Pathak V, Ellenbogen KA, Wood MA.

Circ Arrhythm Electrophysiol. 2009 Aug;2(4):393-401. Epub 2009 Jun 23.

Catheter ablation of atrial fibrillation: randomized controlled trials and registries, a look back and the view forward.

Santangeli P, Di Biase L, Pelargonio G, Dello Russo A, Casella M, Sanchez J, Horton R, Gallinhouse GJ, Natale A.

J Interv Card Electrophysiol. 2011 Jun;31(1):69-80.

Systematic review: comparative effectiveness of radiofrequency catheter ablation for atrial fibrillation.

Terasawa T, Balk EM, Chung M, Garlitski AC, Alsheikh-Ali AA, Lau J, IpS.

Ann Intern Med. 2009 Aug 4;151(3):191-202.

Antiarrhythmic drug therapy for atrial fibrillation.

Zimetbaum P.

Circulation. 2012 Jan 17;125(2):381-9.

Contemporary management of atrial flutter.

Wellens H.

Circulation. 2002;106:649-52.

Subclinical atrial fibrillation and the risk of stroke.

Healey JS, Connolly SJ, Gold MR, Israel CW, Van Gelder IC, Capucci A, Lau CP, Fain E, Yang S, Bailleul C, Morillo CA, Carlson M, Themeles E, Kaufmann ES, Hohnloser SH.

N Engl J Med. 2012;366:120-9.

Ventricular arrhythmias & sudden cardiac death

Linear ablation lesions for control of unmappable ventricular tachycardia in patients with ischemic and nonischemic cardiomyopathy.

Marchlinski FE, Callans DJ, Gottlieb CD, Zado E.

Circulation. 2000 Mar 21;101(11):1288-96.

Nonsurgical transthoracic epicardial catheter ablation to treat recurrent VT occurring late after myocardial infarction.

Sosa E, Scanavacca M, d'Avila A, Oliveira F, Ramires JA.

J Am Coll Cardiol. 2000;35:1442-1449.

Mapping and ablation of idiopathic ventricular fibrillation.

Haïssaguerre M, Shoda M, Jaïs P, Nogami A, Shah DC, Kautzner J, Arentz T, Kalushe D, Lamaison D, Griffith M, Cruz F, de Paola A, Gaita F, Hocini M, Garrigue S, Macle L, Weerasooriya R, Clémenty J.

Circulation. 2002 Aug 20;106(8):962-7.

Radiofrequency Catheter Ablation for Ventricular Tachycardia.

Haqqani HM, Roberts-Thomson KC.

Heart Lung Circ. 2012 Jan 9. [Epub ahead of print]

Ablation of ventricular arrhythmias in arrhythmogenic right ventricular dysplasia.

Arbelo E, Josephson ME.

J Cardiovasc Electrophysiol. 2010 Apr;21(4):473-86.

Long-term outcomes of combined epicardial and endocardial ablation of monomorphic ventricular tachycardia related to hypertrophic cardiomyopathy.

Dukkipati SR, d'Avila A, Soejima K, Bala R, Inada K, Singh S, Stevenson WG, Marchlinski FE, Reddy VY.

Circ Arrhythm Electrophysiol. 2011 Apr;4(2):185-94.

Clinical and electrophysiological spectrum of idiopathic ventricular outflow tract arrhythmias.

Kim RJ, Iwai S, Markowitz SM, Shah BK, Stein KM, Lerman BB.

J Am Coll Cardiol. 2007 May 22;49(20):2035-43. Epub 2007 May 4.

Ventricular tachycardia ablation remains treatment of last resort in structural heart disease: argument for earlier intervention.

Frankel DS, Mountantonakis SE, Robinson MR, Zado ES, Callans DJ, Marchlinski FE.

J Cardiovasc Electrophysiol. 2011 Oct;22(10):1123-8.

Characterization of the arrhythmogenic substrate in ischemic and nonischemic cardiomyopathy implications for catheter ablation of hemodynamically unstable ventricular tachycardia.

Nakahara S, Tung R, Ramirez RJ, Michowitz Y, Vaseghi M, Buch E, Gima J, Wiener I, Mahajan A, Boyle NG, Shivkumar K.

J Am Coll Cardiol. 2010 May 25;55(21):2355-65.

Sudden cardiac death caused by coronary heart disease.

Myerburg RJ, Junttila MJ.

Circulation. 2012 Feb 28;125(8):1043-52.

Sudden Cardiac Death and Genetic Ion Channelopathies: Long QT, Brugada, Short QT, Catecholaminergic Polymorphic Ventricular Tachycardia, and Idiopathic Ventricular Fibrillation.

Napolitano C, Bloise R, Monteforte N, Priori SG.

Circulation. 2012 Apr 24;125(16):2027-34.

Supraventricular tachycardias & EP fundamentals

Principles of entrainment: diagnostic utility for supraventricular tachycardia.

Veenhuyzen GD, Quinn FR.

Indian Pacing Electrophysiol J. 2008 Feb 1;8(1):51-65.

Exploring postinfarction reentrant ventricular tachycardia with entrainment mapping.

Stevenson WG, Friedman PL, Sager PT, Saxon LA, Kocovic D, Harada T, Wiener I, Khan H.

J Am Coll Cardiol. 1997 May;29(6):1180-9.

Development and validation of an ECG algorithm for identifying accessory pathway ablation site in Wolff-Parkinson-White syndrome

Arruda MS, McClelland JH, Wang X, Beckman KJ, Widman LE, Gonzalez MD, Nakagawa H, Lazzara R, Jackman WM.

J Cardiovasc Electrophysiol. 1998 Jan;9(1):2-12.

Using the twelve-lead electrocardiogram to localize the site of origin of ventricular tachycardia.

Josephson ME, Callans DJ.

Heart Rhythm. 2005 Apr;2(4):443-6.

Principles of electroanatomic mapping.

Bhakta D, Miller JM.

Indian Pacing Electrophysiol J. 2008 Feb 1;8(1):32-50.

Intracardiac echocardiography in complex cardiac catheter ablation procedures.

Bancks JE, Patel P, Naccarelli GV, Gonzalez MD.

J Interv Card Electrophysiol. 2010 Sep;28(3):167-84. Epub 2010 May 18.

Cardiac anatomy for the interventional arrhythmologist: I.terminology and fluoroscopic projections.

Farré J, Anderson RH, Cabrera JA, Sánchez-Quintana D, Rubio JM, Benezet-Mazuecos J, Del Castillo S, Macía E.
Pacing Clin Electrophysiol. 2010 Apr;33(4):497-507.

EGC diagnosis of paroxysmal supraventricular tachycardias in patients without preexcitation.

González-Torrecilla E, Arenal A, Atienza F, Datino T, Atea LF, Calvo D, Pachón M, Miracle A, Fernández-Avilés F.
Ann Noninvasive Electrocardiol. 2011 Jan;16(1):85-95. doi: 10.1111/j.1542-474X.2010.00399.x.

Diagnostic pacing maneuvers for supraventricular tachycardia: part 1.

Veenhuyzen GD, Quinn FR, Wilton SB, Clegg R, Mitchell LB.
Pacing Clin Electrophysiol. 2011 Jun;34(6):767-82.

Diagnostic Pacing Maneuvers for Supraventricular Tachycardias: Part 2.

Veenhuyzen GD, Quinn FR, Wilton SB, Clegg R, Mitchell LB.
Pacing Clin Electrophysiol. 2012 Mar 4. doi: 10.1111/j.1540-8159.2012.03352.x. [Epub ahead of print]

RF catheter ablation: Lessons on lesions.

Wittkampf FH, Nakagawa H.
Pacing Clin Electrophysiol. 2006 Nov;29(11):1285-97.

EP suggested preparatory questions

“Cardiac Arrhythmia Challenge” App

iOS: <https://itunes.apple.com/ch/app/cardiac-arrhythmia-challenge/id1342635095?mt=8>

Android: <https://play.google.com/store/apps/details?id=ch.corxl.cac>

Landmark papers in clinical cardiac electrophysiology

1967: Tachycardias can be induced, mapped and terminated by intracardiac stimulation.

Durrer D, Schoo L, Schuilenburg RM, Wellens HJJ. The role of premature beats in the initiation and the termination of supraventricular tachycardias in the Wolff-Parkinson-White syndrome.
Circulation. 1967;36:644 – 662

1968: Arrhythmias can be cured by surgical ablation.

Cobb FR, Blumenschein SD, Sealy WC, Boineau JP, Wagner GS, Wallace AG. Successful surgical interruption of the bundle of Kent in a patient with the Wolff-Parkinson-White syndrome.
Circulation. 1968;38:1018– 1029.

1969: The His bundle electrogram is first observed.

Scherlag BJ, Lau SH, Helfant RH, Berkowitz WD, Stein E, Damato AN. Catheter technique for recording His bundle activity in men.
Circulation. 1969;39:13–18.



1978: Entrainment for mapping and interruption of tachyarrhythmias.

Waldo AL, MacLean WAH, Karp RB, Kouchoukas NT, James TN. Entrainment and interruption of atrial flutter with atrial pacing: Studies in man following open heart surgery. *Circulation* 1977;56:737–745.

1980: The implantable cardiac defibrillator is used to terminate ventricular arrhythmias.

Mirowski M, Reid PR, Mower MM, Watkins L, Gott VL, Schauble JF, Langer A, Heilman MS, Kolenik SA, Fischell RE, Weisfeldt ML. Termination of malignant ventricular arrhythmias with an implanted automatic defibrillator. *N Engl J Med*. 1980;303:322–32

1982: Catheter ablation of arrhythmias through intracardiac shocks.

Gallagher JJ, Svenson RH, Kasell JH, German LD, Bardy GH, Broughton A, Critelli G. Catheter technique for closed-chest ablation of the atrioventricular conduction system. *N Engl J Med*. 1982;306:194–200.

1987: Catheter ablation of arrhythmias through radiofrequency.

Borggrefe M, Budde T, Podczeczek A, Breithardt G. High frequency alternating current ablation of an accessory pathway in humans. *J Am Coll Cardiol*. 1987;10:576–582.

1989: Surgical lesions in the atria can be used to treat atrial fibrillation.

Cox JL, Schuessler RB, Cain ME, Corr PB, Stone CM, D'Agostino HJ Jr, Harada A, Chang BC, Smith PK, Boineau JP. Surgery for atrial fibrillation. *Semin Thorac Cardiovasc Surg*. 1989;1:67–93.

1989: Prophylactic antiarrhythmic drug therapy may kill more lives than it saves.

Cardiac Arrhythmia Suppression Trial (CAST Investigators). Preliminary report: effect of encainide and flecainide on mortality in a randomized trial of arrhythmia suppression after myocardial infarction. *N Engl J Med* 1989;321:406–412.

1998: Role of pulmonary vein activity in the pathogenesis of atrial fibrillation.

Haissaguerre M, Jais P, Shaw DC, Takahashi A, Hocini M, Quiniou G, Garrigue S, Le Mouroux A, Le Métayer P, Clémenty J. Spontaneous initiation of atrial fibrillation by ectopic beats originating in the pulmonary veins. *N Engl J Med*. 1998;339:659–666

1998: Left ventricular pacing from within the coronary sinus.

Daubert JC, Ritter P, Le Breton, Gras D, Leclercq C, Lazarus A, Mugica J, Mabo P, Cazeau S. Permanent left ventricular pacing with transvenous leads inserted into the coronary veins. *Pacing Clin Electrophysiol*. 1998;21(pt 2):239–245

2000: Pulmonary vein isolation for catheter ablation of atrial fibrillation.

Pappone C, Rosario S, Oreto G, Tocchi M, Gugliotta F, Vicedomini G, Salvati A, Dicandia C, Mazzone P, Santinelli V, Gulletta S, Chierchia S. Circumferential radiofrequency ablation of pulmonary vein ostia: a new approach for curing atrial fibrillation. *Circulation*. 2000;102:2619–2628.

2000: Epicardial ablation of ventricular arrhythmias

Sosa E, Scanavacca M, d'Avila A, Oliveira F, Ramires JA. Nonsurgical transthoracic epicardial catheter ablation to treat recurrent VT occurring late after myocardial infarction. *J Am Coll Cardiol*. 2000;35:1442–1449.

