

## Normal ECG Findings

- Increased QRS voltage for LVH or RVH
- Incomplete RBBB
- Early repolarization/ST segment elevation
- ST elevation followed by T wave inversion V1-V4 in black athletes
- T wave inversion V1-V3 age <16 years old
- Sinus bradycardia or arrhythmia
- Ectopic atrial or junctional rhythm
- 1° AV block
- Mobitz Type I 2° AV block

**No further evaluation required**  
in asymptomatic athletes with no family history of inherited cardiac disease or SCD

## Borderline ECG Findings

- Left axis deviation
- Left atrial enlargement
- Right axis deviation
- Right atrial enlargement
- Complete RBBB

In isolation

2 or more

**Further evaluation required**  
to investigate for pathologic cardiovascular disorders associated with SCD in athletes

## Abnormal ECG Findings

- T wave inversion
- ST segment depression
- Pathologic Q waves
- Complete LBBB
- QRS  $\geq 140$  ms duration
- Epsilon wave
- Ventricular pre-excitation
- Prolonged QT interval
- Brugada Type 1 pattern
- Profound sinus bradycardia < 30 bpm
- PR interval  $\geq 400$  ms
- Mobitz Type II 2° AV block
- 3° AV block
- $\geq 2$  PVCs
- Atrial tachyarrhythmias
- Ventricular arrhythmias

Reprinted from Journal of the American College of Cardiology, Volume 69, Issue 8, Authors: Sanjay Sharma, Jonathan A. Drezner, Aaron Baggish, Michael Papadakis, Mathew G. Wilson, Jordan M. Prutkin, Andre La Gerche, Michael J. Ackerman, Mats Borjesson, Jack C. Salerno, Irfan M. Asif, David S. Owens, Eugene H. Chung, Michael S. Emery, Victor F. Froelicher, Hein Heidbuchel, Carmen Adamuz, Chad A. Asplund, Gordon Cohen, Kimberly G. Harmon, Joseph C. Marek, Silvana Molossi, Josef Niebauer, Hank F. Peltó, Marco V. Perez, Nathan R. Riding, Tess Saarel, Christian M. Schmied, David M. Shipon, Ricardo Stein, Victoria L. Vetter, Antonio Pelliccia and Domenico Corrado, International Recommendations for Electrocardiographic Interpretation in Athletes, Pages 1057-1075, February 2017 with permission from Elsevier.

<https://www.sciencedirect.com/journal/journal-of-the-american-college-of-cardiology>