

Via Medical Advisory Committee Statement on ECG Interpretation

There has been a dramatic drop in the ECG findings in young athletes requiring specialized medical evaluation prior to participating in sports (false positive rate, FP). These two FP ECG findings ([1] high QRS voltages and [2] the isolated ST elevation of early repolarization) are acknowledged to be possibly due to the physiological effects of exercise training. Furthermore, there are clinical studies that support their benign nature in non-athletes. This drop in FPs followed the 2011 publication in *Circulation* "Stanford Criteria for ECG Screening of Young Athletes" which led to the currently utilized "International Criteria for ECG screening of young athletes."

The major FP finding are all the **QRS voltage criteria** and scores included in the classification of ECG-LVH. However, the ST depression, T wave inversion and/or left atria abnormalities included in some of the LVH scores are **NOT FPs** but should be considered abnormal.

The second most common benign finding causing a FP is the **ST elevation** component of Early Repolarization. It is very important to distinguish it from the ST elevation of acute ischemia or pericarditis and the J wave or slurred R wave downslope of a rare arrhythmic condition.

The finding of ST elevation accompanied by T wave inversion in the anterior leads (V123) is a more controversial FP finding in athletes of African descent since it can also be seen in cardiomyopathies.

On the other hand, the ECG finding of WPW has been found to be an important marker of risk for sudden cardiac death in young athletes (less than 21 yrs of age).

Cited Papers:

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