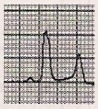
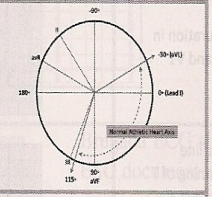
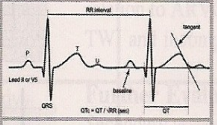
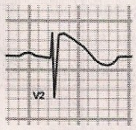
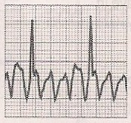
Ventricular Preexcitation

LBBB RBBB IVCD	Any QRS >120 ms	
QRS axis deviation	More leftward than -30◦ More rightward than 115◦	
QTc interval	>470 ms in males >480 ms in females <340 ms in any athlete	
Brugada pattern	Presence of Type 1 pattern: coved ST segment in V1 and V2 gradually descending into inverted T wave	
Pre-Excitation	Delta wave and PR interval <120 ms	
Ventricular extrasystoles, heart block, and supraventricular arrhythmia	Atrial fibrillation/flutter, supraventricular tachycardia, complete heart block or ≥2 PVCs in one 12 lead ECG	

The presence of an accessory pathway of conduction between the atrium and ventricle outside the atrioventricular node can predispose patients to atrioventricular reentry tachycardia, as well as very rapid ventricular conduction during other supraventricular tachycardias such as atrial fibrulation. Conduction via the accessory pathway leading to preexciation of the ventricle can be seen on the ECG as the Wolf-Parkinson-White (WPW) pattern: a delta wave, which is slurring of the initial QRS and a short PR interval.

An electrophysiology study in all athletes with evidence of preexciation is suggested. Echocardiography is also recommended. Exercise testing to estimate the refractory period of manifest accessory pathways may be considered, with the assumption that a short refractory period places the patient at higher risk of atrial fibrillation-induced sudden death. However, in light of the low likelihood of sudden death observed in populations studies, there is insufficient data to recommend this routinely.

Wolff-Parkinson White (WPW) Syndrome