

# Sudden Cardiac Arrest in Athletes

By Chris Cameron, MEd, AT, ATC

Over the past few months, the nation has had high school student athletes collapse and die during practices or games. People ask how active and fit teenagers can die at an early age with no detection of any problems or illness. The cause of death is many times due to an enlarged heart known as Hypertrophic cardiomyopathy (HCM). Hypertrophic cardiomyopathy causes thickening of the walls of the heart. Although thickening of the heart's wall are normal in active people the thickening becomes extreme in HCM. The lower chambers of the heart (the ventricles) often become thicker, blocking flow to the aortic valve or preventing the heart to relax between pumps. Most cases of hypertrophic cardiomyopathy are confused with a condition called Athlete's Heart. Both cases do have an enlarged heart but in the Athletes Heart, there is symmetry between the septum and left ventricle wall. The septum is much thicker in hypertrophic cardiomyopathy.

Hypertrophic cardiomyopathy is asymptomatic (having no symptoms) or has mild symptoms and is the leading cause of sudden cardiac arrest in young athletes. The symptoms are: shortness of breath (dyspnea), chest pain (angina), abnormal heartbeat, fatigue, fainting, and sudden cardiac death. Most of these symptoms are hard to catch during a practice or game because of the energy used during the activity. If an athlete is having chest pain or feels the need to faint they should tell their athletic trainer or a coach. The person in charge should have the athlete sit out of the activity while the symptoms reside.

The prevalence in male athletes is five times greater than females. The American Heart Association says Hypertrophic cardiomyopathy claims 1 death per 220,000 athletes per year in the U.S. While younger individuals are likely to suffer from a more severe form of HCM, all ages are affected, 36% of the deaths associated with HCM are accounted from athletes.



Most of the deaths are suffered during or just after physical activities.

Medical history and physical exams seem an ineffective way to catch abnormalities of the heart. Although expensive, echocardiograms, electrocardiograms and a cardiac MRI are all effective ways to catch HCM. Also, genetic testing will detect the disorder.

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