

## Introduction

Often sudden cardiac death is the result of an underlying inherited cardiac abnormality.

The AHA recommends a 14-element pre-participation cardiovascular screening of all competitive athletes, which includes direct questioning for a family history of cardiomyopathies.

Adherence to this recommendation is variable, with adequate family history omitted in up to 80% of cases.

## Objectives

Evaluate the prevalence of a positive family history when asked specifically about cardiac conditions associated with premature sudden cardiac death.

## Methods

From October 2012 to November 2018, we performed cardiac screens aimed at high school athletes. This involved a health questionnaire, physical examination and 12-lead electrocardiogram.

As part of the questionnaire, we asked specifically about a family history of

- Hypertrophic or dilated cardiomyopathy
- Arrhythmogenic right ventricular cardiomyopathy
- Long QT syndrome
- Brugada syndrome
- Catecholaminergic polymorphic ventricular tachycardia
- Wolff-Parkinson White

## Results

In the six-year period, 6973 individuals underwent cardiovascular screening.

Of these, 61% were male and the median age was 17 (IQR 15-19).

The majority (83%) was Caucasian, followed by Asian/Pacific Islander (5%), African-American (4.9%), and Hispanic (3.1%).

A positive family history for a condition associated with sudden cardiac death was reported in 4.4% (308). These comprised of dilated or hypertrophic cardiomyopathy (2.57%), ARVC (0.34%), WPW (0.76%), LQTS (0.49%), CPVT (0.19%) and Brugada syndrome (0.07%).

Of those that had a positive family history, four had an abnormal screen that required further investigation

Figure 1: Flowchart of screened individuals

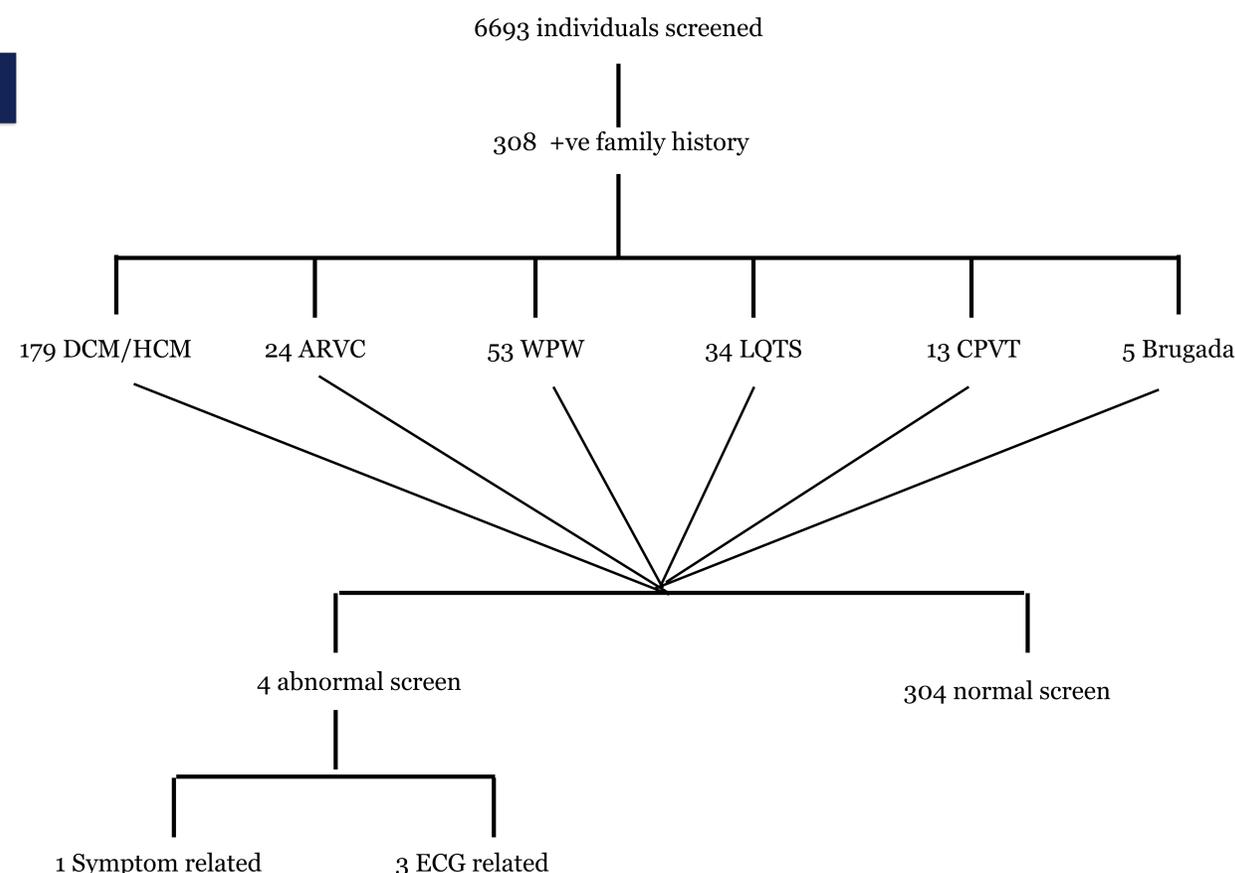
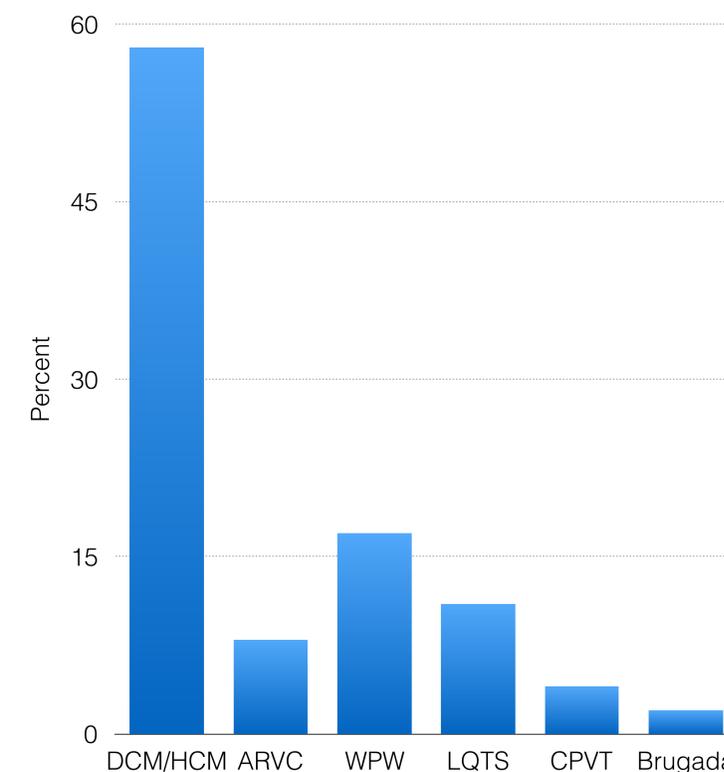


Figure 2: Distribution of cardiac conditions when family history was positive



## Conclusions

The pre-participation screening for cardiovascular disease is crucial to reduce the risk of sudden cardiac death.

Discerning the family history during this screening is a cost-effective tool but of limited value when used in isolation.

Identifying the most high-yield components of a cardiovascular screening program is an important consideration in the debate regarding pre-participation screening of young athletes.