# The COVID Cardiac Connection: A Novel Pre-Participation Screening Tool to Identify Subclinical Cardiomyopathy After SARS-CoV-2 Infection in Young Athletes

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Emerging evidence demonstrates that COVID-19 can lead to myocarditis and may induce malignant arrhythmias associated with sudden cardiac death (SCD) during high intensity exercise. The objective of this project was to implement a low-cost and accessible pre-participation screening tool to detect potential cardiac issues among young athletes, without the need for hospital-grade screening equipment. A novel questionnaire was created based upon a literature review to identify risk factors for SCD in young athletes. Participants completed this questionnaire, and a risk score was produced, advising “moderate” or “high” risk participants to undergo a resting electrocardiogram (ECG) using the KardiaMobile 6-Lead ECG device. These rhythm strips produced by the ECG were then reviewed by a cardiologist. After completing the study and screening 80 participants, three subjects were identified with cardiac arrhythmias and two subjects needed to be assessed by a physician due to signs of a possible heart condition. The main hypothesis was supported as 4% of participants required further medical evaluation to diagnose any underlying intrinsic heart conditions. The screening tool was validated, becoming the first mobile health platform that combines the most recent research about COVID-19, a three-tiered risk score system, and ubiquitous ECG monitoring technology. This tool can be used to identify factors that are predictive of SCD in seemingly healthy individuals. Implementation of this tool in sports settings could lead to an increase in detection of underlying subclinical cardiomyopathies, ultimately increasing the likelihood of preventing sudden cardiac deaths in young athletes.

**Awards Won:**