

## Heart Rate Variability Responses Pre-, during, and Post-Exercise among Special Olympics Athletes

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**Abstract :** Heart Rate Variability (HRV) is the beat-to-beat variation in adjacent heartbeats. HRV is a non-invasive measure of the autonomic nervous system (ANS) and provides information about the sympathetic (SNS) and parasympathetic (PNS) nervous systems. The HRV of a well-conditioned heart is generally high at rest, whereas low HRV has been associated with adverse outcomes/conditions, including congestive heart failure, diabetic neuropathy, depression, and hospital admissions. HRV has received very little research attention among individuals with intellectual disabilities in general or Special Olympic athletes. Purpose: 1) Having a longer post-exercise rest and recovery time to establish how long it takes for the athletes' HRV components to return to pre-exercise levels, 2) To determine if greater familiarization with the testing processes influences HRV. Participants: Two separate samples of 10 adult Special Olympics athletes will be recruited for 2 separate studies. Athletes will be between 18 and 50 years of age and will be members of Special Olympics BC. Anticipated Findings: To answer why the Special Olympics athletes display poor cardiac responsiveness to changes in autonomic modulation during exercise. By testing the cortisol levels in the athletes, we can determine their stress levels which will then explain their measured HRV.

**Keywords :** 6MWT, autonomic modulation, cortisol levels, intellectual disability

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