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Recovery from Exercise in Persons with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS)

Abstract:
There is little objective evidence regarding the temporal characteristics of recovery following exertion in people with myalgic encephalomyelitis (ME/CFS). Post-exertion malaise (PEM) is a hallmark symptom with characteristics varying between individuals. Importantly, exertional load is comprised not only of physical stressors, but also cognitive and emotional stressors; consequently, PEM may be provoked by any combination of these factors. Serial ratings of 9 common ME/CFS symptoms before exercise (baseline), before each of two sequential cardiopulmonary exercise tests (2-d CPET), and for 10 d following CPET-1 revealed significant differences in recovery time for 80 ME/CFS (12.7 d) and 64 inactive controls (CTL; 2.1 d). Further, recovery time for ME/CFS varied by duration of illness. However, recovery time did not differ between groups when separated by baseline PEM ratings (high, intermediate, low). The 'half-life' of recovery, or duration for PEM symptoms to diminish by one-half, differed from a few hours (CTL) compared to a few days (ME/CFS). Physical activity (PA) measured by accelerometry in a smaller sample from the same cohort (ME/CFS n=58; CTL n=51) 6 d before (baseline) and 10 d after 2-d CPET indicated that ME/CFS spent more time in sedentary PA compared to CTL. A comparatively higher level of sedentary PA in ME/CFS persisted during both daytime and nighttime hours. A higher level of sedentary activity occurred in ME/CFS particularly during the first three days following 2-d CPET but required the full 8-10 d of post-exercise surveillance to return to baseline PA. Conclusion: Recovery duration for ME/CFS following exertion is protracted and does not comport with standard exercise prescription guidelines. Efforts to exert before complete recovery will further exacerbate illness symptoms and prolong PEM.

Keywords: Post-exertional malaise, exertion intolerance, fatiguing illness

Biography: For over two decades she has used a 2-day CPET protocol to study and objectively assess functional capacity in those with fatiguing illnesses. In 2015 she served on the Institute of Medicine committee to study ME/CFS and has given numerous scientific and invited presentations on fatiguing illnesses nationally and internationally. She was the Co-Coordinator of the Clinical Core for a multi-site 5-year NIH-funded Collaborative Research Center to study ME/CFS. Presently, she is a principal in the newly established non-profit PaceForward Foundation where the team continues to provide objective assessment of functional capacity and recovery for those with fatiguing illnesses.

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