

The Role of Oral Glutathione in Improvement of Health Outcomes among Persons with Late Effects of Poliomyelitis

Claire Z. Kalpakjian, PhD, MS, University of Michigan,
Department of Physical Medicine and Rehabilitation, Ann Arbor, Michigan

Glutathione is a powerful antioxidant and plays an important role in a number of cellular processes and the maintenance of cellular homeostasis associated with health and longevity. The goal of this pilot study was to examine the effectiveness of oral glutathione for improving health outcomes in persons with the late effects of poliomyelitis.

A total of 20 individuals who were between the ages of 50 and 65 with clinically identified post-poliomyelitis late effects and who were able to ambulate at least 100 feet, with or without assistive devices, enrolled in this study. The intervention was a three-month trial of twice-daily, oral, 1,000-mg glutathione supplements. This study involved four assessment periods across the three-month study period (two clinic visits, two home-based assessments).

Outcomes were self-reported physical functioning, fatigue, sleep problems and mood. Scores on these questionnaires were compared to the U.S. population to see if this sample was different than their peers. A device worn on the upper arm was used to measure physical activity, and how well people slept at night was measured using weekly sleep diaries.

Contrary to expectations, the results of this pilot study did not provide support for the hypothesis that a 12-week trial of oral glutathione supplementation would improve health outcomes. While outcomes of anxiety and sleep improved from baseline to the final assessment, there were no other changes in outcomes across the study period. There also was not a significant change in total glutathione levels in the blood. People in this study were a lot like their peers without polio on self-reported health outcomes like mood and fatigue, but they were much lower in terms of physical functioning.

Although not the primary focus of this study, the use of a device to monitor physical activity indicated that people in this study had an extremely high level of sedentariness with an average of nearly eight hours lying down per day (in addition to night-time sleep). Efforts may be best spent to design and test interventions to reduce sedentariness in this population. This is likely to have a greater and more direct impact than a supplement like glutathione for improving mood, strength, flexibility and to reduce risks associated with reduced physical activity. ■

Self-Reported Health Outcomes

