

**The Effect of Alternating Cooling/Warming on Postural Sway**  
Laboratory for Health, Human Performance and Rehabilitation  
Department of Exercise and Sport Sciences  
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The effects of cooling or warming the human body has been explored for many decades. Changes in motor skills have been widely documented through research supported by the U.S. military and NASA. In the past decade new applications have examined the use of a microthermal environment during and after cardiac surgery, and on several special populations, most notably individuals with multiple sclerosis. In the research to date, selective zonal application of cold or heat has either not been used or has been functionally unavailable. With the development of the Liquid Cooling/Warming Garment (LCWG) and particularly the zonal suit, more controlled applications of cold or heat can now be applied to specific body zones while protecting the entire system from excessive core temperature increases.

The goal of the present on-going project is to explore the effect of a mild cooling/warming regimen on lower extremity musculature as expressed through postural sway patterns. In completing the project the student will have developed skill in instrumenting individuals for motion analysis, and electromyography. The student will also gain a solid background in the concepts of human thermoregulation, particularly as it relates to human performance, vasodilation, and vasoconstriction. The learned skills will be valuable to those planning on graduate programs in a variety of fields including Biomedical Engineering, Human Factors, Kinesiology or medical school.

One undergraduate student will work on this project, advised by Dr. Michael Dancisak. The student will work on assisting Dr. Dancisak with refocusing the current protocol used with the LCWG for use with postural sway studies and amending the IRB: Human Subjects Committee application to include the new protocol. To apply for this project, please send application materials, including your future educational/employment plans/goals, to Dr. Dancisak in the Department of Exercise and Sport Sciences, 105 Reily Center or contact him at 865-5301.