

Heat regulation dysfunction may stop MS patients from exercising

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Exercise can be beneficial for patients with multiple sclerosis, a degenerative nerve disease that progressively impairs central nervous system function. However, for some patients, a rise in body temperature, which occurs during exercise and/or exposure to hot and humid conditions, can make symptoms temporarily worse. Researchers at Southern Methodist University collaborating with colleagues from University of Sydney set out to explore how moderate exercise affected patients with MS compared with healthy control subjects. Mu Huang, will present the research team's findings in a poster session on Tuesday, April 29, at the Experimental Biology meeting.

Huang et al. asked five patients with MS and five control subjects to cycle in a temperature-controlled room for 30–60 minutes. They found that sweating took longer to start and sweat rate was lower during exercise-induced body temperature increases in MS patients compared to healthy control subjects. This altered [temperature regulation](#) also led to a greater increase in core temperature among the MS patients vs. controls. Overheating in this way could cause a temporary worsening of symptoms, which may impact the ability to exercise or discourage patients with MS from exercising.

From the researchers: "While preliminary, these findings suggest that a larger rise in body temperature seen in MS patients is due to a lower sweat rate and a delay in the start of sweating thereby limiting the body's ability to cool itself down. A greater understanding of how MS affects the body's ability to dissipate heat during exercise will provide insight

into ways of reducing the impact of heat intolerance and improving the safety and benefit of exercise for MS patients."

More information: Mu Huang, Nathan Morris, Ollie Jay, and Scott Davis. "Thermoregulatory dysfunction in multiple sclerosis patients during moderate exercise in a thermoneutral environment" (1104.17). *FASEB J* April 2014 28:1104.17

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