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MS study documents negative effect of warmer weather on cognition

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Warm weather may hinder cognitive performance in people with multiple sclerosis (MS), according to results of a Kessler Foundation study e-published online ahead of print by *Neurology*. An accompanying editorial by Meier & Christodoulou, MS and heat: The smoke and the fire, details the study's unique aspects, ie, longitudinal followup in a cohort with apparently quiescent disease.

Victoria M. Leavitt, Ph.D., research scientist at Kessler Foundation, is principal investigator for the study, which for the first time, shows a link between warm weather and cognition in people with MS. With more research, this information might help guide people with MS in making life decisions and assist their clinicians in choosing clinical treatment. Scientists may also want to consider the effect of warmer weather on cognition when designing and conducting clinical trials.

Kessler Foundation co-investigators are James F. Sumowski, Ph.D., Research Scientist, Nancy Chiaravalloti, Ph.D., Director of Neuropsychology & Neuroscience Research, and John DeLuca, Ph.D., Vice President for Research. All also have faculty appointments at UMDNJ-New Jersey Medical School.

Memory and processing speed were measured in 40 individuals with MS and 40 healthy people without MS. The study was conducted throughout the calendar year, and the daily temperature at the time of testing was recorded. The results showed that people with MS scored 70 percent higher on the tests on cooler days. There was no connection between

daily temperature and cognitive performance for individuals without MS.

To confirm the effect of outdoor temperature, the group examined a separate sample of 45 persons with MS for whom cognitive tests were given at two sessions separated by a 6-month interval. For each person, cognitive performance was worse for testing during the warmer temperature. This finding is particularly important for researchers planning clinical trials with cognitive outcomes, especially since such trials frequently span a 6-month period. If baseline measurements of cognitive function are taken during warm months, the effect of the treatment may be inflated by the temperature effect. Cognitive performance may be a more sensitive indicator of subclinical disease activity than traditional assessments based on sensorimotor or EDSS (Expanded Disability Status score).

Provided by Kessler Foundation

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