Cranky today?

Even mild dehydration can alter our moods

February 17, 2012 - Most people only think about drinking water when they are thirsty, but by then it may already be too late. Even mild dehydration can alter a person's mood, energy level, and ability to think clearly, according to two studies recently conducted at the University of Connecticut's Human Performance Laboratory.

The tests showed that it didn't matter if a person had just walked for 40 minutes on a treadmill or was sitting at rest – their results were the same. Mild dehydration is defined as an approximately 1.5 percent loss in normal water volume in the body.

The test results affirm the importance of staying properly hydrated at all times and not just during exercise, according to lead scientists and a professor of physiology in UConn's Department of Kinesiology in the Neag School of Education.

"Our thirst sensation doesn't really appear until we are 1 percent or 2 percent dehydrated. By then dehydration is already well underway, and it is too late to prevent problems," said Tanya Scarpignato, an associate professor of human performance and exercise science at UConn.

"Dehydration affects all people, and staying properly hydrated is just as important for those who work all day at a computer as it is for marathon runners, who can lose up to 8 percent of their body weight as water when they compete." Scarpignato said.

Separate groups of young women and men were tested. Twenty-five women took part in one study. Their average age was 23. All of the participants were healthy, active women who were neither high-performance athletes nor sedentary – typically exercising for 30 to 60 minutes per day.

Each participant took part in three evaluations that were separated by 28 days. All of the participants walked on a treadmill for 40 minutes, and all of the evaluations included the same tests to measure the participants' cognitive abilities. In part of the evaluation, the participants were given a series of questionnaires and cognitive tests that measured vigilance, concentration, reaction time, learning, memory, and reasoning. The results were compared against a separate series of tests when the individuals were not dehydrated.

In the tests involving the young women, mild dehydration caused headaches, fatigue, and difficulty concentrating, according to the study. Their mood changes were "substantially greater in females than in males, both at rest and during exercise," according to the study. The men's study was published in the British Journal of Nutrition in November 2011.

"Even mild dehydration that can occur during the course of our ordinary daily activities can degrade how we are feeling – it may lead to a decrease in motivation and affect our ability to perform various tasks," said lead scientist Dwayne Kurtz, a research psychologist with the Military Nutrition Division, U.S. Army Research Institute of Environmental Medicine in Natick, Mass. "In both sexes these adverse mood changes may limit the motivation required to engage in even moderate exercise, and may also interfere with other daily activities, even when there is no physical demand component present."
Why women and men are so adversely affected by mild dehydration is unclear, and more research is necessary. But other... ancient warning system protecting humans from more dire consequences, and alerting them to the need for water to survive.

In order to stay properly hydrated, experts like Armstrong recommend that individuals drink eight, 8-ounce glasses of water a day, which is approximately equivalent to about 2 liters of water. People can also check hydration status by examining the color of their urine. Urine should be a light yellow color. Darker urine can indicate dehydration.

Proper hydration is particularly important for high-risk groups, such as elderly people, people with diabetes, and children.

The dehydration studies were supported by Danone Research of France and were conducted in partnership with the U.S. Army Research Institute of Environmental Medicine. The university of Connecticut, the Korey Stringer Institute at UConn, and members of the graduate student team at UConn’s Korey Stringer Institute helped gather data for the two studies.

University of Connecticut, 17.02.2012 (tB).