

# Hydration Test May Be Army's Next Training Tool

By Crystal Maynard, USAMRMC Public Affairs 2016



U.S. Army Sgt. 1st Class Gerardo Lopez, and Capt. Sean Raleigh, who hydrates himself, with Headquarters and Headquarters Company, Allied Forces North Battalion, U.S. Army NATO Brigade, perform their monthly ruck march, on Chièvres Air Base, Belgium, Aug. 25. (U.S. Army photo by Visual Information Specialist Pierre-Etienne Courtejoie)

Staying hydrated is one of the most important ways to stay healthy, yet the majority of people today are dehydrated without even realizing it. Staying hydrated is something that many struggle with, being pushed to the wayside and too often forgotten amid busy lives and hectic schedules.

It is important that we all strive to stay hydrated, especially our Soldiers in training as water is an essential nutrient critical to reaching peak physical and mental performance. Dehydration leads to decreased balance, coordination, speed, strength and endurance, and degrades mood, attention, reaction time, memory and reasoning. It also increases risk of heat illness, hyponatremia and other environmental injuries that Soldiers in particular need to avoid during field training in extreme environments.

Heat, a heavy load burden and exertion all lead to sweating, which is good for you. However, the lost body water must be replaced to stay hydrated and mission ready.

"So how does one know when they are becoming dehydrated? Once you feel thirsty or develop a headache, it is too late. You are already dehydrated at that point," said hydration researcher Dr. Sarka Southern, founder and scientific director of the Gaia Medical Institute. "Dehydration is fully preventable if detected and treated early. However, there is currently no field-expedient dehydration test."

Southern and her team are working with the U.S. Army Medical Research and Materiel Command's Military Operational Medicine Research Program to fill this capability gap in hydration monitoring technology. Their goal is to develop a rapid saliva test for objective hydration assessment.

The test will be a small, inexpensive device that will use a drop of saliva to deliver actionable results in

less than five minutes, delivering innovative science to Soldiers. Saliva-based biomarkers of dehydration are a new, patented technology that provides a major advancement in hydration assessment.

"It's our goal that this new dehydration test will train individuals how to take care of themselves and acquire the new skill of being properly hydrated," said MOMRP's Lt. Col. James McKnight. "We see this as a tool that can especially be used in training arenas, such as basic training and advanced individual training. The tool will help leaders to monitor the hydration status of their troops and alert them when they need to re-hydrate before they have degradation in performance or potentially succumbing to a heat injury, if the conditions are right."

The new dehydration test has potential to bring multiple benefits to Soldiers. Soldiers could use the test to monitor and prevent dehydration in real time, which would improve Soldier performance and safety, increase effectiveness of training, mitigate injuries and overall improve mission readiness.

Chief of Staff of the Army Gen. Mark A. Milley has set readiness as his top priority. With the proper training, education and preparation, the number of Soldiers who suffer from dehydration can be minimized and curtail the dehydration before it leads to a heat-related illness.

"The thing about dehydration is that it is a completely preventable condition," said McKnight. "With the proper tool in place to help us monitor Soldier hydration, we will be one step closer to being as prepared and ready as we can. It's our goal to have a tool in place within the next two to three years."

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