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## Drink According to Thirst, Scientists Advise

Updated consensus statement on hydration and hyponatremia published June 29 in Clinical Journal of Sport Medicine.

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By Andréa Maria Cecil

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All photos: Dave Re/CrossFit Journal

*In February 2015, CrossFit Inc. sponsored a conference on hyponatremia. Seventeen scientists from around the world gave presentations and answered questions.*

The dogma is pervasive: Dehydration is bad.

For more than a decade, scientists from around the globe have been working to fight that doctrine. Their advice is simple: Drink only when you're thirsty.

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"Everybody has this little barometer in their brain that they were born with that measures the appropriate amount of sodium in your blood and the appropriate amount of water going through your circulation," explained Dr. Tamara Hew-Butler, an associate professor of exercise science at Oakland University in Rochester, Michigan. "Inside (your brain), when you need water, you will get thirsty."

Hew-Butler was among 16 scientists who wrote a consensus statement on hyponatremia that the [Clinical Journal of Sport Medicine](#) published on its website today.

Hyponatremia occurs when a person drinks so much hypotonic fluid—such as water or sports drinks—that blood-sodium levels are reduced. Symptoms can be as mild as dizziness and nausea or as severe as vomiting, seizures and coma. Because drinking excessive fluid can flood the lungs and brain, hyponatremia can be fatal.

The 18-page "[Statement of the Third International Exercise-Associated Hyponatremia Consensus Development Conference, Carlsbad, California, 2015](#)" summarizes the most current information on the prevalence, etiology, diagnosis, treatment and prevention of so-called exercise-associated hyponatremia (EAH) for medical personnel, athletes, athletic trainers and the general public. EAH is hyponatremia that occurs during or up to 24 hours after physical activity, according to the consensus statement.

The 16 scientists represent four countries and nine medical and scientific sub-specialties related to athletic training, exercise physiology, sports medicine, water/sodium metabolism and body-fluid homeostasis.

The authors—all of whom hold doctorate degrees or are medical doctors—convened at the 2015 CrossFit Conference on Exercise-Associated Hyponatremia organized by the HEAT Institute on Feb. 20 in Carlsbad. CrossFit Inc. sponsored the conference but did not participate in the development of the consensus guidelines.

The [Clinical Journal of Sport Medicine](#) published the group's [first statement](#) in 2005 and [the second](#) in 2007. Updates are issued when there's "enough evidence to change or update the statement," Hew-Butler said.

"But it was accelerated by the deaths of the two football players."

[Zyrees Oliver](#) and [Walker Wilbanks](#), both 17-year-old high-school football players, died of EAH within two weeks of one another in August 2014.

"These football players were encouraged to ingest copious volumes of hypotonic fluids and sports drinks to prevent or relieve exercise-associated muscle cramps (EAMC) in the belief that EAMC was caused by dehydration and electrolyte imbalance," the authors wrote.

But studies speculate that EAMC might be caused by neurological changes brought on by fatigue—not uncompensated water and sodium losses incurred during exercise in some cases, according to the statement.

In the past, EAH was relegated to long endurance events, such as triathlons, marathons and ultra-marathons. In recent years, that's changed.

"The culture of 'drinking a lot of fluids will prevent heat stroke, muscle cramps, dehydration' is really being pushed in ... team sports without anyone realizing that there's hazards," Hew-Butler said.



***Dr. Arthur J. Siegel was among the scientists who authored the third consensus statement on hyponatremia. Like his colleagues, his advice is simple: Drink to thirst.***



***Years of bad hydration recommendations to guzzle water and sports drinks have trumped common sense, said Dr. Mitchell Rosner.***

Additionally, statement authors pointed to 21-year-old Matthew Carrington, [who died of hyponatremia](#) in February 2005 during a hazing incident at California State University, Chico, and to 25-year-old Washington, D.C., police officer James C. McBride, [who also died](#) of hyponatremia in August 2005 after a 12-mile bicycle ride for training purposes.

"It is likely that other cases of symptomatic hyponatremia have either not been recognized or reported," the scientists wrote.

Hydration is a balance, Hew-Butler said.

"But drinking too much will kill you. That's No. 1."

Preventing EAH is dependent on drinking less, according to the statement.

"Thirst should provide adequate stimulus for preventing excess dehydration and markedly reduce the risk of developing EAH in all sports," the authors wrote.

Thirst, they added, is "an evolutionarily conserved, finely tuned, regulatory mechanism. ... There are physiological sensing mechanisms in place to prompt when to drink and therefore guard against excessive dehydration."

Widely accepted hydration advice now permeating all levels of sports has made hyponatremia a growing concern, Hew-Butler said.

Excessively drinking beyond thirst is "not a panacea for all instances of fatigue, collapse, muscle cramping, or exertional heat stroke," the scientists wrote.

"The drinking of fluid volumes sufficiently above sweat and urinary losses before, during and after activity and the accrual (of) a positive water balance, is the primary underlying pathophysiological mechanism of symptomatic and fatal EAH cases," they continued.

Prevention, therefore, must focus on drinking behavior, the authors said.

"What's frustrating is the information has been out there for 10 years," Hew-Butler noted. "How do you convince people that thirst is adequate?"



### About the Author

*Andréa Maria Cecil is a CrossFit Journal staff writer and editor.*