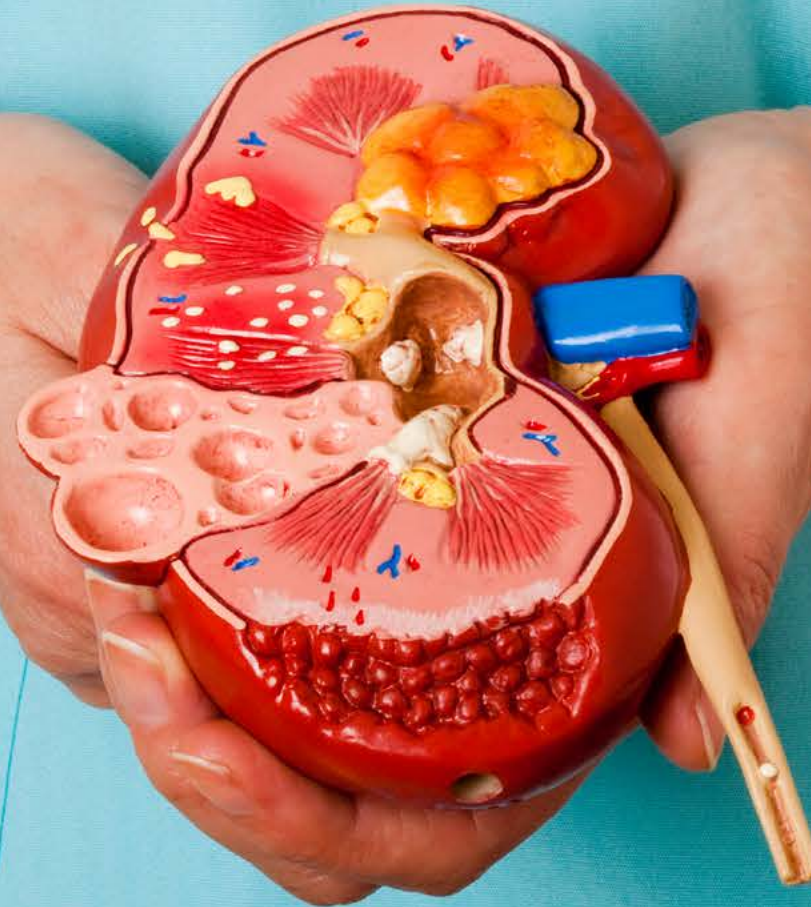


THE  
**CrossFit** JOURNAL

# SODA WIDOWS

BY ANDRÉA MARIA CECIL

Scientists link repeated hydration with sugar-sweetened beverages to kidney disease and early death in Central America.





Dr. Richard Johnson



The American Society of Nephrology's Kidney Week conference was held Nov. 3-8 in San Diego, California.

It's called La Isla de Viudas: Widows' Island.

The name comes from the rural sugarcane-worker community of La Isla in Nicaragua, where thousands of men have died from the same epidemic over the last two decades, leaving behind women and children. All perished of chronic kidney disease, referred to as "CKD," and researchers estimate the overall death toll in Central America is at least 20,000. The condition targets working-age men, most of whom labor in the region's ubiquitous sugarcane fields.

These men do not have diabetes, hypertension or hereditary kidney disease, said Dr. Richard Johnson, professor of renal diseases and hypertension at the University of Colorado Denver's Anschutz Medical Campus in Aurora.

"It's what we call 'chronic kidney disease of unknown etiology' ... so it's been a big mystery," Johnson said during a Nov. 7 presentation at the American Society of Nephrology's Kidney Week conference in San Diego, California.

Johnson—along with 13 other scientists—investigated the mystery, and the *American Journal of Kidney Diseases* published their findings on Oct. 5. All told, the group of researchers studied 189 sugarcane workers in El Salvador, taking samples of blood and urine from the men, measuring their blood pressure, and tracking other markers.

The workers' long hours spent doing backbreaking labor in extremely hot temperatures lead to chronic dehydration—dehydration on a daily basis, Johnson said.

"The primary thing we see is ... repeated dehydration," he explained. "These people are going out and working under very hot conditions."

And even though some of them were hydrating, they are working in heat and humidity that would exceed recommendations set by the U.S. Department of Labor's Occupational Safety & Health Administration (OSHA).

Johnson, author of "The Fat Switch," added that climate change is also playing a role as CKD is increasingly being reported in

areas with extreme temperature swings: Egypt, India, Sri Lanka. Likewise, this form of CKD is being seen among construction workers, miners and high-performing athletes, too, he noted.

Further exacerbating the workers' condition is their hydration drink of choice: sugar-sweetened beverages, a class that includes soda, sports drinks, juices and other fluids to which sugar is added. More often than not, workers turn to soda in many Central American countries where clean drinking water is unavailable or soda is cheaper than bottled water.

"They don't trust water," explained Miguel Lanaspá, assistant professor of research at UC Denver's Anschutz campus. "They think water makes them sick."

Thus, the question arose: "Could sugar-containing rehydration solutions worsen dehydration-induced kidney disease?"

"There has been a marked increase in intake of sugary beverages throughout the world," the scientists wrote in the study. "Fructose, which is present in soft drinks, can induce tubular injury in laboratory animals. Sugary beverage intake

is also associated with increased risk for hyperuricemia and nephrolithiasis and may increase urine acidity due to fructose-dependent stimulation of the proximal tubule sodium/hydrogen exchanger."

To begin remedying the situation, working conditions must improve and hydration practices have to change, the scientists wrote in the study.

"If you drink a soda for hydration, you are killing your body," Johnson told the *CrossFit Journal*. "We know that soda drinking increases the risk of kidney disease." ■

## About the Author

Andréa Maria Cecil is assistant managing editor and head writer of the *CrossFit Journal*.