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ADDICTS AND ANECDOTES

More and more, science is confirming what athletes report:
Avoiding sugar can improve health and performance.

BY EMILY BEERS



Food is fuel. Choose wisely and you'll complement your hard work in the gym. Choose foolishly and you'll derail it.

The first week was hard. Really hard.

“My body told me it wanted sugar,” said Tanya Chick.

An athlete at CrossFit E-Town in Evanston, Illinois, Chick said she was addicted to Trader Joe’s freeze-dried mangoes.

“I would buy 15 bags at a time,” she added.

Chick’s mango fetish came to an end the moment she signed up for her affiliate’s No Sugar November nutrition challenge last fall. She said conquering her sugar addiction was difficult.

“But once you get through those first two weeks, then it’s mind over matter,” Chick said.

Soon, her cravings went away and she started feeling better, sleeping better, performing better.

“Little performance things, like my shoulder that had been bugging me for a while, suddenly didn’t hurt. All the little nuances in my body felt better,” Chick said.

Kevin Teborek, owner of CrossFit E-Town, instituted the no-sugar challenge. Through research—which included a [CrossFit Kids Facebook post](#) he came across—Teborek realized sugar comes with zero benefits and many risks to the body.

“I wanted to introduce some of the dangers of (added) sugars to my community and get them thinking about what they’re doing on a daily basis,” he said.

Although generating awareness was the impetus behind No Sugar November, the challenge did more than that: Teborek’s athletes experienced significant physical and emotional improvements from just one month without sugar.

Interested in using science to prove a sugar-free diet improves health quickly, Teborek is running a second challenge in spring 2016; he plans to partner with a lab to measure his athletes’ blood chemistry.



Dr. Robert Lustig

Short Study Shocks

The Lustig study monitored 43 children between the ages of 8 and 18. All were obese and displayed at least one symptom of metabolic syndrome. The children received low-sugar catered meals for 10 days. Their metabolic health was measured at the beginning and end of the study through blood and glucose-tolerance tests and through dual-energy X-ray absorptiometry, which assessed their bone, fat and fat-free mass.

The goal of the study wasn't to promote weight loss or healthy carbohydrates, Lustig explained: The goal was simply to control for and measure the effects of reducing sugar by keeping the children's total calories consistent with the totals in their self-reported diets.

"We kept (the subjects') fat and protein content the same and the total calories the same, but within the carbs, we took out sugar and put starch in. We took out the sweetened yogurt and put in the baked potato chips. We took out the doughnuts but put bagels in," Lustig said. "We took their total dietary sugar from about 28 percent to 10 percent (of their total calories)."

The result: metabolic-health improvements in every category, Lustig explained—from triglycerides to LDL levels (the bad kind of cholesterol), diastolic blood pressure, glucose levels, glucose tolerance and fat-free mass.

"We expected change, but we were astonished by the magnitude of the changes."

—Dr. Robert Lustig

"Their insulin went down by 33 percent. And their liver fat decreased 22 percent," Lustig said.

The results were so dramatic Lustig's colleague and co-author Jean-Marc Schwarz jokingly accused the doctor of tampering with the test tubes.

"My colleague—the biochemist on the study—called me up and said, 'Rob, did you spit into the tubes?' I replied, 'Are you high?"

An Oct. 26 study in the journal [Obesity](#) supports Teborek's anecdotal evidence from the November challenge. In "Isocaloric Fructose Restriction and Metabolic Improvement in Children With Obesity and Metabolic Syndrome," Dr. Robert Lustig and company replaced foods with added sugars with other foods but kept caloric intake steady for participants. The resulting data indicated metabolic health markers improved dramatically in the study's 43 subjects after just 10 days of following a low-sugar diet.

Teborek said he wasn't surprised when he heard about the results of the study.

"Consuming sugar affects us negatively more than anything else," he said.

What do you mean?" And he said, 'If I had made this data up the results couldn't have been better.'"

He added: "We expected change, but we were astonished by the magnitude of the changes. Every aspect of their metabolic health improved."

A Quick Return on Investment

CrossFit E-Town is far from the only affiliate to motivate members to remove sugar from their diets. CrossFit City Line in Watertown, Massachusetts, CrossFit Springfield in Missouri and CrossFit Southie in Boston, Massachusetts, have also committed themselves to eliminating added sugar.

Melissa Wistrom of CrossFit Springfield said reducing added sugar helped her and her children.

"My son gets bright flaming-red ears and a weird rash around his nose (when he eats sugar). It almost looks like fever blisters around his nose. And it's harder for him to focus," Wistrom said.

The moment she removed sugar from her son's diet, his rash and red ears went away, and his behavior changed for the better, she said.

"When he isn't eating sugar, he's a totally different kid."

While the link between diet and skin-related problems such as eczema and acne has long been debated, research links diet to skin. In "Acne: The Role of Medical Nutrition Therapy," published in 2013 in the [Journal of the Academy of Nutrition and Dietetics](#), authors Jennifer Burris, William Rietkerk and Kathleen Woolf reviewed the literature on diet and acne. With regard to a modest number of studies done over the last 52 years, the authors suggest that sugary foods might aggravate acne-prone skin.

Christina Morris is another who witnessed big changes in athletes at CrossFit Southie when she held a 21-day no-sugar challenge in 2015. The challenge required athletes to avoid dried fruit as well as sweeteners such as high-fructose corn syrup, agave syrup, maple syrup, honey and coconut sugar, Morris explained. Participants had to limit their natural-sugar intake to only one piece of fresh fruit per day.

Just one week brought noticeable positive changes, said Morris, a head coach at the affiliate.

"(They dropped) pounds and inches off their waistline," Morris explained. "And they couldn't believe how they no longer had crazy food cravings throughout the day."

Chick noted improved sleep and reduced aches and pains shortly after she eliminated sugar from her diet. While sugar has long been associated with [diabetes and obesity](#), research also suggests sugar causes inflammation—which can lead to chronic muscle and joint pain.

Also consistent with Chick's experience, sleep and diabetes websites such as [diabetes.co.uk](#) note blood-sugar levels can affect sleep patterns, and a 2014 study in the [European Respiratory Journal](#) reported links between severity of sleep apnea and increased levels of blood sugar.

The 2014 Open Heart article "[The Wrong White Crystals: Not Salt but Sugar as Aetiological in Hypertension and Cardiometabolic Disease](#)" added evidence to the growing theory that consumption of sugar—particularly fructose—leads to inflammation and insulin resistance as well as metabolic dysfunction.

Other recent research—including the 2012 article "['Metabolic Syndrome' in the Brain: Deficiency in Omega-3 Fatty Acid Exacerbates Dysfunctions in Insulin Receptor Signalling and Cognition](#)"—suggested sugar and fructose negatively affect brain function, and the [National Institute of Diabetes and Digestive and Kidney Diseases](#) noted sugar can also cause gastrointestinal problems.

When CrossFit athlete Simon Anolick eliminated sugar during CrossFit E-Town's No Sugar November, he said he immediately noticed the effect it had on his bowel movements and digestive system. They just seemed to function better, said Anolick, who also lost 15 lb. during the challenge.

He added: "I'm not waking up as many times in the middle of the night. And my clothes fit better. I just feel much better."

Mat Frankel, owner of CrossFit City Line, was convinced by the growing amount of evidence.

"I heard about this type of study (Lustig's) a lot through Facebook and on TV and read about consequences of sugar, like childhood obesity," Frankel said.

Frankel launched a no-sugar challenge in April 2015 and held a second one last fall. Like Teborek, Frankel set a main goal of generating awareness.

“People don’t realize (sugar is) everywhere. It’s in ketchup. It’s in Jif peanut butter,” Frankel said. There are 3 grams of sugar in 2 tablespoons of Jif peanut butter and 4 grams of sugar in 1 tablespoon of Heinz ketchup.

Anolick discovered his favorite treat—Kraft peanut butter—has added sugar, and he was forced to eliminate it from his diet. Breaking his peanut-butter addiction wasn’t easy, he said.

“Everyone usually has one thing—one thing that feels harder to give up than others.”

While Anolick’s “one thing” was peanut butter, many of the athletes at CrossFit Springfield had a hard time letting go of their sugary beverages.

“People really struggled with giving up Coke and Diet Coke and the Gatorades and things like that,” said Wistrom. But once they got over the first week or two of detox, life improved, she explained.

Despite the challenge of breaking their addictions, Wistrom, Anolick and Chick agreed doing so was well worth it.

“It’s hard to put into words what (avoiding sugar) does to you. It just makes you feel better,” Chick said.

Chick might not have the words to describe exactly how reduced sugar consumption affected her, and many affiliates only have anecdotal evidence to justify the success of no-sugar challenges, but researchers are providing more and more backup. The science is sound, Lustig said, and has helped bring the negative consequences of consuming added sugar into the mainstream. ■

Feb. 24, 2016—Corrects to clarify relationship between blood sugar and sleep.

About the Author

Emily Beers is a CrossFit Journal contributor and coach at [CrossFit Vancouver](#). She finished 37th at the 2014 Reebok CrossFit Games.



Tanya Chick said her health and performance improved when she addressed a sugar addiction fueled by freeze-dried mangoes.

Kevin Teborek