



Sports Medicine Experts Say Female Athlete Triad Syndrome is a Growing Concern

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When an adolescent female patient comes to [Nationwide Children's Hospital's Sports Medicine](#) clinic, not only are these young women treated for their sports-related injury, but their sports medicine physician will also ask if they've missed any periods, because of a growing concern among female athletes.

Anastasia Fischer, MD, a physician in Sports Medicine at Nationwide Children's, says that is because female athlete triad syndrome is more prevalent than previously realized. The female athlete triad has three interrelated components: disordered eating low energy availability (often caused by not eating appropriately), dysmenorrhea (change in a girl's period), and low bone mineral density.

Regan, a high-school track and cross-country athlete from Columbus, Ohio, said she didn't realize how serious the symptoms she was experiencing were until she suffered a stress fracture. The sports medicine team at Nationwide Children's helped her realize that this injury, and her loss of bone density, was due to the fact that she needed several hundred more calories a day than she realized because of how many she burns as a busy high school athlete.

"Many girls are so active they need 3,500 calories a day because they are competing at a high-level," said Dr. Fischer. "Some girls who have this syndrome do have serious eating disorders, but most do not. Rather, most adolescents just do not realize how important eating the appropriate amount of calories and proper nutrition is for their athletic performance and general wellbeing. Girls underestimate that food is fuel."

Dr. Fischer, also a faculty member with The Ohio State University College of Medicine, says the triad is a continuum and when it is broken down, you can see how the three elements are interrelated and that many girls fall along this scale. She suggests this might not just be an athlete problem, but an adolescent American problem. New research is even showing that early hormonal detection could help these adolescent females even before they start missing periods, when they could first be at risk for problems the female athlete triad.

"It may be uncomfortable for a young female athlete to let her coach, or even her parent, know that she is missing periods," said Dr. Fischer, so she is currently researching how school physicals, required to play school sports in the state of Ohio, could help address this problem early on.

[Jessica Buschmann, RD](#), a dietitian in Sports Medicine at Nationwide Children's, consults with female athlete triad patients like Regan when they are first diagnosed. She sees not only female athletes who suffer from the female athlete triad who benefit in their sport from being lean, like rowing and track, but also patients in aesthetic sports where athletes are –partly judged by their appearance, wear more revealing attire, or may be judged, like gymnastics and dance.

Buschmann's advice to the female adolescents she works with is that they should be tracking their menstrual cycle, which can now be done easily and privately using an app for their smartphone. Girls should talk to their parent or doctor if they are going more than 35 days in between periods, skipping occasional periods, if their periods have stopped, or if they are 15 years old and have not yet experienced a menstrual cycle. By eating meals with their children, parents can assess their attitudes about eating. All athletes should have a nutrition plan that consists of getting enough calories throughout the day.

"We have girls who are competing at a very high level who aren't even meeting the minimum requirements for health. They might be only eating 600-800 calories in a day. Because they are energy deficient, they will suffer not only in their sport, but their health in general will suffer," said Buschmann.

The short-term consequences of the syndrome are a dysfunction menstrual cycle, and for young adults, that could lead to potential fertility issues. As the disorder progresses, the consequences can be serious. The athletes become more prone to various injuries, the time to recovery may be prolonged, bone mineral density can start to decline and they may begin to experience early stages of vascular disease. The more periods an adolescent misses, the more likely that their problems could become serious down the road. However, the short term solution is simple: eat healthfully!

[Click here to watch Regan's story and learn more about Female Athlete Triad.](#)

Regan is a track and cross country runner who was diagnosed with Female Athlete Triad Syndrome. She had no idea that two stress fractures in her legs were caused, in part, because of her eating habits.

Source: <http://www.nationwidechildrens.org/news-room-articles/sports-medicine-experts-say-female-athlete-triad-syndrome-is-a-growing-concern?contentid=124015>

Common Deficiencies in Female Athletes

Calcium

Iron

Zinc

What Is Female Athlete Triad?

When women and girls don't eat enough to fuel their workouts, their sport and long-term health can suffer.



A study found that 4.3 percent of female athletes had all three components of the Female Athlete Triad.

By [Anna Medaris Miller](#) July 23, 2015, at 4:12 p.m.

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It started innocently enough.

Nan Zhu, a 14-year-old high school freshman at the time, signed up for the school's crew team and wanted to perform her best. At 5 feet 3 inches small – "I wasn't really built to be a rower," she says – Zhu felt she had to work harder than her more height-gifted teammates. So she gave it her all during practice and started learning about *healthy eating* for the first time.

"I really wanted to train to just be good and be on the team and do well," says Zhu, now a 24-year-old medical student at the University of Rochester School of Medicine and Dentistry in New York.

Then, it got out of hand.

In addition to training two hours each weekday with the team, Zhu also clocked at least two hours of exercise nightly on her own, running or hitting the gym after finishing her homework. She turned down invitations to the mall or amusement park because she worried she wouldn't have enough time to work out.

Zhu's food rules were just as rigid. Instead of eating healthfully most of the time, she *ate healthfully all of the time*, never surpassing the recommended serving size of baby carrots, for instance, or even tasting her own baked goods. She avoided social situations like going to dinner and a movie because deciding what to order was too nerve-wracking. "My friends noticed I became really withdrawn," she says.

For about two years, she stuck to the regimen, dropping to a low of 85 pounds and losing her period. Her hair thinned and her skin dried out. "None of those things were really that concerning to me," she says. But then Zhu started experiencing increasingly frequent quad and hamstring cramps that compromised her athletic performance.

"Sometimes they would be so severe I wouldn't be able to walk; it was just so tight and painful. At that point, I started to realize that maybe this was too much, and clearly I wasn't fueling my body enough," she says. "That's when I started thinking maybe I need to get help."

A Triple Threat

Zhu's internist eventually told her she had female athlete triad, a condition that usually consists of three interrelated symptoms in active girls and women: not eating enough (whether intentionally or not), menstrual changes and weak bones, according to the [Female Athlete Triad Coalition](#), an international nonprofit that promotes health and well-being among active girls and women. Though the three prongs of the condition often coexist, women and girls can still have female athlete triad if they only have one or two, says Dr. Elizabeth Joy, a sports medicine physician in Salt Lake City and president of the coalition. "Each of these conditions is on a spectrum, and having one ought to prompt investigation for the others," she says.

Boys and men who don't eat enough to fuel their activity may also suffer from a similar syndrome, but there's not enough research yet to confirm it. While [some professionals](#) have proposed the term "relative energy deficiency in sport," or RED-S, to describe the condition in both genders, [others say](#) changing the name of female athlete triad after more than 30 years of research on it would be a step backward for female athletes.

It's unclear how many women suffer from the triad, but [one study](#) found that 4.3 percent of female athletes had all three components of it and anywhere from 5.4 percent to 26.6 percent had two. The condition may be on the rise as more women and girls participate in sports – 3.37 million in 2010 compared to only 310,000 before Title IX gave women and girls equal access to federally-funded education programs and activities in 1972 – according to a [2015 study](#) in the Journal of the American Academy of Orthopaedic Surgeons.

The syndrome is particularly common among [girls and women who participate in sports](#) that value a lean physique, such as cross-country, gymnastics and ice skating. "They think, 'The

lighter I am, the better runner I'll be' or 'the better gymnast I'll be,' and then they end up getting injured," says Nancy Clark, a sports nutritionist in Newton Highlands, Massachusetts, who sees women with the condition daily.

That was Alyssa Burns' thought process as a 15-year-old competitive gymnast in Long Island, New York. Although she was already thin, she thought being thinner would give her a leg up on the competition. "You're flying through the air, and so it's easier if you're small," says Burns, now a 22-year-old aspiring registered dietitian. "I decided that in order to win, I needed to lose weight."

But that didn't work. Instead of winning or losing much weight, Burns lost the energy she needed to keep her head in the game. "I would freak myself out doing things," she says. "[My teammates] knew something was wrong."

More than just hurting sports performance, the female athlete triad seems to contribute to issues with [fertility](#) and bone health even long after women recover, says Mary Jane De Souza, a professor of kinesiology and physiology at Pennsylvania State University who studies the condition.

"That's the big concern: Can we reverse bone health problems? We're not 100 percent confident that that can happen," she says. "And that's why it's a big deal because these women will enter the menopause years at a much lower bone density and precipitously become at risk for osteoporosis sooner than the average woman."

Refueling for Health

Treating women and girls with female athlete triad can be challenging since many of them don't realize they have a problem, don't want to get help or don't see a professional who recognizes the syndrome. An orthopedist, for example, may only see a [stress fracture](#) and prescribe a walking boot, a coach may only see a lack of energy and suggest [more sleep](#), and an OB-GYN may only see a few missed periods and prescribe [birth control pills](#). Or, as in Burns' case, a nutritionist might see a healthy-looking athlete and send her on her way.

All solutions miss the point: The woman or girl needs to eat more food, De Souza says. "We don't want to send the notion that exercise is bad because exercise is very good," she says. "It's just that they have to eat enough food to support their caloric expenditure," she says. Once that's addressed, the related symptoms are more likely to resolve, too.

But getting active women and girls to eat more, cut back on their exercise or both isn't always easy, says Joy, also professor of family and preventive medicine at the University of Utah. That's why it's important to start with a physician who specializes in the condition, like one from the Female Athlete Triad Coalition's [directory of physicians](#). It's also often helpful to work with a team of providers that include dietitians and therapists who can help women deal with any accompanying [disordered eating](#) or body image issues, says Joy, whose clinic includes a nurse, seven dietitians and nine therapists.

"Some of those conversations are really difficult – sometimes you get a lot of tears, sometimes you get a few four-letter words," she says. But other times, women are

relieved. "[They say,] 'I know I'd rather be competing and training, but it's almost a relief somebody is listening to me, and I have an opportunity to be healthy.'"

For Burns, that opportunity came her freshman year of college when she saw a dietitian who taught her how to [eat more mindfully](#) and forbade her from restricting food. "All those years of yo-yo dieting and eating so not normally makes you forget how to eat," says Burns, who would often limit herself to 500 calories a day and eat only Goldfish crackers for lunch. Now, she focuses on eating when she's hungry and stopping when she's full. "Your body tells you what you need if you just listen to it."

Zhu, on the other hand, started to get healthier at age 16 after a checkup with her pediatrician, who was concerned about her irregular periods. After ordering lab tests, the doctor discussed ways Zhu could incorporate [more fats](#) and protein into her diet. "At first, I kind of tried to brush it off because a lot of what was driving it – hard work and persistence – those traits are usually rewarded," she says. "So it was kind of hard for me to make that switch to: maybe all of this isn't good anymore."

But she did, and now jogs just a few times a week and practices yoga when she can fit it into her packed medical student schedule. "A lot of the anxiety around it and feelings of guilt – that's gone," Zhu says. "I feel a lot more balanced."

Source: <http://health.usnews.com/health-news/health-wellness/articles/2015/07/23/what-is-female-athlete-triad>