UNTIL last spring, running was going great for 15-year-old Erik Kraus. He had been training hard without a break for 18 months and was becoming faster and faster.

Then, when spring track started, something went awry. Every time he raced 1,500 meters, his time was 15 seconds slower than in the previous race.

Erik’s father, Dr. William Kraus, a runner himself and a cardiologist at Duke University who studies exercise, was concerned. Erik was tired all the time; his legs felt heavy; he was frustrated, irritable. Could it be the condition that athletes dread: overtraining?

Overtraining is the downside of training, the trap that can derail an athlete’s success. It’s a real physical condition caused by pushing too hard for too long.

It can happen with too much exercise, too much intense exercise, or both. Its hallmarks are poor performances, exhaustion and apathy.

“You just feel bad,” said Dr. William O. Roberts, an internist at the University of Minnesota who specializes in treating athletes and is a former president of the American College of Sports Medicine. “The spark is gone.”

It can come on so insidiously that before athletes know it, they find themselves trapped in a downward spiral. The harder they train, the worse they do.

But there’s another trap — the overdiagnoses of overtraining, said Dr. Steven Keteyian, the director of preventive cardiology at Henry Ford Hospital in Detroit.
Dr. Keteyian, who has written textbook chapters on the condition, cautions that it is quite rare. But many athletes worry about overtraining every time they fail to perform as well as they think they should.

“It doesn’t happen over a two-week period of time,” Dr. Keteyian said. And it is unlikely to strike someone running 20 miles or so a week or doing the equivalent amount of another endurance sport, he said.

“Twenty miles is nothing,” Dr. Keteyian said. “Talk to me when you are running 50 miles a week. If you are a runner and have a steady history of running 40 to 70 miles a week and now you are pushing it to 80, 90, 100 miles a week and your times are dropping and you are feeling sluggish, then I’ll start to listen.”

Overtraining is an unintended consequence of the only known way for athletes to improve — by pushing their bodies and stressing themselves by deliberately going faster or longer than feels comfortable.

“Training a little bit beyond your capabilities is the only way to get better,” Dr. Kraus said. “But you have to balance that with rest and recovery. It’s a fine line. Where is that edge and how do you get as close as possible without going over it?”

Elite athletes and their coaches are acutely aware of overtraining, said Frank Busch, the head coach for the University of Arizona’s swimming team and an assistant coach for the United States men’s Olympic swimming team. And they have become adept at heading it off.

Not too long ago, coaches thought that volume — hours upon hours of training — was the key to outstanding performances, Mr. Busch said. “The result was sort of an arms race among swimmers and other endurance athletes to see who could train the most,” he said. “Athletes began getting overtrained.”

Now coaches and swimmers know that there is a point of diminishing returns. Coaches look for signs that their athletes are doing too much. Performance is one indicator, of course, but so is something
as simple as a swimmer who has stopped smiling, Mr. Busch said. “That’s usually a sign that they are dreading practice or there is something else going on. Maybe they are exhausted around the clock.”

Dr. Roberts said that among his recent overtrained patients was a young man who was a stellar Nordic skier. A year and a half later, in marched another: the man’s mother, a middle-aged woman, also a prize-winning Nordic skier.

“They both trained too hard,” Dr. Roberts said. Both, he added, “were more or less self-coached at the time.” No one was monitoring them.

“Athletes are obsessed and gullible,” Dr. Keteyian said. “They will do anything they can to improve their performance and they don’t know when to stop.”

Dr. Roberts suggested that athletes who feel tired all the time first take some time off from their sport, perhaps a few days to two weeks. If they still do not feel better, they should see their primary-care doctor and mention that they are concerned about overtraining. Or, he said, they might want to seek out a physician who specializes in sports medicine — a list is available on newamssm.org.

“An athlete would want to look for a physician who practices the broader scope of sports medicine and has not limited his or her practice to musculoskeletal problems,” Dr. Roberts added.

As for Dr. Kraus, he told his son to take a two-week break. That did not help. He had the youth tested for ferritin, an iron storage protein. Overtrained athletes can have low iron levels and anemia, although overtraining is not the only cause.

But even though Erik’s ferritin levels were sub par, and even though they rose slightly when he took iron supplements, he felt as tired and sluggish as ever. In the end, Erik Kraus ended up taking two months off. It was not easy. Like other athletes, he wanted to train, wanted to race, and he worried that he would never be competitive again. Now, finally, he has returned to running.

“When he first started back, he said, ‘Oh, my gosh, this feels good,’ ” Dr. Kraus recalled. Then Erik went for an eight-mile run with the fastest runner on his team. He not only kept up with his teammate but pushed him at the end.

Erik returned home from that run all smiles. “He said, ‘Dad, I had a breakthrough today,’ ” Dr. Kraus said.


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