

Elite athletic performance takes more than talent and preparation: University of Oregon athletes turn to supplements for an edge

By Catie Feldman, Max Londberg and Melissa Haskin

Within the confines of the Casanova Center -- a place reserved for University of Oregon athletes and their staff -- is a small white cabinet. It would be easy to overlook, located in the dimly lit hall, no taller than the recycling bin it's next to.

But that would be a mistake.

The cabinet houses one of the secrets to the Oregon athletic program's rising success: the individualized vitamin regimens of more than 200 athletes. Each day, cups are filled with combinations of vitamin D, iron, calcium and a multivitamin.

"Everyone gets a multivitamin," says Adam Korzun, Director of Sports Nutrition at UO. "Excess of the basic multivitamin isn't going to be a benefit, but having a deficiency hurts."

Omega-3, commonly taken by athletes to reduce inflammation, is missing from the cup due to a technicality. Athletes can still take it, but university trainers can't provide it.

When someone is deficient in iron they can be lethargic, and for female athletes especially it can be important to take a supplement. And in Oregon, with its notoriously rainy weather, lack of sunlight can deplete an athlete's vitamin D stores, but a supplement can replenish these elements critical to an athlete's health and performance.

Vitamin D

It may be difficult to comprehend that a University of Oregon athlete could be deficient in anything other than body fat, fast-food binges and, perhaps, sleep — a result of grueling practice schedules. Collegiate athletes bring to mind optimal fitness, not insufficiencies in any area of health.

When it comes to vitamin D, however, anyone living in a climate such as Oregon's is at risk for being deficient, including athletes.

"I know that when it's not as sunny, you don't have as much vitamin D, so that's probably why I take it the most," says Erika McCool, a junior on the women's Oregon lacrosse team.

McCool didn't take supplements before her freshman year at the UO. Now she takes a multivitamin, calcium and vitamin D about every other day. McCool noticed a difference in her energy levels after she started taking vitamin D.

"I think the biggest difference I noticed was during the winter," says McCool. "Taking vitamin D more often, I had higher energy. I wasn't tired during school coming from practice."

Part of the credit for this can be given to Korzun. Korzun knows exactly what athletes should be putting into their bodies to achieve maximum performance. As the former dietician for the United States Olympic Committee, he knows what it takes to fuel elite athletes.

Korzun, speaking about his new role at the collegiate level, says that all incoming athletes are tested for low levels of a number of vitamins and minerals. However, even before the tests, he gives everyone two supplements from the outset.

“We start all athletes across sports on a multi-vitamin and vitamin D,” Korzun says, “especially living in Eugene where there’s not a lot of sun.”

Vitamin D has a number of health benefits, but its emergence into the sports stratosphere has only happened within the last two years at UO, according to Korzun.

Part of the reason for this are the compelling and thorough endorsements of the vitamin through many studies. Some of which have tested its effect on muscle function in the elderly.

Bruce Hamilton published one such study, “[Vitamin D and Athletic Performance: The Potential Role of Muscle](#).” For the study, 85 elderly stroke patients deficient in vitamin D were tested on muscle growth during a two-year supplementation period. Patients were given either a placebo or vitamin D2, the form commonly found in plants. At the beginning of the study, all patients had a low level of Type II muscle fibers, or fast-twitch muscles, which are used for low endurance, high power movements.

“At the two year follow-up, the placebo group had a further reduction in Type II muscle fibre diameter,” wrote Hamilton, “while in the Vitamin D2 supplemented group the relative content and mean diameter of Type II fibres increased. Muscle fibre size was found to correlate with ... vitamin D levels.”

“The studies with the elderly, showing improved muscle functions, are fairly impressive improvements,” says Adrian Gombart, a principal investigator at the Linus Pauling Institute. “Even a little edge might make a difference (for athletes).”

The Linus Pauling Institute, located on the Oregon State University campus, focuses on micronutrient research for optimum health. Gombart studies vitamin D and its effect on the immune system. He says that the increase in interest in vitamin D and athletic performance can partly be attributed to studies such as Hamilton’s.

Gombart says that aside from muscle function, vitamin D is involved in bone health, immune functions such as regulating inflammation, overall cardiovascular health, and it can even play a role in cancer prevention.

“It’s thought vitamin D is critical to a lot of different processes in our bodies,” says Gombart.

These overarching benefits, in addition to the studies done with muscle function, have caused the recent association of vitamin D and enhancing athletic performance. And while it’s common for

University of Oregon athletes to take the it, Gombart notes that vitamin D will never be confused with a performance-enhancing drug.

“I don’t know if it will make dramatic changes (in athletic performance),” Gombart says, “but it will improve overall health, which could lead to overall improvement in performance.”

Korzun only administers low doses to athletes who are deficient. His main concern is ensuring they have enough calcium in their bodies, yet another area benefitted by sufficient levels of vitamin D.

“What we do know is it’s involved in calcium uptake in the bones,” Korzun says. “If you have all the calcium in the world and no vitamin D, you’re not getting that calcium into your bones.”

High-level athletes are not the only ones who should be concerned with vitamin D deficiency. The CDC published [a report](#) on the issue in 2011, finding that as many as 25 percent of Americans were at risk for having inadequate levels of vitamin D.

Gombart says the main source of vitamin D is synthesis through the sun. For those with fair skin during the summer, only a few minutes is needed to take in a significant amount of vitamin D. However, during the winter in Oregon, the UVB rays in the sunlight are not strong enough for vitamin D to enter the body.

Another, more recent obstacle to synthesis is sunscreen and UVB-protective clothing. Both are critical for protecting against skin damage but are equally effective at blocking vitamin D from entering the body.

“Sometimes there’s an assumption that athletes might have higher levels, especially if their activities are outdoors,” Gombart says, “but that could be affected by a number of factors, such as UV protective clothing or putting on sunblock.”

Gombart advises anyone who feels they may be at risk for vitamin D deficiency to have their levels tested by their physician, including athletes.

“Athletes are just as likely to have low levels as anybody else in the population,” he says. “Unless their program actively monitors it and supplements to keep the levels up.”

(Sidebar)

The Institute of Medicine recommends 600 international units a day to maintain optimal vitamin D levels. The [Mayo Clinic](#) reports individuals taking 1,000 IU a day had a lower incidence of colon cancer and cardiovascular disease.

Iron

When seemingly easily explained ailments occur, college athletes who are overworked and consistently running on little sleep tend to brush them away. Fatigue often occurs because of exhaustion; lethargy could happen from tensing up due to stress.

But something else entirely may be causing these problems.

Iron. Or, more accurately, a lack thereof.

For female athletes, assuring iron levels are sufficient is critical for them to perform at their full potential. If a female athlete learns she is anemic, it will take 4-6 months for her levels to reach normalcy. It's easier to beat anemia to the punch than to wait for it to hit.

Mo Fitzgerald, a senior center midfielder on the UO women's soccer team, has always had low iron. Because of this, she's been taking iron supplements since her sophomore year of college.

"Before I started taking it, when I was a sophomore, I was just super fatigued," says Fitzgerald. "I started off just taking it sporadically. I've been doing better and I would say that my energy level has gone up."

Fitzgerald isn't the only female athlete who's suffered from lack of energy due to not having enough iron. Taryn Hand, a graduate student at OSU and a former college distance runner who works with women's cross country teams, used to suffer from anemia as a result of iron deficiency.

"Not having energy is the huge thing," Hand says. "I know a lot of people, both me and athletes I've worked with – you'll be fine during workouts with shorter intervals, but during a race at that intensity and long period of time, you're wiped from it."

Iron deficiency anemia is one of the most common mineral deficiencies in the world, according to Dr. Stella Volpe, Professor and Chair of the Department of Nutrition and Sciences at Drexel University in Philadelphia.

One of the first things people recognize is that they just feel lethargic. They feel tired," says Volpe. "When it comes to athletic performance, because iron is so important in oxygen consumption and we have high oxygen consumption when we exercise, that will decrease exercise performance."

Because of women's diets (which often lack red meats) and menstrual cycles, the deficiency is much more common among women than men. The average woman needs 18 mg per day while the average man only needs 8 mg per day, says Volpe. With a diet that's already prone to lack iron, this means that if deficient, women usually need to make up the difference with a daily supplement. One trick to boosting iron is to eat iron rich foods and supplements along with citrus, because it helps the iron absorb faster.

Iron deficiency leads to fatigue and lack of energy because it hinders oxygen from traveling throughout the body. "When you exercise, you have to carry more oxygen more quickly to the muscle," says Volpe. "If you don't have enough iron to make hemoglobin or myoglobin, then you're really going to feel very tired, and you won't be able to perform at a higher level."

Omega-3

As per the NCAA bylaws, trainers cannot distribute or suggest the taking of omega-3 says Adam Korzun, Director of Sports Nutrition. However, students are free to take as much as they'd like on their own he says adding "I don't have any idea why."

As of the time this article was published, the NCAA could not be reached for comment.

So what's the deal?

It's a fatty acid explains the The Mid-Eastern Athletic Conference in a newsletter. "Permissible non muscle-building nutritional supplements are identified according to the following classes: Carbohydrates/electrolyte drinks, energy bars, carbohydrate boosters and vitamins and minerals." Omega-3 doesn't fall under any of these categories and thus it's impermissible for the University to give it out.

Chris Depner, who has his master's degree in nutrition exercise, has the answer. Omega-3 is a fatty acid, not a vitamin or mineral.

The University of Oregon Executive Assistant Athletic Director of compliance isn't really sure either, "my take is that Omega-3 does not provide additional calories or electrolytes. But I'm no nutritionist..."

Fatty acids are what make the cells that make up our body says Depner. They're especially key to our eyes and brain, but "your body doesn't make those," he says. Enter Omega-3, the fatty acid that works as a building block in our body.

"If you think of bricks making a building, a lot of those bricks would be fatty acids," says Depner.

Depner doesn't know why exactly the NCAA bylaws are what they are. "That's extremely shocking to me," he says. "That would be the equivalent to tell a dietician can't give athletes a vitamin or a mineral."

Depner doesn't see omega-3 as giving athletes an extra advantage. Instead, it helps with injury prevention and recovery. "Very broadly, they're anti-inflammatory," says Depner. "If you get injured, there's an inflammatory response to repair tissue...so part of the job of omega-3 is to turn off that inflammation."

Matt Miner, Duck's track and field middle distance runner takes omega-3 of his own accord. He says he doesn't notice a difference but thinks it's useful "given how much inflammation I subject my body to, it's more than a little useful," he says.

Jack Galpin, freshman sprinter for the track and field team says he takes 1,200 mg per day, just under the 1,600 mg recommendation for males by the Food and Nutrition Board of the U.S. Institute of Medicine (for women the recommendation is 1,100 mg).

While Galpin isn't sure why the NCAA would ban trainers from providing the supplement, Miner has a guess: "A doctor I was speaking to says that one of the big reasons is that because fish oil isn't regulated by the FDA," he says. "It can easily be tainted or altered. Because of that, it's just too risky to allow in the system in an official level."

Over at Oregon State University, Depner agreed. "The issue with supplements is they're not regulated," he says. "Most have what they say, but they have a lot of other stuff in it too," explains Depner. There's a possibility that some of the additives will show up in drug tests and that's a big risk.

Nonetheless, Depner recommends athletes take a supplement. "They are putting their body through more stress," he says. "A lot of athletes assume that cause they're fit, they're healthy, but that's often times not the case."

For now, it seems, omega-3 is out of the question when it comes to institutions providing it, but there's no definitive answer from the NCAA on why this is the case.

In the last five years, the University of Oregon has emerged as a mainstay among the top athletic schools in the country.

Oregon has more than 200 athletes competing in 17 Division I sports. The cross country and track and field teams have won seven national championships since 2007. Football earned four straight BCS Bowl berths. Ten current and former UO athletes competed in the London Olympics.

In any sport, competitions are decided by inches and fractions of a second. Oregon's athletic success can't entirely be attributed to the supplements the athletes take. What they aim to do is provide athletes with an edge. One that can make a difference between winning and losing.