

# Super, natural cows make the best sports recovery drink

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A recent study conducted by the University of Maryland School of Public Health found milk outperformed top commercial products in aiding post-exercise recovery.

Jae Kun Shim, a professor of kinesiology at UMD, conducted a year-long study to test how well Fifth Quarter Fresh, a locally-manufactured chocolate milk sports drink, aided the post-exercise recovery of muscular endurance compared to other popular sports drinks. The study found the milk outperformed competing products by 13-17 percent.

The idea for Fifth Quarter Fresh came from dairy veterinarian Richard Doak and Kurt Williams, both parents of athletes in Western Maryland. The pair wondered why kids were getting injured more often, and realized the problem lay with their nutrition. After conducting research, they found the freshest milk from the best cows provided more of what athletes' bodies needed than artificial commercial drink, including:

- Protein—20 grams, as much as most whey drinks, along with a special kind of protein that remains available for hours after drinking it;
- Electrolytes—far more than products on the shelf; and
- Calcium and vitamin D for strong bones.

Next, Doak and Williams brought the product to the University of Maryland for further testing.

"I was very surprised at the results," said Shim. "I knew they had a high-quality milk with less damaged protein [than whey protein drinks] and more electrolytes, but I didn't expect it would make much difference for strength endurance recovery. There are many studies out there that show the cardiovascular recovery benefits from milk-based products, but this data is unique because we are showing that the muscular endurance recovery from this chocolate milk is significant. Our data suggests that athletes may be ready faster and better for the next game or practice if they drink Fifth Quarter Fresh chocolate milk."



One secret to making higher quality milk, Doak and Williams discovered, is in the cows—Jerseys and Guernseys—whose milk innately has higher amounts of protein, electrolytes, calcium and carbohydrates than the milk we typically buy in stores. Store milk is produced primarily by Holsteins, which comprise 90 percent of the herds in the U.S. simply because they produce more milk per cow.

"Jerseys naturally produce the highest quality milk for human consumption," said Erick Metzger, general manager of National All-Jersey Inc., an industry group. "Compared to average milk, a glass of Jersey milk has greater nutritional value. Nutrient-dense Jersey milk

tastes better because there are more non-fat solids, protein and calcium in Jersey milk when compared with other breeds."

Great taste and better performance as a sports recovery drink—all achieved by using higher quality, fresh milk, Doak and Williams contend.

"When you look at the nutritional profile of Fifth Quarter Fresh over conventional [chocolate milk](#), you get 40 percent more protein, calcium and electrolytes," said Doak, who works full-time as a dairy veterinarian. "We hand-selected our cow breeds to provide these nutrients through the superior components in their milk."

The other secret was pasteurization, the process of heating milk to kill the bacteria that makes it go sour. The higher the pasteurization temperature, the longer it lasts in stores.

But the commonly used ultra-high temperature pasteurization, in excess of 200 degrees Fahrenheit, also damages something called casein protein. In its natural state, casein forms a gel in the stomach and takes longer to break down, providing a longer-term protein to the body, according to Doak and Williams. Fifth Quarter Fresh is pasteurized at 165 degrees Fahrenheit, five degrees over the FDA-recommended minimum of 160 degrees, preserving the casein protein.

"Most processors cook [milk](#) to death," Williams explained. "Our protein is natural and is better utilized by the body. An athlete will get 95 percent of our protein rather than the 70 percent they get from some of the chemical slurries on the market."

But athletes' bodies need calcium to come with that protein, according to Doak.



"Whenever your body metabolizes excessive protein, it leads to an acidification of the blood stream," he explained. "The body then balances this by pulling calcium from bones. So if you are drinking in lots of [protein](#) without that calcium, you will, over time, experience a decrease in bone density."

The University of Maryland study involved non-athletes, who conducted measured leg extension workouts, drank one of the four drinks in the study, waited for four hours and then conducted the same workout. Two weeks later they came back and did the same thing with another product.

"We were interested in their recovery before and after fatiguing exercise," said Shim. "The recovery of strength was similar across all of the different products; however, the recovery of muscular endurance was as much as 17 percent better in the Fifth Quarter Fresh Group when compared with the other drinks."

Doak, Williams and their partners are now trying to get Fifth Quarter Fresh into stores and provide it in bulk to athletic programs in schools and universities.

Provided by University of Maryland

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