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Credits: Klaus Beck separates the whey from the cheese at his alpine dairy Alpe Oberberg on August 25, 2010 near Immenstadt im Allgaeu, Germany. (Photo by Miguel Villagran/Getty Images).

A blend of proteins supplies amino acids to muscles and extends growth and repair. A new study from [Solae, LLC](#) reports that if you blend soy and dairy products in one beverage or food, it promotes muscle protein synthesis if you consume it right after exercising. The study, published in the current issue of the [Journal of Nutrition](#) demonstrates the benefits of consuming a protein blend for muscle protein synthesis after exercise. You want a nutritional way of prolonging amino acid delivery to muscles, whether you're a child or an aging individual. By mixing whey with soy protein, researchers found a source of high-quality protein that can promote muscle.

This study is a first-of-its-kind, conducted by researchers at the University of Texas Medical Branch, and utilizes the proteins from soy, whey and casein consumed after an acute bout of resistance exercise. These proteins have complementary amino acid profiles and different digestion rates (amino acid release profiles). The results demonstrate prolonged delivery of amino acids to muscles and extended muscle protein synthesis when subjects consumed the blend, compared to a single

source of protein alone. Also worth looking at is the results of another unrelated study, [Risks: Loss of bone mass linked to contraceptive](#).

"Sources of high-quality protein contain all the essential amino acids and have individual characteristics thought to offer a unique advantage for muscle growth," said Blake Rasmussen, Ph.D., interim chair, Department of Nutrition & Metabolism and principal investigator of the study, according to the January 24, 2013 news release, [A blend of soy and dairy proteins promotes muscle protein synthesis when consumed after exercise](#). "This is the first study to test the effects of combining soy with the dairy proteins, whey and casein, for promotion of lean body mass gain."

A soy-dairy blend can stimulate muscle growth similar to whey protein

This human clinical study for the first time shows that a soy-dairy protein blend (25 percent SUPRO® isolated soy protein, 25 percent whey protein isolate and 50 percent caseinate) is capable of stimulating muscle growth to a similar extent as whey protein through an elevation in muscle protein synthesis and muscle cell growth signaling. In addition, the blend extended the anabolic window (i.e., prolonged increase in the rate of muscle protein synthesis from rest) for a longer amount of time than whey alone.

The composition of the blend used in the current study was based on results from a recently published pre-clinical study that demonstrated enhanced postprandial (after eating a meal) skeletal muscle protein synthesis in rats compared to another blend of soy or whey protein sources alone. The goal is to develop healthier, stronger muscles and also to stimulate muscle growth. Children are still growing, and aging individuals are losing muscle mass. So a solution would be to find a nutritional source for both that promotes muscle cell growth.

The beverages provided approximately 20 grams of protein from either the soy-dairy blend or whey protein and contained similar amounts of leucine, a key amino acid involved in muscle cell signaling pathways that regulate muscle protein synthesis rates. The beverages were consumed following high-intensity leg resistance exercise. Multiple leg muscle samples were collected from each subject to determine changes in muscle protein synthesis over time (at rest and 3 and 5 hours after exercise). Nineteen healthy, young adults participated in the randomized, double blind trial.

Protein sources examined for leucine content

"Previous research examines only single sources of proteins and does not match the protein sources for leucine content, a branched chain amino acid with anabolic effects, thought to trigger muscle protein synthesis. Results from our study with matched leucine indicate the soy-dairy protein blend stimulated muscle synthesis during the early recovery period as well as into the later post-exercise period, compared to the single protein treatment, whey, which only increased muscle synthesis from rest into the early recovery period," said Paul Reidy, lead investigator on the study, according to the news release, "[A blend of soy and dairy proteins promotes muscle protein synthesis when consumed after exercise](#)." For more information on the study, check out this [Nutrition](#) link to the study published at the [Journal of Nutrition](#) site.

This study demonstrates that consumption of a beverage made with a soy-dairy protein blend following exercise is capable of prolonging amino acid delivery to muscles, muscle cell signaling and protein synthesis in human skeletal muscle. This extension of the anabolic window may also be important for the aging muscle. The big picture is that proteins from milk (casein and whey), soy, beef and egg are effective in stimulating post-exercise muscle protein synthesis.

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"No research on blends of proteins from different sources and their effects on muscle protein synthesis has been done, to-date. Muscle health is of great concern to not only young and active individuals like the ones in this study but also to the aging population. The role of protein for muscle health is a key area of interest for our company, " said Ratna Mukherjea, Ph.D., Nutrition Science team lead at Solae/DuPont Nutrition & Health, according to the news release. "This publication expands on results indicating the beneficial effects of consuming blends shared at numerous scientific meetings in 2012."

Regarding general health and foods in cans, check out another recent study, "[BPA substitute could spell trouble Experiments show bisphenol S also disrupts hormone activity](#)." Also, when you check out any research results, be sure to see who funded the study and whether it was an objective third party or an industry whose products relate to the study, just to keep that in mind when looking at applied science-related studies, medical, and nutritional research. The goal is of course, solutions.

Soy-based ingredient solutions and Solae™

Solae™ soy-based ingredient solutions help create nutritious, great-tasting products with a unique combination of functional, nutritional, economical and sustainable benefits. Solae, LLC, originally a DuPont joint venture, was fully acquired by DuPont on May 1, 2012, and is now part of DuPont Nutrition & Health, a world leader in specialty food ingredients. For more information, visit the [Solae website](#), or follow the corporation on [Twitter](#), [Facebook](#), and on [LinkedIn](#).

DuPont Nutrition & Health addresses the world's challenges in food by offering a wide range of sustainable, bio-based ingredients and advanced microbial diagnostic solutions to provide safer, healthier and more nutritious food. Through close collaboration with customers, DuPont combines knowledge and experience with a passion for innovation to deliver unparalleled customer value to the marketplace.

DuPont (NYSE: DD) has been bringing world-class science and engineering to the global marketplace in the form of innovative products, materials, and services since 1802. The company believes that by collaborating with customers, governments, NGOs, and thought leaders we can help find solutions to such global challenges as providing enough healthy food for people everywhere, decreasing dependence on fossil fuels, and protecting life and the environment. For additional information about DuPont and its commitment to inclusive innovation, please visit the [DuPont site](#).