

# Amylopectin/chromium complex boosts muscle protein synthesis rate: Study



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**A combination of amylopectin and chromium may double the muscle protein synthesis rate compared to what was seen when using whey protein alone, says a new study using Nutrition 21's patented Velositol ingredient.**

Adding a 2 gram dose of Velositol to a 6 gram dose of whey protein led to a 48% increase in muscle protein synthesis from baseline, compared to a 24% increase seen with 6 grams of whey protein alone, according to findings of a study with 10 healthy men and women aged between 22 and 34.

*"Muscle biopsy studies are tightly controlled and highly invasive, so small sample sizes are very common. With a study like this, if you cannot show a difference with 10 people, it's unlikely one exists in the 'real world,'" said Tim Ziegenfuss, PhD, lead author of the study and CEO of Center for Applied Health Sciences. "The study results are impressive. It's not only statistically significant that Velositol doubled muscle protein synthesis, but also practically relevant for anyone who is active and may not be consuming enough protein to support enhanced muscle growth.*

*"Until this study was done, one of the only ways known to improve the anabolic response to resistance training was to consume more protein, which is not always practical. If future studies confirm our results, Velositol could be a huge benefit not only to people in their 20s and 30s, but especially those in their 40s and 50s and older whose muscles become more resistant to the*

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anabolic effects of protein.”

The study's findings were published in the *Journal of the International Society of Sports Nutrition*. Funding was provided by Nutrition 21.

### Study details

On two different occasions, Dr Ziegenfuss and his co-workers gave the participants a single dose of Velositol with 6 grams of whey protein or 6 grams of whey protein alone, and completed eight sets of bilateral isotonic leg extensions at a load equivalent to 80% of their estimated one-repetition maximum.

Results showed that Velositol plus whey led to significant increases in muscle protein synthesis. A non-significant increase in insulin to help initiate muscle growth was also reported. Blood glucose levels remained in the healthy, normal range, added the researchers.

*“To our knowledge, these results are among the first to illustrate the impact of a novel amylopectin chromium-containing complex on the stimulation of mixed muscle protein synthesis,”* wrote the researchers. *“In seeking an explanation for our study outcomes, the purported ability of chromium to favorably alter insulin metabolism is an important mechanistic consideration.”*

*“While the exact role(s) of insulin in muscle protein metabolism continues to be clarified, insulin has a demonstrated stimulatory effect on muscle protein synthesis when adequate EAA [essential amino acids] precursors are present, and seems to work more towards reducing muscle protein breakdown when EAA concentrations are reduced.”*

*“If [Velositol] acutely enhances these intracellular responses to insulin as indicated by previous work in culture, animal and human studies, then it may potentially augment the anabolic response of skeletal muscle to an otherwise suboptimal dose of whey protein,”* they added.

*“Future research should confirm these data and seek to better understand the mechanisms responsible for the observed results,”* they concluded.

### “Exceeding expectations”

In a release, Nutrition 21 stated that, given the success of this study, more studies will be funded to further demonstrate the additional benefits of Velositol.

*“This study shows Velositol has the ability to unlock the potential of protein, promote leaner body composition and enhance muscle building,”* said Joe Weiss, president of Nutrition 21. *“This study confirmed our theories, and exceeded our expectations for Velositol.”*

Source: *Journal of the International Society of Sports Nutrition*

2017, 14:6, doi: 10.1186/s12970-017-0163-1

*“Effects of an amylopectin and chromium complex on the anabolic response to a suboptimal dose of whey protein”*

Authors: T.N. Ziegenfuss et al.

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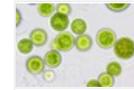
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