

# NO WHEY!

## 10 COMMON PROTEIN MYTHS DEBUNKED

BY MIKE STRAUS

**P**rotein enjoys wide popularity as a nutritional supplement, particularly among fitness enthusiasts. However, its popularity means that it's easy for false notions about protein to proliferate. There's no shortage of incorrect beliefs regarding protein and protein supplements, both in consumer and industry circles.

A proper understanding of how protein works is essential. Unfortunately, bad science, over-hyped conjecture, and the advent of the Internet have made it easy for profiteers to spin false narratives about protein, which can be a danger both to the nutritional supplement industry and to the end user.

What myths have invaded the nutritional supplement space? Let's review 10 of the most common protein myths that consumers and industry insiders alike encounter.

### MYTH 1: A High-Protein Diet Is Bad for Your Kidneys

Jose Antonio, PhD, is the editor-in-chief of the *Journal of the International Society of Sports Nutrition* and serves as associate professor of exercise and sport science at the Nova Southeastern University College of Health Care Sciences. Antonio says that he has come across a variety of protein myths in his work, but the one that he opposes most vehemently is the myth that a high-protein diet causes kidney damage.

"There are a lot of dumb myths about protein out there, but this the dumbest of them all," he says. "I've heard dietitians claim that when you eat a high-protein diet, it shuts down your kidneys. But there's no possible mechanism by which that might happen."

A 2015 literature review found no connection between high protein intake and kidney

disease, damage, or impairment in healthy participants.<sup>1</sup> An earlier 2005 literature review also concluded that "protein-induced changes in renal function are likely a normal adaptive mechanism well within the functional limits of a healthy kidney."<sup>2</sup>

### MYTH 2: People Who Consume High-Protein Diets Risk Bone Demineralization

Antonio points to the claim that high-protein diets put consumers at risk of bone demineralization and eventual osteoporosis as another example of a common protein myth. There's absolutely no evidence that bone mineral density drops with higher protein intake, he says. He also notes that just as in the case of the kidney-damage myth, there's no workable theory as to what kind of protein-related

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biological mechanism could cause bone demineralization. A variety of clinical studies conducted over the course of the last several decades confirm this<sup>3,4</sup>, as does Antonio's own research.

Says Antonio: "I'm doing a study right now on bone mineral density in female athletes who consume a lot of protein. There's zero evidence that bone mineral density drops when you eat a lot of protein. The claim that high-protein diets cause bone demineralization makes no sense."

### **MYTH 3: The Body Can't Absorb More Than 30 Grams of Protein Per Meal**



This myth seems to have originated on Internet bodybuilding forums, where consumers tend to misinterpret nutritional research. According to the myth, the maximum amount of protein the human body can absorb in one sitting is 30 g, and that any protein consumed above 30 g is simply wasted.

But the research indicates otherwise. While literature reviews have concluded that 25-35 g of high-quality protein per meal is a sufficient amount to trigger protein synthesis<sup>5</sup>, these studies don't prove that any protein consumed above a certain threshold is wasted.

Antonio says that evolutionary biology also refutes this myth. "If you're a hunter-gatherer, most of your calories come from animals. If you haven't eaten anything for a day and then you kill an animal, are you going to say, 'I can't eat more than 30 g or else my body won't use the rest of the protein?' No, of course not. Your body will use what it needs."

But it seems there *is* a kernel of truth amid the false claims. At least one randomized clinical trial has demonstrated that protein doses above 30 g do not stimulate further muscle protein synthesis beyond what would be achieved with a 30-g dose.<sup>6</sup>

However, this is very different from claiming that any protein consumed above the 30-g threshold is wasted or that the body does not absorb protein above the 30-g threshold. Neither of those statements has been proven through research.

### **MYTH 4: A Higher Dose of Protein Is Always Better**

Antonio says the claim that a higher dose of protein is always better is somewhat true in certain situations, but requires additional context.

"If you're only getting 50 g of protein per day and your body needs 100 g per day, then yes, 100 g is better," he explains. "My research also shows that a higher dose of protein is better for athletes—it helps them lose more body fat. But the question we should be asking is, 'What's the maximum safe and effective dose of protein?'"

At the 2013 Protein Summit 2.0 in Washington, DC, over 60 nutrition scientists, educators, and experts gathered to discuss the formation of new dietary guidelines for protein intake. The summit's conclusions included a new recommendation that most adults consume 25-30 g of protein per meal,

or 1-1.5 g of protein per kilogram of body mass per day.<sup>7</sup>

However, Antonio cautions that this doesn't necessarily mean the average adult needs to start consuming more protein. Rather, he says, based on average protein intakes, the typical sedentary American or recreational "weekend warrior" athlete is most likely already getting enough dietary protein. While increasing protein intake is unlikely to cause kidney or bone problems, Antonio says there's no reason to recommend higher protein intakes for non-athletes.

### **MYTH 5: Protein from Whole Foods Is Better than Protein Supplements**

Research doesn't necessarily support the view that protein from whole foods is more valuable than protein from dietary supplements. Says Antonio: "If I were to ask all of my scientifically minded friends, they'd say that this myth makes sense." However, he points out, "all of the studies on protein are on protein supplements [and not whole foods] because it's just easier to use supplements."



"This choice to differentiate whole food protein from whey protein supplements is rather arbitrary," he adds. "Whey comes from milk, which is a food."

While there may not be enough evidence to prove that whole foods are better protein sources than protein supplements, Antonio notes that those who take protein supplements—particularly plant-derived protein supplements—would do well to also add a lysine supplement to their nutrition regimen. He says that not all protein supplements contain the natural amino acid lysine, despite the fact that lysine is the primary compound that triggers muscle protein synthesis.

## MYTH 6: More Protein Consumed Equals More Muscle Gained

While the myth that the body can't absorb more than 30 g of protein per meal isn't necessarily true, there may be a limit to how much protein should be consumed for the express purpose of muscle building. As Antonio says, "There's a dosage sweet spot, and any protein you consume beyond that is burned as fuel."

One Canadian literature review found that 1.8 g per kilogram of body mass per day was sufficient protein intake for most athletes<sup>8</sup>, while another literature review contends that 1.2–1.6 g per kilogram of body mass per day is emerging as the ideal protein dosage for maintaining muscle mass among athletic individuals.<sup>9</sup>

Regardless of the exact number, the research offers a clear consensus that there is indeed a maximum protein intake threshold for muscle building, and any extra protein consumed beyond said threshold is expended as energy.

## MYTH 7: A High Protein Intake Makes You Fat

Consuming too much of any compound or nutrient can result in fat gain, at least in theory. But Antonio says that in the case of protein, it appears that there may not be such a thing as "too much," at least not in practical terms. "I've done studies on overfeeding people whey protein, and they all lose fat," he says.



"They also lose *more* body fat with higher doses of protein. Plus, from a practical perspective, most people can't overfeed on protein enough to cause problems."

However, Antonio also mentions an important caveat: One's level of physical activity may influence whether or not one gains fat from protein. Antonio doesn't study sedentary people, but he also notes that athletes and fitness enthusiasts are more likely to have a high-protein diet than sedentary individuals.

## MYTH 8: Dairy Protein Is Superior to Plant Protein

One common misconception in the bodybuilding and wellness enthusiast communities is that dairy protein offers health benefits that plant protein doesn't. People who promote this line of thinking may also claim that dairy protein is nutritionally denser than plant protein or that protein from dairy sources is easier to metabolize. Antonio says the truth is somewhat more complicated.



If you're asking whether dairy protein is more 'nutritious' than plant protein, then the answer is no. But on a gram-for-gram basis, milk-based proteins are far superior to plant proteins where protein synthesis is concerned," he says.

However, he also notes that overall volume of protein consumed can compensate for protein inferiority. "If you're consuming a lot of protein, [the source] doesn't really matter. A 40- to 60-g rice protein shake will be about equivalent to 20 g of milk protein. But I'm assuming that you're also consuming a lot more [dietary] protein throughout the day."



## MYTH 9: You Should Always Eat Protein Immediately After a Workout

The common wisdom in the strength-training community is that during the 30-minute period immediately following a workout, consuming a high concentration of protein and carbohydrates will increase muscle gain by taking advantage of the anabolic window. But scientific support for the anabolic window theory is mixed at best. One 2013 literature review, for instance, states that the anabolic window is "a gray area lacking cohesive data to form concrete recommendations."<sup>10</sup>

Antonio agrees with this conclusion, but also grants that the anabolic window theory does have a sliver of usefulness. He says, "Total protein intake matters more than timing. But if you're working out twice a day, then you have to eat right after you work out because otherwise you'll have a hard time getting enough total protein. The science is equivocal on this issue, but there's a pragmatic aspect to consider."

## MYTH 10: Protein Supplements Are Just a Placebo

This claim is one that often frequents bodybuilding forums and workout enthusiast communities, with some YouTube personalities like Keith and Kevin Hodge espousing this view. One recent article in *The Atlantic* also made hedged claims regarding the effectiveness of protein supplements, positing that protein powder "is caught up in the same web of ideas and beliefs about masculinity, nutrition, and exercise that can be taken to more disturbing extremes."<sup>11</sup>

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Antonio rejects this “protein as placebo” narrative, as it is contradicted by clinical studies that have found increases in exercise performance accompanying higher protein intake. Says Antonio: “For protein to be a placebo, it would have to be inert. But you need protein to live. It’s hardly a placebo. I’m writing a paper right now that outlines all the studies on how protein supplementation improves lean body mass.”

One randomized clinical trial investigating protein supplements found that, relative to a placebo, a whey protein isolate supplement bonded with the amino acid cysteine significantly increased peak power and work capacity in healthy young adults.<sup>12</sup> Another study, a 2015 double-blind, placebo-controlled randomized clinical trial, examined the effect of whey and pea protein and resistance training on muscle thickness and strength and found that pea protein was more effective at promoting muscle thickening than a placebo.<sup>13</sup>

## The Truth about Protein

Protein supplements are effective at improving fitness outcomes; however, many of the claims made about protein (both online and off) exaggerate the research, stretch the truth, or simply promote claims that run contrary to the established facts. In an era of advertising hype and bad science, of fake academic publishers and short consumer attention spans, the best way to market protein supplements will involve confronting false claims with unassailable data gathered by respectable researchers.

In sum: Effective protein supplement marketing strategies now require brands to replace consumer misconceptions with hard facts. ■

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