

Building Muscle With Exercise and Reassessing Protein Intake

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STORY AT-A-GLANCE

- › Stuart Phillips, Ph.D., explains how to use resistance exercise and protein intake to build muscle
- › Phillips recommends a minimum of two strength training sessions a week, and building from there
- › If you don't consume enough high-quality protein it can limit the amount of muscle that your body is able to produce
- › Older people have accelerated muscle loss and require greater protein intake to stimulate maximum muscle protein synthesis compared to younger people
- › Phillips believes 0.8 grams of protein per kilogram of body weight is a starting point of protein intake for adults. The sweet spot is likely 1.2 grams of protein per kilogram of body weight
- › Whey, which is rich in leucine, in combination with exercise, represents a simple option for older adults looking to maintain and increase their muscle mass

Maintaining muscle mass as you age is an integral part of staying healthy and independent. Stuart Phillips, Ph.D., a professor of kinesiology at McMaster University in Hamilton, Ontario, Canada, where he is also the director of the Physical Activity Center of Excellence, is an expert in this area and recently spoke with Rhonda Patrick, Ph.D., about how to use resistance exercise and protein intake to build muscle.

Once you reach your 40s, you may lose about 1% of muscle mass per year, which corresponds to a 1% to 3% drop in strength.¹ Loss of muscle mass is associated with a downward decline in health, including an increased risk of premature death, while engaging in muscle-strengthening exercises for just 30 to 60 minutes per week is enough to lower your risk of death.²

However, it is important to understand that this is just the common observation and not a rule set in stone. I started aggressive resistance training and increasing my protein intake to 1.3 grams/kilogram in my 60s and at the age of 67 was able to increase about 25 pounds of muscle mass. So much so that I was able to ten reps of 600 pounds on a leg press (see below).

What you eat also plays a role in your muscle mass, and if you don't consume enough high-quality protein it can limit the amount of muscle that your body maintains. While Phillips notes that most people in their younger and middle-age years consume enough protein, as people get older their appetite may decline and they may start to consume a smaller amount of protein that's not supportive of optimal muscle mass.

Optimal Protein Intake for Older Adults

You need protein reserves to survive serious disease, and most of your protein is stored in muscle. If you have very little muscle, you're going to pass away prematurely because you have no amino acid reserves.³ Phillips explains:⁴

"Protein is something that when you ingest it, your body has to use it. There's not a little, sort of, place that you can store away the building blocks of protein, which are amino acids and, kind of, use them for later, although your muscle is, sort of, a reservoir of that. So it does turn over a little bit.

So when we think about it from a daily recommended intake or what we call the recommended dietary allowance, it's the amount of protein that you need to ingest to replace all of the protein and amino acids that your body loses.

And most of it is lost in urine as urea ... I would actually be happy if they just changed the name from recommended dietary allowance to minimal dietary intake ... I don't think it should be recommended because it's too low. And, I think, you should be allowed to eat more."

Phillips believes 0.8 grams of protein per kilogram (kg) of body weight is a starting point of protein intake for adults, "and then build up from there," he says. "Most of the data that we have, and it's not ours, there's lots of other people who have contributed to this as well, suggest that a minimum might be closer to about 1.2 grams per kilogram of body weight per day. And, you know, athletes and even older people could probably benefit from going up from that level to about 1.6."⁵

When calculating your protein needs, however, it's important to make the calculation based on grams per kg of lean mass, not total body weight. The reason for this is because you do not need protein to maintain your fat mass. You need it to maintain your lean muscle mass. The following amounts can also be used as a general guideline:⁶

- **Children and young adults** – 2 grams of protein per kg of lean body mass for children and 0.8 grams of protein per kg of lean body mass for adults
- **Adults** – 0.6 to 0.8 grams of protein per kg of lean body mass
- **Bodybuilders** – 1 to 1.2 grams of protein per kg of lean body mass
- **Endurance athletes** – 1 to 1.5 grams of protein per kg of lean body mass
- **Seniors** – 0.8 grams of protein per kg of lean body mass; possibly more if muscle wasting is a problem

Timing is also important for protein intake; ideally, it should be evenly spaced throughout your meals. However, Phillips notes that, unless you're an elite professional athlete, consuming enough high-quality protein in a day and engaging in resistance training are the most important points. Timing protein intake is secondary to these, but for older adults he recommends including more protein at your breakfast meal, which many people tend to neglect.

If you're engaging in time-restricted eating, which is best done 16 to 18 hours a day, doing your workout in a fasted state will reduce the carbohydrate load in the muscles as they're using up glucose during the workout. This, in turn, gives you the additional benefits of autophagy and will also help prevent excessive activation of the mechanistic target of rapamycin (mTOR).

When you're eating all your meals within a window of, say, six to eight hours, and fasting for the remaining 16 to 18 hours, mTOR gets stimulated only once or twice a day, which is not a problem. When you activate mTOR continuously, it can lead to an increased risk of diseases like cancer.

Strength Training Twice a Week Is the Minimum

Phillips recommends both aerobic and resistance exercise, noting that the biggest gains happen when a person goes from doing nothing to doing something.

"Most of the guidelines you look at around the world, there's a recommendation for two times a week of strengthening activities. My own feeling is that it should be more than recommended ... and I do think two days a week is sort of the buy-in level ... My main point is getting to do that at least twice a week for, let's say, 30 to 45 minutes duration.

*There's a lot of benefit associated with that. I think three times, you can get a little bit more. But it's about making clear that the biggest reduction in risk bar none is always going from nothing to doing something."*⁷

If you're wondering how much exertion to use, Phillips uses a simple measure: "I just say lift until you're pretty fatigued at the end, and you should do pretty well."⁸ Ensuring you're engaging in resistance training regularly is key to building muscle, even more so than adequate protein intake. "Simply put protein is ... sufficient and necessary for a little bit of extra strength, but it's a thin slice on top of what lifting weights provides in terms of strength and muscle."⁹

Recovery is another important part of the equation, however. When you exercise, you're stressing your muscles and creating damage. "Successful adaptation to stress is that you're able to repair that damage and replace those damaged proteins ... that's the synthesis side of things," Phillips says.

"What we're aiming for is, we have damage and then we have synthesis. But now you've gone up a bit and we have damage synthesis. And over time, it's sort of down, up, down, up, down, up, but the trend is that you're getting better and better."¹⁰

Recovery periods, "where all the good stuff happens," allow your body to repair damage, recover from stress and then reach a point where you're better than you were to begin with. Nutrition is supportive in this process.

Why Leucine Is Important

Optimal nutrition is important to reap all of the benefits that muscle-strengthening activities have to offer. Amino acids from protein are particularly important in this process, acting as the raw material or "building blocks" of your muscle while also playing a role in new muscle growth. Leucine, in particular, has been established as an amino acid with greater anabolic properties.¹¹ To explain, Phillips likened muscle protein to a brick wall:¹²

"It's made up of 20 different types of bricks. Those are the 20 amino acids that we have, nine of which are essential. We need to get them in our diet. And in particular, they're a group of what are called branched-chain amino acids that are three of the nine. And the most potent, if you like, of the three branched chains is an amino acid called leucine.

The way I like to explain it to people is that it's kind of like the brick that when it arrives, it turns the process on ... it's like a dimmer switch. So it's not, you know, click on, click off. It's really like ... leucine comes along, and you see the lights begin to come on. And the lights obviously are the process of making new muscle proteins.

So, once you have sufficient leucine there, you can turn the switch up as bright as it can go. Once you put more leucine there, you can't go any higher. For older people, for reasons that we're beginning to unravel now ... we need more leucine or more branched chains or more essential amino acids, which translates into more.

You need more protein to trigger the whole turning the protein synthetic process on ... when we look at diets, the people who consume higher-quality proteins or sufficient lower quality proteins ... it's really about the leucine that they consume, particularly for their muscle, that's important."

So older people not only have accelerated muscle loss, but also require greater protein intake to stimulate maximum muscle protein synthesis compared to younger people.¹³ For instance, while the muscle protein synthesis rate of healthy young adults increases by about 75% following intake of 20 grams of protein, older adults require about 40 grams of protein to experience a similar increase.¹⁴

The richest source of leucine, which helps regulate the turnover of protein in your muscle, is whey protein. Without whey, it can be difficult to achieve enough leucine to maintain body protein from diet alone. Fortunately, whey, in combination with exercise, represents a simple option for older adults looking to maintain and increase their muscle mass.

Three More Secrets to Building Muscle

Resistance training and adequate high-quality protein make up the crux of building muscle and maintaining it, but there are additional supportive strategies that also play a role. Integrating heat into the equation is one of them. Using a sauna after your fasted workout increases heat shock proteins, which help to refold misfolded proteins inside your cells and help proteins maintain their three-dimensional structure. This allows the proteins to function normally.

Heat shock proteins have also been shown to prevent muscle atrophy, even if the heat is merely applied locally. This has major relevance for those with sarcopenia (age-related muscle loss) and the physically disabled. They may not be able to exercise, but they can sit in a sauna.

Omega-3 fats, which are often talked about in terms of heart health, are also important for your muscles. Phillips and colleagues ran a trial of young women, during which one leg was braced for two weeks to cause local disuse atrophy. Half of the women took a high-dose omega-3 fat supplement while the other half received a placebo.

Those who took omega-3 fats had significantly less atrophy and returned to normal much quicker than the placebo group. "It's anticatabolic for sure," Phillips said.¹⁵ In addition to omega-3 fats, creatine monohydrate is another supplement that Phillips said makes his short list for its benefits for muscle growth and brain health.

"Its effects are pretty mild on muscle, but they're there. They're potent. They last. Now the brain and the cognitive side of things ... the evidence is growing in that area too."¹⁶

Also, it is really important to consciously contract the muscle you are exercising. It is known that simply doing isometrics will increase muscle size, but if you combine that by actively contracting your working muscle you can get far greater muscle gains. It is not enough to merely move the weight; you really need to consciously contract the working muscle as much as possible.

Remember, also, that you don't have to be a "gym rat" to reap the benefits of strength training. You can work out virtually anywhere, and even engaging in nonexercise movement – getting up out of your chair and staying active – is important:¹⁷

"You can do bodyweight workouts just about anywhere. You can do an air squat, up and down, you don't need a weight ... the benefits of exercise never stop. It's almost embarrassing to talk about how good it is for you ... 13 of the 26 most common types of cancer are lower in people who have higher levels of leisure-time physical activity.

And so that's not exercise. That's gardening. That's walking. That's ... you know, just the general day-to-day ... moving around ... not sitting down all the time."

Another excellent strategy that can allow even the elderly to get a very intense workout while minimizing the risk of injury is blood flow restriction (BFR) training. KAATSU is the original BFR device, developed in Japan. With BFR, you can get the same results with just 30% of the weight you'd have to use otherwise.

I have been doing KAATSU for a few years now along with increasing my protein intake to 1.6 grams/kg of my body weight, which is about 150 grams of protein for me, with beneficial results.

KAATSU is the perfect strategy that I highly recommend for anyone who is injured or over 60 years old. I have been using it for the last three years and can't say enough good things about it as you can use far lower weights and radically reduce your risk of injury. Although you can use inexpensive bands from Amazon, they are vastly inferior to KAATSU, which cycles on and off.

You can learn more about KAATSU by simply going to [Bitchute.com](https://bitchute.com) and typing in "KAATSU" in their search engine and you will get my videos on it. You can also click on the link in the MORE section under the video to find [this link](#) for a 10% discount.

Sources and References

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