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Muscle Mass — The Key to Longevity

Analysis by Dr. Joseph Mercola | Fact Checked

April 10, 2022

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STORY AT-A-GLANCE

- Muscle is vastly misunderstood as part of the solution for many chronic health problems, as most are rooted in skeletal muscle health maintenance
- Resistance training is superior to cardio exercise because muscle mass responds to this longevity. The greater your muscle mass, the higher your survivability against all diseases
- You need protein reserves to survive serious illnesses, and most of your protein reserve is stored in muscle. If you have very little muscle, you're more likely to succumb to illness because you have no amino acid reserves. Your muscle also interfaces with your immune system
- It's never too late to start building muscle, even if you're in your 70s or even 80s. Lean muscle mass is a precious resource that's difficult to add muscle with advancing age, but it's not impossible. To prove it is possible, I'm 67 and over the past year, I've put on 25 pounds of muscle mass and now weigh over 200 pounds.

The Case for Animal Protein

In terms of diet, skeletal muscle requires high-quality dietary protein, ideally animal protein, to maintain and grow optimally. Lyon explains why animal protein is the best source of protein and why vegetarians have to get them from your diet, as your body cannot make them from other substances. In particular, skeletal muscles requires branched-chain amino acids — leucine, isoleucine and valine.

Most you can animal protein? No, but one of the problems with avoiding animal protein is that it is quite difficult to obtain enough complete essential amino acids, especially branched-chained amino acids to stimulate mTOR.

While there are plants that are high in protein, they're not identical or even equivalent to animal protein. Lyon explains why vegetarians and vegans have to work harder to get enough of the important leucine it is accessible in everybody — [and] resistance exercise, as we discussed in our training ... [resulting] in states like diabetes, hypertension, cardiovascular disease. Insulin resistance severely begins in skeletal muscle.[1]

To consider high-quality protein to be animal-based protein. That's not to say if you are an individual who is vegan or vegetarian, that you cannot get the same amount of protein. You can, but that would require additional supplementation ...

But one has to understand that 20 grams of protein from hemp is different from 20 grams of protein from, say a chicken breast. OKAY. I don't advise anyone to eat chicken because of the high [toxins and content].

In fact, as you age, it becomes really important to realize that, if you are going to try to get enough protein, you're going to have to eat more than you think you need to eat. I mean, a lot more if you're to get the equivalent of one 3-ounce chicken breast ...

So, if you are listening to this, I really want you to take to heart that you need to focus on high-quality proteins, and if you are vegan or a vegetarian, that you need to think about supplement with something — some branched-chain or essential amino acids — in addition to your meals.

On a side note, glutamine, a nonessential amino acid (meaning your body can generate it) is an important nutrient source for your immune cells, and the way your body generates glutamine is through muscle contraction. So, when you're contracting skeletal muscle, you're quite literally nourishing your immune system!

Finding Your Ideal Protein Intake

To determine your personal protein requirement, Lyon recommends 1 gram of protein per pound of ideal body weight (the weight you would ideally be, not necessarily the weight you are now). Once you have your ideal weight, you'd like the number of meals you want to get your per-meal quota which, for older adults should be around 35 to 50 grams per meal.

For reference, there's approximately 7 grams of protein in each ounce of meat, so a 5-ounce steak would give you 35 grams of high-quality protein. For children, the average amount per meal is around 15 to 20 grams, while young adults typically can get away with 30 grams per meal.

For most normal-weight adults, 30 grams per meal is really the minimum you need to stimulate muscle protein synthesis. Once you're in your 60s, that number increases to 40 grams per meal or higher. To make sure you're getting enough protein in your meals, consider using a free nutritional tracker like Cronometer. That way, you're not guessing.

Will a High-Protein Diet Harm Your Kidneys?

Some past protein is fine if a high damage their kidneys. People with chronic renal failure do need to limit their protein intake so as not to tax their kidneys, but if your kidneys are healthy you don't need to worry about this. Lyon explains:

I think the majority of individuals have healthy kidney function. Actually, protein intake has been shown to improve kidney function in diabetics, so the notion that you have to limit protein should be capable to manage high-quality protein — and I mean a wide variety of protein multiple meta-analyses with individuals with healthy kidneys in terms of protein consumption. It's another falsehood.

The same thing with osteoporosis. People still say, 'You don't want to eat too much protein because it's bad for your bones.' Well, what do people think bones are made of? Bones are made of proteins. Yes. They are made of calcium, but the requirement is through the roof. Bones have a matrix that is the matrix that's the scaffold. It's the framework.

When I went through my geriatrics training, it became so apparent that what we were seeing in clinic, and what we were doing to protect aging individuals was so outside the box of what was out in the public sphere.

It's interesting. Individuals can ride the wave of youth for only so long, and then what ultimately happens is, as you age, you have to get proof information, because the staple room for mistakes and the wiggle room for actually executing important and correct information becomes less ...

[Protein] is the one nutrient that will really be able to save people's lives. It is the protein, because it protects skeletal muscle. You carbohydrates have a protein sparing effect. You have a fat sparing effect, and there may be protein sparing effects. But the nutrient I would work on is protein.

We know we need to prioritize protein because we have to optimize skeletal muscle. It is important for successfulness. It is important for the immune system. It is important for reparation for muscle from gut lining. It is important for all things in the body bundle down, and it's essential.

[Skeletal muscle goes through this process of anabolic resistance, and as we age, the] anabolic resistance is going to be a very important emerging aspect. It's an offshoot of insulin resistance disease as we age.[2]

Should You Work Out Fasted?

I believe time-restricted eating (TRE) is best done 16 to 20 hours a day, every day. Sixteen to 18 hours is probably the easiest spot. This schedule will give you virtually all the same benefits as calorie restriction with respect to longevity benefits, but without any of the downsides, the primary one being compliance.

I prefer to do my workout in a fasted state, followed by an infrared sauna and warm, and then breakfast my final afterwards. This will reduce the carbohydrates load in the muscles by the time you do glucose during the workout. This, in turn, gives you the additional benefits of autophagy.

Lyon also points out that when muscle contracts, it releases myokines, which are proteins that have a host of beneficial functions, including:

- About five years ago, largely due to Dr. Ron Rosedale, co-founder of the Colorado Center for Metabolic Medicine, I was concerned about too much protein stimulating mTOR so I restricted my protein intake to about 0.5 grams per pound of lean body mass for about two to three years. I now believe minuscule amounts of mTOR is fine for us to sustain ideally the problem, or even cardio, You stimulate mTOR on a resistance that we will.

The other cross section issue is that most people eat more or less consistently throughout the day, which will keep mTOR continuously activated. 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 is stimulated only once or twice a day, which is not a problem.

mTOR is a beneficial pathway in many ways. It's a pluripotic function. When you activate it continuously as most people do, it can lead to an increase in risk in diseases like cancer.

Timing of Your Post-Workout Meal

As for the timing of your post-workout meal, Lyon disagrees with the common notion that protein feeding can occur any time after your workout as long as it's within 24 hours:

> The current recommendation is very low for exercise. It's 'six minutes per week ... I would say that's probably the bare minimum that anybody should do, not the optimal; 30 minutes of moderate intensity exercise, five days a week, is likely not going to be enough. – Dr. Gabrielle Lyon

She believes it's far better to eat that meal shortly after exercise. "In a geriatric population, we know that blood flow is optimized post-training, and we know that adding in a protein meal right after training ... is extremely beneficial," Lyon says. This goes for eating in:

> To gain more muscle, you do need calories," she says. "Protein and carbohydrates play a role in that. Protein is the building block, and protein-rich nutrition versus muscle protein synthesis or muscle repair, both are very valuable.

Are You Getting Enough Exercise?

When it comes to executing an exercise program to optimize muscle health, Lyon recommends working with an experienced coach to create a suitable program.

"Volume is very important, and volume is exactly what it sounds like, it's the amount of repetitions, it's all cumulative in terms of weight and repetitions. That is a key variable that is in the literature. When you are new [to exercise], it is much easier to stimulate muscle tissue. So, if you are an untrained individual, you could get away with 10 to 12 sets per week.

I preface this by saying I don't actually develop training programs for individuals. I think that's very important. I work with individuals who develop training programs for me, and I think that's a very good way to start out. They can demonstrate exercises to you, and they can coach you.

You don't want to get injured, because injury really sets individuals back. There are certain groups of people that have a predisposition to get injured, for example, an individual with hypothyroidism. I see that they have poor tissue turnover. They get joint pain. The recovery tends to be a lot of issue, so getting with someone more familiar with that I think doing is really important.

That said, the current recommendation is very low for exercise. It's '150 minutes per week. That could be 30 minutes, five days a week of exercise ... I would say that's probably the bare minimum that anybody should do, not the optimal; 30 minutes of moderate intensity exercise, five days a week, is likely not going to be enough.[3]

Exertion Is Important

A key part of resistance training is actually exerting yourself. "It's called resistance exercise for a reason," Lyon says. "There needs to be a component of effort that I don't see people putting in." If you're on your phone or watching TV, chances are you're not putting in sufficient effort.

"It's not just about putting in the time. I expect you to exercise in a way that requires focus and a mental presence, where you're really concentrating on what you're doing," she says. "I encourage people to listen to their bodies. Proprioception is very important.

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Only one way you can test an individual who is developing a program for you, but it doesn't mean you're actually targeting the muscle group that you are intending to target. If you do a certain exercise, maybe you're going to do a squat, and perhaps you compensate in a different way. You can push your muscle more than you can your hamstrings or your glutes.

Really focusing on the muscle that you are training is of extraordinary importance. You do need to create muscle damage. You do need to change the metabolic homeostasis in your body. You do need to have enough recovery, enough nutrients for recovery, but you do have to start the muscle, and one way to which you do the muscle is through exertion.

One way that you also test an individual who is developing a program for you is through exertion. You can't just do a program and not exert yourself. You have to exert yourself and you have to push and you have to put in effort and it sometimes an an ego, people are always hiding that internal fountain of youth. It's not.

It's not something you're going to take. The fountain youth truly is within this muscle system as the organ of longevity. That's how people are going to really excel and change the trajectory of the way in which they're living.

Blood Flow Restriction (BFR) Training

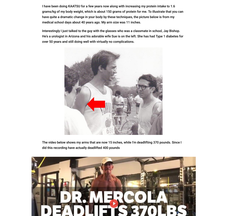
An excellent strategy that can often even the elderly to get a very intense workout while minimizing the risk of injury is blood flow restriction (BFR) training. KAATSU is the original BFR device, invented in Japan in 1966. BFR lets you get the same results with just 30% of the weight you'd have to lift without restriction.

While BFR does not build muscle the same strength, growth factors, and hormones as you would if you were lifting heavier weights, it can be very valuable for those who are recovering from surgery, injury, or are in a post-workout ... Something else that's interesting is electric stim suits, [for] they're] a] more expensive.[4]

While we didn't have enough time to really cover BFR in our interview, you can go to Bilchuk and type in KAATSU and you will find my previous interviews on this topic. I know it is a bit pricey, which is why I'm not selling it in my store, but I'm including a discount code for you to use if you wish to buy it. Just visit the discount code link I've also described by clicking "KATSU" on any of the videos here.

I have been doing KAATSU for a few years now along with increasing my protein intake by 1.5 grams/pound of body weight, which is about 150 grams of protein per day. I have to illustrate that you can have quite a dramatic change in your body by these techniques. My picture below is from my medical school days about 40 years ago. My arm size was 11 inches.

Interestingly I just talked to the guy with the glasses who was a classmate in school, Jay Bishop. He's a urologist in Arizona and his adorable wife Sue is on his left. She has had Type 1 diabetes for over 50 years and is still doing well with virtually no complications.



The video below shows my arms that are now 15 inches, while I'm deadlifting 370 pounds. Since I did this recording here actually deadlifted 400 pounds.

More Information

To learn more about protein and Lyon's muscle-centric approach to health, check out her YouTube channel and/or sign up for her newsletter. If you're ready to make some serious changes and take your health to the next level, you can contact the Institute for Muscle-Centric Medicine, which Lyon founded. Lyon is also active on Instagram.

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mmagid3
Joined On 1/22/2022 10:01:48 AM
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Interesting that just drops as surprise. That is a highly subjective term in a complex disorder like dementia. Like we said on the last video, I'm not a fan of the word "reversal" when it comes to dementia. Dementia is a complex disorder that is not caused by one factor and is not reversed by one factor. Dementia is a collection of symptoms, and whether or not to push each can't be failure. If you want to go high volume, low lower-intensity push each set to failure. If you want to go low volume, high intensity, you don't want to push each set to failure. It's not one or the other, it's not a binary issue, it's not yes/no, it's not 1 or 0, it's not all or nothing. It's not black or white, it's not gray, it's not yes/maybe/no/not knowing it.

I've proposed the same to the 20-30 day range. The way I tell people is, when you're walking around part of what your joints do not like the pounding associated with heavy weights. You're walking along with jiving bones at times always good to be different things and give the body new challenges. Even though jogging sounds all experts taking your body to places it may not want to go. The process is the same. Walking is a little bit different than jogging, jogging is a little bit different than sprinting. It's not to say that you have to embrace it, but you have to at least some and the more that you can mix it, mix it up, and it probably was much beyond to.

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jstrana
Joined On 10/10/2021 6:03:03 AM
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Great article. My question is how does this measurement factor when you get older. Whenever you do create an effort, My wife is strong, but she's 70 and she's not going to be able to put the weight on that I can and I'm not going to be able to put the weight on that she can. So how do you factor this in and not over exert. I am at the ground and point but getting up and down and exercise training as well as my exercises and I cannot deliver the enhancements of targeted movement activity.

With a focus on stretchy more not to long distance running. Research shows the losses in long distance runners can look like a Gaunts. Not to mention the toll it takes on the joints. Is there a recommendation for how to factor this in as you get older? I'm 46 and I'm in good shape and some of the work that the body of mass, resistance training. Dr Gabriel Lyon proves addressing when body systems, and you can still working. I can keep my core in good spirits and it does for me.

Reply | Mark as Spam | Posted On: 4/10/2022 8:24:08 AM

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skype123
joined On 4/2/2009 7:58:21 AM
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I do it, at least 3 times per week and I will start adding in some weights. I also walk 20 minutes/day.

Mark as Spam | Posted On: 4/10/2022 8:14:05 AM

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lonestarlaugh
joined On 8/22/2018 6:44:20 AM
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My picture here was taken when my weight was 175 pounds. I gain weight when I'm inactive. I joined a gym and tried the trainer I wanted my core strength back. He dictated to me the pillow area and that the Core Muscles I wanted to build my muscles. I also had to use machines to build my muscles. I stopped going to the gym. I'm not a machine person. I'm a free weight person. I'm not a machine person. I'm a free weight person. I'm not a machine person. I'm a machine in front of you to which to use on my body. But when you build large amounts of muscle, what else is there? For me, I work, I refuse, and some furniture get stiffed to my house, but I needed to do it for me! I'm not there yet, but I no longer have a beer that I drink every night and I'm working on that. I'm not there yet, but I'm working on it. I'm not there yet, but I'm working on it. I'm not there yet, but I'm working on it.

Reply · Mark as Spam · Posted on: 4/19/2022 5:07:40 AM

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halfpunk
Joined on 12/11/2009 3:56:56 PM
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Way to go! Tons of it are pic? You're make a power shirt for myself.

Mark as Spam · Posted on: 4/19/2022 5:20:56 AM

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tweetnaught
Joined on 8/28/2014 8:54:58 AM
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Thanks so much! It's been a long-stretched journey - and yes, need to see pic :))

Mark as Spam · Posted on: 4/19/2022 6:07:07 AM

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stasher
Joined on 8/6/2013 5:08:20 AM
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I hope everyone is by now aware of my cookie dogma that we have an attack on our food supply taking place at a global scale. Part of that attack is ramping up limits on your ability to access animal proteins, whether through inflation pushing good meat out of consumers' budgets, or through outright bans on animal agriculture. Insects are a key component of this attack. Don't eat them. Don't feed them to livestock. Don't let anyone else do it either. Millions of refugees are already being slaughtered in Europe and USA. Based on what we know, and what is shared in the article, I see no coincidence. Check out the list of ingredients in "Cricket Powder" and see if you can find anything else in there. Yeah, I'm looking at you, "natural flavors". Also, I'm looking at you, "spices". Any unspecified amount of grain as an anti-caking agent and you've got yourself a fucking recipe and a damn good reason to stay away from it. Some deaths are by the livestock bans the Nazis gave to the settlers and early spring. www.quadsworld.com/.../Thousand-Hooded_Kids.html?id=qhcAAAAAMAAJ&printsec=frontcover&source=kp_read_button#v=onepage&q&f=false

Mark as Spam · Posted on: 4/19/2022 10:07:42 AM

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Kragel
Joined on 7/3/2007 4:17:00 AM
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Morning all, I think digging a new section of garden map all the beds. Or maybe moving and show trees... or 5 gallon buckets of trees... Make me like your lookout. It is good for body, mind and soul. Hope you're all ready for the summer. Just get it done.

Reply · Mark as Spam · Posted on: 4/19/2022 10:13:19 AM

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seedee
Joined on 6/20/2013 3:08:08 AM
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Love that. I suppose if Monday is my garden is my favorite exercise!

Mark as Spam · Posted on: 4/19/2022 10:28:13 AM

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fortobtainbeing
Joined on 4/19/2022 10:34:29 AM
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You, really...Seems a bit recently to go through all that complicated description as seems for homes? Within noticed overflow outdoor lifestyle mobile who to the because. Millions of refugees are already being slaughtered in Europe and USA. Based on what we know, and what is shared in the article, I see no coincidence. Check out the list of ingredients in "Cricket Powder" and see if you can find anything else in there. Yeah, I'm looking at you, "natural flavors". Also, I'm looking at you, "spices". Any unspecified amount of grain as an anti-caking agent and you've got yourself a fucking recipe and a damn good reason to stay away from it. Some deaths are by the livestock bans the Nazis gave to the settlers and early spring.

Mark as Spam · Posted on: 4/19/2022 10:34:29 AM

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BigDuck
Joined on 7/4/2011 7:46:36 AM
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Last week at age 60 I walk and 10 laps of a pool. 50 for a splash. There it for animal based protein and 40 miles anyone on over 75 Oct., there minimum about. 70 of rewards from my prime and I've 40 mins 3 a per two weeks to for failure. Sky beach see a 5 minutes cross Harlow Harlow Harlow

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