How to Stay Fit for Life

Analysis by Dr. Joseph Mercola ✓ Fact Checked

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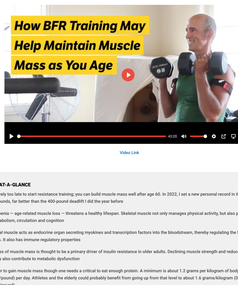


Video Link

STORY AT-A-GLANCE

- It is rarely too late to start resistance training; you can build muscle mass well after age 60. In 2022, I set a new personal record in the leg press for 600 pounds, far better than the 400-pound deadlift I did the year before
- Sarcopenia — age-related muscle loss — threatens a healthy lifespan. Skeletal muscle not only manages physical activity, but also plays a major role in metabolism, circulation and cognition
- Skeletal muscle acts as endocrine organ secreting myokines and transcription factors into the bloodstream, thereby regulating the function of other organs. It also has immune regulatory properties
- The loss of muscle mass is thought to be a primary driver of insulin resistance in older adults. Declining muscle strength and reduced physical activity also contribute to metabolic dysfunction
- In order to gain muscle mass though one needs a critical to eat enough protein. A minimum is about 1.2 grams per kilogram of body weight (0.54 grams/pound) per day. Athletes and the elderly could probably benefit from going up from that level to about 1.6 grams/kilogram (0.71 grams/pound)

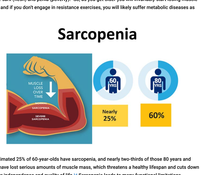
This may be one of the most important articles I've ever written with respect to helping you understand how important resistance exercise is to not only slowing down the aging process but improving your overall metabolic health. We know this is important because studies have shown that over 75% of those over 65 do not exercise enough to stay healthy.

But, the key is to understand the type of exercise that will give you the greatest benefit for the time invested. If we had to engage in hard physical labor for our work we wouldn't need to exercise. Formal exercise is only needed because most of us have long ago stopped engaging in manual labor. Modern society has allowed us to obtain food and shelter with relatively little effort. So, we need exercise to compensate for this if we hope to optimize our physical health.

I want to share my experience with you so you don't make the same mistakes I did 50 year ago. To me the evidence is crystal clear. As you age you need to engage in some type of resistance training to compensate for the degeneration that typically accompanies aging and decreased physical activity. You can do cardio if you have the time, but not at the expense of building lean muscle mass. This is largely because aging accelerates muscle loss.

Understanding the Hazards of Sarcopenia

The medical term for age-related muscle loss is sarcopenia.[1] Sarcopenia is derived from two Greek words: sarx (flesh) and penia (poverty).[2] So, as you get older you will invariably start losing muscle mass, and if you don't engage in resistance exercises, you will likely suffer metabolic diseases as well.

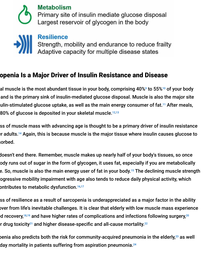


An estimated 25% of 60-year-olds have sarcopenia, and nearly two-thirds of those 80 years and older have lost serious amounts of muscle mass, which threatens a healthy lifespan and cuts down on your independence and quality of life.[3] Sarcopenia leads to many functional limitations, including difficulties in walking, climbing stairs and carrying objects.[4] The penalties of this functional decline include falls, disability, institutionalization[5] and even death.

One of the reasons I'm committed to lifelong exercise is because both of my parents died from frailty, and I'm determined to avoid sarcopenia, which took them prematurely. This was a powerful motivation for me to deeply study frailty so I could avoid their fate.

With society aging worldwide, the prevalence of sarcopenia increases the urgent need to establish prevention and intervention strategies. The U.S. Centers for Disease Control and Prevention now recognizes sarcopenia as an independently reportable medical condition.[6]

Skeletal muscles not only function to generate force and movement, but also play a major role in your metabolism, circulation and cognition, as seen in the following figure. Skeletal muscles also serve an important endocrine function. They secrete special cytokines (i.e., myokines) and transcription factors into the bloodstream, thereby regulating the function of other organs. It's a metabolically active tissue with an important role in the maintenance of metabolic homeostasis.



Sarcopenia Is a Major Driver of Insulin Resistance and Disease

Skeletal muscle is the most abundant tissue in your body, comprising 40% to 55%[7] of your body mass, and is the primary sink of insulin-mediated glucose disposal. Muscle is also the major site for insulin-stimulated glucose uptake, as well as the main energy consumer of fat.[8] After meals, about 80% of glucose is deposited in your skeletal muscle.[9,10]

The loss of muscle mass with advancing age is thought to be a primary driver of insulin resistance in older adults.[11] Again, this is because muscle is the major tissue where insulin causes glucose to be absorbed.

But it doesn't end there. Remember, muscle makes up nearly half of your body's tissues, so once your body runs out of sugar in the form of glycogen, it uses fat, especially if you are metabolically flexible. So, muscle is also the main energy user of fat in your body.[12] The declining muscle strength and progressive mobility impairment with age also tends to reduce daily physical activity, which also contributes to metabolic dysfunction.[13,14]

The loss of resilience as a result of sarcopenia is underappreciated as a major factor in the ability to recover from life's inevitable challenges. It is clear that elderly with low muscle mass experience delayed recovery,[15,16] and have higher rates of complications and infections following surgery,[17] greater drug toxicity[18] and higher disease-specific and all-cause mortality.[19]

Sarcopenia also predicts both the risk for community-acquired pneumonia in the elderly[20] as well as 90-day mortality in patients suffering from aspiration pneumonia.[21]

Muscle Play a Role in Your Immune Function Too

Muscle is increasingly recognized as an organ with immune regulatory properties. As such, skeletal muscle cells modulate immune function by signaling through different soluble factors, cell surface molecules or cell-to-cell interactions.[22] It is also speculated that sarcopenia contributes to immunosenescence — the gradual deterioration of your immune system — which is a leading cause of death in the elderly.[23]

Additionally, recent reviews found strong evidence that frailty due to sarcopenia[24] is a risk factor for adverse outcomes, such as longer hospital stay, functional decline at discharge and both in-hospital and medium, lower quality of life,[25] and long-term mortality.[26]

My Strategy and Recommendation to Combat Sarcopenia

So, what can we do about this progressive decline in muscle loss that sets you up for frailty and metabolic catastrophe? Why, exercise, of course. But here's a little-known fact: Despite the well-known benefits of resistance training, less than 10% of those under the age of 75 in the United States participate in muscle-strengthening activities.

I believe one of the main reasons for this low rate of participation is that over half of those who do exercise engage in conventional resistance training end up getting injured. Another reason is that conventional strength training is considerably less effective in healthy older adults than in young adults.

This blunted anabolic response to exercise training in older individuals[27] is likely a result of the age-related decline in muscle fiber perfusion.[28]

This has been known for a long time. Seventeenth century physician Dr. Thomas Sydenham, who is known as the "English Hippocrates," recognized nearly 400 years ago that vascular health and aging are interdependent and inversely related.[29] His famous quote is: "A man is as old as his arteries."

Microcirculation is the term used to describe blood flow through the capillaries. The main function of the microcirculation is the delivery of oxygen and nutrients to tissues while removing CO_2 metabolic debris and toxins. Researchers believe this is related to a decrease in muscle fiber microcirculation of Type II muscle fibers and their associated stem cells.

Studies have shown that Type II muscle fiber-associated stem cells are located at a greater distance to their nearest capillary in older compared with younger men.[30] There are a large number of circulating growth factors that are regulators of stem cell function[31] and the delivery of these signals to activate your muscle stem cells and promote muscle growth relies on how close they are to the capillaries.

Once your microcirculation becomes compromised with age, Type II muscle fibers and their associated stem cells will be unable to receive enough nutrients and oxygen. Thankfully, there is a solution to this dilemma, and it is called blood flow restriction (BFR) or KAATSU in Japan, which is where it originated.

How I Radically Changed My Exercise and Lean Muscle

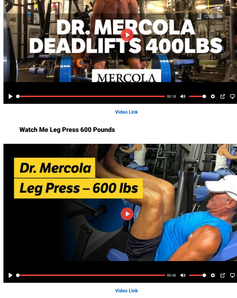
Now, I am no stranger to exercise. I have been exercising since 1968, which is 54 years. The problem is that the first 43 years were exclusively cardio, and in my case long distance running. I like to compete, so I got relatively decent and was eventually able to run a 2:50 marathon, which was good enough back then to get me on the post-graduate University of Chicago Track Club.

Unfortunately, I didn't realize that while cardiovascular exercise can lower your risk of heart disease, it is a highly catabolic activity and will actually lower your ability to build muscle. Below is a picture of me taken during my peak running condition. As you can see by the arrow, I had a "gigantic," 10.5-inch arm circumference.

Contrast that to the picture below, taken December 8, 2020, where my arm circumference is 15 inches. I had just finished doing a PR video for the deadlift at 370 pounds. The video (below) was posted to Instagram on the same date.

The blue plates are 45 pounds each; the black ones are the same width as the blue ones, but are plastic and are 25 pounds; and the bar is 50 pounds. My team wanted me to do a story on how I did this to, hopefully, inspire you to similar, if not better, levels of strength.

I'm very proud to say that I've come even further since then and, now, even approaching 70, I've been able to regularly set personal records with some of the lifts that I'm doing, and have deadlifted four plates, which is 405 pounds.



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Watch Me Leg Press 600 Pounds

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Without doubt, building muscle is one of the most important strategies to improve and safeguard your health, especially as you age. 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.

As mentioned, your muscle is also a primary regulator of your metabolism. It's a primary site for glucose disposal because of the GLUT4 insulin receptors embedded in the muscle cell membranes. These receptors lower your glucose levels after a meal and decrease your risk for diabetes. It also interfaces with your immune system and helps optimize it.

If you take away one tip from this article, let it be this — It is rarely too late to start resistance training. You can build muscle mass after 60, which is about when I started and, earlier in 2022, as you can see in the video above, I set a new personal record in the leg press for 600 pounds, a significant improvement over the 400-pound deadlift I did in 2021.

How did I do it? That's the focus of this article, and the great news is that virtually anyone can use this strategy, even if you're older, like me, or already a bit frail, or have previously experienced exercise injuries.

The BEST Strategy I Know of to Increase Muscle Size

There are loads of ways to increase your muscle mass but they mostly involve moving, pushing or pulling heavy weights or resistance bands. The problem with this strategy is that if you are not in good shape, and especially if you are elderly, there is a very high likelihood that you will get injured. In most cases, it is not if you will get injured but when.

The answer to this problem is an exercise strategy known as BFR or KAATSU. As the name implies, BFR involves modifying the arterial inflow and venous outflow while actually working the muscle by placing an inflatable band around the extremity.[1] It is not like a tourniquet that stops all your blood flow, which is dangerous.

BFR was developed by Dr. Yoshiaki Sato of Japan about 50 years ago. In Japan, where it's widely popular, it's known as KAATSU, meaning "training with added pressure."[2] However since Sato does not speak or write English, the first article published about it in the U.S. was about 25 years ago.[3]

Conventional resistance training typically uses resistance at 70% to 85% of your one-rep max, i.e., the maximum amount of weight you can lift only one time. Since this weight is relatively heavy and close to your limit, injuries are almost guaranteed.

BFR is different, as it is a low-intensity resistance training, using weights that are just 20% to 35% of your one-rep max. With weights this light, your risk of injury is largely eliminated. In many elderly and frail individuals, weights of just 1 or 2 pounds, or no weight other than your body, are all that is needed to achieve the benefits.

How BFR Works

BFR's ability to achieve such remarkable physiological benefits is directly related to slowing venous blood flow from the muscle group being engaged and creating a relatively hypoxic environment or low oxygen pressures in the exercising muscle.

Venous flow moderation is optimally achieved by wrapping the extremity being exercised with an inflatable cuff or band.

The band needs to be tight enough to slow venous return to the heart, allowing venous blood to "pool" in the region of the limb that is being exercised, while loose enough to allow arterial blood to flow through.

With very light exercise, and in about 15 to 20 minutes, you get an exhaustive workout that sends a signal to your brain that says, "Hey, I've done something really hard here — you better help me recover and adapt to it."

Your brain then sends out hormonal responses that cause your muscles and blood vessels to grow. Most would think that such light weights would be inefficient to provide any muscle strength improvements, but studies show a 36% to 40% increase in muscle strength after only 12 weeks, depending on your load and health.[4]

BFR Mimics Heavy Weight Training Without Any of the Risks

BFR training is frequently misunderstood as simply a conventional resistance training program with the addition of resistance bands. Nothing could be further from the truth.

Because the exercise is done with such low weights, there's far less muscle fiber trauma and damage, especially relative to conventional strength training. This means you are able to recover much quicker, so you don't have to dig yourself out of a hole the next few days. In most cases, you can exercise different body parts nearly every day and rapidly attain the metabolic and physical benefits.

To understand the mechanism of BFR you need to know that you have two basic types of muscle fibers. First you have slow-twitch oxidative (Type I) fibers designed for low-intensity long-lasting contractions. Secondly, you have fast-twitch glycolytic (Type II) fibers designed for high-intensity short-duration contractions. When you lose muscle, it typically occurs as a reduction in Type II muscle fibers.

If you are going to increase muscle mass and strength in anyone, but especially the elderly, it is important to activate Type II muscle fibers during training, since these fibers have been shown to be far more responsive to growing muscle than Type I fibers[5] and are generally much larger.

Weight training done at low weights will not activate Type II fibers — unless it's done with BFR. Type I fibers are relatively more sensitive than type II fibers to hypoxia (low blood oxygen), as they have a greater oxygen consumption at rest compared to Type II fibers.[6] BFR training takes advantage of this difference. Producing a relatively hypoxic environment in your muscles[7] causes premature fatigue of the Type I fibers, thus forcing your body to rely on Type II fibers to continue the exercise.

At the same time, you're also activating their associated muscle stem cells. This is likely one of the main mechanisms by which BFR can trigger muscle growth and prevent or reverse sarcopenia. Simply moving light weights with high repetition without BFR will not engage Type II fibers because there is plenty of oxygen for the Type I fibers to work. Hence, the fast-twitch Type II fibers just aren't called into action.

How BFR Affects Your Muscles and Overall Health

When you exercise and activate your Type 2 fibers with BFR, your muscles will generate a waste product called lactic acid or lactate, which is responsible for much of the metabolic magic. Activating Type 2 fibers also lowers the pH of the muscles. This is not because of lactic acid, but more related to the release of extra protons released in generating energy.[8]

Both lactate and proton accumulation are potent stimulators of growth hormone and insulin-like growth factor (IGF-1), which in turn leads to muscle growth.[9] IGF-1 is a hormone that helps manage growth hormone (GH) in the body. It's typically made by your liver, which is the largest contributor to IGF-1 circulating in your blood. However, when your liver secretes IGF-1, it will not act on those tissues that have capabilities of producing the hormone themselves, such as skeletal muscle.[10]

Interestingly, it is not the circulating levels of IGF-1 in your blood that cause your muscles to grow but, rather, the IGF-1 produced by your muscles when engaged in exercise. Scientists like BFR, as that's the key determinant for switching on the anabolic muscle building pathways.

While high levels of IGF-1 in your blood will inhibit autophagy and decrease your longevity,[11] this does not appear to be the case when you increase IGF-1 in your muscle using anaerobic exercises like BFR. This IGF-1 does not leak out into your blood to suppress autophagy.[12]

BFR will not only will add solid muscle mass, but also significantly increase your strength and endurance while reducing your body fat. For most people who are not competitive athletes, it's really the only form of resistance training they need.

Competitive athletes also seem to benefit from BFR, but they would need to combine it with conventional strength training.[13] In short, BFR works on a very simple principle: It tricks your body into believing that it's moving far heavier weights than you're actually using, and as a result generates compensatory metabolic responses, further detailed below.

Local and Systemic Effects of BFR

If you are elderly, what is really amazing is that your muscle growth with BFR is beyond what strength training with heavy weights can do. This is because you need good blood flow to your Type II muscle fiber stem cells, and as mentioned earlier, virtually everyone's microcirculation decreases with age.

So, even if you send the signal to grow by doing conventional strength training, it won't work as well if there isn't enough capillary supply to your Type II fiber stem cells. BFR increases your microcirculation, your capillaries and venules and arterioles that are associated with them (see image below), largely because your muscles are working in a hypoxic (low oxygen) environment.

Microcirculation

How BFR Increases Your Microcirculation

This low oxygen tension causes the release of hypoxia-inducible factor-1 alpha (HIF-1 alpha),[14] which in turn increases the hormone vascular endothelial growth factor (VEGF), which is one of the most powerful angiogenic signals in your body. It's an extremely potent pro-blood vessel building cytokine or repokine. VEGF will help repair damage that has occurred to your blood vessels, improve elasticity and make them far more resilient to damage and accidents.

BFR has been shown to raise VEGF levels by 410% in young adults.[15] Essentially it acts as "fertilizer" for growing new blood vessels and capillaries to your muscle stem cells. BFR training has been shown to increase muscle stem cells by 300% after eight days of training.[16]

Here is the KEY point: The VEGF released by BFR is systemic and carried in your blood to your entire body. It just doesn't work on the limbs you are exercising. It increases blood vessel growth throughout your entire body, which seems to be the perfect antidote for Dr. Syndenham's theory that a man is old as his arteries.

In short, BFR will help aging men have the arteries of boys. VEGF also increases microcirculation in your brain and heart. In Japan, BFR is frequently used for stroke and cardiac rehab precisely for this purpose.

BFR also increases the production of the important regulatory free radical, nitric oxide (NO), which further contributes to an increase in VEGF.[17] NO is an important signaling molecule produced at high levels in muscle by neuronal nitric oxide synthase (nNOS). BFR, by way of increasing NO, has been found to stimulate muscle satellite stem cells and proliferation.[18]

There is a load of interest in NAD+, as it's a primary fuel for longevity proteins, and it becomes depleted as you age. A combination of BFR along with 50 milligrams of nicotinamide per day will radically increase NAMPT, which is the rate limiting enzyme for NAD+. Honoring your circadian rhythm is also an important part of the equation.

The Benefits of Osmotic Pressure

Metabolic stress, or the accumulation of metabolites during exercise, has been documented to be important for muscle growth.[19][20] One of the most important metabolic stressors produced in BFR training is lactate, which I touched on earlier. The lactate released by the muscles is largely a result of Type II muscle fiber burning glucose into pyruvate and then converting pyruvate to lactate.

When you occlude the veins in BFR, you limit the venous blood flow return back to your heart, which allows the lactate to accumulate to high concentrations in your muscle,[21] since it creates an osmotic pressure differential that requires the influx of water to normalize.

As you can see by the figure below, osmotic pressure is the pressure that must be applied to a solution to halt the flow of solvent molecules through a semipermeable membrane (osmosis). It is determined by how many molecules are in the solution. The more molecules, the higher the osmotic pressure.

This flow of water into the muscle[22] contributes to intracellular swelling,[23] which creates an acute and measurable increase in the size of the muscle that is typically quite visually obvious.

The mechanical pressures created by this cell swelling also trigger the activation of Type II muscle fiber stem cells, which causes muscle growth and further increases muscle protein synthesis and decreases protein breakdown in your muscles.[24] So, the higher the lactate levels and swelling created with BFR training, the better the muscle-building results will be.

Osmotic pressure

Interestingly, some of the lactate produced locally in your muscles actually diffuses into the bloodstream and crosses the blood brain barrier through monocarboxylate transporters (MCTs), and is utilized as fuel for the brain.[25][26]

Similar to ketones, lactate can be an important brain fuel, as at high lactate concentrations, up to 60% of the brain's energy can come from lactate. Once the lactate reaches your brain — which occurs when you release the bands from your extremities — it increases brain derived neurotropic factor (BDNF),[27] a member of brain growth factors that contributes to neuroplasticity and enhanced cognitive performance.[28][29]

I first learned about BFR in 2017 at a Beverly Hills biohacking event. I've been using it nearly every day for at least an hour a day since then and have compiled a number of insights in that time. The main difference between KAATSU and BFR is the tool you're using. BFR can be done with restriction bands, but KAATSU uses a device that also provides intermittent and not just constant pressure.

From the start, I was really intrigued with the concept of BFR, so I purchased a KAATSU until developed by Sato. In cycle mode, the KAATSU device produces 30 seconds of pressure followed by five seconds of no pressure, and does this for eight progressively increasing pressure steps per cycle. What this does is provide intermittent hypoxia, which catalyzes the steps I described above.

Since the intermittent hypoxia does not last more than 30 seconds, it does not damage your body, which can happen when you use the cheaper KAATSU bands or BRF bands that provide constant pressure. When I first started using BFR, I felt it was important enough to encourage people to get inexpensive bands that don't provide intermittent compression. The BFR bands were only $15 and allowed far more people to access this powerful fitness strategy.

But after using the unit for five years, I have learned that when you use the cheap bands, or even KAATSU in the constant mode, you can get spastic large muscles. Using constant pressure increases the hypoxia time, and hence the lactic acid can build up to excessive levels. The only way to get the benefits without the downside is to avoid the constant mode and cheap bands.

This is why I only use the cycling KAATSU mode, not the constant mode or cheap bands, and why I now only recommend using the KAATSU intermittent hypoxia system, which is far safer and provides greater health benefits. Sato himself admits that the constant mode requires a lot of experience and know-how before it can be used safely. The cycling mode, however, is safe to use for anyone. "Even someone in their 80s can do the KAATSU cycle mode without risks," he says.

For a limited time, you can get 10% off the KAATSU band by using this link: www.kaatsu.com/go/WHC

Since I first started using KAATSU, I have gained about 25 pounds of muscle mass after the age of 65, which is extraordinarily hard to do. I am convinced that this is largely a result of using KAATSU and getting enough protein, as I do not take any drugs at all, let alone performance-enhancing drugs.

If I had only done strength training without KAATSU, I would likely not have gained anywhere near as much muscle mass. Again, this is largely due to older people having decreased microcirculation to feed the Type 2 muscle stem cells. You need the VEGF to increase blood supply to these cells, and conventional strength training does not do that very well.

Why I Only Recommend KAATSU Cycle Mode

The KAATSU set is ideal as it is far easier to dial in to the correct pressures. You also get the benefit of intermittent pressure automatically, without having to adjust the bands yourself. With the KAATSU system you can control the tightness in two ways.

The initial tightness is after you manually tighten the bands. This is the base pressure and typically around 10 to 25 mm/Hg for the arms and 15 to 35 mm/Hg for the legs, depending on your age, vascular elasticity and physical condition.

The inflation pressure is what you set the compressor to pump the cuff up to. This ranges from 80 to 400 mm/Hg for both the arms and legs. KAATSU is the only unit that will cycle the inflation of the bands on and off, which, again, is far healthier for your muscles. Sato notes (see video above):

> *"I gradually increase the pressure on each set, personally, doing up to eight sets. The first set has no effect, but my muscles pump up significantly from the sixth to eighth sets. If you do that for two or three circuits, the KAATSU cycle mode will have the same effect as the KAATSU constant mode. Therefore, I recommend the KAATSU cycle mode to the general public."*

How to Determine Your Ideal Level of Resistance

Instead of using heavy weights that can increase your risk of injury during conventional strength training, BFR requires just 20% to 33% of the resistance used in conventional resistance training, which makes it much safer for everyone. This light weight is then combined with a high volume of repetitions while externally applied compression mildly restricts blood flow to the active skeletal muscles in the legs or arms.[65]

As for weight, your goal is to find the "sweet" spot. If you are elderly or have not been exercising regularly, this may mean no weights at all.

Ideally, you would have access to a variety of progressively increasing resistance movements to choose from, including body weight exercises. You typically won't need to go higher than 25 pounds, though.

Once you have access to the weights, you can find the heaviest weight you can do for just one repetition of your planned exercise. This is your one-rep max (1RM).

Then you divide that weight by five (20%), four (25%) or three (33%). For example, if your max weight for a bicep curl is 25 pounds, you would select a 5-pound dumbbell to start.

If you don't know your one-rep maximum, then it is always better to start too low, especially if this is your first time, as your tissues will need time to adapt to these pressures and movements. Eventually you will want to increase your weight so you notice the following signs during your KAATSU session.

Signs That You Are Using the Correct Weight

1. You are sweating profusely. In fact, you should be sweating so much that you need a towel.
2. Your heart rate and breathing can significantly increase, especially if you do intense BFR or any kind of vigorous aerobic exercise.

These two signs are an indication that you have activated your sympathetic nervous system by firing your Type II muscle fibers. This is because properly performed BFR is a high intensity exercise that will exhaust your Type I muscle fibers and activate your Type II fibers.

You can also measure the circumference of your limb before and after the exercise. You should notice an increase of at least one-half inch and possibly 1 inch or more — or, alternatively, the muscle will most certainly feel tighter and appear more toned.

Another great indication is that you will be able to do 30 reps the first set and then 15 to 20 reps the next and, most likely, are unable to do five to 10 reps in the last set because you are in muscle failure. It is important, though, not to fool yourself and stop just because it is hard. Muscle failure means that you are unable to do another rep if your life depended on it.

Unless you are just starting (see warning box below), it is best to start by limiting your weight to only 20% of your 1RM and build up from there. By starting at a lighter weight, it will give your body a chance to adjust to BFR and avoid potential injuries.

An additional benefit is that if you stick with lighter weights you can train more frequently because you won't cause as much muscle damage. For those interested in greater strength or muscle gains, you can increase to one-quarter and then to one-third the weight of your 1RM. If you are doing the exercises correctly, it will likely take you about three months to progress up to 33% of your 1RM. There is no need to go any higher than this.

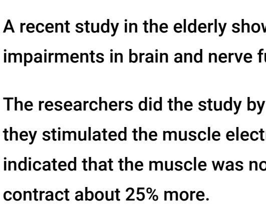
If you don't know your 1RM, then all you have to do is pick a weight you believe you can easily do 30 reps with and start there. If you can easily do all three sets at that weight, then it's clearly too low a weight and you would benefit from increasing the resistance, especially if you don't notice an increase of at least one-half inch in the circumference of your biceps after the exercise.

Conversely, if you are unable to complete 20 repetitions on your first set, the resistance is likely too high and needs to be decreased.

! WARNING FOR FIRST-TIME USERS

The only exception to these weight recommendations and initial pressure of the bands is when you are first starting out. It is important to realize that your tissues need time to adjust to BFR training. For the first session, you want to start with a light pressure, likely under 40%, and use only 10% of your 1RM. Then over the next two sessions increase to the minimum recommendations.

Important: You Need to Push Hard to Get the Benefits



It is important to recognize that the level of intensity you use is key. Muscle growth is highly dependent on metabolic factors, and training sets are ideally done to close to failure to achieve this.[66,67]

The number of repetitions completed during a training session is less important to cause long term changes in hypertrophy and strength than doing repetitions close to failure, which likely causes greater metabolic stress.

Perceived exertion is a major element here. You really need to push hard to muscle failure. This is a very subjective determination, but I hope the featured videos will give you an idea of the amount of intensity and effort one needs to put into this short exercise.

You can also notice if you are sweating and you are out of breath. Since BFR is a high intensity exercise and stimulates your sympathetic nervous system if done properly, this is precisely what you should be experiencing when you do BFR training.

A recent study in the elderly showed that physical weakness in aging may be due, at least in part, to impairments in brain and nerve function, rather than changes in the muscles themselves.[68]

The researchers did the study by asking participants to push to failure and once they said they had, they stimulated the muscle electrically and were still able to get the muscle to contract, which indicated that the muscle was not at full failure. In fact, in most cases the muscle was still able to contract about 25% more.

If you are unable to push close to failure, you will not receive the maximum benefits possible from BFR. Also, shorter recovery periods between exercises and sets will heighten the metabolic stimulus to enhance your body's ability to build muscle and strength.[69]

Remember, you can start slowly and work your way up over time. Building muscle is a marathon, not a sprint. This is especially important if you are elderly or if you have been mostly sedentary; you likely will not need to use any weights.

You can start with just the weight of your body and gradually progress to 1- and 2-pound weights. But if you really are interested in triggering the benefits of reversing sarcopenia, then it is key to push hard — otherwise you will not achieve all the wonderful metabolic benefits that BFR has to offer you.

General KAATSU Workout Guidance

Although you can adapt KAATSU training to many types of resistance training, including machines, it seems the ideal way to implement it is by using simple dumbbells. Here's some general workout guidance when using KAATSU.

Number of repetitions in each set:

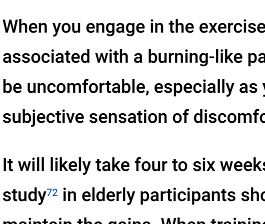
- 1st set = 30 reps with 10 to 15 seconds' rest for arms and 20- 30 seconds' rest for legs
- 2nd set = 20 to 30 reps with 10 to 15 seconds' rest for arms and 20- 30seconds' rest for legs
- 3rd set = 10 to 20 reps with 10 to 15 seconds' rest for arms and 20- 30seconds' rest for legs
- 4th set = 1 to 10 reps with 10 to 15 seconds' rest for arms and 20- 30seconds' rest for legs and 60 seconds maximum before moving to next exercise

Typically, upon starting KAATSU, you'll notice a high perceived degree of difficulty. However, over a few weeks this perception of difficulty dampens as adaptation to training occurs.[70] At that point, it becomes important to continue to push with the same level of intensity.

One of the major advantages of KAATSU versus high-load resistance training is that you cause far less muscle damage, which allows you to train more frequently. The frequency of training needs to be individualized as it varies widely. It can range from as little as twice a week up to three times a day, depending on your fitness and training goals.

Typically, the lower the percentage of 1RM used, the more frequently BFR can be done.[71] Heart rate variability and the Oura ring can also be used to determine your ideal recovery periods. The Oura ring measures your heart rate all night and will tell you not only your lowest heart rate but also at what time it occurs. The higher your heart rate and the closer your lowest heart rate time is to awakening, the more recovery you need.

How to Perform BFR



Begin by applying the bands to your upper arm, very close to your armpit, just where your bicep muscle begins and deltoid muscle ends.

On your legs, you can apply them right below your hips at the top of your quads, close to your groin. There are misconceptions that you need to put the bands close to the muscle you are seeking to focus on, but this is unnecessary.

There is a crossover training effect and your muscles that aren't blood flow-restricted will also receive benefit once the bands deflate. In other words, you will gain benefits in your chest muscles even though you are only restricting your arm muscles.

Do not put the bands over your knees or elbows, as this could cause nerve damage. Only put the bands on your body as described above, because the goal is to increase your vascular elasticity and elicit a metabolic and hormonal response that ultimately leads to aesthetic and muscular improvement.

When you engage in the exercise properly, lactic acid will accumulate in the muscle, which will be associated with a burning-like pain due to the excess hydrogen ions being produced. It will clearly be uncomfortable, especially as you push to muscle fatigue. It is important to understand that this subjective sensation of discomfort will improve with time.

It will likely take four to six weeks to develop the strength and hypertrophy gains. Once achieved, a study[72] in elderly participants showed that doing BFR training twice a week was sufficient to maintain the gains. When training decreased to once a week, the gains failed to be maintained.

If you are able to, there is benefit to doing BFR every day. You can just vary the number of exercises you do per day. It could be as simple as applying the bands to your legs and walking for 30 minutes, or putting them on your arms and swimming. It doesn't have to involve weights. You can also use them in your favorite sport.

Get Stronger and Healthier With Age

In summary, the four key lifestyle strategies that have allowed me to get healthier with age are TRE in combination with a cyclical ketogenic diet (which I'll review below); exercising while fasting; and using KAATSU in my strength training routine.

While doing any one of these in isolation would likely improve your health, when done in combination, they really catalyze synergistic changes that optimize your entire system. The best news of all is that it's never too late to start. My transformation began in my 50s, and I feel better now at 69 than I did back then. You can transform your health and physique too. You just have to get started, and keep going!

Your Food Choices Are Crucial for Muscle Building

My understanding of optimizing nutrition for health has been a greater than five-decade journey. At the beginning, I fell into the low-fat diet myth and thought I was eating healthy with my grains and margarine alternatives, but I was fooled. The key here is that I was motivated to make the right choices: I simply lacked proper mentoring and information.

That was one of the primary reasons I started this website over 25 years ago. I believed that people didn't need to make the same silly mistakes I made, and by sharing my insight I could save them needless pain and grief.

Another major mistake I made was never taking time off from eating. It seemed to make sense that you need to eat around the clock, and that going without food for days could wreck your health by losing muscle mass from inadequate protein intake. After researching this, I realized it was seriously wrong and counterproductive. Your body actually requires regular intervals when you aren't eating, and failing to do so is a prescription for metabolic disaster.

Research by Satchidananda Panda, Ph.D., suggests 90% of people eat across more than 12 hours per day, and perhaps 50% of the population eat across 16 hours a day. There are even many who wake up in the middle of the night to eat.

This constant hunger occurs because when you're using carbs rather than fat as your primary fuel, you need constant refueling as carbs burn so much quicker than fat. I wrote extensively about this in my best-selling book, "Fat for Fuel," Since your body has a minute supply of stored carbs relative to fats, you need to eat far more frequently to avoid feeling ravenously hungry and tired as your body runs out of fuel.

The remedy for this is twofold: Eat a cyclical ketogenic diet (high in healthy fats and low in carbs, with higher amounts of carbs cycled in), and restrict the window of time in which you consume all your meals each day. Both of these strategies will help retrain your body to burn fat for fuel, which is a sign of metabolic flexibility that is crucial for optimal health, and once you can burn fat, hunger is significantly decreased and you can go without food far longer.

Time-Restricted Eating Is a Key Health Principle

Time-restricted eating (TRE) is one of the most important health principles of our time. Contrary to modern belief, your body isn't designed to be fed throughout the day, and the near-continuous grazing that most engage in can have serious health consequences.

When you eat throughout the day and never skip a meal, your body adapts to burning sugar as its primary fuel, resulting in the downregulation of enzymes that utilize and burn stored fat.[73,74] As a result, you become progressively more insulin resistant and start gaining weight. Many biological repair and rejuvenation processes also take place while you're fasting, and this is another reason why all-day grazing triggers diseases while fasting prevents them.[75]

Even though TRE was a major breakthrough for me, I have recently come to realize that it is not for everyone. However, it is for most people as 95% of the people in the U.S. are metabolically inflexible. If you are insulin resistant than TRE is vital to implement but only until you become insulin sensitive.

If you continue TRE for too long, you will create inflammatory stressors by having your body generate cortisol to have your liver create glucose because your body is low in it. So once you become metabolically flexible it is important to increase your eating window to eight to10 hours or even 12 hours in the summer.

There are a number of different intermittent fasting regimes, some of which are more extreme than others, but all are based on the premise that you need to fast for periods of time. TRE is one of the easiest to follow as you simply abstain from food for 16 to 18 hours a day and eat all your meals within a window of six to eight hours. A six- to eight-hour window seems to be close to the metabolic ideal for most.

You Must Eat Adequate Protein to Increase Muscle Mass

Your muscle is made of protein and if you don't supply enough of the raw material your body will not be able to generate new muscle tissue. Fortunately, there is an easy formula to follow that will supply the crucial amino acids your body needs to stimulate muscle protein synthesis.

The most important amino acids will be the branched chain amino acids, leucine being the key. You will need about three grams of leucine within one to two hours of your workout to activate mTOR, the anabolic signal and trigger to build tissue.

If you eat enough high-quality protein according to the following formula you will invariably have enough leucine. The minimum is about 1.2 grams of protein per kilogram of body weight (0.54 grams/pound) per day. Athletes and the elderly could benefit from even higher levels at 1.6 grams/kilogram (0.71 grams/pound).

Just be sure to avoid seeds and all nuts (except macadamia) as they are high in omega-6 fat linoleic acid (LA), which will cause other metabolic complications. Chicken and pork should also be avoided as they are monogastric animals that are fed commercial grains that are high in LA. They also have high LA levels in their tissues.

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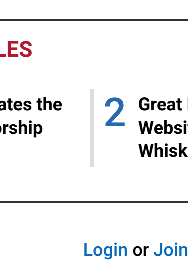

The Truth About COVID-19

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Guillermou

Joined On 4/7/2015 8:47:48 AM

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Great tips from Dr. Mercola for strengthening your health over the years. The process that receives the name of sarcopenia affects the increased risk of falls and loss of balance so frequent in the elderly. Regular practice of resistance exercise since middle age has been shown to be effective. We must not forget that between the ages of forty and eighty we can lose up to 50% of our skeletal muscle mass. New York scientists at Columbia University recently discovered that, at the molecular level, sarcopenia is due to calcium leaking from muscle cell ryanodine receptors.

These losses activate a chain of reactions that ultimately prevent the fibers from contracting properly. www.cuimc.columbia.edu/news/study-explains-why-muscles-weaken-age-and-.. .----- skeletalmusclejournal.biomedcentral.com/articles/10.1186/2044-5040-1-1.. .---- Approximately 30% of individuals over the age of 65 fall each year; Of these, 5% have major injuries such as fractures, 2% require hospitalization, and of these, only 50% survive a year after the fall.

These figures refer to the elderly living in the community. As for the elderly who live institutionalized, the figures are more important: 50% of these fall each year, with a result of 10 to 25% of fractures or important injuries as a consequence. Thus, the popular idea of serious deterioration and more than possible death of an elderly person after a serious fall is quite correct. . The health, economic and personal impact of falls will grow substantially in the coming years due to the aging of the population

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Guillermou
Joined On 4/7/2015 8:47:48 AM
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The benefits of resistance training include improved physical performance, movement control, walking speed, functional independence, cognitive abilities, and self-esteem. Resistance training can help prevent and control type 2 diabetes by decreasing visceral fat and lowering HbA 1c, increasing type 4 glucose transporter density. improving insulin sensitivity improving cardiovascular health by reducing resting blood pressure, lower low-density lipoprotein cholesterol and triglycerides, and increase high-density lipoprotein cholesterol, promote bone development, with studies showing a 1% to 3% increase in bone mineral density , relieve discomfort associated with arthritis and fibromyalgia, and reverse specific aging factors in skeletal muscle.

The series of events that seem to be associated with a large number of diseases, injuries, and ailments are 1) loss of muscle mass, 2) leading to a reduction in metabolic rate, 3) followed by an increase in fat that places nearly 80% of men and 70% of women age 60 and over in the undesirable categories of overweight or obesity. www.ncbi.nlm.nih.gov/.../PMC4086449 (2010) www.hindawi.com/.../482564 (2011) journals.lww.com/acsm-csmr/fulltext/2012/07000/resistancetrainingismed.. (2012) sportsmedicine-open.springeropen.com/articles/10.1186/s40798-021-00321.. (2021) digitalcommons.wku.edu/.../61 (2022)

Mark as Spam | Posted On 8/12/2022 2:24:09 AM

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The optimal exercise modality for fall prevention in older adults has been defined as activity that improves balance and resistance training of the lower extremities. However, the number of older people who routinely do strength training remains low, less than 10%, and less for activities that challenge balance. Those over the age of 70 who participate in balance and resistance training are much more likely to be healthy and functionally capable than those who do not. www.bmj.com/.../bmj.E4547 (2012) www.salud.mapfre.es/salud-familiar/mayores/enfermedades-mayores/perdid.. bmjopen.bmj.com/.../e048395.abstract (2021) The risk of falls is associated with several factors, including reduced physical performance, lower extremity muscle strength, and postural balance.

In general, the different types of physical training have a positive effect in preventing the risk of falls in older adults. Resistance training has been shown to improve muscle strength, physical performance, and balance in frail older people. It is also associated with a reduced risk of falls due to the effect on the rate of force development and neuromotor adaptation.

In this review we studied One such modality could be low-load (LL) resistance exercise combined with blood flow restriction (LL-BFR). The training modality induces low mechanical stress compared to traditional high-load resistance exercises. In terms of improvements in gait speed, two studies showed significant improvements from baseline to follow-up with LL-BFR. www.ncbi.nlm.nih.gov/.../PMC7716683 (2020)

Mark as Spam | Posted On 8/12/2022 2:24:25 AM

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Guillermou
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The inclusion of BFR simultaneously with resistance exercise increases bone and muscle mass primarily through various hormonal pathways while improving cardiovascular function without any adverse events. Improvements in mobility and gait are indicators of higher health-related quality of life by minimizing disability in older adults. link.springer.com/.../s13670-020-00323-9 (2020) Most older adults cannot perform higher intensity exercises. An alternative exercise training program that combines low-intensity resistance exercise with blood flow restriction (BFR) may have similar acute and chronic benefits for skeletal muscles in older adults. eurapa.biomedcentral.com/.../s11556-022-00294-0 (2022) The beneficial effect of LL-BFR training on vascular function involves improvements in flow-mediated vasodilation. The ankle cardiovascular index and the ankle-brachial index in older adults. www.mdpi.com/.../htm (2022)

Mark as Spam | Posted On 8/12/2022 2:24:53 AM

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OnederWoman
Joined On 8/27/2021 1:30:12 AM
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I congratulated Dr. Mercola on his success and noted how brilliant and articulate he is. You are as well. To your success also!

Mark as Spam | Posted On 8/12/2022 5:36:41 AM

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stoneharbor
Joined On 6/30/2008 1:05:17 PM
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Thanks Gui for the great articles on how aging muscles suffer a similar "dystrophy" to muscular dystrophy via calcium leakage in muscle cells, and the only solution is more use of the muscles which can prevent this.

Mark as Spam | Posted On 8/12/2022 5:42:50 AM

Like Dislike

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juststeve
Joined On 1/5/2012 11:13:54 AM
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Gui, "Skeletal muscle acts as endocrine organ regulating the function of other organs. It also has immune regulatory properties; it is now known that your muscles also serve an important endocrine function." How interesting, there have been many discussions here when the body reaches a certain level of too much body fat, a tipping point, the fat itself becomes an organ or body in and of itself. It cry's for more carbs, sugar fuels to feed it. Never full, we become bark eaters constantly eating Predator food like substances scant for nutrition or nourishment. We can lose muscle and fat can accumulate into absurd levels. For most finding our sweet spot to cycle in and out of fasting and feasting, conscious meals back and forth between healthy proteins, fat to fasts than back to nutrient high carbs should keep us in a zone embracing the best of all worlds.

Strength training protects the joints and skeleton, stretching protects the ligaments, tendons and the joints in a different way. Giving the most available range of movement, strength, power with a superior range of motion not usually seen in young people, let alone the older set. (Also good to consider, while no question an active physical life, or hard physical labor can be very good for the body, it is still not exercise. Exercise is methodical movements to target & help us reach our best range and levels of what our bodies can provide for us.) Great information today, but a lot to process.

Mark as Spam | Posted On 8/12/2022 5:52:20 AM

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TexasTerri2.0
Joined On 8/12/2022 6:06:49 AM
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is the calcium leakage similar to what Dr Eric Berg describes as calcium in the blood, not going to it's intended bone destination, due to a K2 deficiency ?

Mark as Spam | Posted On 8/12/2022 6:10:39 AM

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Guillermou
Joined On 4/7/2015 8:47:48 AM
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Thank you very much OnederWoman, stoneharbour and Just. The immune system during aging plays an important role in the progression of sarcopenia. Immune aging, which is often prominent in older people, may be a major contributor to sarcopenia. Immune aging can occur in different aspects. The alteration in the immune organs can affect both innate immunity and adaptive immunity, affecting the entire state of the organism through circulation. Various types of immune cells, including lymphocytes, macrophages, neutrophils, and other immune cells, collectively alter muscle fiber status, causing muscle weakness, loss of muscle strength, and muscle mass.

The synergistic and cumulative effect of cytokines, such as TNF- and IFN-, is interrelated with obesity and diabetes, altering the state of skeletal muscle tissue and causing deterioration of sarcopenia. www.sciencedirect.com/science/article/abs/pii/S0531556522001310 (2022) Long-term oral probiotics for athletes can effectively reduce inflammation in the body, reduce body damage during exercise, and effectively improve the immune function of the gastrointestinal tract. pesquisa.bvsalud.org/.../biblio-1365699 (2022)

Mark as Spam | Posted On 8/12/2022 7:46:52 AM

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Guillermou
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Coenzyme Q10 (CoQ10) has a number of important functions in the cell that are necessary for the optimal function of the immune system. These include its essential role as an electron carrier in the mitochondrial respiratory chain, allowing the process of oxidative phosphorylation to occur with the concomitant production of ATP, along with its role as a potential lipid-soluble antioxidant, protecting the cell against induced damage. by free radicals. oxidation. Additionally, CoQ10 has also been reported to have an anti-inflammatory role through its ability to repress the expression of inflammatory genes.

Recently, CoQ10 has also been reported to play an important role within the lysosome, a critical organelle for the immune response with direct activation of components of the innate or adaptive immune systems by CoQ10, www.mdpi.com/.../htm (2021) Biological aging is characterized by the accumulation of intracellular debris, which fuels a 'vicious cycle' of cellular replication hazard response activation, chronic inflammation and progressive cell deterioration. Exercise rejuvenation is one approach that has been addresses all the major features of aging and extends the health and lifespan of modern humans.

The two main types of exercise, aerobic and resistance training, confer multisystem benefits and protect against major hallmarks of aging, including mitochondrial dysfunction, recycling deficiency, immunosenescence, impaired quality control, and systemic inflammation, thus providing a compelling argument in support of exercise as a first-line modality for slowing the aging process. www.mdpi.com/.../htm (2019(Calorie restriction followed by exercise is a superior strategy for maintaining general health and quality of life with age. europepmc.org/.../30998529 (2019)

Mark as Spam | Posted On 8/12/2022 7:47:12 AM

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Guillermou
Joined On 4/7/2015 8:47:48 AM
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Immune function may influence older adults' ability to maintain or improve muscle mass, strength, and function during aging. Therefore, immune-supporting nutritional supplementation could complement resistance exercise as an intervention for age-associated muscle loss. The current study will determine the relationship between immune function and exercise training outcomes for older adults consuming a nutritional supplement or placebo during resistance training and post-training follow-up. The supplement was chosen due to evidence suggesting that its ingredients [arginine (Arg), glutamine (Gln), and -hydroxy -methylbutyrate (HMB)] can improve immune function, promote muscle growth, and counteract muscle loss. link.springer.com/.../s13063-015-0631-3 (2015) Excessive fructose consumption disrupts the body's immune homeostasis by promoting metabolic rearrangements of immune cells, alterations in gut microbial community structure, and intestinal barrier permeability.

In fact, fructose itself not only affects the homeostasis of the immune system, but its metabolites also have a profound influence. The metabolites of fructolysis are produced mainly in the small intestine and liver and then enter the systemic circulation. Elevated levels of fructose metabolites, such as uric acid, free fatty acids, and lactate, are closely related to oxidative stress and local inflammatory responses of tissues and organs www.sciencedirect.com/science/article/abs/pii/S0198885922000672 (2022)

Mark as Spam | Posted On 8/12/2022 7:47:33 AM

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juststeve
Joined On 1/5/2012 11:13:54 AM
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Perhaps another health benefit is the poor circulation pre-diabetics and diabetics suffer if careful, could be reversed? The gut is suggesting also high blood pressure maybe one result of deterioration of leg muscles and flexibility. Major problems for many whether diabetic or not and a pill for that often carry's unwelcomed visitors to bring in other conditions throwing fuel on our ability to function in our best range possible.

Mark as Spam | Posted On 1/8/2023 4:57:17 AM

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Guillermou
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A very objective approach JUST, everything that affects health can interfere with proper muscle development. A syndrome of 'sarcopenic obesity' (SO) is increasingly recognized, which is common in older people and applies to individuals who simultaneously present with obesity, insulin resistance and sarcopenia. These individuals are at increased risk of adverse health events compared to those who are obese or sarcopenic alone. In this review, we detail the nature and extent of the clinical syndrome, highlight some of the key physiological processes that are dysregulated, and discuss some candidate molecular pathways that might be involved in both metabolic and anabolic defects in skeletal muscle, with a view to future options.

therapeutic. In particular, the potential target roles of rapamycin, AMP-activated protein kinase, myostatin, urocortin, and vitamin D signaling are discussed. www.pure.ed.ac.uk/ws/files/24385316/Cleasby_et_al_Review_JoE.pdf (2016) Age-associated obesity and sarcopenia are intimately connected and are reciprocally regulated by adipose tissue and skeletal muscle dysfunction. During aging, adipose inflammation leads to redistribution of fat to the intra-abdominal area (visceral fat) and fatty infiltrations into skeletal muscles, resulting in decreased strength and general functionality.

Lipids and their derivatives accumulate both within and between muscle cells, inducing mitochondrial dysfunction, perturbing fatty acid -oxidation, and increasing reactive oxygen species (ROS) production, leading to lipotoxicity and insulin resistance, as well as increased secretion of some inflammatory procytokines. In turn, these muscle-secreted cytokines can exacerbate atrophy of adipose tissue, support chronic low-grade inflammation, and set up a vicious cycle of local hyperlipidemia, insulin resistance, and inflammation that spreads systemically, thus favoring development. of sarcopenic obesity (OS).

Mark as Spam | Posted On 1/8/2023 5:59:16 AM

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Guillermou
Joined On 4/7/2015 8:47:48 AM
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We call this the metabaging cycle. OS patients show an increased risk of systemic insulin resistance, systemic inflammation, associated chronic diseases, and the subsequent progression to sarcopenia and even cachexia. onlinelibrary.wiley.com/.../jcsm.12901 (2022) The accumulation of lipids within muscle cells may be a useful way to store a readily accessible source of energy, much like glycogen does glucose. However, while this may be beneficial for athletes, excessive lipid accumulation, particularly in diseases such as diabetes and sarcopenia, leads to inflammation and muscle deterioration.

Triglycerides, stored in adipose tissue and within muscle fibers, are the main source of free fatty acids (FFA) that are oxidized during exercise. Many factors affect the regulation of these substrates during exercise, including nutritional status, hormones, physical condition, type of exercise (intensity and duration), dietary intake, and aging. On the other hand, fatty infiltration of skeletal muscle, or myosteatosis, is one of the hallmarks of sarcopenia. Furthermore, in aged and sarcopenic skeletal muscle, the accumulation of oxidative damage and intramyocellular lipid droplets (IMCL), leading to a impaired mitochondrial oxidative phosphorylation, is another typical age-related process that corresponds to muscle disorders.

Recently, many researchers have suggested targeting inflammation as a promising intervention for sarcopenia. Aging is associated with inflammation, and this phenomenon, also described as "inflammation," could be a crucial contributor to the development of muscle loss and sarcopenia. www.sciencedirect.com/science/article/abs/pii/S8756328222002162 (2022)

Mark as Spam | Posted On 1/8/2023 5:59:57 AM

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Guillermou
Joined On 4/7/2015 8:47:48 AM
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The fascial system is the three-dimensional matrix of the tensional network of connective tissue throughout the body that includes ligaments, tendons, joint capsules, retinacula, and other fibrous collagenous tissues with a common definition that has arisen with the definition of fascia as the uninterrupted tissue. whole body tension network that surrounds and penetrates all structures from head to toe. Collagen forms 60-70% of connective tissue, skin and muscles. Being an essential constituent of bones, cartilage, tendons, ligaments and joints, including fascial tissue.

Sufficient collagen and hyaluronic acid is necessary with a good dose of exercise. Bone broth, fish, sweet potatoes, pasture-raised organ meats, eggs, garlic, kale and other leafy greens, red and orange vegetables, bell peppers, beets, carrots, flaxseeds, olives, black cocoa Cashews, almonds, walnuts, berries, bananas, cherries, black grapes, and citrus fruits are good sources of hyaluronic acid and collagen. People with permanent Covid lose mobility. Fascia is a fibrous connective tissue that allows muscles to move freely alongside other structures and reduces friction.

It is present throughout the body. It is found immediately under the skin, around muscles, muscle groups, bones, nerves, blood vessels, organs, and cells. It surrounds and penetrates all the structures of the body that extend from the head to the feet. Fascia is virtually inseparable from all structures in the body and works to create continuity and bonding between tissues to improve function and support. deeprecovery.com/understanding-fascia www.lidsen.com/.../icm-06-03-026 (2021) .

Mark as Spam | Posted On 1/8/2023 6:41:18 AM

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Guillermou
Joined On 4/7/2015 8:47:48 AM
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Dr. Mercola informed us that the inflammatory process of the fascia can occur as a consequence of stress, stress due to lack of exercise, a sudden increase in activity, obesity, the way and style of walking, factors that can cause an imbalance or stress. or resulting in excessive pressure on the fascial system. Exercise, behavioral therapy, acupuncture, massage, meditation, stress reduction, EFT, osteopathy, barefoot walking, stretching, yoga, diet, chiropractic and anti-inflammatory, vegetable juices, vitamin D, ginger, shiitake, fermented vegetables, probiotics, astaxanthin, curcumin, bromelain, medical cannabis, omega 3, etc. They help strengthen the spine, relieve back pain, and strengthen the fascia.

Without forgetting hydration, spring water, sun, infrared sauna, vegetable juice with coconut water and turmeric, earth, chia seeds, electrolytes, etc. When a soccer player can't take the field due to a recurring calf spasm, a tennis star gives up early in a match due to knee problems, or a sprinter limps across the finish line with an Achilles tendon. torn, the problem is often the structure of the connective tissue (ligaments, tendons, joint capsules, etc.) that have been charged beyond their current capacity. A focused training of the fascial network could be of great importance for athletes, dancers and other advocates of movement.

If one's fascial body is well trained, that is to say optimally elastic and resistant, then it can be trusted to perform effectively and at the same time to offer a high degree of injury prevention. Some alternative physical training activities - such as Pilates, yoga, Continuous Movement, Tai Chi, Qi Gong and martial arts. In the link he addresses the study of the fascia and exercises to revitalize the fascia. www.fascialfitnesstoday.com/wp-content/uploads/2021/05/TerraRosa.pdf (2015) bartleystructuralintegration.com/wp-content/uploads/2020/03/moving-and.. (2015)

Mark as Spam | Posted On 1/8/2023 6:42:39 AM

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Guillermou
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Fascia holds the key to developing the form and function of the body. It is richly innervated with mechanoreceptors that detect changes in pressure, stretch, and vibration and are involved in proprioception and nociception (pain perception). Fascia also has contractile properties like those of smooth muscle due to the presence of myofibroblasts, as they contain alpha smooth muscle actin. Researchers have identified specific movement categories that target exercises that address the unique properties of fascia. This may include the use of gentle pressure, flowing movements, slow dynamic stretching, and elastic rebounding movements (eg, light jumping).

Increases in ROM, reduction in pain, and increases in proprioception can result from training the fascial system. The relationship between fascial health and aspects of training such as increased strength may be of interest, as most of the alteration occurs in that soft tissue from injury and overuse, which can affect the integrity of muscle function in various capacities. This study recommends that it may be more appropriate for participants to participate in a fascial training program months before beginning a heavy resistance training program and not participate in both simultaneously.

Once fascial conditioning has been established, a fascial training program, or part of a program, can be performed at regularly

Once fascial conditioning has been established, a fascial training program, or part of a program, can be performed at regularly spaced intervals (eg, once every 2 to 3 weeks) to maintain fascial conditioning while training. perform a heavy weight training program. www.ncbi.nlm.nih.gov/.../PMC6719817 (2019)

Mark as Spam | Posted On 1/8/2023 6:51:47 AM

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Randyfast
Joined On 5/6/2010 8:42:42 PM
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Hi, Gui. I practice that standing on one leg exercise as much as possible: IE; putting on my shoes. I've tried just balancing on one leg and can do it for over a minute. I can no longer do body building, as a result of my latest shoulder surgery; although, I still do whatever I can. I have a "Total Gym" on which I do what I call "simulated chin-ups" - bench with pulleys on an incline. I also have exercise bands (with handles) that I do curls with and also throw it over the door and do triceps pull-downs and push-downs. I also do various everyday activities that help to keep me (relatively) strong. I can't do push-ups anymore, so I don't have much in the way of pectoral muscles now; although, what I do have, is solid muscle.

My arms have shrunk to 12 1/2-13". They used to be more than 14 1/2" when I was body building three times a week - right into my mid-sixties (I'm 5' 8"). I also cycle every day if possible, for at least an hour. Sometimes I go out 2 or 3 times. I still have (noticeable) biceps and can still see the three heads of my triceps grouping. I've had good stamina and endurance my entire life and I really don't get tired (unless I'm doing nothing). My resting heart rate is still 60 BPM or less. In spite of all my infirmities, at 72, I think that I could be doing much worse. ;)

Mark as Spam | Posted On 1/8/2023 7:42:37 AM

Like Dislike

Guillermou
Joined On 4/7/2015 8:47:48 AM
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Perfect Randy! I am one year older than you (73), thin but wiry. Surely you will know the historical tradition of the Basque Country with the blast furnaces and the production of steel for the industry. A Greenway is being remodeled in the Montes de Hierro that takes us through the industrial bowels of our herrialde, between panoramic views shaped by iron, in a route that follows the tracks of the old mining trains. This journey through the essence of the history of a territory prior to the Guggenheim is made up of a network that connects the Traslavia area, in Artzentales, to Kobaron, already in Muskiz.

It is an obligatory stop for anyone who wants to discover the landscape, life and character of the interior of Bizkaia forged over centuries by iron. On foot or by bicycle, Burdinberri, the Montes de Hierro Greenway, leads us through the history of Bizkaia, that of its entrails burnished in the metal of the old 19th century mining, along 42 kilometers now regenerated for the leisure and enjoyment of the nature of the people of Biscay. Riding a bike regularly is one of the best ways to reduce the risk of health problems associated with a sedentary lifestyle.

Cycling is a healthy, low-impact exercise that can be enjoyed by people of all ages, from toddlers to seniors. It's also fun, cheap, and good for the environment. Cycling to work or shopping is one of the most efficient ways to combine regular exercise with your daily routine. It is estimated that one billion people ride a bicycle every day, for transportation, recreation and sport. www.betterhealth.vic.gov.au/health/healthyliving/cycling-health-benefi..

Mark as Spam | Posted On 1/8/2023 8:11:31 AM

Like Dislike

Guillermou
Joined On 4/7/2015 8:47:48 AM
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Emerging evidence indicates that moderate-intensity aerobic exercise is positively correlated with cognitive function and memory. Recent investigations in animal models allow for the proposal of a pathway in which brain-derived neurotrophic factor (BDNF) is a key mediator. Exercise drives the synthesis and accumulation of neuroactive metabolites such as myokines and ketone bodies in the periphery and in the hippocampus to enhance BDNF neutrophin expression. with well-established properties of promoting neuronal survival and synaptic integrity, while its influence on energy transduction may provide the crucial link between the inherent vascular and metabolic benefits of exercise with improved brain function.

In fact, BDNF mRNA and protein rise considerably after periods of voluntary exercise. This was also correlated with improved spatial memory. Similarly, both BDNF and cardiovascular fitness derived from aerobic exercise have been positively associated with hippocampal volume and function in humans. Exercise will attenuate the cortical atrophy and synaptic loss inherent in neurodegenerative disorders, many of which also exhibit aberrant downregulation of BDNF. europepmc.org/.../30326283 (2018)

Mark as Spam | Posted On 1/8/2023 8:14:38 AM

Like Dislike

Guillermou
Joined On 4/7/2015 8:47:48 AM
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A growing body of evidence suggests that pathological alterations in neuronal circuits and synapses may provide a mechanistic link between amyloid (A) and tau pathology and thus may serve as an obligatory relay of cognitive decline in Alzheimer's disease (AD). Brain-derived neurotrophic factors (BDNF) play an important role in maintaining synaptic plasticity in learning and memory. Considering AD as a synaptic disorder, BDNF has attracted increasing attention as a potential diagnostic biomarker and therapeutic molecule for AD. Although BDNF depletion has been linked to A accumulation, tau phosphorylation, neuroinflammation, and neuronal apoptosis, the exact mechanisms underlying the effect of impaired BDNF signaling in AD remain unknown.

Physical exercise, especially aerobic exercise, is beneficial for improving cognitive function. Studies have attributed many of the therapeutic benefits of exercise in AD to its effect on BDNF levels. Exercise increased levels of pCREB, CaMKIV, and BDNF. Also, a growing body of evidence has suggested that dysregulation of the human microbiome may contribute to the pathogenesis of AD.

Poor dental condition (ie, tooth loss) has been considered an early sign of AD, and irregular tooth brushing is a high risk factor for dementia. P. gingivalis, T. forsythia and T. denticola have been implicated as the main pathogens responsible for triggering inflammatory responses and are associated with the pathogenesis of AD. Intestinal microbial diversity is altered in patients with AD. translationalneurodegeneration.biomedcentral.com/articles/10.1186/s400.. (2022)

Mark as Spam | Posted On 1/8/2023 8:15:14 AM

Like Dislike

steelj
Joined On 6/19/2006 11:43:25 PM
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Yes, gui the danger of falls can't be overemphasized. In my opinion there is too much emphasis on avoiding falls and not enough on being robust enough to be OK when (not if) you do. Sure, falls should be avoided. And also, strength and agility will help you recover when you start to fall, and avoid an actual fall. But unless you stay on the sofa, you're likely to fall. Especially if you're active. I was small game hunting yesterday (I'm 72) and actually fell to the ground 3 times. That's more than expected, maybe a lifetime record, there were just a lot of hidden vines close to the ground, and I do fall easier than I used to. My mom lived to be 100, and fell quite often right up till the end, with nary a broken bone. Many scrapes and cuts, some nasty, but bones intact because she was always physically fit. She also liked to drink too much which is what caused all her falls that I knew about. But apparently the alcohol didn't hurt her bone and muscle fitness.

Mark as Spam | Posted On 1/8/2023 12:57:37 PM

Like Dislike

Guillermou
Joined On 4/7/2015 8:47:48 AM
Add as Friend | Send Message

Thanks steelj. Of course, a good musculator and strong bones will avoid serious damage in falls. Good genetics also accompanies. At Juventus I have fallen many times. Once from a tree that caused me to break the humerus. After 60 years 2 times with only pain from the blow. The last time with 71 years (now I'm 73). Advancing age, frailty, and pre-existing medical conditions reduce the likelihood that older people will recover from fall-related injuries. A team of researchers at the University of Rochester Medical Center set out to study how the effects of falls to ground level differ between older and non-elderly adults.

Although falls to the ground (those that occur when a person falls from a standing position) don't seem serious, they can cause serious injuries to older people. The study, published in The Journal of Trauma: Injury, Infection, and Critical Care, found that older adults were three times more likely to die after a low-level fall compared to people younger than 70. Americans age 65 and older account for 71% of annual consumer product-related deaths, despite making up only 16% of the population.

Even in non-fatal situations, the latest data shows that products in the home can pose significant risks of injury, sending millions of adults age 65 and older to the hospital each year. According to the US Consumer Product Safety Commission, Consumer Product-Related Injuries and Deaths Among Adults 65 Years of Age and Older, nearly three million older adults visit the emergency room each year for injuries. related to products. Consumer products are also associated with about 3,800 reports of older adult deaths each year.

Mark as Spam | Posted On 1/8/2023 1:34:48 PM

Like Dislike

Guillermou
Joined On 4/7/2015 8:47:48 AM
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"It's a fact that older adults are much more likely to experience a significant injury or fatality from hidden dangers associated with consumer products in their homes than other age groups," says CPSC Chairman Alex Hoehn- Saric. "This new report is an important reminder that preventing consumer product-related injuries and deaths in older adults often begins with basic steps to improve safety in all areas of the home," he added. Falls are by far the most common cause of product-related injuries and deaths among older Americans. Older adults are six times more likely to be seen in the emergency department as a result of a fall on the floor than younger people.

Each year, on average, 1,800 older adult deaths result from falls and 1.5 million injuries are treated in the emergency room. Falls usually occur on floors, stairs, steps, and from beds. Worldwide, falls are a major public health problem. Some 684,000 fatal falls occur each year, making it the second leading cause of unintentional injury death, after road traffic injuries. More than 80% of fall-related deaths occur in low- and middle-income countries, with the Western Pacific and Southeast Asia regions accounting for 60% of these deaths.

In all regions of the world, mortality rates are highest among adults over 60 years of age. Although not fatal, each year there are approximately 37.3 million falls severe enough to require medical attention. Globally, falls are responsible for more than 38 million DALYs (disability adjusted life years) lost each year (2) and result in more years lived with disability than transport injuries, drowning, burns, and poisoning combined.

Mark as Spam | Posted On 1/8/2023 1:35:56 PM

Like Dislike

Guillermou
Joined On 4/7/2015 8:47:48 AM
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Age is one of the key risk factors for falls. Older people are at the highest risk of death or serious injury from a fall, and the risk increases with age. For example, in the United States of America, between 20% and 30% of older people who fall sustain moderate to severe injuries such as bruises, hip fractures, or head trauma. This level of risk may be due in part to physical, sensory, and cognitive changes associated with aging, in combination with environments that are unsuited for an aging population. In 2020, 42,114 people died from falls at home and at work. For working adults, depending on the industry, falls can be the leading cause of death. www.agingcare.com/articles/falls-prove-fatal-for-elderly-patient-14968.. www.nsc.org/.../slips-trips-falls.----- www.cpsc.gov/Newsroom/News-Releases/2022/Older-Americans-Are-More-Like.. Hazards-Around-the-Home.----- www.ncbi.nlm.nih.gov/.../.---- www.who.int/.../falls

Mark as Spam | Posted On 1/8/2023 1:37:02 PM

Like Dislike

Sue12Cross
Joined On 10/31/2009 3:22:30 AM
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Rather than sitting here writing this, I should be outside unloading the 200 kilos of organic grain I use just to supplement the diet of my poultry. For me, I would absolutely hate going to a gym but I do my exercise by my lifestyle which is labour intensive. Over the last two decades and as all our domestic appliances have come to their natural end (inbuilt obsolescence) we have converted them to human-powered ones. Tasks take more time but that's time you can use to think, read, converse or purely enjoy being out in the open air. This is just one example which was an add-on to our pedal-powered washing machine, a pedal spin dryer - www.youtube.com/watch This because of the inertia in the system due to the gear ratios, imagine trying to move a car from stationary in top gear, is a practical application of resistance training. So not only are you eluding sarcopenia but also avoiding having wet washing hanging about in the Winter and most topically, using zero electricity and taking the first steps to getting yourself off the grid. All the very best from Normandie, Sue

Reply | Mark as Spam | Posted On 8/12/2022 5:45:49 AM

Like Dislike

steelj
Joined On 6/19/2006 11:43:25 PM
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That's an amazing feat to have converted appliances like that. I'm 71 and lifted weights since I was 13, except for my 30s which I greatly regret missing those years as I lost strength I never recovered. With weight training, it's simple to ensure all muscles are adequately trained. With manual labor, you are doing what needs to be done and the muscles affected is out of balance. That said, there is something about hard physical labor that is very special and superior to gym exercise in some ways for sure. We heat with wood, all split by hand, so that's many great workouts. We garden and compost, digging and forking by hand is great.

Pushing a mower on hilly ground is useful. Stream fishing, hunting and hiking in rough country are all super beneficial so long as you stay on the move as I do. Riding a vehicle to your hunting or fishing spot, staying there the duration, then riding out isn't helpful. One thing I've noticed - weight trainers tend to hit the upper body extensors like triceps, as well as pecs too much, and neglect the pulling muscles like lats. Manual labor is the opposite - heavy on the pulling muscles, not so much on the pushing. Which is one reason a mix of labor and lifting is ideal.

Mark as Spam | Posted On 8/12/2022 9:18:25 AM

Like Dislike

Almond
Joined On 2/26/2008 4:23:33 PM
Add as Friend | Send Message

I can't lift 600#, don't need to and don't want to. As long as I can hike several miles a day, pack our a buck (or 2) and maintain my garden I am satisfied. Recently got into an argument with someone who told me that poor health is inevitable in old age. I argued that it was not. I am thinking of some very elderly hunters with incredible vision who can make a long distance shot with an open sight rifle. Also, a 96-year old woman who is incredibly active--and I mean really active--who dresses impeccably every day. Or my husband's now-deceased 96-year old aunt who bought herself a pink Cadillac because she decided she wanted to travel and visit every state.

A lot has to do with diet, but also your daily routine. If you are used to working and don't quit, you will prob do ok. Of course, being able to work often has to do with diet. And attitude. Putting gratitude in your heart and looking at work and many other things, not as a miserable burden, but a wonderful opportunity. How much bleaker would my life be without a garden to work in and a full pantry?

Mark as Spam | Posted On 8/12/2022 9:28:18 AM

Like Dislike

stoneharbor
Joined On 6/30/2008 1:05:17 PM
Add as Friend | Send Message

Thanks for the always inspiring words Sue12. You definitely have refined your living style to accomplish a lot more than just get exercise daily. Like you, I don't care to work out unless it also provides some productive benefit besides toning my muscles. The YouTube on the human powered spin dryer was fantastic. There was a time I hand=ground flour every week to make two loaves of organic wheat bread. I would read as I turned the stone grinder by hand. I grew up watching my grandmother still churning butter after she was 80. Now I'm 80, and just content to mostly get exercise from gardening chores. You though have worked exercise into dozens of aspects of your lives. Kudos! Thanks also for your ideas steelj and Almond. You set great examples for how a workout can always be a part of an "active lifestyle" which most people imagine just means they motor around a lot.

Mark as Spam | Posted On 8/12/2022 11:21:14 AM

Like Dislike

epi-cure
Joined On 5/12/2012 7:02:04 PM
Add as Friend | Send Message

I for one would most certainly bring along Dr. Mercola on a hunting trip. Ya just never know when you're gonna have to leg press a 600-pound elk.

Mark as Spam | Posted On 8/12/2022 12:58:36 PM

Like Dislike

Sue12Cross
Joined On 10/31/2009 3:22:30 AM
Add as Friend | Send Message

Thank you steelj, Almond and stoneharbour for those great insights. To me health is all about lifestyle and being positive and finding joy and somehow a garden, particularly one with animals and birds whether 'domesticated' or wild is a great place to find that. When I let my quail out in the morning, they usually head for their breakfast plates but often they have two or three mouth(beak)fuls, particularly if it's meal worms but then they take the time to jump in the air and flap their wings and say 'bonjour' to the day and that is a beautiful image and it always sets me up for the day. The other and most important reflection for me is the time I spent with my grandparents on the farm and how their lives were based around good quality home-grown food and physical labour, particularly gardening.

Our next project steelj, is to convert a food processor, liquidiser, grater and chopper with the use of a Singer treadle machine from 1914. I bought it from our local charity store for 5 Euros and we will be able to keep the sewing function but switch that out for the food processor when and where needed. I have a lot of vegetables and fruit to hand chop and grate each day for the poultry - so it will be a good workout for the calf muscles and lower joint mobility!

Mark as Spam | Posted On 8/12/2022 1:16:00 PM

Like Dislike

steelj
Joined On 6/19/2006 11:43:25 PM
Add as Friend | Send Message

You are an inspiration Sue! Good luck with those projects. You don't seem to need luck but it always helps! We do way better than most by preferring manual to mechanized labor. I'd never consider a wood splitter for example since splitting by hand is truly an ultimate workout and fun besides! I'd never consider a four-wheeler for hunting - what a stupid idea unless you're crippled. But you take it to another level!

Mark as Spam | Posted On 8/12/2022 3:17:59 PM

Like Dislike

ICONOCLAST
Joined On 9/26/2009 5:27:11 AM
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Here is an idea to complement your great one. If the grid goes down then get on your bike to power up your deep freezer at solar noon please please please ignore dangerous, misleading decade dead advice, by government dangerass captured agencies.(Just use sensible sun exposure instead of dead in the head Rockefeller advice) Build a reflector. Eg Tin foil on a surface to MAXIMISE solar radiation at solar noon for IVB to synthitise vitamin D but NOT when the sun is lower than 45 degrees though you still get near infra red for melatonin production. See Fat for Fuel an amazing book by Dr Mercola .Probably best to get a light meter to be sure. I'm not very good at explaining my concepts.

Mark as Spam | Posted On 8/12/2022 11:25:15 PM

Like Dislike

Almond
Joined On 2/26/2008 4:23:33 PM
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Sue and all... I just cannot get motivated or interested in going to a gym or adhering to a complicated diet. IMO, it is enough to live in harmony with the cycles of nature. We buy very little in the way of food. We either garden or harvest most of what we consume from the wilderness. It is nonGMO and organic. One problem that leads to stress and poor health outcomes is having so many distractions that you cannot hear yourself think. Some days, it is enough to weed a garden, sort things out and free your mind. Such activities also help realize the priorities of life--a full pantry, wood heat and realizing that man must also be part of the cycle of nature.

During the dark months of the year, I slow down physically and eat more fat--even some sugar. I get more sleep and less exercise. This seems very beneficial in rest & recovery, helping me be ready for the new nature year starting with spring planting. (Meanwhile, I organize seeds, plan my garden, etc.) I find that taking a break greatly helps the arthritis that accompanies old injuries, so I will be stronger and more prepared for work in 2023. It only seems to make sense that we take lessons from native peoples. => The cold dark months are a time for sitting by the fire, story-telling, gathering together and hunting or fishing. It is a time to nurture our relationships with others, share traditions with younger generations, sleep more, do more reading and studying, make repairs, get organized for the year ahead, etc.

I think many preppers are making serious mistakes by over-reliance on technology. The more complicated stuff is, the more likely it is to break and be difficult to repair. Also, it takes a lot of money. So, focus on a few priorities. Keep it simple and do more with less. For example, using a few basic ingredients to cook many different recipes from scratch. Being resourceful with what you do have. Filling your heart with gratitude and virtue so there is no room for negativity. -continued-

Almond
Joined On 2/26/2008 4:33:35 PM
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Posted On: 1/8/2003 2:29:26 AM

Like · Delete

Almond
Joined On 2/26/2008 4:33:35 PM
Add as Friend · Send Message

Posted On: 1/8/2003 2:55:29 AM

Like · Delete

Bigfletch
Joined On 1/5/2010 7:46:30 AM
Add as Friend · Send Message

Posted On: 1/8/2003 3:03:22 AM

Like · Delete

bowgirl
Joined On 12/7/2011 6:17:03 AM
Add as Friend · Send Message

Posted On: 1/8/2003 4:45:44 AM

Like · Delete

grufo
Joined On 11/7/2012 6:03:55 AM
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Posted On: 1/8/2003 5:42:37 AM

Like · Delete

cat151330
Joined On 9/29/2021 4:58:06 AM
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Posted On: 1/8/2003 5:47:27 AM

Like · Delete

sekershae
Joined On 8/28/2013 3:01:14 PM
Add as Friend · Send Message

Posted On: 1/8/2003 6:13:16 AM

Like · Delete

spi-core
Joined On 9/13/2012 7:02:04 PM
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Posted On: 1/9/2003 12:53:45 PM

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Sue12Cross
Joined On 10/31/2009 3:22:35 AM
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Posted On: 1/9/2003 12:54:20 PM

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andreadconnor
Joined On 1/24/2012 6:19:21 PM
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Beckett
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Almond
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Posted On: 1/9/2003 3:51:04 PM

Like · Delete

Newbones1
Joined On 9/27/2016 7:06:57 PM
Add as Friend · Send Message

Posted On: 1/9/2003 5:31:54 PM

Like · Delete

indicator45
Joined On 1/7/2022 1:49:07 PM
Add as Friend · Send Message

Good for you, Dr.Mercola !

Reply · Mark as Spam · Posted On: 8/13/2022 5:48:43 AM
Like · Dislike

OnoderWoman
Joined On 8/27/2021 1:30:12 AM
Add as Friend · Send Message

Dr. Mercola, you are that rare individual who is brilliant, articulate, and disciplined. Thank you for sharing and congratulations again on your anniversary. To your success!

Reply · Mark as Spam · Posted On: 8/12/2022 5:34:15 AM
Like · Dislike

Nuclear27
Joined On 6/25/2006 1:38:15 AM
Add as Friend · Send Message

Yet again, a masterful article!

Reply · Mark as Spam · Posted On: 8/12/2022 12:49:37 AM
Like · Dislike

good050
Joined On 1/3/2021 3:07:38 PM
Add as Friend · Send Message

I am a 70 year old female. I have been consistently doing weight training/lifting since age 20. Since 2012, my training has been Les Mills Body Pump 3 times a week, which uses low weight and high reps. I have never had a weight problem, note horsers from age 13 to 65, and bike regularly (weather permitting). I absolutely recommend a weight training regimen to be able to keep on keeping on. And ZERO fast food!

Reply · Mark as Spam · Posted On: 1/6/2023 10:10:48 AM
Like · Dislike

Randyfast
Joined On 5/6/2010 8:42:42 PM
Add as Friend · Send Message

Good for you! I tell people that I'll quit exercising when I'm dead!

Mark as Spam · Posted On: 1/6/2023 12:01:02 PM
Like · Dislike

nordoodoly
Joined On 7/24/2019 5:22:19 AM
Add as Friend · Send Message

Dr Mercola your timing could not have been better. I am grateful for your knowledge, persistence in sharing it, and resilience in adversity. Carry on you're a gift to those who will listen and implement your advice.

Reply · Mark as Spam · Posted On: 8/13/2022 2:22:35 AM
Like · Dislike

indicator45
Joined On 1/7/2022 1:49:07 PM
Add as Friend · Send Message

Dr. Mercola ' s advices keep me alive.

Mark as Spam · Posted On: 8/10/2022 5:54:22 AM
Like · Dislike

020202
Joined On 1/13/2017 8:23:48 AM
Add as Friend · Send Message

When the revolution starts we'll make sure the doc is at the front of the line!

Reply · Mark as Spam · Posted On: 1/6/2023 6:14:45 PM
Like · Dislike

jik784
Joined On 6/14/2014 10:53:18 AM
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And then there is my 97yr old mother who has never exercised a day in her life. At 88 she suffered a major stroke and was thought to not survive but did. Because of her partial paralysis she "lives" in a SNF. She is unable to walk, but has the ability to wheel herself to the bathroom and toilet herself. At 96 she fell breaking her hip and as a result had full replacement surgery. The surgery went well and she has recovered fully. All are amazed at her resilience. We just never know.

Reply · Mark as Spam · Posted On: 1/6/2023 11:51:00 AM
Like · Dislike

Segstar
Joined On 3/10/2012 3:30:42 PM
Add as Friend · Send Message

Movement is life, movement with a "purpose " creates an extraordinary life. Quote my dad..

Reply · Mark as Spam · Posted On: 1/6/2023 10:06:26 AM
Like · Dislike

bennyr47
Joined On 4/15/2010 9:51:28 AM
Add as Friend · Send Message

Hi Dr M. congratulations on your recent dead lifts and leg presses. you look much better than you did 15 years ago when you were into tabata and HIIT although I still feel that HIIT once every week or so is a good idea.

Reply · Mark as Spam · Posted On: 1/6/2023 1:18:55 PM
Like · Dislike

ColdTurkey
Joined On 12/16/2019 8:14:58 AM
Add as Friend · Send Message

Motivation is the key. Anyone who is interested in his/her health and longevity must be willing to devote a bit of time each day to it. Discouragement comes easily and not letting it stand in your way is the major part of that key. Start off slowly with light weights two to three times a week. At exactly 70, I find twice a week fair for me as I need more recovery time than I did when much younger. Listen to your body and never strain, increasing the weight over time. Patience is everything. When I was in my 20s, I worked out often, motivated by an inner brother he won our state body building title, as well as other contests like 3rd place Mr. Olympia, before entering in the Mr. America contest, where his finished in the middle of the entries.

Reply · Mark as Spam · Posted On: 1/6/2023 11:51:30 AM
Like · Dislike

ColdTurkey
Joined On 12/16/2019 8:14:58 AM
Add as Friend · Send Message

I'll just add here that that brother lived to age 90 in good health and died within three days of of a blood clot after taking the Covid shot. And no, my wife and I and our four children and six grandchildren and three great-grandchildren have not taken the shot, will not take the shot, and all have been and remain healthy.

Mark as Spam · Posted On: 1/6/2023 12:08:06 PM
Like · Dislike

tmoran
Joined On 10/16/2012 2:19:53 PM
Add as Friend · Send Message

I am very impressed with Dr. Mercola's fitness level and never seen anybody in such a great shape at his age. As a female, who is thin and slim (small body frame) at 5'9" and 127 lbs - I have been the same weight (within 5lbs) for last 30 years (I am 48 now). I personally hate lifting weights or doing any of those weight lifting machines. I've seen too many women looking much worse if they lifted weights and stopped for some reason, their body looks worse than if they never did it. I prefer swimming in warm pool and doing most of my exercises there. It provides slight resistance and variety of movements (I can dance in the water, or just do random movements exercising all kinds of muscles). I believe in rebounding, and read a few books on how mini-trampoline exercises every cell of your body, inc. heart, bladder, eyes etc. I own a couple whole body vibration machines, which I love as well. I do my stretches on VibePlate Yoga.

Reply · Mark as Spam · Posted On: 1/6/2023 11:18:04 AM
Like · Dislike

Joe1919
Joined On 1/14/2016 10:14:36 AM
Add as Friend · Send Message

Hi Imoran, Are the whole body vibration machines very expensive. I would love to own one. I will take a look on Craigslist, etc. The warm pool exercising sounds wonderful.

Mark as Spam · Posted On: 1/6/2023 11:21:18 PM
Like · Dislike

3wholewaves
Joined On 10/25/2010 6:52:11 AM
Add as Friend · Send Message

As much as I admire Dr Mercola and find his information invaluable, I get frustrated because there is so much of what he suggests that I cannot do. Mostly around diet and supplements. I cannot eat beef or pork or fish of any kind due to MCAS and severe allergies. I can only eat chicken or turkey and he says that chicken is not adequate as a protein. I am 75 and due to illness and injuries I am in terrible shape but am just starting out again and have to go slowly and I have to stick with strict diet. Any suggestions on how to proceed would be great.

Reply · Mark as Spam · Posted On: 1/6/2023 7:16:59 AM
Like · Dislike

mpoodge
Joined On 1/6/2023 9:56:56 AM
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I am pretty sure that Dr Mercola says the problem with chicken is the feed they eat. Commercial, all grain feed. Also battery raised. What you need is free-range, pastured, organic poultry. If you raise your own, this is pretty easy. If you have to buy it, find an organic farmer that will sell to you direct. Try Weston A Price Foundation if you need help.

Mark as Spam · Posted On: 1/6/2023 10:03:49 AM
Like · Dislike

3wholewaves
Joined On 10/25/2010 6:52:11 AM
Add as Friend · Send Message

Great article. But where to go for such training?

Reply · Mark as Spam · Posted On: 1/6/2023 5:06:11 AM
Like · Dislike

indwriter4
Joined On 3/10/2009 2:16:57 PM
Add as Friend · Send Message

Great article. But where to go for such training?

Reply · Mark as Spam · Posted On: 1/6/2023 5:06:11 AM
Like · Dislike

ss00
Joined On 6/18/2010 3:11:24 PM
Add as Friend · Send Message

Dr Mercola, do you recommend the Kaatsu B1 since it has Bluetooth which has risks correct? Or do you like the C3?

Reply · Mark as Spam · Posted On: 8/13/2022 8:28:08 AM
Like · Dislike

sparry
Joined On 6/28/2011 4:08:50 AM
Add as Friend · Send Message

I've been very interested in BFR for a while, but am concerned if it is contra-indicated for those that have Venous Insufficiency or Venous Reflux Disease? Does anyone have some insight into that? It would be very much appreciated. Thanks!

Reply · Mark as Spam · Posted On: 8/13/2022 7:27:15 PM
Like · Dislike

Guillermo
Joined On 4/13/2015 8:47:46 AM
Add as Friend · Send Message

Hi sparry, BLOOD FLOW RESTRICTION TRAINING GUIDELINES:
www.ncs.gov.au/_data/assets/pdf_file/0005/992026/3611119_Blood-flow-res... AN OVERVIEW OF SAFETY ASPECTS WITH BLOOD-FLOW RESTRICTED EXERCISE www.fysio.dk/globalassets/documents/faglivsgren/2018/presentationer/bl...

Mark as Spam · Posted On: 1/6/2023 7:19:33 AM
Like · Dislike

Bicycledoy
Joined On 6/26/2007 12:32:23 AM
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My physical therapist has told me not to use BFR on my legs since I have varicose veins which is an indication of insufficient blood flow in my legs. I do BFR on my arms only and count on the circulation to the rest of my body after hard release. This may not be your problem but may be related.

Mark as Spam · Posted On: 1/6/2023 9:24:44 AM
Like · Dislike

mamoryabhide
Joined On 12/3/2022 12:39:34 PM
Add as Friend · Send Message

What a great article, thanks for sharing your inspiring story Dr. Mercola! One of my goals for this year is to step up my resistance training, and the info in this article will certainly help a great deal.

Reply · Mark as Spam · Posted On: 1/6/2023 10:57:37 PM
Like · Dislike

brodiebrock12
Joined On 9/16/2008 5:37:51 AM
Add as Friend · Send Message

Can't tell you how many people I have come across thru the years who are so locked in the dogma of running only and yet they say they do strength training too...the delusion is real. Almost like those who believe in maids kind of delusion lol

Reply · Mark as Spam · Posted On: 1/6/2023 2:52:24 PM
Like · Dislike

andreadunmer
Joined On 1/24/2014 6:19:21 PM
Add as Friend · Send Message

Gol, in addition to your post on Fascia; the electrical conductance and neural networks are subtle energy platforms that connect tissue structures and functions. This is why the benefits of Qigong and Energy practices are underappreciated. There is evidence to show the bioelectric capabilities in conductors, transducers, and capacitors along the lines of meridian systems, where the extracellular matrix connects with cells. Consider: –The Bioelectric Circuitry of the Cell www.ncbi.nlm.nih.gov/...PMC6345581 –Extracellular matrix/mechanobiology: A novel potential target for sarcopenia pubmed.ncbi.nlm.nih.gov/31645972/ –A Review of the Theoretical Fascial Models: Biotensegrity, Fascintegrity, and Myofascial Chains: Fascial tissue includes solid and liquid fascia (body fluids such as blood and lymph) pubmed.ncbi.nlm.nih.gov/32235495/ –Evidence of a new hidden neural network into deep fascias www.ncbi.nlm.nih.gov/...PMC8329023/ –Fascia: A missing link in our understanding of the pathology of fibromyalgia: pubmed.ncbi.nlm.nih.gov/20006263/ –Meaning of the Solid and Liquid Fascia to Reconsider the Model of Biotensegrity: www.zumea.com/articles/13292-meaning-of-the-solid-and-liquid-fascia-6... –Physiology Fascia: www.ncbi.nlm.nih.gov/...NBK534773/ –Review of evidence suggesting that the fascia network could be the anatomical basis for acupoints and meridians in the human body: pubmed.ncbi.nlm.nih.gov/31584202/ –Does fascia hold memories? www.bodywisehomeopathy.com/...21-360-8592 (720)8592-7LRobert –Tai Chi and its Effect on the Body's Lymphatic System: taichiontheclasses.com/tai-chi-chuan-and-the-lymphatic-system/ –doctorwhitefeling.com/blog/five-conclusions-of-new-research-into-fascia... –What is Fascia? www.anatomytrains.com/fascia

Reply · Mark as Spam · Posted On: 1/6/2023 12:35:51 PM
Like · Dislike

7838healthyus
Joined On 10/11/2012 9:02:47 AM
Add as Friend · Send Message

You lost me.

Reply · Mark as Spam · Posted On: 1/6/2023 10:45:02 AM
Like · Dislike

YMApple
Joined On 12/3/2022 6:47:00 AM
Add as Friend · Send Message

Well, the video with the scientific explanation is wonderful. I would like to archive it, but it will disappear in a couple of days. The video

link worked once and supposedly the video is on BitChute, but I cannot locate it. Additionally, the link has failed to work most of the time. Anyone know something I don't know?

Reply | Mark as Spam | Posted On 1/9/2023 7:48:05 AM

Like | Dislike

GinNck
Joined On 1/8/2023 1:14:51 PM
Add as Friend | Send Message

How about the use of nandrolone decanoate for sarcopenia, does anyone have any particular experience or insight on its effectiveness?

Reply | Mark as Spam | Posted On 1/8/2023 1:18:06 PM

Like | Dislike

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pecanroll
Joined On 7/2/2020 10:12:50 PM
Add as Friend | Send Message

What does one do with no growth hormone secretion due to pituitary damage? GH is needed to stimulate the process.

Reply | Mark as Spam | Posted On 1/8/2023 1:09:19 PM

Like | Dislike

KED518
Joined On 3/29/2013 12:50:33 PM
Add as Friend | Send Message

I love the photo of DocM with HAIR! I realize that isn't the point of this article, but I'm keeping that picture of my hero!

Reply | Mark as Spam | Posted On 1/8/2023 10:02:54 AM

Like | Dislike

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dte92186
Joined On 12/15/2013 10:09:15 AM
Add as Friend | Send Message

B Strong is another brand that is out there. It is less expensive, but not inexpensive. This system seems to be manual and does not inflate or deflate according to how it is programed. Does anyone have any thoughts or experience with this system? You Tube has quite a bit of information on this system as well. Thanks

Reply | Mark as Spam | Posted On 1/8/2023 7:01:40 AM

Like | Dislike

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citico
Joined On 1/8/2023 4:33:06 AM
Add as Friend | Send Message

Great article! Unfortunately, too packed with important details and information to benefit many who lack time necessary to thoroughly digest and implement the suggested regimen. As a lifelong nutrition and fitness "nut" and someone who's interests have always required top physical condition to participate in and enjoy, at 76 I'm blessed with a body capable of enjoying everything I did 30 years ago. I devour your articles and am pleasantly surprised that inadvertently I have been on a parallel plane regarding over 50% of your recommendations. My comment: The physical effort I expend simi-daily living off the grid on a hard scrabble mountain farm and that derived from income producing work I perform manually as a fencing contractor maintain my condition. During periods of inactivity I resort to pushups and exercises with the elastic bands/tubes rather than weights for the muscle resistance you wisely preach.

Reply | Mark as Spam | Posted On 1/8/2023 4:55:30 AM

Like | Dislike

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buy7098
Joined On 1/15/2016 10:13:35 AM
Add as Friend | Send Message

Doc Mercola You are the Best Thanks Rob

Reply | Mark as Spam | Posted On 1/8/2023 2:08:40 AM

Like | Dislike

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ugadano
Joined On 8/1/2011 1:03:53 PM
Add as Friend | Send Message

I would be interested to know your thoughts on BFR for those who are born with McArdles, a.k.a Glycogen Storage Disease type Five (type V). We do all in our control to avoid muscle cramps already, some are severely affected by contractures that persist and result in muscle damage followed by rhabdomyolysis and potential kidney damage. Might want to include a disclaimer for contraindicated conditions, especially signs to watch for, as many are not diagnosed until considerable muscle damage has occurred. Thank you.

Reply | Mark as Spam | Posted On 8/13/2022 7:00:02 PM

Like | Dislike

ICONOCLAST
Joined On 9/26/2009 5:27:11 AM
Add as Friend | Send Message

Exercising your funny bone.www.youtube.com/watch

Reply | Mark as Spam | Posted On 8/12/2022 9:26:58 PM

Like | Dislike

DeanB123
Joined On 8/12/2022 12:32:04 PM
Add as Friend | Send Message

KAATSU is wonderful, but not advised if you have a history of blood clots. I have had two DVTs, one 25 years ago and another 1 year ago. As much as I'd love to use KAATSU, I am not. What surprises me is that this is rarely mentioned in KAATSU articles.

Reply | Mark as Spam | Posted On 8/12/2022 12:42:15 PM

Like | Dislike

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stu5016
Joined On 8/22/2021 7:55:56 AM
Add as Friend | Send Message

See my comment about calcification potential. KAATSU is not risk free.

Mark as Spam | Posted On 1/9/2023 1:31:37 AM

Like | Dislike

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irenevroom
Joined On 2/15/2013 2:27:46 PM
Add as Friend | Send Message

Thanks for the great encouragement. I need help getting into BFR. I have searched for a coach in my area in Michigan to help and advise but can't find one. My husband has alpha 1 antitrypsin deficiency. I feel that he might really benefit from this type of activity, but I know he will not do it without advice. Right now he has the look of a long distance runner. What do you say - can someone with alpha 1 antitrypsin deficiency benefit from kaatsu and how do we get started?

Reply | Mark as Spam | Posted On 8/12/2022 8:49:05 AM

Like | Dislike

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nancysbryaonyahoo.com
Joined On 8/12/2022 7:43:59 AM
Add as Friend | Send Message

Is EMS training the same? Is it safe?

Reply | Mark as Spam | Posted On 8/12/2022 7:44:45 AM

Like | Dislike

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mowla2010
Joined On 10/29/2010 6:56:53 PM
Add as Friend | Send Message

Very interesting article keep it up

Reply | Mark as Spam | Posted On 8/12/2022 6:39:33 AM

Like | Dislike

Palazzolo
Joined On 1/18/2010 9:02:36 PM
Add as Friend | Send Message

The man is a beast. Too ambitious for me. I am approaching 70 years of age as well and as such, am satisfied with a nutrient-dense caloric restricted diet of organic wholesome foods, controlled fasting, wholesome purified water, and Mattes isolated stretching exercise. I'd rather walk for fitness, swim, dance, and participate in constructive house and yard work than lift weights. Thank you Dr. Joe for your knowledge, wisdom, and inspiration. Your reports are the perfect blend of logic and intuition.

Reply | Mark as Spam | Posted On 8/12/2022 8:48:08 PM

Like | Dislike

Kanadian45
Joined On 3/17/2021 8:48:36 PM
Add as Friend | Send Message

I just don't have the drive and the determination anymore. Great article and kudos to you doc for being so disciplined and dedicated.

Reply | Mark as Spam | Posted On 8/12/2022 4:46:20 PM

Like | Dislike

Post your comment

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