



NOURISH YOUR MUSCLES AS YOU AGE:

THE SCIENCE OF STRENGTH FOR HEALTHY LIVING



WHAT YOU'LL LEARN

It's the aging factor that's rarely talked about – your muscles.

Your muscle health plays an increasingly important role in strength, energy and ability to live a healthier, more active life with age. Did you know that after turning 40 years old, a person's muscle mass decreases by approximately 8% per decade?^{1,2} After 70 years of age, that rate of loss almost doubles per decade.¹⁻⁴

Additionally, up to 50% of older adults have an advanced form of muscle loss, which can impact their overall health and recovery.⁵

Losing muscle is natural, but its rate of progression and negative effects don't have to be. You can take simple measures to slow down muscle loss to help support a healthy lifestyle and continue doing the things you love to do.

This guide covers the science on why nourishing your muscles is critical to health and why everyone 50 years and older should take steps to support their muscles for healthy living.

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UNDERSTAND WHY YOUR MUSCLES ARE IMPORTANT

Muscles are the largest component of your total lean body mass (or LBM), which is everything that makes up your body except for fat. In fact, your muscles usually account for 50% to 60% of your body weight.⁶

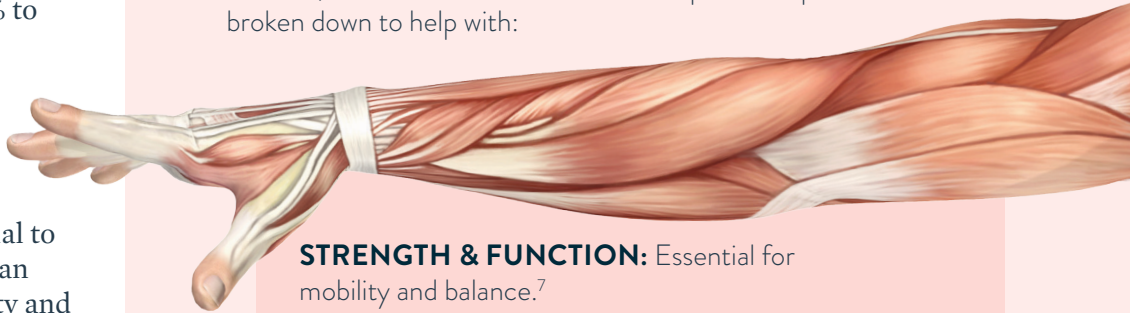
The role of your muscles goes beyond simply allowing you to move and retain balance.

Healthy muscles also are essential to a person's physical strength, organ function, skin integrity, immunity and wound healing.⁶

That's why healthy muscles are pivotal for enjoying and achieving all of life's possibilities as you age.

KEY ROLES OF OUR MUSCLE

Muscles house the majority of protein in your body.⁶ In healthy muscles, there is a balance between how protein is produced and broken down to help with:



STRENGTH & FUNCTION: Essential for mobility and balance.⁷

PROTEIN REPLENISHMENT: Cells, tissues and muscles are made up of amino acids – the building blocks of proteins. If a person is sick or malnourished and not getting enough protein in their diet, muscle tissue helps replenish the necessary amino acids.⁸



FIND OUT WHY YOU LOSE MUSCLES NATURALLY

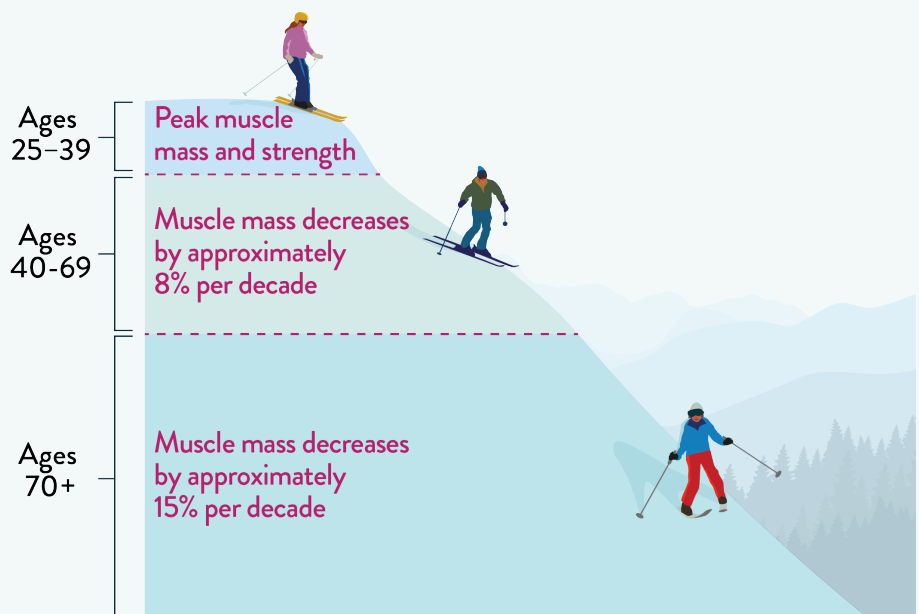
Understanding muscle health and healthy aging is especially important today because, for the first time in history, most people worldwide are expected to live into their sixties and beyond.⁹ By 2020, the number of people age 60 years and older will outnumber children younger than five years.⁹

With more adults living longer than ever before, they are looking to lead active and healthy lifestyles as they get older. To do so, maintaining your muscle mass and strength is key to a healthy lifestyle and living your best.

Peak muscle mass and strength usually occurs around the age of 25 years, and the amount of muscle mass gradually decreases as you age.^{1,2,4} Between 40 and 70 years of age, muscle mass decreases by approximately 8% per decade.^{1,2} After 70 years of age, that rate of loss almost doubles (approximately 15%) per decade.¹⁻⁴

MUSCLE LOSS AS YOU AGE:

Navigating the Downhill Slope



As you age, your muscle fibers shrink. Muscle tissue is replaced more slowly, and lost muscle tissue may be replaced instead with a tough fibrous tissue and fatty tissue. Changes in muscle tissue, combined with normal aging changes in the nervous system, can cause muscles to be less efficient in their ability to contract, leading to loss of strength and function.¹⁰

DID YOU KNOW?

Muscle strength plays a role in determining a person's risk for falls, which can result in fractures and other injuries.¹¹



RECOGNIZE SIGNS AND FACTORS OF MUSCLE LOSS

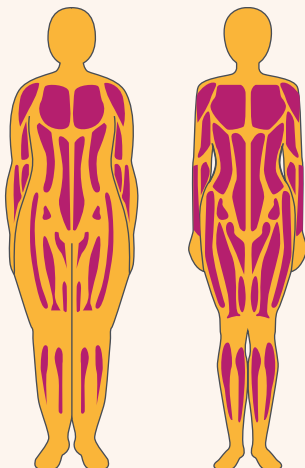
Many adults do not initially notice the signs of muscle loss, as they increase gradually as a person ages. Additionally, they may dismiss the signs of muscle loss as simply part of “getting older,” and not realize there are ways to prevent and reduce the loss.

By being aware of the signs of muscle loss, you can ensure you are taking steps to support your muscle health as you age – enabling you to lead an active and full life.

When you notice these signs, be sure to discuss ways to support your muscle health, including nutrition and exercise, with your physician.

HIDDEN MUSCLE LOSS

There's more than meets the eye when it comes to BMI and your muscles. As you see in the two graphics below, a high BMI can mask the muscle loss that is happening underneath. This makes it particularly important for all older adults to look out for muscle loss signs, regardless of weight.



MUSCLE LOSS INDICATORS

Know the Signs



Weakness



Decelerated walking speed



Less strength



Unintentional weight loss



Exhaustion



Low physical activity



Body pain and cramps

“

“Muscle loss can not necessarily be seen, as it's happening inside the body, and that's why it's so important to understand the signs and symptoms. Even if someone is overweight or obese, they may not have the right amount of muscles to help them live a healthy life. It's a significant issue that can't be detected by looking at Body Mass Index (BMI) or with looks alone.”

— *Carla Prado, PhD, Assistant Professor & CAIP Chair in Nutrition, Food & Health, University of Alberta*



LEARN HOW ILLNESS AND INJURY ACCELERATE MUSCLE LOSS

Maintaining your muscles now is important as they impact much more than your strength. In addition to playing a role in your physical strength and energy, muscles can play a role in your overall health, well-being and quality of life.

Doctors often hear the phrase, “I feel like my body is breaking down” when someone is sick or has experienced a health event. This concept is not far off. If your body is deficient in protein or other important nutrients, it will start to rely on your muscles to provide the protein it needs for energy, leading to more advanced muscle loss.

There are several factors that can accelerate the loss of lean body mass in adults age 50 and older—including malnutrition, inactivity, illness and injury—which can lead to sarcopenia, a medical term for an advanced form of muscle loss.

HEALTH & LIFESTYLE FACTORS THAT ACCELERATE MUSCLE LOSS

MUSCLE LOSS	RISKS INCLUDE ^{6, 7}
10%	<ul style="list-style-type: none"> • Impaired immunity • Increased infection
20%	<ul style="list-style-type: none"> • Weakness • Thinning of the skin • Decreased healing
30%	<ul style="list-style-type: none"> • Too weak to sit • Pressure ulcers • No wound healing

MALNUTRITION

Malnutrition is a deficiency, excess or imbalance of energy, protein and nutrients.¹²

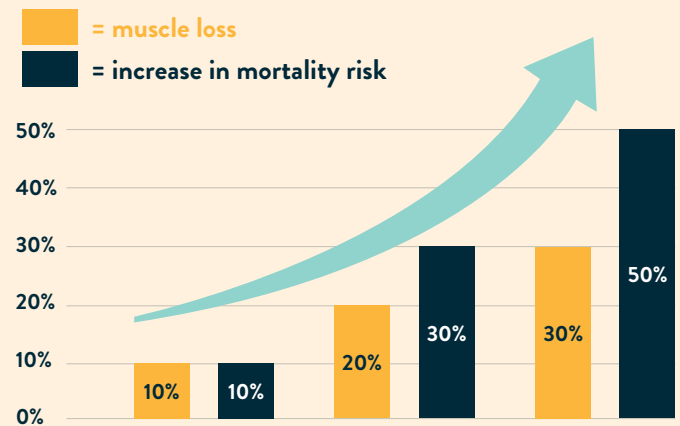
Without identifying and treating malnutrition, it can lead to poorer health outcomes, including longer recovery times, higher chances of complications or even death.^{6, 7, 13}

ILLNESS & INJURY

Illness and injury often go hand-in-hand with muscle loss. That’s because bed rest and being hospitalized can increase muscle loss, and you can lose lean body mass up to 3x faster with illness or injury.^{14–16}

Healthy muscles are key for recovery from a critical illness or severe trauma. That’s why supporting your muscle health as you age is important – it helps act as an insurance policy, reducing your risks and putting your body in a better position to handle illness and injury.

BEYOND WEAKNESS:⁶ The Greater the Muscle Loss, The Greater The Mortality Risk



DOCTOR TERMINOLOGY 101: SARCOPENIA (ADVANCED MUSCLE LOSS)

In Greek, “Sarco-,” refers to flesh or muscle, and “-penia” indicates deficiency. Thus, “sarcopenia” translates loosely as deficiency of muscle.¹⁷

Sarcopenia, also known as advanced muscle loss, is when a person loses a large amount of muscle mass along with strength and function. This type of muscle loss occurs with advanced age and can compromise someone’s recovery and survival.¹⁸

Up to one in two older adults are at risk for advanced muscle loss.⁵ An estimated 50 million people are affected by this condition, and this number is expected to increase to more than 200 million in the next 40 years.¹⁹

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“Think about your muscles like a savings account. When you continuously invest in the health of your muscles, with regular exercise and good sources of nutrition, you can build up a reserve that helps you better handle illness and recover if you experience a health setback.”

— *Suzette L. Pereira, PhD, Associate Research Fellow, Strategic Research, Abbott*



DID YOU KNOW?

Across the globe, malnutrition is a risk for older adults. In fact, one in two older adults are malnourished when admitted to hospitals.²⁰

THE FAST TRACK TO MUSCLE LOSS: Muscle Loss Accelerators to Avoid





DISCOVER NUTRITION'S ROLE IN HEALTH AND RECOVERY

OVERALL NUTRITION NEEDS FOR MUSCLE HEALTH & RECOVERY

The body requires important nutrients as you age to support overall health and muscle strength.²¹ People tend to eat less food as they age — particularly high-quality, protein-rich foods — and their bodies don't process nutrients as efficiently.^{22, 23}

DID YOU KNOW?

Research shows that up to nine out of ten aging adults fail to meet the daily recommended amounts of varying key nutrients recommended for a healthy and active life.^{24, 25}

Proper nutrition and maintaining a balanced diet is a great way to support your muscle health. But no single food provides all the nutrients needed for good health, so it's important to eat a variety of foods for different vitamins and nutrients.

Getting the right nutrition is especially important when you're sick or recovering from a health setback, such as surgery or pneumonia, as you may not be consuming the amount or types of foods in your diet that will help you recover. Just like you need oxygen to breathe, you need to nourish your muscles with protein and energy to combat the breakdown as you recover.



RESEARCH SHOWS NUTRITION IS LIFE-SAVING

Science shows the critical role nutrition plays in our health, ranging from rebuilding muscle mass to helping with recovery from disease and time in the hospital.

One of the largest nutrition clinical studies of its kind – Nourish – builds to this research as it showed nutrition's role in adults aged 65 years and older who were malnourished in the hospital while recovering from heart or lung disease.



NUTRITIONAL STATUS



SURVIVAL

The group of people in the study who consumed a specialized oral nutritional supplement with protein (20g) and HMB, a muscle-preserving ingredient, was associated with improvements in body weight and nutritional status - helping to support their recovery. Also, the group showed a significantly reduced death rate (by 50%) compared to those who drank a placebo.²⁶

DID YOU KNOW?

















Your muscle fibers begin to shrink when you lose the fine balance between muscle protein production and breakdown, generally caused by aging, disease and stress.²⁷ Even with a healthy diet, the muscles of adults age 50 and older do not respond as efficiently to protein from diet as much as when they were young.²⁸

“

“HMB might as well stand for ‘Human Muscle Bodyguard’; it quite literally helps protect critical muscle health in older adults as they age.”

– Abby Sauer, MPH, RD, Research Scientist, Abbott

To support your muscles, energy and strength as you age, consider adding the following muscle-preserving ingredients into your diet.

	WHAT IS IT AND WHAT ARE THE BENEFITS AS I AGE?	HOW CAN I GET IT IN MY DIET?	HOW MUCH DO I NEED?
HMB	HMB (beta-Hydroxy beta-Methylbutyrate) is a muscle-preserving ingredient which can significantly help you maintain your strength, muscle mass and physical functionality as you age (or slowing down muscle loss when ill). ^{29,30}	Very small amounts of HMB are found in: ³¹ <ul style="list-style-type: none">  avocado  citrus fruit  cauliflower  catfish 	3 grams of CaHMB per day is beneficial to muscle health, which cannot be obtained from the normal diet. ³² This amount is equal to approximately 6,000 avocados.
Protein	Protein is part of every tissue, including your organs, muscles and skin, and it plays a major role in the body, from building, repairing and maintaining tissues, to making important hormones and enzymes, to transporting nutrients. ²⁷ Older adults that eat more protein are significantly less likely to lose muscle over time. ³³	High-protein foods include: <ul style="list-style-type: none">  soybeans  nuts  lean red meat  tofu  chicken  fish 	If you're a healthy adult, the U.S. and EU recommend 0.8 grams of protein for every kilogram of body weight daily, ³⁴ which is roughly 53 grams of protein per day if you weigh 150 pounds. ^{35,36} However, research shows that older adults may actually need about two times this amount of protein. ³⁷ That's because people start absorbing and storing nutrients like protein differently as they age.
Vitamin D	Vitamin D is a fat-soluble vitamin that plays an important role in supporting your muscle health. ^{38,39} Vitamin D deficiency is associated with decreased muscle strength in older men and women, and supplementation improves lower limb strength and reduces risk of falling. ⁴⁰	Foods containing a healthy amount of Vitamin D: <ul style="list-style-type: none">  fortified milk  cheese  eggs  fish liver oil  fatty fish <p>In addition to diet, you can get Vitamin D through:</p> <ul style="list-style-type: none">  exposure to sunlight. 	The World Health Organization recommends at least ⁴¹ <ul style="list-style-type: none"> • 200 IU daily → 50 years old and under • 400 IU daily → 51-65 years old • 600 IU daily → 65 years old and older



TAKE ACTION FOR MUSCLE HEALTH

Muscle health can play a big role in helping you live a longer and better life. The good news: it's not too late to reduce muscle loss and adopt a healthier, more active lifestyle. Here are a few tips to improve your muscle health with age:



GET A GRIP

Your hand grip strength can serve as a good indicator of your health.⁴⁴ Recent studies show that the firmness of your hand grip, which measures muscular strength, is better than your blood pressure when assessing muscle strength, ability to recover from hospital stays and quality of life.^{44, 45}

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