



NOURISH YOUR MUSCLES AS YOU AGE:

THE SCIENCE OF STRENGTH FOR HEALTHY LIVING



It's the ageing 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 should take steps to support their muscles for healthy living.

For more information, please visit <http://www.nutritionnews.abbott/>.



UNDERSTAND WHY YOUR MUSCLES ARE IMPORTANT..... 2



FIND OUT WHY YOU LOSE MUSCLES NATURALLY..... 2



RECOGNISE SIGNS AND FACTORS OF MUSCLE LOSS.....2



LEARN HOW ILLNESS AND INJURY ACCELERATE MUSCLE LOSS..... 3



DISCOVER THE ROLE OF NUTRITION IN HEALTH AND RECOVERY..... 5



TAKE ACTION FOR MUSCLE HEALTH..... 8



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 are also essential for your 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:



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 is broken down to support repair and recovery.⁸



FIND OUT WHY YOU LOSE MUSCLES NATURALLY

Understanding muscle health and healthy ageing is especially important today because most people worldwide are expected to live into their sixties and beyond.⁹ By 2020, the number of people aged 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 muscle mass and strength is key.

Peak muscle mass and strength usually occur 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

Ages
25-39

Peak muscle
mass and strength

Ages
40-69

Muscle mass decreases
by approximately
8% per decade

Ages
70+

Muscle mass decreases
by approximately
15% per decade

Changes in muscle tissue, combined with normal ageing 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



RECOGNISE 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 realise there are ways to prevent and reduce the loss.

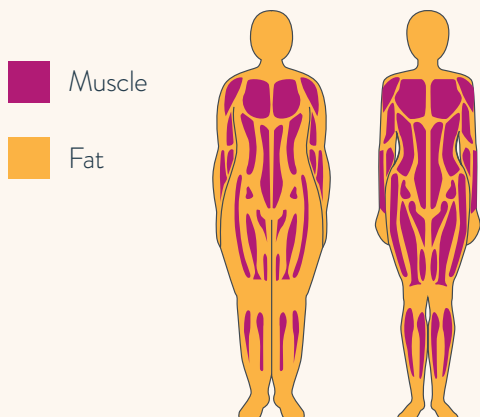
By being aware of the signs of muscle loss, you can ensure you are taking steps to support your muscle health as you age – enabling you to lead an active and full life.

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

HIDDEN MUSCLE LOSS

There's more than meets the eye when it comes to Body Mass Index (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 signs of muscle loss, regardless of weight.

*BMI is used to assess whether a person has a healthy weight in relation to their height.



MUSCLE LOSS INDICATORS

Know the Signs



Weakness



Slower walking speed



Loss of strength



Unintentional weight loss



Exhaustion



Low physical activity

“

“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.

There are several factors that can accelerate the loss of lean body mass in adults age 40 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"> • Lower 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 • Poor wound healing

MALNUTRITION

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

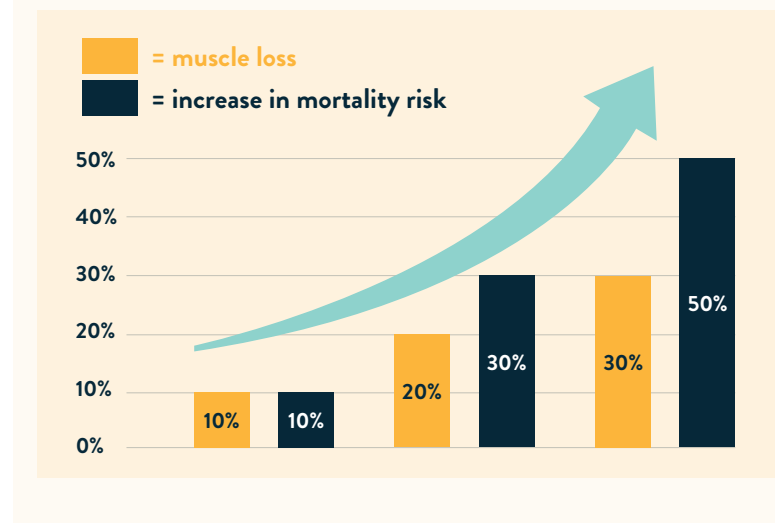
Left unidentified and untreated, malnutrition can lead to poorer health outcomes, including longer recovery times, higher chances of complications or even death.^{6, 7, 13}

ILLNESS & INJURY

Illness and injury often go hand-in-hand with muscle loss. That's because bed rest and being hospitalised can increase muscle loss, and you can lose lean body mass up to three times 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



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 of 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

“

“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 the UK, approximately 1 in 3 adults admitted into hospital are malnourished.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

Your 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 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 ageing adults fail to meet the daily recommended amounts of varying key nutrients recommended for a healthy and active life.^{24, 25}

Adequate nutrition and maintaining a balanced diet are great ways 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.

Getting the right nutrition is especially important when you're sick or recovering from a health event, 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 hospital.

One of the largest nutrition clinical studies of its kind – Nourish – builds on this research. It showed nutrition's role in adults aged 65 years and over 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 specialised oral nutritional supplement with protein (20g), HMB** and vitamin D had improvements in body weight, nutritional status and vitamin D levels - helping to support their recovery. Also, the group showed a significantly reduced death rate (by 50%) compared to those who drank a placebo.^{26***}

**HMB (β -hydroxy β -methylbutyrate) has been demonstrated in older adults to help maintain their muscle health as they age or when ill – even helping minimise muscle loss during bedrest.⁸


















*** Results show no significant differences between the two groups for the primary composite (i.e. combined) endpoint of 90 day hospital readmissions or death.

DID YOU KNOW?

Your muscle fibres begin to shrink when you lose the fine balance between muscle protein production and breakdown, generally caused by ageing, disease and stress.²⁷ Even with a healthy diet, the muscles of adults age 40 and older do not respond as efficiently to protein from diet as much as they did when they were younger.²⁸



To support your muscles, energy and strength as you age, consider including the following nutrients in 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?
Protein	<p>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</p> <p>Older adults who eat more protein are significantly less likely to lose muscle over time.²⁹</p>	<p>High-protein foods include:</p> <ul style="list-style-type: none">  lean red meat  chicken  fish  milk & dairy  eggs  tofu  pulses  nuts 	<p>If you're a healthy adult, the EU recommends 0.8 grams of protein for every kilogram of body weight daily,³⁰ which is roughly 53 grams of protein per day if you weigh approximately 68kg or 10st 10lb.^{31,32}</p> <p>However, research shows that older adults may actually need about two times this amount of protein.³³ That's because people start absorbing and storing nutrients like protein differently as they age.</p>
Vitamin D	<p>Vitamin D is a fat-soluble vitamin that plays an important role in supporting your muscle health.^{34,35}</p> <p>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.³⁶</p>	<p>Foods containing a healthy amount of vitamin D:</p> <ul style="list-style-type: none">  fortified cereal  eggs  fish liver oil  fatty fish <p>You also get vitamin D through:</p> <ul style="list-style-type: none">  exposure to sunlight 	<p>The World Health Organization recommends at least³⁷</p> <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
HMB	<p>HMB (beta-hydroxy beta-methylbutyrate) is an ingredient which can significantly help you maintain your strength, muscle mass and physical functionality as you age (or slow down muscle loss when ill).^{38,39}</p>	<p>Very small amounts of HMB are found in:⁴⁰</p> <ul style="list-style-type: none">  avocado  citrus fruit  cauliflower  catfish 	<p>3 grams of CaHMB per day is beneficial to muscle health, and cannot be obtained from the normal diet.⁴¹</p>



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 as you age:

1.

MAINTAIN A BALANCED DIET

Proper nutrition and a balanced diet are a great way to take charge of your health.



2.

FEED YOUR MUSCLES

Ensure you are consuming enough protein and vitamin D to support your muscle health, either through diet or oral nutritional supplementation. This is especially important when you are hospitalised, ill, injured or recovering.



3.

TALK TO YOUR HEALTHCARE PROFESSIONAL

Whether working to maintain healthy muscles or recover from illness or surgery, it is important to have regular conversations with your healthcare professional to define how you can combat natural or illness-related muscle loss.



4.

EXERCISE YOUR MUSCLES WITH RESISTANCE TRAINING

Ageing muscle responds to exercise, especially resistance exercise, which has been proven to be an effective way to increase muscle mass and strength.⁴²

In addition to good nutrition, regular resistance training should be undertaken by all adults over the age of 55 for as long as possible.⁴³



Remember that daily walks also help tone your muscles.



- Get off the bus one stop early and walk to your destination.
- Take the stairs.
- Walk in a nearby park.



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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