

PROTEIN HELPS YOU POWER THROUGH LIFE

PROTEIN 101:

What Builds These Powerful Powerhouses?

You want to be your very best at all times. It makes sense - you are bombarded with millions of messages every day from all directions, may it be on social media or even from your best friend. We all want to be in peak condition or optimal health! Whether you are an athlete or a novice beginning to work out, time and time again, you will encounter one word that is most commonly associated with muscle, performance and body shape: protein.

Protein is found literally everywhere in our body, providing structure to our muscle, skin, hair and even our cell membranes. An incredible 42% of the dry weight of our body is protein - but proteins are not just for building structures. We tend to forget that our digestive enzymes and many hormones in our bodies are pure protein too!¹ Protein is also used as a source of fuel, providing the same amount of calories per gram as carbohydrates. Typically, adults are recommended to consume a minimum of 0.8 grams of protein per kilogram of weight, or to consume between 10 to 35% of daily calories from protein sources.¹ For a 140

pound (63.3 kilogram) female, that may mean around 50 grams from mixed sources of high quality protein needed per day. However, protein needs are greater if you are very active. In these cases, protein may need to be increased to 1.2 to 2.0 grams of protein per kilogram of body weight.² Recent research also suggests that older adults need more. Use our protein calculator tool to calculate how much you may need!

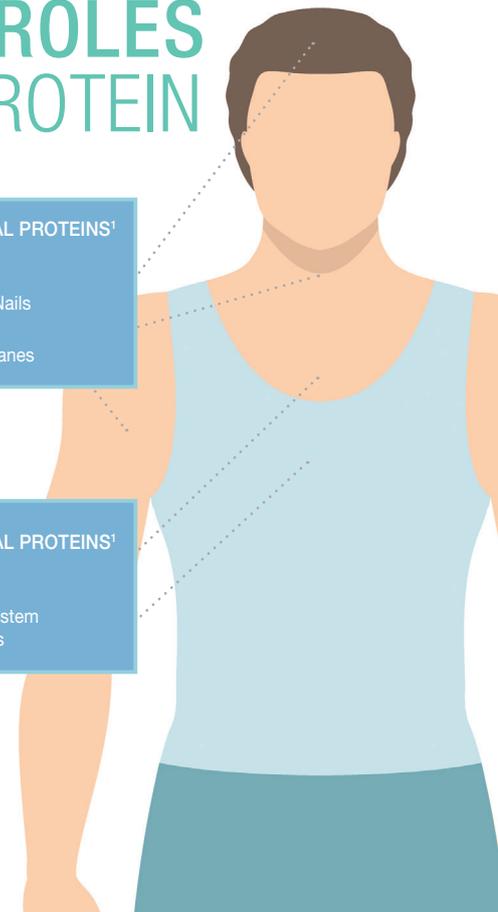
KEY ROLES OF PROTEIN

STRUCTURAL PROTEINS¹

- Muscle
- Bone
- Skin, Hair, Nails
- Blood
- Cell Membranes

FUNCTIONAL PROTEINS¹

- Hormones
- Enzymes
- Immune System Substances



PROTEIN CONTENT OF COMMON FOODS

FOOD	SERVING SIZE	GRAMS PER SERVING
Chicken (skinless)	85 grams	28
Salmon, Tuna	85 grams	22
Greek Yoghurt	170 grams	18
Pinto Beans	½ cup	11
Egg (large)	1 egg	6
Almonds	¼ cup	6
White Rice (cooked)	⅓ cup	1.4
Almond Milk	1 cup	1
Spinach (raw)	1 cup	0.9

USDA Food Composition database, 2018

Protein sources include seafood, meats, poultry, eggs, nuts, seeds, legumes (beans and peas) and soy products like tofu. Protein foods usually contain a lot of other valuable nutrients such as B vitamins, selenium, choline, phosphorus, zinc, copper, vitamin D, vitamin E and essential fats.⁴ However, it is important to remember that not all the protein that we eat is of the same value in terms of quality. Protein quality as well as quantity matters.¹

The Foundation: Amino Acids Build Proteins

Among athletes, the words “amino acids” are very familiar. As we know, amino acids

are the basic building blocks of proteins and so amino acids are particularly important to build and retain muscle.⁵

There are two types of amino acids, essential and non-essential. Essential amino acids are considered essential because your body cannot make them - they must be obtained from your diet. Another group of amino acids within the essential ones are called branched- chain amino acids (they’re branched in their chemical structure - hence the name) and they include one amino acid called **leucine**. **Leucine** is particularly helpful in starting muscle protein synthesis - think of it as the starter foundation for when you’re building this “house” we call protein. Having high quality protein that contains

leucine is helpful for all, but particularly older adults. The other types of amino acids are considered non-essential because our body CAN make them, but it is important to have the right balance of all amino acids. Think about it - they are building up so many important different protein sources in your body - just like a house, you need to make sure that the material is all there because if not, then the house will crumble!

Checking If It’s Built Right: Assessing Protein Quality

But is all protein the same? Not at all. Proteins differ greatly in quality. Protein quality matters because it impacts many things such as tissue repair, nitrogen balance and your lean muscle mass.⁶ It has been shown that protein from animal sources is of high quality and can be important for all life stages. However, plant sources have been shown to be valuable too and can provide high quality protein, particularly when combined.

The quality of a protein is determined by the amino acid components, how many essential amino acids they contain, how well the component amino acids are digested and how much of these get absorbed for use in the body.⁷ There are different scales to determine the quality of protein - the development of these different protein scales goes back 100 years! Countries also have unique scoring systems for protein and this is continuously evolving as we learn more about what makes a protein an “excellent” and high quality protein.

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ARE YOU GETTING ENOUGH PROTEIN?^{1,3}

Use our protein calculator tool to calculate how much protein you need:

$$\frac{\text{Weight in Kilograms}}{\text{Activity Factor}} \times \text{Activity Factor} = \text{Total Protein Needed Per Day (Grams)}$$

ACTIVITY FACTOR	ACTIVITY LEVEL / LIFE STAGE
0.8	Sedentary
0.8 – 1.0	General fitness
1.0 – 1.2	Older adults
1.2 – 1.5	Moderate amount of intense training
1.7 – 2.0	High volume of intense training

*Protein needs are for current weight and are not intended for weight loss measures.



Some proteins such as proteins from milk like casein and whey, egg and soy protein are considered to be high quality proteins.



The quality of protein you eat daily can impact your general health as the type of protein can impact both your immune function and your capacity to do physical work, which in turn may influence your long-term health outlook and the onset of nutrition-related chronic diseases or how successfully you age.⁶ Keep this in mind and remember to choose a good mix of high quality protein sources in your daily diet!

Protein and Weight Management: Pace Your Protein!

The latest research in protein consumption, nutrition and weight loss indicates that it is not only the consumption of protein that is important but also the time of day the protein is consumed that has a pronounced effect on satiety (feeling of fullness) and weight loss. Research shows that consuming a protein-rich breakfast has a positive effect on satiety and helps keep the satiety system activated throughout the day, which contributes to consuming fewer calories and to weight reduction.⁸ The satiety effects, as well as reduced hunger and cravings after consuming a protein-rich breakfast have even been measured in the brain using a high-technology technique called functional magnetic resonance imaging (fMRI).⁹



Recent research has also emphasised the benefit of regular protein consumption through the day - a concept

which is called protein pacing. This means that it is far better for the body's retention of protein and muscle building, to have a reasonable amount of protein (20-30 grams) at a few time points during the day, rather than in a single high protein meal at the end of the day.^{10,11}

So, to give yourself the best chance to lose fat and build muscle, try incorporating a convenient source of high quality protein into your daily meal

planning. **NeoLifeShake, clinically proven in a leading research laboratory to have cardio protective benefits, reduce body fat and body size (including waist circumference) and to lower body mass index (BMI), is a product you can trust to kick start your day and to help your weight management goals.**¹²

As We Age, Our Foundation Fades: Needs For Older Adults

As we age, our bodies change and as we get older we need more protein. Aside of needing more protein to account for general needs, there is evidence showing that protein can help with aiding age-related muscle loss.¹² It is easy to say "eat more protein" but frequently older adults do not consume the recommended amounts of protein. A study revealed that many adults over the age of 50 failed to meet the recommended daily allowances (RDA) for protein and this lack of protein can ultimately lead to muscle loss.¹⁴

50+

NEOLIFE FOCUSES ON QUALITY PROTEIN



NeoLife nutritional products offer high quality protein sources. **NeoLifeShake** provides a balanced blend of protein with 27 grams per serving*. Whether you are drinking the shake as part of an active lifestyle or to help with weight management - **NeoLifeShake** can provide a high-quality protein nutrient-packed beverage. In addition, these shake blends also contain NeoLife's special proprietary fibre blend to help aid satiety and digestion.

- #690 – Creamy Vanilla
- #691 – Berries n' Cream
- #692 – Rich Chocolate

*When mixed in skim milk

BUILD AND MAINTAIN YOUR HOME:

What is Sarcopenia?

You snooze, you lose, but the same can happen with your muscles. Sarcopenia is a condition where your muscle mass declines and this can consequently lead to a loss of muscle strength.¹⁶ This loss in muscle mass can also contribute to frailty, disability, physical dependence and mortality and this isn't great to hear at all!¹⁵ We think of protein for muscle health, but the prevention of sarcopenia is also important for reducing the risk of fractures and osteoporosis.¹³ When muscle mass is lost, the loss of bone mass comes into play - muscle strength helps increase bone density. Muscle strength is needed for balance and posture and when these fail, there is a risk of falling and with this, an increased risk of getting fractures. Remember that walking is a series of calculated falls and having proper muscle strength and muscle mass can help ensure you're at lower risk from falls and fractures.

And a heads up, once you reach the age of 30, your muscle mass may decline at around 1% per year and for some the pace

may be more severe.¹⁶ But there is hope! There has been a lot of recent research on how to prevent or slow down the progression of muscle loss with aging. The first step is to ensure that you're consuming adequate protein levels and quality for your age as described earlier. There is research that really indicates that **25 to 30 grams of a high quality protein per meal containing 2.5 to 2.8 grams of leucine** is necessary to help stimulate muscle protein synthesis in older adults.^{15,17} To put this into perspective, an 85 gram piece of chicken breast has around 28 grams of protein.

For older adults who may not consume more than the RDA (0.8 grams protein per kilogram of body weight), leucine supplementation of 4 grams/meal may be able to improve muscle protein synthesis.¹⁸ Consistent protein doses or protein-pacing throughout the day can be particularly helpful for building and retaining muscle, especially among older adults.

With aging and the associated muscle loss that may occur - referred to as "sarcopenia", more protein is needed. It is recommended that older adults consume about 1.2 g/kg of body weight a day of protein to maintain optimal muscle function, which is higher than the general recommendation for adults of 0.8 g/kg of body weight.^{13,15}

Keeping the Foundation Stable: Other Nutrients that Support Protein's Abilities

There are a range of other nutrients that may positively impact muscle strength. One study called "The Vitality, Independence and Vigor Study (VIVE2)" evaluated 149 older adults who were placed in either one group required to consume a high protein, high vitamin D nutritional supplement beverage containing 20 grams of whey protein and a combination of 800 IU vitamin D, 350 mg calcium and other vitamins and minerals, or another group that did not receive these added nutrients.¹⁹ All of the older adults in this trial were initially vitamin D deficient and all participated in a structured physical activity program. The authors found that physical activity was

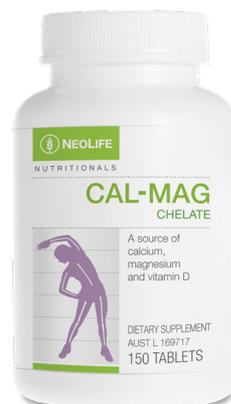
immensely protective for optimal muscle health. They also found that the adults who consumed a high protein, high vitamin D supplement beverage had a reduction in the fat found within the muscle and generally improved muscle composition compared to the group that did not have this supplementation.¹⁹ This highlights the

fact that **vitamin D** may also play a large role in protecting older adults from loss of muscle along with protein and physical activity! Something to remember is that **vitamin D, calcium and magnesium** all play important roles in bone health.

Vitamin D promotes calcium absorption and can support bone, heart and immune health as well. **NeoLife Cal-Mag incorporates the powerful trio of calcium, vitamin D and magnesium to support healthy muscle function and bone health.** The special formula contains the chelated forms of the minerals to help ensure maximum absorption.* In addition, daily supplementation of calcium and vitamin D combined may reduce the risk of bone fractures in all adults, regardless of age or gender.

Ca

Mg



Chelated Cal-Mag
333 IU of Vitamin D₃
#634 - 150 tablets

Move on over to **omega-3s** as these mighty fatty acids have been shown to increase the rate of muscle building.²⁰ A group of 16 healthy, older adults were either given supplements with omega-3 fatty acids from fish or corn oil supplements for 8 weeks and it was found that the group that took the omega-3s had an indirect increase in the rate of muscle protein synthesis, similar to the effects of **leucine**, the branched-chain amino acid we discussed earlier on in the article.²⁰ Omega-3s, particularly the ones found in fish and other seafood, have a powerful influence on cell membrane structure with anti-inflammatory properties. Pairing these two - protein and omega-3s can pack a powerful punch to help protect muscle loss!

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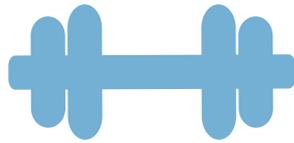
A great way to incorporate more omega-3s into your system is by taking a high-quality, omega-3 supplement such as NeoLife Salmon Oil Plus!

Resistance Training and Protein Timing in Older Adults

Exercise has been shown to help build muscles, especially in older adults.²¹ A combination of consuming protein and exercising can be a power house for increased physical performance and



Omega-III
Salmon Oil Plus
#641 – 90 caps



muscle mass increase!^{21,22} **Resistance training is helpful for muscle growth.** Some examples of resistance training include: weights, bands, kettlebells or cable machines. **NeoLife social media pages and blogs offers great examples of some resistance training exercises.**

Evidence has shown that an intake of a protein source after resistance training bouts can help in the development of larger muscles called “hypertrophy” of skeletal muscle.²³ Is there an appropriate time to eat protein when you have

just exercised...especially knowing that perhaps, it can help with rebuilding your muscle? Imagine if you were doing resistance training

for about 30 minutes, 3 times a week, for 12 weeks and you wanted to see what would be most effective for your muscle growth - consuming protein within 5 minutes after working out or consuming protein 2 hours after each training session. That’s exactly the type of investigation that happened in a group of elderly men, between ages 70 to 80 years old.²³ This group of elderly men took part in a 12-week resistance training program and were instructed to **either** take protein immediately after the resistance training session or 2 hours after the session. This study showed that an oral protein supplement immediately after training was helping to achieve skeletal muscle growth among these men.²³ As an older adult, the next time you are done doing a resistance training exercise, consider adding a protein source after your routine.

5 Ways to Integrate More Protein Into Your Daily Diet

1 Aim for seafood twice a week

Eating seafood has many benefits and can be a great-tasting, lean protein option during the week. Try your hand at shrimp or fish tacos for a wonderful Taco Tuesday dinner, tuna sandwiches for lunch, or baked fish with a side of heart-healthy whole grains and vegetables. Sounds delicious!

2 A quick sandwich can save the day!

Sandwiches or wraps can be an easy way to squeeze in some protein. You can try adding a spin with your protein option to avoid eating processed deli meats, by using a homemade chickpea hummus spread, bean spread, or a nut butter if you’d prefer something sweet!

3 Snack time can be a great time

What easy way to incorporate snacks into your daily meals but to have some tasty protein-rich snacks. Of course, the **NeoLifeBar offers 10 grams of satiating protein and 5 grams of fibre to help keep you full for longer.** Another way of having great snacks is by having a handful of nuts or seeds. These contain healthy fats and both protein and fibre to help when hunger strikes.



NeoLifeBar
#694 – 15 Bars



4 Drink your protein!

Protein shakes can be an easy way to get your protein in a drinkable form. This could be helpful for older adults as well who may need more protein sources but struggle with mastication or other digestive issues.

You can pack a protein supplement drink anywhere and when you're ready to consume, you can mix it with skim milk or water. Try **NeoLifeShake** in 3 delicious flavours, Creamy Vanilla, Berries n' Cream and Rich Chocolate. **With 27 grams of high-quality soy and milk proteins***, this is a great, fast way to get it in throughout the day!

5 Aim for lean protein varieties

Great examples of lean protein varieties include lean meats from beef, lamb, veal; poultry such as turkey, chicken; fish and seafood like crab, shrimp, salmon; eggs, nuts and seeds, legumes/beans including beans, lentils and tofu. Some grains such as quinoa have high protein content as well (8 grams of protein per cup).

*When mixed in skim milk



Conclusion: Keeping Our House Strong!

Protein and the amino acid building blocks play vital structural and functional roles in our body. Not all protein sources are of the same quality and that's something to keep in mind. Quality and quantity matter at all ages, but it is particularly imperative that everyone who is physically active and particularly golden agers, consume adequate amounts of protein at regular intervals throughout the day to help build and maintain optimum muscle mass and strength.

As with all things, keeping ourselves in peak condition is not only about what we ingest but our overall lifestyle including our physical activity levels, stress management, good sleep and the positive relationships we have in our lives. A healthy balance of all these elements and constant good protein supplies to our body, can ensure that we have the best tools to build a healthy foundation for our life!

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