



THE ROLE OF PROTEINS TO HELP PREVENT SARCOPENIC OBESITY

Tirlán

Tirlán is an ingredient solutions partner to some of the world's leading companies and brands. At the forefront of ingredient technology, we offer a range of solutions to match the ever-changing demands of the food and nutrition industry and its consumers.

With quality dairy and grains sourced from 5,000 Irish family farms, combined with advanced market research and insights, our unique platform offers fully traceable and sustainably produced natural solutions to help our customers stay ahead of the curve.

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What is Sarcopenic Obesity?

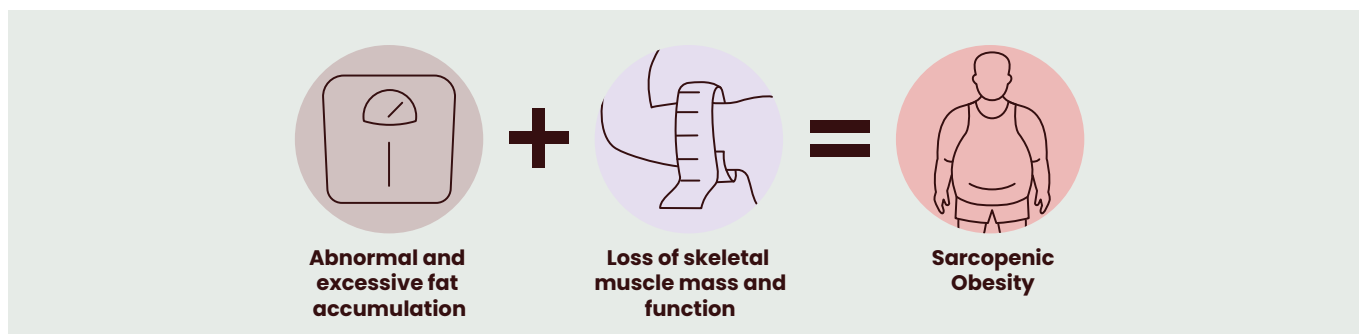
Sarcopenic obesity is obesity and sarcopenia combined.¹ Sarcopenia is defined as a progressive skeletal muscle disorder operationalised by low levels of muscle strength and muscle quantity, and with physical performance as an indicator of severity.^{2,3,4} Obesity is a chronic, systemic disease defined as a pathologically increased fat mass, is associated with an increased health risk.⁵ It is estimated that obesity is to be around 12.6% in men and 33.5% in women. However, these rates significantly increase with age, with 48% in men and 27.5% in women for those aged 80 years and above.^{1,3}

Sarcopenic obesity can affect a wide range of individuals due to many factors such as age, lifestyle, and underlying health conditions. It can contribute to various health issues, including mobility problems, metabolic disorders, bone health and functional decline.

Monitoring Sarcopenic Obesity

It is important to monitor sarcopenic obesity due to the many health concerns it carries like functional decline, type 2 diabetes, cardiovascular disease. It can be monitored through a combination of medical assessments, body composition measurements and functional tests. Monitoring sarcopenic obesity is crucial for identifying and managing its health risks, promoting functional independence and improving the overall well being of affected individuals.

Exercise, and Persuasive Technology in the Prevention and Treatment of Sarcopenic Obesity in Older Adults; Frontiers in Nutrition; Vol. 8, Pg. 212



PROTEINS ASSIST IN THE PREVENTION OF SARCOPENIC OBESITY

Protein plays a crucial role in helping to prevent sarcopenic obesity through various mechanisms that support muscle mass, metabolism and overall body composition.

Protein can support against the risk and impact of sarcopenic obesity by addressing both the muscle loss (Sarcopenia) and the accumulation of body fat (obesity). Protein intake can help combat sarcopenic obesity through the following

- 1. Muscle Preservation:** Protein is essential for building and repairing muscle tissue. Adequate protein intake helps to preserve existing muscle mass and even promote muscle growth.
- 2. Metabolism:** The body expends more energy to process protein leading to an increase in metabolism which can aid weight management.
- 3. Appetite:** Protein rich foods are more filling and satiating, helping to control hunger and reduce calorie intake.
- 4. Maintenance:** Higher protein intake supports the preservation of muscle mass, this helps reduce muscle loss whilst targeting fat reduction.

Age Group	Grams of protein needed each day
Children age 1 -3	13
Children age 4 -8	19
Women age 19 - 70+	46
Men age 19- 70+	56

Institute of Medicine (IOM) (2006) Dietary Reference Intakes: The Essential Guide to Nutrient Requirements




WHAT DOES 25G OF PROTEIN LOOK LIKE?

 30g SOLMIKO HD* <small>*approximate weight +/-2g</small>	 4 large EGGS
 300g GREEK YOGHURT	 290g KIDNEY BEANS

Increase Protein for Increased Preservation

Older people often require higher protein intake due to several physiological changes that occur with aging. Protein helps to maintain their health, well-being, and quality of life. The recommended protein intake for elderly individuals can vary based on age, activity and overall health. It has been advised that the minimum intake of 1g/1kg of bodyweight should be recommended to help address the muscle loss (sarcopenia) and maintain overall health.

The following protein intakes have been suggested (ESPEN)⁹

<p>1.0–1.2g/kg bodyweight per day for healthy older persons</p> 	<p>1.2–1.5g/kg bodyweight per day for older persons with acute or chronic disease</p> 	<p>Up to 2g/kg bodyweight per day for older persons in case of severe illness, injury and malnutrition</p> 
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Protein intake in conjunction with exercise has shown that combining protein intake with exercise (resistant and aerobic) will enhance muscle protein synthesis and maintenance of muscle mass.¹⁰

MPC and MPI are considered a high quality or complete protein source, as they contain all 9 essential amino acids. These amino acids, in particularly leucine, supports minimized muscle wasting and stimulated muscle protein synthesis. MPI and MPC contain both casein and whey protein in the same ratio as milk. Whey and casein have different digestion periods, casein is a slow-digestible protein retaining in the stomach while whey digests rapidly, and transferred into the small intestine.^{2,3} Therefore, as MPI and MPC have a combination of both whey and casein the benefits of both protein types should be achieved.



Solmiko contains both casein and whey protein in the natural ratio as found in milk (80:20).

Solmiko is **naturally rich** in all nine Essential Amino Acids, including:

LEUCINE is one of the key drivers of muscle protein synthesis. Leucine acts like a molecular switch that turns the manufacturing of muscle in the body.

VALINE stimulates muscle growth and regeneration and is involved in energy production.

ISOLEUCINE is involved in muscle metabolism. It is also important for immune function, haemoglobin production and energy regulation.



Protein	80% min	80% min	85% min	85% min
Fat	2% max	2% max	2% max	2% max
Lactose	6%	4%	2%	1%

Benefits

- ✔ High in protein
- ✔ High quality protein
- ✔ From grass fed cows
- ✔ Low in sugar
- ✔ Low fat
- ✔ High bulk density
- ✔ Enhanced solubility
- ✔ Vegetarian, halal & kosher
- ✔ Clean, fresh dairy taste

Solmiko is suitable for a variety of applications



RTM powdered nutritional products



RTD beverages including meal replacement & pH neutral sports drinks



Protein fortified foods



Weight management products



Medical & clinical nutrition applications



Child nutrition such as follow-on formula and growing up milks

OUR UNIQUE DAIRY SYSTEM



Grass fed cows

Outdoor grazing on nutritious grass for most of the year



Cleanest air in Europe

Urban outdoor air pollution index



Island location

On the edge of the Atlantic Ocean with plentiful rain



Product quality

Multiple checkpoints from farm to factory



Food authenticity

Produced honestly by safe family farms



Clean label

Non-GMO, hormone-free, Kosher & Halal



Cow & milk traceability

From grassland to customer



Trusted Partner

Supporting leading global brands

OUR R&D FUNCTION



The Innovation Hub

Our Innovation Hub houses world class facilities enabling us to bring our concepts to life.



Leading the way in process and technology

Functionalising and developing ingredients whilst always maintaining nutritional integrity.



Our external ecosystem

Our extensive network of external partners ensures we are agile.



Developed by our experts

Our team of experts passionately researching the worlds of dairy and plant.



Providing superior nutrition

At Tirlán the foundations of nutrition are built on dairy and plant. Our ethos: "Good for You, Good for the Planet".

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Get in Touch

To find out more about how Tirlán can support you in developing your solutions, please contact us directly.

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