

The Benefits of Protein for Runners: Why It's Essential for Performance and Recovery

by Anton van Marion



Whether you're a seasoned marathoner or a casual jogger, optimising your nutrition is key to improving your performance and recovery. One of the most critical nutrients for runners is protein. Often associated with bodybuilders and strength athletes, protein is equally important for endurance athletes, including runners. This article will delve into the benefits of consuming protein for runners, exploring the science behind muscle protein synthesis (MPS), and providing practical guidelines for protein intake. Additionally, we'll recommend the best protein sources to help you maximise your training outcomes.

Muscle Repair and Growth



Running, especially long distances, causes significant muscle damage. With each step, your muscles experience tiny tears, particularly in the lower body muscles such as the quadriceps, hamstrings, calves, and glutes. While this microtrauma is necessary for adaptation and strength improvements, the body needs to repair these damaged fibres effectively.

Protein plays a vital role in this repair process. When you consume protein, it is broken down into amino acids, the building blocks of muscle tissue. Through the process of muscle protein synthesis (MPS), these amino acids are used to repair and rebuild the damaged muscle fibres, making them stronger and more resilient over time.

The science behind this involves the activation of the mTOR (mechanistic target of rapamycin) pathway, a key regulator of cell growth and MPS. Adequate protein intake, particularly sources high in the essential amino acid leucine, stimulates the mTOR pathway, promoting muscle repair and growth. For runners, this translates to faster recovery times and a reduced risk of injury, allowing you to train more consistently.

Muscle Loss Prevention

While running is excellent for cardiovascular fitness, it can lead to muscle catabolism, especially if your protein intake is insufficient. This is because endurance activities like running increase the body's demand for amino acids, which, if not met through dietary intake, will be sourced from muscle tissue, leading to muscle loss.

Muscle loss, or muscle atrophy, can impair your performance, making you weaker and more prone to injuries. It can also reduce your metabolic rate, making it harder to maintain a healthy body weight. By consuming adequate amounts of protein, you provide your body with the necessary amino acids to prevent muscle breakdown. This ensures that your body preserves muscle mass, even when running long distances.

Research shows that regular protein intake throughout the day can help prevent muscle loss by maintaining a positive net protein balance. This means that the rate of MPS exceeds the rate of muscle breakdown, which is crucial for runners who need to sustain muscle mass to perform well.

Improved Strength and Power

While running is primarily an endurance activity, strength and power are also important, particularly for sprinters and those involved in trail running or hill sprints. Protein contributes to the development of muscle strength by enhancing muscle repair and growth, as discussed earlier.

Increased muscle strength allows you to generate more force with each stride, improving your running economy – the amount of energy required to maintain a certain speed. This means that

with stronger muscles, you can run faster and more efficiently, expending less energy over the same distance.

Furthermore, the improved muscle power provided by adequate protein intake can be particularly beneficial during explosive movements, such as sprinting or powering up a hill. Protein, combined with strength training exercises, helps to build fast-twitch muscle fibres, which are responsible for generating explosive force. This can enhance your overall running performance, making you a more powerful and effective runner.

Enhanced Immune Function



Intense and prolonged running sessions can suppress the immune system, increasing the risk of illness and infection. Protein plays a crucial role in maintaining and boosting immune function. It is necessary for the production of antibodies, which help to fight off infections, and for the repair of tissues damaged during strenuous exercise.

A well-functioning immune system allows you to recover more quickly from tough workouts and to stay healthy, which is crucial for maintaining consistent training. Ensuring you consume enough protein can help to keep your immune system strong, reducing the likelihood of illness interrupting your training routine.

Satiety and Weight Management



Maintaining an optimal body composition is important for runners, as excess body fat can reduce running efficiency. Protein is known for its satiating effect, meaning it helps you feel fuller for longer. This is particularly beneficial for runners who need to manage their calorie intake to maintain a lean physique.

Protein has a higher thermic effect than carbohydrates or fats, meaning it requires more energy to digest, absorb, and process. This can slightly increase your metabolic rate, aiding in weight management. For runners, this can translate to better energy levels and improved performance due to a more favourable body composition.

How Much Protein Do Runners Need?



The optimal protein intake for runners varies depending on factors such as training intensity, duration, and body weight. General recommendations for protein intake in endurance athletes like runners range from 1.6 to 2.1 grams of protein per kilogram of body weight per day.

For example, a 70 kg runner would need between 112 and 147 grams of protein daily. This range ensures that you are providing your body with sufficient amino acids to support muscle repair, growth, and overall performance.

Timing and Distribution: Maximising Muscle Protein Synthesis



To maximise muscle protein synthesis, it's not just about how much protein you consume, but also when and how you distribute it throughout the day. Research suggests that consuming 20-40 grams of protein every 3-4 hours is optimal for stimulating MPS. This strategy ensures that your body has a constant supply of amino acids to support muscle repair and growth.

The reason behind this is that MPS is a cyclical process. After consuming protein, MPS rates increase and peak within about 2-3 hours. After this period, the rates of MPS begin to decline, even if amino acids are still available. By spacing out protein intake in 3-4 hour intervals, you can repeatedly stimulate MPS, leading to greater overall muscle repair and growth throughout the day.

This approach also helps in maintaining a positive net protein balance, crucial for preventing muscle breakdown and promoting recovery, particularly after long or intense running sessions.

Best Sources of Protein for Runners

When selecting protein sources, it's important to choose those that are not only high in overall protein content but also rich in leucine. Leucine is the key amino acid responsible for activating the mTOR pathway, thereby stimulating MPS. Additionally, for runners who need to manage their weight, choosing protein sources that offer a high protein-to-calorie ratio is essential.

Here are ten of the best protein sources that meet these criteria:

Whey Protein

- Leucine Content: Approximately 2.5 grams per 25 grams of protein.
- Calories: Around 120 calories per 25 grams of protein.

Whey protein is one of the most effective protein sources for stimulating MPS due to its high leucine content. It is quickly absorbed, making it ideal for post-run recovery.

Eggs



- Leucine Content: About 1.2 grams per large egg.
- Calories: Approximately 70 calories per egg.

Eggs are a complete protein source, meaning they contain all essential amino acids. They are also rich in leucine, making them a powerful option for muscle repair and growth.

Chicken Breast

- Leucine Content: Roughly 2.5 grams per 100 grams of cooked chicken breast.
- Calories: About 165 calories per 100 grams.

Chicken breast is a lean source of protein with a high protein-to-calorie ratio, making it ideal for runners looking to maintain a lean physique.

Greek Yogurt

- Leucine Content: Approximately 1.3 grams per 200 grams (7 oz).
- Calories: Around 100 calories per 200 grams.

Greek yogurt is rich in casein, a slow-digesting protein, making it great for sustaining MPS overnight or between meals.

Tuna



- Leucine Content: About 2.1 grams per 100 grams of tuna.
- Calories: Roughly 116 calories per 100 grams.

Tuna is another lean protein source with high leucine content, ideal for post-run meals or snacks.

Cottage Cheese

- Leucine Content: Around 2.7 grams per 200 grams.
- Calories: Approximately 206 calories per 200 grams.

Cottage cheese is an excellent source of casein protein, which releases amino acids slowly, providing a prolonged MPS effect.

Soy Protein



- Leucine Content: About 2.7 grams per 30 grams of protein powder.

- Calories: Around 120 calories per 30 grams.

Soy protein is a great plant-based alternative that still provides a good amount of leucine, making it suitable for vegan or vegetarian runners.

Lean Beef

- Leucine Content: Roughly 2.5 grams per 100 grams.
- Calories: About 250 calories per 100 grams.

Lean beef is a rich source of high-quality protein and essential nutrients like iron, which are crucial for endurance athletes.

Pea Protein

- Leucine Content: Approximately 2.3 grams per 30 grams of protein powder.
- Calories: Around 120 calories per 30 grams.

Pea protein is another plant-based option that provides a good leucine content, making it a great choice for those with dietary restrictions.

Tempeh



- Leucine Content: About 1.1 grams per 100 grams.
- Calories: Approximately 195 calories per 100 grams.

Tempeh is a fermented soybean product, rich in protein and fibre. It offers a good leucine content and provides the added benefits of probiotics, which can aid in digestion and overall gut health. Tempeh is an excellent option for vegan runners, providing a complete protein source that supports muscle repair and growth.

CONCLUSION



Protein is a crucial nutrient for runners, offering numerous benefits that go beyond just muscle repair and growth. By preventing muscle loss, improving strength and power, enhancing immune function, and aiding in weight management, adequate protein intake is key to maximising your running performance and recovery.

For runners, it's important to consume enough protein daily, aiming for 1.6 to 2.1 grams per kilogram of body weight. To maximise muscle protein synthesis, distribute your protein intake evenly throughout the day in 20-40 gram portions every 3-4 hours. This approach ensures that your body has a constant supply of amino acids, promoting continuous muscle repair and growth.

When selecting protein sources, focus on those rich in leucine and with a high protein-to-calorie ratio. Incorporating a variety of these high-quality protein sources into your diet will help you meet your protein needs while supporting your overall running performance.

Remember, optimising your protein intake isn't just about building muscles; it's about becoming a stronger, faster, and more resilient runner. By paying attention to your protein consumption and making informed choices about your diet, you can enhance your recovery, improve your performance, and ultimately achieve your running goals.

About **Anton van Marion** – Fitness Expert & Performance Coach

With a decade of experience in the fitness industry, Anton van Marion stands as a seasoned professional dedicated to elevating his clients' health and performance. As a Level 4 qualified Strength & Conditioning (S&C) Coach and a Level 4 Nutrition Coach, Anton brings a comprehensive approach to personal training that integrates advanced techniques in both exercise and nutrition.

Over the past six years, Anton has specialized in personal training, guiding individuals through transformative journeys that span from weight loss to enhanced sports performance. His extensive expertise is rooted in a solid foundation of competitive experience, including a background in swimming, sprint triathlons, and running. This diverse athletic background

enables Anton to offer tailored training solutions that cater to a variety of fitness goals and challenges.

Anton's commitment to excellence and personalized coaching has empowered countless clients to achieve their desired outcomes and push their limits. His passion for fitness and dedication to client success make him a valuable asset to anyone looking to improve their physical health and performance.

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