



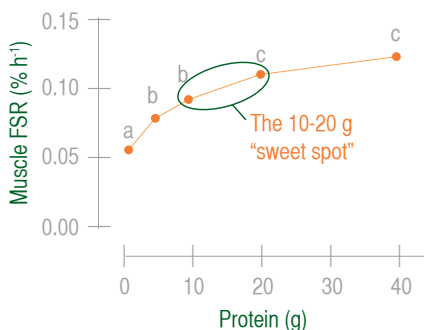
PROTEIN 101

Proteins are molecules made of amino acids linked together. Amino acids are commonly referred to as the “building blocks” of proteins.

THE ROLE OF PROTEIN

When you eat protein, it is digested into the individual amino acids, which are absorbed and used to make new protein structures in the body.

Proteins have many functions in the body, primarily providing structure for cell membranes, collagen, and muscle fibers. Other protein structures in the body are enzymes (molecules that make chemical reactions happen), hormones, and components of the immune system.



RESEARCH SPOTLIGHT: After a session of weight lifting, subjects consumed either 0, 5, 10, 20 or 40 g of a complete protein. Muscle Fractional Synthetic Rate (FSR), or the rate new proteins were made, was measured after ingestion. Each subject completed a trial with each amount of protein. 10-20 g of protein appears to give the best results. More than 20 g of protein was not necessary since 40 g resulted in about the same FSR value as 20 g! *Moore D et al. Am J Clin Nutr. 2009.*

DID YOU KNOW?

Similar to heart rate, the activity of muscle building enzymes is increased during exercise and doesn't go back to rest right away after stopping. It's important to take advantage of this time by giving the muscles amino acids to make new muscle fibers, which is why athletes should consume complete proteins shortly after exercise.

DOES PROTEIN NORMALLY PROVIDE ENERGY?

No. There are a few amino acids that can enter the energy production pathway in the muscle, but their contribution to overall energy production is very small. In extreme cases some amino acids can be converted to glucose in the liver and then used by the muscle and brain for energy. This usually occurs when adequate carbohydrate is not available.

WHEN IS THE BEST TIME FOR ATHLETES TO EAT PROTEIN?

- As part of a healthy diet, athletes should consume protein throughout the day. In fact, athletes need a little more daily protein than those who are inactive.
- For their sports nutrition needs, athletes should eat protein after training and/or competition for recovery.
- During exercise, muscle proteins are broken down. Following exercise, athletes should consume 10-20 g of a complete protein within 30-60 minutes to help build new muscle proteins and to slow further breakdown.
- G Series Recover and G Series Pro Recovery Shake both provide the right amount of complete protein for athletes following exercise.

DID YOU KNOW?

Complete proteins contain all of the essential amino acids, which cannot be made by the body. Examples include meats, fish, eggs, milk proteins (whey and casein), soy, and quinoa which is the only grain that is a complete protein. Nuts and beans, including peanut butter, are **not** complete proteins, unless they are eaten with a grain (such as a peanut butter sandwich).