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Get Enough Protein Post-Workout

After exercise, it starts. The body begins the process of recovery, adapting and preparing for the next challenge. There are two basic types of recovery. The first is the restoration of fuel supplies--the carbohydrates and fats that supply energy to the working muscle.

The second is adaptation, in which the structure and metabolic processes of the muscles are rebuilt and reinforced to be stronger and more efficient.

Different types of exercise will stimulate different types of adaptation. After a bout of endurance exercise, there is an increase in enzymes and structures for fat metabolism and better fatigue resistance.



After resistance training, there is an increase in strength and size of muscle fibers. Sprint training stimulates both. Enzymes and muscle fibers are made of protein.

Adaptation depends on an increase in protein synthesis--the making of new proteins. How much protein synthesis occurs after exercise depends on the balance between the breakdown and the building of proteins.

While hormones such as testosterone and growth hormone are released to support and enhance this process, this balance ultimately depends on nutrition.

To maximize athletic performance, the goal is to create an environment in your body between exercise sessions that minimizes the breakdown of protein and maximizes protein synthesis. This principle is also true for seniors embarking on a strength-training program.

Protein breakdown is the predominant process under stressful conditions like exercise--stress and fasting activates the release of cortisol, a catabolic hormone released to combat inflammation and break down proteins to amino acids that can be used for energy.

When cortisol is allowed to remain elevated after exercise, protein breakdown continues.

A common mistake among athletes is to refrain from eating after exercise either because they think that fat burning will continue at a higher rate or because their appetite is depressed.

It is better to eat and drink immediately after exercise, especially after high-intensity workouts.

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It is better to eat and drink immediately after exercise, especially after prolonged or high-intensity workouts.

Sport drinks or foods that deliver high glycemic carbohydrates will stimulate an insulin response from the pancreas. Insulin counteracts cortisol and minimizes protein breakdown.

The combination of insulin and carbohydrate also increases glycogen storage in the muscle, which improves intensity and quality of subsequent training sessions. Consistent, high-quality training is how you get better.

In spite of the natural increase in testosterone and growth hormone after exercise, protein synthesis remains low. All the essential amino acids must be present in the muscle in order for proteins to be made.

After exercise, however, the limited availability of amino acids and energy will limit protein synthesis. A recent study found that addition of just 10 grams of protein to the post-exercise carbohydrate resulted in a net increase of protein uptake.

Take in about 20 grams of protein for an optimal response. You can easily accomplish this with a scoop of whey powder added to your post-exercise sports drink or smoothie.

Unfortunately, beer is not a good source of carbohydrate. Alcohol taken after exercise depresses testosterone secretion in men.

The amino acid glutamine also mitigates the catabolic effects of cortisol. In addition, glutamine is a potent stimulator of protein synthesis by increasing the pool of amino acids and encouraging hydration of the muscle cells.

High glutamine concentrations exert an osmotic effect, pulling water into the cell. Hydration is a powerful anabolic signal. Glutamine also stimulates testosterone and growth hormone secretion. Addition of 2 to 4 grams of glutamine to the post-exercise carbohydrate and protein cocktail will enhance recovery and lead to better training sessions.

Attention to nutrition must continue well past the immediate post-exercise period. Four hours after a bout of strength training, protein synthesis will be increased by 50 percent. After 24 hours, it is elevated by 109%. It doesn't return to baseline until 36 to 48 hours later. Undernutrition will limit this process.

If the amino acids, vitamin, minerals and other building blocks aren't there when they're needed, the building stops. The result is sub-par adaptation to training.

Pay attention to your nutrition and hydration. Eat regularly spaced, balanced meals that deliver both high-quality protein and carbohydrate and are packed with vitamins and minerals. Maintain hydration by drinking at least 2 quarts of fluid per day.

How much daily protein a person needs depends on their training program. A weightlifter or body builder or an athlete that is still growing may need as much as 1 gram of protein per pound of body weight.

A runner, bicyclist, swimmer or soccer player would do well with 0.75 grams per pound. If the athlete is overweight, calculate protein needs based on goal body weight.

Most of the protein should be supplied by high-quality, whole food sources such as milk, beef, fish, chicken, tofu or beans. Whole foods also supply essential nutrients necessary for basic health, sports performance and optimal utilization of protein.

When you leave the gym or playing field, get off your bike, out of the pool or off your feet, you're not done. The nutrition that happens between training sessions will determine how well you do.

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