

The Effects of Alcohol on Muscle Gains

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There's no question the impact an effective nutrition plan can have on weight loss and muscle gains. Research indicates that, when it comes to losing weight or gaining muscle, a client's nutrition plan makes up approximately 75 percent of the equation. This includes beverages, from water for hydration and caffeinated beverages for performance to alcohol for recreation. Alcohol, specifically, can play a key role in derailing client goals, especially when it comes to muscle gains.

Muscle and Protein Synthesis

Myofibrillar protein synthesis (MPS) is the driving force behind how the body adapts and responds to exercise. This response is directly related to the recovery and growth of skeletal muscle. During the recovery period following a workout, MPS is significantly elevated, which makes the right nutrition crucial for muscle growth. This is also the time when alcohol can negatively impact gains.

In fact, according to a study, alcohol consumption interferes with muscle recovery and regeneration after training. Specifically, rates of myofibrillar protein synthesis impaired when large amounts of alcohol was consumed within eight hours of the exercise bout, particularly when exercisers didn't consume any protein. Researchers also concluded that the added alcohol impaired the individual's ability to follow an appropriate recovery protocol following workouts. In addition, the study found that even adequate protein after a workout could not overcome the negative impact of alcohol on MPS.

Immune System

The immune system consists of a vast number of cells, tissues and messengers that play a key role in protecting the body against infection and healing the body after injury. A strong immune system not only boosts performance during training sessions, but also helps clients avoid infections and injuries that may otherwise prevent them from working toward weight-loss and muscle-gain goals. Alcohol, especially when consumed in excess, can prove to be a strain on an otherwise strong immune system.

Research has shown the immune system is highly integrated with our neurological and endocrine systems, all of which must be in balance during exercise training and recovery to optimize muscle growth. Not only can excessive alcohol consumption lead to immune deficiency and increased susceptibility to certain diseases, it can also place added [stress on the liver](#). Overall, an active and [healthy immune system](#) is critical to peak performance and recovery.

Energy

While in some cases [alcohol](#) intake can impact glycogen synthesis, that's not the only effect of alcohol that may leave your clients low on energy during workouts. Alcohol can cause an increase in blood pressure and heart rate. An increased heart rate during aerobic activities combined with the additional stress from the alcohol can make exercise feel harder than it should, resulting in a less-effective training sessions and much less motivated clients.

Dehydration

[Dehydration](#) has a number of [negative effects](#) on the body, from inducing feelings of fatigue to causing low physical performance, to increasing hunger and disrupting the ability of the muscle cells to produce ATP. Acting as both a diuretic and vasodilator in the body, alcohol can exacerbate dehydration by causing increased fluid loss. When dehydrated, people are at greater risk of sustaining musculoskeletal injuries such as cramps, muscle pulls and strains. This increased risk of injuries can result in reduced training time and diminished muscle gains.

Endocrine System

No discussion of muscle gains would be complete without including growth hormone. Predominantly described as an anabolic hormone, growth hormone helps with the growth and maintenance of tissues, including muscle and collagen. More specifically, growth hormone stimulates protein turnover and MPS during and after exercise. In addition, this hormone helps to regulate the metabolism.

Alcohol can negatively impact this essential hormone in two different ways, both of which can significantly short circuit muscle gains:

- Alcohol has been shown to increase the stress hormone [cortisol](#), which can reduce the levels of growth hormone by as much as 72 percent.
- Growth hormone is predominately secreted during the early sleeping hours of the night. Because alcohol tends to disrupt natural sleep rhythms, it can decrease the amount of growth hormone released by as much as 70 percent.

The impact of food and drink on achieving training goals can't be overstated. While the key to any successful long-term training program and [nutrition plan](#) is moderation, it's vital for both you and your clients to understand the impact of alcohol on muscle gains.