Alcohol and High Performance

People have been participating in athletics for hundreds of years, and for that same amount of time they have been using alcohol as a form of celebration. What athletes do not realize is, the alcohol being consumed, especially right after an athletic event or training session, can be detrimental to performance for days to come. What about alcohol places it on such a high pedestal in celebration? Why does social obligation have such great pressure for athletes to jeopardize all the months of hard work? Everyone has heard that alcohol can affect performance, but does anyone really know how much?

It is game night and the team has just come away with a close victory in front of a loud, screaming, home crowd. The energy among the team and from the fans is high and everyone just wants to celebrate. So, instead of the team escaping to replenish their bodies of essential nutrients lost from hours of intense, exhausting activity, they take off to celebrate and begin drinking alcohol to loosen up and enjoy the moment. Maybe they are out because they really want to celebrate, or maybe it is because the team feels an obligation from both themselves. Whatever the case maybe it is important that an athlete's body be replenished after such an intense bout of exercise and alcohol definitely be counterproductive to the recovery process for the athlete.

Alcohol, especially immediately following an event or bout of exercise, has no nutritional value that will help an athlete's body fully recover. Often times many athletes will begin consuming even before they have had a chance to replace essential nutrients in their bodies needed for a full recovery. This is the worst thing that can happen because not only is the body broken down from competition, but it will remain broken down for days following because it was not properly taken care of when most critical. Alcohol decreases the body's testosterone levels and testosterone is an important hormone that stimulates the rebuilding of broken muscle tissue.

Most athletes know it is important to get a well balanced amount of carbohydrates, protein and fat within 30 minutes of an extreme workout or competition and again hours later. When alcohol is consumed, yes there are carbohydrates in alcohol, but not the correct ones. It is important to replace the glycogen stores by using complex carbohydrates to repair muscle tissue damage, and avoid a lack of energy for repair in the days to come. The body is in a highly vulnerable state immediately following exercise, especially an athletic field event such as Lacrosse, football, or soccer, where the action is constant and the movements are maximal majority of the time. Sports with many short bursts of speed and movement rely on the breakdown of carbohydrates in order to supply energy. Without that energy the body cannot function at maximum capacity.

Lactic Acid build up is another problem with the consumption of alcohol. When alcohol enters the body it causes an increase in blood acidity. Because of this increase the body has more trouble getting rid of the lactic acid build-up. Lactic acid is a result of exercises that involve many short, maximal bursts of intensity such as sprinting and can be a limiting factor in performance. This limiting factor can cause separation in ability between athletes. High amounts of lactic acid will not allow an athlete to continue training or playing at a high intensity for a long period of time.

One of the biggest reasons why it is important for athletes not to drink alcohol is because of an effect called the "hangover effect." Alcohol can have a large impact on sleep patterns and the body's ability to reach all the stages of sleep. If an athlete is restless because of alcohol or cannot get a full, deep night worth of sleep, the athlete is at an even larger disadvantage. Now not only is the body weakened

because of a lack of nutrient replacement, but a good night's rest which is vital to the repair process, was not achieved. When the body is completely broken down after competition, the two most important factors that contribute to recovery and performance are proper nutrient uptake and rest. Heavy consumption of alcohol can have a negative impact on sleep quality. Consumption of large amounts of alcohol can interfere with the body's ability to reach the deepest category of sleep. This is important because once the body has gotten into a deep sleep, the body stimulates the release of natural human growth hormone to promote and regenerate the body from wear and tear. If an athlete is unable to reach this level of sleep, his body will take much longer to recover from the physical stress of competition.

In regarding consecutive days of competition, if the body was not well taken care of the night before, it will no longer be able to reach peak performance the next day during training or competition. The next day training session will essentially be a waste because the body is not back to 100% and will not be able to make gains and improve upon performance. That is why it is known as the "hangover effect," because the body will be in a constant hangover or broken down state until it has a chance to properly and fully recover.

Another affect of alcohol that has a large hangover effect is dehydration. Alcohol forces water out of your body causing it to become extremely dehydrated. If you have ever waken up after a night of drinking and noticed you have a headache or feel dizziness, then the body is experiencing some of the effects of dehydration. Even with a few drinks the dehydration affect can take up to 72 hours to recover fully. This means if alcohol was consumed on a Saturday night the body would not be fully recovered until Tuesday or Wednesday. In order for teams and athletes to stay competitive and on top of their games, every practice needs to be productive and gains need to be constantly made. Lost days of training due to dehydration and lack of recovery make it hard to remain competitive. Additionally, if the body is at a slightly dehydrated level, it is much more likely to sustain an injury. Muscles are more venerable when they are slightly dehydrated, muscles are 80%, muscles need this water to allow for proper lubrication as the muscle shortens and lengthens during movement. Muscle pulls, strains and cramps are much more likely in the dehydrated athlete. Additionally, if a muscle is dehydrated, its ability to generate maximal strength and power can be reduced by up to 25%.

Alcohol can also cause neurological inhibition on an athlete. It can take up to 24 hours for alcohol to be completely metabolized in the blood stream and up until the last traces are gone neurological movements such as coordination and reaction time can be affected. Trying to compete with slow reaction time, impaired hand eye coordination, and lack of balance will extremely affect the speed, agility, and precision of an athlete's performance.

It is important for every athlete to know the effect alcohol has on their bodies and performance. Everything from hydration level, glycogen storage, lactic acid build-up, and nutrient recovery is affected. How can anyone reach their full potential of athletic performance if they are continually inhibiting their body with alcohol?

Athletes who commonly consume alcohol after competition are much more likely to develop an overtraining syndrome. Overtraining is a condition that occurs over a period time. It happens when the body is unable to recover between bouts of intense physical stress over time. This is common after games among athletes who enjoy participating in social gatherings/celebrations with teammates where alcohol is present.

How Alcohol Affects Muscle Development and Recovery from Sport

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Everyone knows that working out while under the influence of alcohol is dangerous because of the likelihood of injury, but few athletes realize that consuming alcohol after a workout, practice, or competition can cancel out any physiological gains you might have received from such activities. Not only does long-term alcohol use diminish protein synthesis resulting in a decrease in muscle build-up, but even short-term alcohol use can impede muscle growth.

In order to build bigger and stronger muscles, your body needs sleeps to repair itself after workouts. Because of alcohol's effect on sleep, however, your body is robbed of a precious chemical called "human growth hormone" or HGH. HGH is part of the normal muscle-building and repair process and the body's way of telling itself your muscle needs to grow bigger and stronger. Alcohol, however, can decrease the secretion of HGH by as much as 70 percent! Also, when alcohol is in your body, the production of a substance in your liver is triggered that is directly toxic to testosterone, a hormone essential to the development and recovery of your muscles. Speeding the recovery of sore muscles and injuries is integral to optimal performance. Alcohol is a toxin—a toxin that travels through your bloodstream to every organ and tissue in your body, thus slowing your body's ability to heal itself. Additionally, once alcohol is absorbed through your stomach and small intestine and finally into your cells, it can disrupt the water balance in muscle cells, thus altering their ability to produce adenosine triphosphate (ATP), which is your muscles' source of energy. ATP provides the fuel necessary for your muscles to contract.

Adapted from:
Pumped: Straight Facts for Athletes about Drugs, Supplements, and Training, C. Kuhn, S. Swartzwelder, and W. Wilson (New York: W.W. Norton,2000).
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