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DOWN THE HATCH, MISS A SNATCH?

A look at the effect of moderate alcohol consumption on fitness and health.

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One beer can contain up to 18 grams of carbohydrates, which might throw a wrench in a precise diet plan.



A few years ago I stopped drinking alcohol Sunday through Thursday.

I've never been a heavy drinker, so it wasn't a difficult transition. For me, two drinks is letting loose and three is really getting wild, but a few nights a week I'd have a beer or glass of wine while making dinner. Once I started CrossFit, I wondered about the impact of those five or six drinks per week on my health and performance in the gym.

CrossFit was hard enough, I figured, so why make it even more difficult by adding alcohol to the mix? I was so careful about every aspect of my diet, and I worried alcohol was sabotaging those efforts. So I ditched the alcohol in favor of sparkling water and kombucha and saved the drinks for Friday and Saturday nights.

It turns out my years of partial abstinence may have been pointless. More and more studies suggest moderate alcohol consumption can improve cardiovascular health, and recent research suggests a few drinks have no negative impact on athletic performance. Still, alcohol has significant effects on the body, especially when consumed in excess.

Alcohol and the Body

Let's take a quick look at what happens to the body when we drink—even moderately.

Alcohol results from fermenting starches and sugars. It contains about seven calories per gram and has no vitamins or minerals.

When we talk about "one drink," that means either a 12-ounce beer, a 5-ounce glass of wine or a 1.5-ounce shot of liquor. All contain the same amount of alcohol and have about 95 to 165 calories—as long as you aren't mixing the liquor with anything.

Once you take a drink, the alcohol is absorbed into the blood—about 20 percent through the stomach and 80 percent through the small intestine. Most people typically feel the effects within five to 10 minutes of drinking, and blood alcohol content peaks after 30 to 90 minutes.

You may have heard the alcohol you drink turns into fat. This isn't exactly true, but it's not entirely off base. When you drink alcohol, your liver recognizes alcohol's byproducts as toxins. The body wants to get rid of these toxins, so they are processed before more nutrient-rich food. The toxins skip to the front of the digestion line, in a sense.

If you happen to be eating while you're drinking, instead of focusing all efforts on burning the calories from food, your body first has to burn the empty calories from alcohol. By the time your body finishes with the alcohol and goes to work on the food, you might not need the energy. The extra calories are stored as fat.

As bad as this sounds, a 2010 study tracking over 19,000 women for 13 years showed the risk of becoming overweight was almost 30 percent lower for moderate drinkers—those who consumed one or two alcoholic drinks a day—compared with nondrinkers. Researchers aren't sure why, but they have a few theories.

To start, the women who drank alcohol consumed less food, especially carbohydrates. Women might also metabolize alcohol differently than men. Drinking doesn't seem to change a man's metabolism, but it might actually slightly speed up a woman's metabolism. Finally, it's thought resveratrol, which is found in grapes and red wine, might inhibit the development of fat cells.

Moderate drinking does not seem to have a positive impact on men's weight.

"A 2003 study of British men showed that regular drinkers gained more weight than nondrinkers," The New York Times reported. One theory suggests this discrepancy exists because men typically add alcohol on top of their normal caloric intake, while women are more likely to eat less when drinking.

Alcohol is often blamed for negatively impacting sleep quality by affecting the deeper REM sleep. Recent research shows drinking—both heavy and moderate—actually increases slow-wave sleep, which happens during the first part of the night. This stage of sleep is associated with maintaining a strong immune system and healing muscles, bones and tissues. Too many drinks will negatively impact your deeper REM sleep, when memories are stored and whatever you learned during the day is committed to long-term memory. One or two drinks do not seem to have a negative effect on either type of sleep.

While moderate alcohol consumption does not appear to have significant negative health consequences—and might even have some benefit—it bears repeating that excessive drinking is extremely unhealthy and potentially deadly. Consistently drinking too much can lead to alcoholic hepatitis and a fatty liver, which can progress to cirrhosis of the liver. Too much alcohol over a long period of time can also increase the risk of developing certain cancers and can damage the lining of the small intestine and the stomach.

Even if you are a moderate drinker, be careful of mixed drinks, which often contain significant amounts of added sugar from juice or soda. Wine and distilled spirits have very little to no sugar, though beer does have carbohydrates—as much as 18 grams per beer. Liqueurs, such as Kahlua or Baileys, contain a surprising amount of sugar. One fluid ounce of Kahlua contains more than 14 grams of sugar—so no matter how much you admire The Dude from "The Big Lebowski," watch those white Russians.



Even if a beer will not affect performance, it's a poor substitute for nutritious food.



Alcohol has significant effects on the body. If you imbibe, it's important to monitor intake against health and performance. Make adjustments as needed to maximize wellness and fitness.



Alcohol and Training

If moderate alcohol consumption doesn't necessarily lead to weight gain or sleep disturbances, does a nightly beer have any negative effect on athletic performance?

In the April 2014 issue of *Sports Medicine*, Matthew J. Barnes, a senior lecturer and associate head of school at Massey University in New Zealand, published a review of the existing science on alcohol and sports performance and recovery in male athletes.

Barnes noted that because alcohol affects many hormones, it might negatively impact mood, sleep, metabolism and more. In terms of sports, many fitness experts will tell you any amount of alcohol will hamper recovery and strength, but Barnes found it's not that straightforward.

"If athletes are to consume alcohol after sport/exercise, a dose of approximately 0.5 g/kg body weight (about three drinks) is unlikely to impact most aspects of recovery and may therefore be recommended if alcohol is to be consumed during this period," Barnes wrote.

As expected, Barnes found acute alcoholic consumption (more than four to six drinks per day for men) can negatively affect athletic performance, impacting immunoendocrine function, blood flow and protein synthesis. Excessive alcohol use also affects rehydration and glycogen resynthesis, elements related to recovery. This is not the case with moderate alcohol consumption—about three drinks per day for a 180-lb. man.

One of the common concerns about alcohol for strength athletes is the idea that consumption negatively affects testosterone levels—a scary thought for anyone working hard in the gym to build muscles. Alcohol does decrease testosterone levels, but only with larger doses. A study published in 2003 in *Alcoholism: Clinical Study and Research* found an increase in testosterone in men who consumed two to three drinks per day.

To measure the impact of alcohol on muscle function, Barnes devised a *diabolical study* in which subjects completed 300 eccentric contractions with one leg on an isokinetic dynamometer (basically a leg-extension machine). Thirty minutes later, they put down about six screwdrivers (ethanol at 1 gram per kilogram of body weight in the form of vodka). Then, at 36 and 60 hours later, Barnes measured the subjects' dynamic and static strength. About two weeks later Barnes had the same group perform identical exercise followed by an identical number of calories of orange juice only.

It will probably not surprise you to learn that getting wasted on screwdrivers negatively affected muscle function, and the subjects showed about a 15 to 20 percent drop in performance

when compared to their post-exercise strength after consuming plain orange juice.

A year later, Barnes *repeated the study* but cut the alcohol consumption in half, to 0.5 grams per kilogram of body weight. This time, he found no difference between the two groups, concluding "consumption of a low dose of alcohol after damaging exercise appears to have no effect on the loss of force associated with strenuous eccentric exercise."

After analyzing the impact of alcohol on sports performance in males, Barnes determined low doses of alcohol are "unlikely to be detrimental," but the effects of alcohol on athletic performance are dependent on the timing of consumption, overall nutrition and recovery as a whole. The importance of moderation cannot be overstated, and Barnes cautions, "It should be remembered that alcohol is a poison and as such should be treated as one."

Everything in Moderation

Moderation can be difficult concept. It's easy to put things in "bad" and "good" categories, but the truth is it's all about the appropriate dosage. You can certainly drink too much.

Moderate alcohol intake likely won't make you fat or significantly impact your athletic performance, and it might even benefit your cardiovascular health. That nightly beer or glass of wine probably isn't the one thing standing between you and athletic greatness. If a nightly drink doesn't affect your life or your well-being, then carry on. If you feel better when you don't drink, that's a great reason to abstain.

It's also important to remember that the calories in alcohol are empty—void of nutrients. If you build a small or moderate amount of alcohol intake into a sound diet plan, you can account for the calories, but you still won't get the vitamins and minerals kale would have provided in place of a shot of vodka. As with any aspect of your diet, monitor intake, performance and health markers carefully, making adjustments as needed to maximize health and fitness.

Above all, remember the science is unanimous on one point: Excessive alcohol intake will wreak havoc on your performance and your health, so it's important to be vigilant about the quantity of alcohol you habitually consume. ■

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