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# Alcohol Consumption Puts Men at Higher Risk of Gout Than Women

Analysis by Dr. Joseph Mercola | November 23, 2024

## STORY AT-A-GLANCE

- Alcohol consumption is linked to an increased risk of gout. A study found men who drink have a 69% higher risk compared to non-drinkers, while women showed no similar association
- Gout occurs when your body produces uric acid faster than it's able to eliminate it. Alcohol, especially beer, contributes significantly to elevated uric acid levels in the blood
- Exercise, particularly at low- to moderate-intensity, helps manage uric acid levels. It produces anti-inflammatory effects that reduce responses caused by uric acid crystals and offers additional health benefits
- Avoiding processed sugar, especially high-fructose corn syrup, is crucial in managing uric acid levels. Fructose stimulates pathways that produce uric acid from amino acid precursors
- Natural remedies like applying citrates to affected joints and consuming quercetin can help relieve gout symptoms. Quercetin's antioxidant and anti-inflammatory properties reduce uric acid production and increase excretion

Surveys compiled by the National Institute on Alcohol Abuse and Alcoholism noted that 132.9 million Americans ages 18 and older drank one alcoholic beverage in the past month. Moreover, 60.4 million adults reported binge-drinking (four to five drinks on the same occasion[1]) and 16.3 million adults reported heavy drinking (four to five drinks on any day[2]) within the last month.[3]

These are concerning figures, as alcohol consumption is strongly linked to an increased risk for gout. According to the Mount Sinai Health System, around 8.3 million people in America have gout.[4] This number is expected to grow further, as risk factors such as alcohol consumption continue without change. But to what degree does alcohol contribute to the development of gout?

## Study Links Alcohol Consumption to Increased Risk of Gout

In a study published in JAMA Network Open,[5] British researchers established that alcohol is a known risk factor for gout. From there, they sought to quantify how many drinks it will take to increase the risk of gout.

The researchers selected men and women ages 37 to 73 years from the U.K. Biobank, which contained 502,411 participants. From this database, they excluded participants who had self-reported having poor health, prior incidences of gout (as well as those taking gout medications) and reduced alcohol consumption due to an ongoing illness. After exclusions, they settled on a final test population of 401,128 participants.[6]

From there, they created two categories — men (179,828) and women (221,300). All participants were asked to categorize their status with these three choices — never, previous, or currently drinking. Those who were currently drinking were asked to enumerate the types of alcoholic beverages they drank (such as beer or wine) and their consumption in an average week.[7]

After analysis, researchers noted that there were 5,278 cases of gout after follow-ups were conducted — 4,096 in men and 1,182 cases in women. The researchers further added that among the men, those who currently drink have a 69% higher risk of gout compared to those who never drink. Interestingly, this association was not found among women.[8,9]

While the study didn't go into the mechanisms of how alcohol induces gout, it theorizes that the type of drink, rather than biological differences between men and women, influence the risk of gout:

> *"In this prospective cohort study with a careful consideration of potential confounding and reverse causation, consumption of several specific alcoholic beverages was associated with a higher risk of gout among both sexes.*
>
> *The observed sex-specific difference in the association of total alcohol consumption with incident gout may be owing to differences between men and women in the types of alcohol consumed rather than biological differences."*

## How Alcohol Consumption Causes Gout

Purines are naturally occurring substances within your body and are used to build DNA and RNA. Research shows that about two-thirds of purines circulating in your body are endogenous while the rest come from exogenous sources, such as food and alcohol. Once the purines are metabolized, the ultimate byproduct is uric acid, which is eliminated via urination.[10]

Uric acid itself is not bad — in fact, it plays a protective role in your health. A study noted that uric acid "contributes to approximately 60% of plasma antioxidant activity and maintains the stability of blood pressure and antioxidant stress."[11]

Under normal conditions, uric acid levels in the blood hover between 2.5 and 7.0 mg/dL for men, and 1.5 and 6.00 mg/dL for women.[12] However, it becomes a problem when your body produces more uric acid than it's able to eliminate, which leads to crystals forming from the blood plasma and depositing in the joints and soft tissues, leading to gout.[13] And again, one of the biggest contributors is alcohol consumption.

Going back to the JAMA Network Open study, there are two ways alcohol consumption influences the production of uric acid that progress to gout — frequency of consumption and the type of alcoholic drink. As noted by the researchers in the JAMA Network Open study:[14]

> *"Among current drinkers … more frequent alcohol consumption was associated with a substantially elevated risk of gout among men and a moderately elevated risk among women. Regardless of sex, greater consumption of several specific*

> *alcoholic beverages, especially beer or cider, was associated with a higher risk of gout …*
>
> *Among current drinkers, men who drank five times or more per week had an approximately twofold higher risk of gout than those who drank less than once per week. Among female drinkers, a positive association between drinking frequency and incident gout was present only after adjusting for BMI (body mass index), especially after further accounting for potential reverse causation …"*

As you can see, beer consumption was noted to be the highest contributor to rising uric acid levels, and this finding was also echoed by other research. In a 2021 review[15] published in Molecules, beer raised serum acid levels higher than whisky and shochu (a traditional Japanese hard liquor) in just one hour of drinking.

## Exercise — A Healthy Way to Manage Uric Acid Levels

The best way to avoid alcohol's harmful effects on your health is to not drink it in the first place. But if you've been drinking for quite some time and looking to manage your uric acid levels better and prevent gout from developing, I recommend exercise, as it has multi-system benefits.

According to a study[16] published in the Indonesian Journal of Global Health Research, a person who weighs heavier compared to normal reference ranges generally have higher uric acid levels. That's because visceral fat and adipose tissue produces uric acid as a byproduct.

Conversely, research[17] has shown that once you start getting regular exercise, either low- or moderate-intensity, your body begins to produce anti-inflammatory effects that reduce pathological responses caused by uric acid crystals.

You're probably wondering, why do low- and moderate-intensity exercise only? That's because high-intensity exercise causes lactic acid to build up in your body. When this

occurs, your body holds on to uric acid more, which is what you want to lower in the first place.[18]

Research published in 2021 noted that improving uric acid levels "helps reduce the risk of chronic disease, such as hypertension, obesity, diabetes and insulin resistance."[19]

I'm a passionate advocate of moderate-intensity exercise, **and my interview with cardiologist Dr. James O'Keefe** goes into great detail for the reasoning. From his research, he noted that at a moderate intensity, your body gets a dose-dependent decrease in mortality, diabetes, depression, high blood pressure, osteoporosis and sarcopenia.

Moreover, O'Keefe discovered that those who did high-intensity exercise for longer periods didn't provide any further benefits. For additional information, I encourage you to read my article that goes over his research. There, I also provide examples of moderate-intensity exercises you can do.

## Oxalates Create an Inflammatory Response Similar to Gout

For many years, I struggled with a mystery rash, and I believed that flushing out the toxin by sweating in infrared saunas three times a week would do the trick. Despite my best efforts, the problem persisted. Eventually, I learned that I had developed a condition known as oxalate dermatitis, caused by oxalates embedded in my skin.

Oxalates are natural compounds found in many foods, such as leafy greens and seeds. They're also called dicarboxylic acid because they're made up of two carbon dioxide molecules. The problem with oxalates is they can lose protons under certain conditions, leaving them with a negative charge that binds to positively charged ions like calcium.

When oxalates bind to calcium, oxalate crystals form, which are insoluble and accumulate, usually in the kidneys. In my case, they deposited in my skin because my kidney function is impaired.

So, how do oxalate crystals relate to gout? They work similarly to uric acid crystals. As mentioned before, when your body produces uric acid faster than your body can eliminate it, uric acid crystals start building up in in your joints, causing gout.

During my time looking for a solution to my oxalate issue, I discovered that citrates are an effective tool. Citrates made from calcium, potassium or magnesium bind to the oxalates on your skin when applied topically. Since the oxalate buildup process is similar to that of uric acid in gout, I suspect applying citrates to the joints may provide similar relief for gout symptoms.

Interestingly, past research suggests a link between uric acid levels and the formation of oxalates. When you're urinating plenty of uric acid, there's a chance calcium oxalate kidney stones will form because the calcium salts will remove mucopolysaccharides, a sugar molecule that inhibits the creation of stones.[20]

So, in the interest of protecting your health, a two-pronged approach is ideal — reducing your alcohol intake to lower your uric acid levels while simultaneously reducing your oxalate load. The most logical starting point is to avoid foods high in oxalates, such as:

- **Spinach —** Typically has 600 to 800 milligrams of oxalates per 100 grams
- **Almonds —** Contains about 122 milligrams per 100 grams. I advise avoiding nuts in general as well, as they contain **linoleic acid**, a toxin that will destroy your mitochondrial health
- **Peanut butter —** Usually has around 140 milligrams per 100 grams
- **Sweet potatoes —** They contain around 30 milligrams per 100 grams
- **Figs —** Contains around 40 milligrams per 100 grams

## Other Strategies to Help Lower Uric Acid Levels

Exercise isn't the only available strategy to help lower your uric acid levels to a healthy range. Here are other recommendations I encourage you to try:

- **Avoid processed sugar —** According to a study published in Frontiers in Nutrition, fructose consumption stimulates the pathways that produce uric acid from amino acid precursors.[21] While the exact process isn't identified, some observations have been made. Obstetrician and gynecologist Dr. Liji Thomas explains:[22]

  > *"Fructose is taken up by the liver following absorption and converted to fructose-1-phosphate, which causes a reduction in ATP levels. The resulting increase in AMP means it is converted to IMP instead, in the absence of phosphate for phosphorylation.*
  >
  > *This in turn can enter the uric acid synthetic pathway. Increasing fructose intake and lowered ATP levels may lead to an increase in purine nucleotide production with increased uric acid being a side effect.*
  >
  > *Another possible pathway is reduced insulin sensitivity due to the peripheral fat deposition induced by fructose, which may result in reduced uric acid excretion."*

  To protect your health, avoid all forms of ultraprocessed foods and drinks that contain refined sugar, especially high-fructose corn syrup. Aside from stimulating the production of uric acid, refined sugar is detrimental to your health in other ways.

  Examples include endotoxin production in your gut, which destroys mitochondrial function, dental decay and heart disease. For more information regarding the dangers of fructose, read my article "**Can Eating Refined Carbs Make You Appear Less Attractive?**"

- **Consider taking quercetin —** Different drugs are taken by those who experience gout to lower uric acid levels and pain. However, these drugs often come with side effects and contraindications that make managing gout harder. That said, a 2022 study[23] proposes that quercetin's antioxidant, anti-inflammatory and anti-hyperuricemia effects provide a drug-free way of relieving gout.

Based on collated information by the researchers, quercetin helps reduce uric acid production by "inhibiting the corresponding enzymes and increasing urate excretion by regulating renal urate transporters." Moreover, quercetin inhibits the activity of adenosine, a key enzyme in purine metabolism, in the aortic endothelial cells.

Another way quercetin helps reduce production is by reducing the downstream process of fructose metabolism, which, as I mentioned earlier, is another way your body produces uric acid.[24]

Quercetin is found in many foods, including green leafy vegetables, broccoli, apples, onions, green tea, red grapes and berries. Quercetin is also available as a supplement. It's a zinc ionophore, so taking it with zinc will have synergistic benefits for your immune function as well.[25]

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