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All About Wine, Part 2: The Health Benefits and Risks

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👤 by CHRIS KRESSER

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Do you know what's really in a bottle of wine? Is wine healthy, or a health hazard? The first article in this wine series discussed how additives and commercialization have turned many wines into unhealthy processed foods. This article will explore whether traditional wine is as healthy as countless headlines today report. I'll go through the beneficial components of wine, and then I will summarize the literature to see if the benefits of wine consumption outweigh the risks.

Polyphenols fight disease

Almost every positive health benefit from consuming wine is attributed to polyphenols, a class of more than 8,000 compounds produced by plants. During winemaking, fermentation, oxygen exposure, and oak barrel aging change the phenolic content of grapes, resulting in a more complex product. (1)

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Polyphenols are divided into flavonoids and non-flavonoids, based mostly on chemical structure. Flavonoids include compounds such as catechins, epicatechins, proanthocyanidins, condensed tannins, anthocyanins, and quercetin. The most talked about non-flavonoid is resveratrol, but this category also includes phenolic alcohols and ellagitannins.

Polyphenols are good for our health for several reasons. First, as antioxidants, they reduce the burden of oxidative stress, which is at the root of many diseases. (2) Second, they neutralize free radicals, which are very unstable and damage body tissues through volatile chain reactions. (3) Furthermore, polyphenols help our guts by increasing beneficial bacterial strains such as Lactobacillus and Bifidobacteria.

Health benefits of wine consumption

Red wine contains more polyphenols than white wine (200 mg per glass vs. 30 mg per glass), as red winemaking also includes the skin of grapes. Although many health benefits have been shown for both types of wine, red wine has consistently been proven more beneficial than other types of alcohol.

Antioxidant/anti-inflammatory effects. Antioxidant and anti-inflammatory effects of wine consumption, not just of individual polyphenols, are probably at the root of red wine's health benefits. Red wine consumption significantly increased total plasma antioxidant status in both younger and older people in a two-week crossover study. (4) Two glasses of red wine every day for a week improved participants' antioxidant enzyme expression and activity in blood. (5) In healthy women, red wine decreased the levels of several inflammatory markers and cellular adhesion molecules in another crossover study. (6)

Cardiovascular disease. Red wine was hypothesized as one reason for the "French Paradox," (7) the supposed "contradiction" of lower cardiovascular disease in France despite higher saturated fat intake. (Read more about the diet-heart myth [here](#)). But it seems that drinking red wine does have heart benefits. Red wine has been shown to both raise HDL "good" cholesterol (8, 9) and reduce oxidized LDL "bad" cholesterol. (10, 11, 12) In addition, moderate red wine drinkers had lower blood pressure, although other studies have reported the opposite. (13) After consuming Sicilian red wine for four weeks, inflammatory biomarkers of atherosclerosis were lowered. (14) In a large prospective study, red wine drinkers had significantly lower mortality from coronary heart disease than non-wine drinkers. (15)

Cognitive/brain. The brain consumes 15 to 20 percent of the body's oxygen, despite its relatively small size, which makes it highly susceptible to oxidative stress. (16) Several studies have shown that moderate wine consumption, with its antioxidant properties, can have positive effects on brain health. In a seven-year follow-up study, moderate wine drinkers performed better than people who consumed other types of alcohol on cognitive tests. (17) In women, alcohol abstainers actually scored lower on the tests than wine consumers! Brain function declined more quickly in nondrinkers than in moderate drinkers, from a review of studies spanning 19 countries. (18) Prospective studies demonstrate lower risks of dementia, Alzheimer's, and Parkinson's disease in those who drink red wine regularly. (19, 20, 21, 22, 23)

Gut/microbiome. I have [written before](#) about the prebiotic effects of polyphenols, which extend to wine. Two glasses of red wine per day increased levels of beneficial bacteria such as Bifidobacterium and Enterococcus, compared to gin consumption, which showed no benefits. (24) Bacteroides, another beneficial gut bacteria, were positively associated with red wine consumption. (25) Natural wines that aren't aggressively filtered or fermented with commercial yeast strains contain their own probiotics similar to what you find in fermented vegetables and dairy products.

Cancer. Individually, polyphenols found in wine like resveratrol and anthocyanin demonstrate anticancer activity by inhibiting cancer cell proliferation and inducing cancer cell death. (26, 27, 28) Polyphenol-rich wine may offer similar anticancer benefits. Compared to non-wine drinkers, those who regularly consumed moderate amounts of wine had lower overall cancer mortality. (29) In contrast to beer and liquor drinkers, wine consumers had a 40 percent lower risk for both esophageal and gastric cancers, hinting again that there is something special about wine among alcoholic beverages. (30)

Mortality rate. Wine consumption is linked to overall lower mortality. A large study of nearly 25,000 people from 20 to 98 years old found that those who consumed moderate amounts of wine had lower all-cause mortality compared to non-drinkers. (31) The Copenhagen City Heart Study from Denmark followed more than 13,000 adults

for 11 years and found that those who drank three to five glasses of wine per day had a lower risk of dying than both spirit drinkers and alcohol abstainers. (32)

Massive numbers of prospective studies and even some clinical trials demonstrate that moderate wine consumption, especially red wine, has many health benefits, which extend even beyond this list. Wine consumption has also been linked to lower stroke risk, (33) lower risk of type 2 diabetes, (34) and lower incidence of bone fracture in the elderly. (35)

Health risks of wine consumption

Now for the bad news. Red wine isn't all rainbows and sunshine. Ethanol is a poison and poses some serious health risks.

Glutathione depletion. If you have been following my work for some time, you will know that glutathione is crucial for the detoxification of many harmful substances. Because it is required for detoxing ethanol, alcohol consumption can deplete glutathione, making our bodies more susceptible to toxic substances and disease. (36, 37)

Liver damage. When the liver detoxes ethanol, it is first broken down into acetaldehyde, an even more harmful poison that can stick around if your detox capacity is impaired. If you drink too much, your liver (and other body organs) will suffer. Fatty liver disease, hepatitis, and, after long-term heavy drinking, cirrhosis are all downstream effects of chronic alcohol use. (38)

Addiction. Not everyone who drinks will develop a bad habit, but alcohol can be very addictive. Although less addicting than nicotine and crystal meth, alcohol is more addicting than heroin, amphetamine, cocaine, and caffeine.

Depression. Moderate drinking is linked to lower incidence of depression, but heavy drinking increases the risk. (39, 40) Substance abuse in general is correlated with mental health problems. (41)

Gut disruption. Ethanol can further the symptoms of leaky gut. Alcohol damages the gut and causes changes in the gut microbiome, increasing the absorption of pro-inflammatory endotoxins. (42) The polyphenols in red wine may help to offset some of the pro-inflammatory effects imparted by alcohol. Residual sugar (which fortunately is found only in very, very low doses in biodynamic, natural wines) is detrimental to gut health. Sugar can feed unhealthy microbes and other pathogens, leading to gut dysbiosis. (43)

Breast cancer. Earlier I laid out the evidence for lower cancer incidence in those who drank red wine regularly. However, even at low levels of consumption, alcohol consumption may increase the risk of breast cancer in a dose-dependent manner. (44)

Myriad other health risks are attributed to or related to alcohol consumption. For example, although drinking alcohol can increase HDL, the so-called "good cholesterol," it simultaneously increases triglyceride levels, which is a risk factor for cardiovascular disease. (45)

Who should avoid alcohol

Now let's return to the question from the beginning of the article. Is wine healthy, or a health hazard? The answer, I believe, is highly individual and depends on a variety of factors. Alcohol in general, including red wine, may not be

a good choice for some people.

Genetics can play a huge role. Alcoholism is a serious illness with a strong genetic component. (46) If there is a history of alcohol abuse in your family, avoiding alcohol altogether is probably the most prudent choice. Those with certain genetic polymorphisms in alcohol and aldehyde dehydrogenases, common in people with East Asian ancestry, may also want to avoid alcohol. These variants put them at higher risks of cancer, liver damage, and more because of their inability to detox aldehyde proficiently. (47)

Sulfur-sensitive people, who are estimated to include 1 percent of the population, (48) shouldn't drink wine due to the sulfites contained either naturally or added. One thing to keep in mind is that dried fruits often have much higher levels of sulfites than wine. So, if you tolerate dried fruit well but have trouble after drinking wine, it might not be due to the sulfites.

Those who take any medications, prescription or not, should be cautious about any potential interactions with alcohol. Some medications can enhance the effects of alcohol, some can cause extreme drowsiness when combined with alcohol, and others can interfere with or change a medication's effectiveness.

This might be a no-brainer, but alcohol should be avoided when **trying to conceive** or **while pregnant**. Some evidence shows that alcohol can negatively impact fertility, especially for males. (49) The CDC states that no safe level of alcohol exists for pregnant women. Although traditionally, French women still drink lightly during pregnancy, and some research has suggested that light drinking may not be problematic for the fetus, (50) I would play it safe here. A baby's body metabolizes alcohol much more slowly than does an adult's.

If you suffer from **asthma**, have a **blood disorder**, or have **liver or detoxification issues**, avoiding all alcohol is probably the best choice.

How to maximize the benefits and minimize the risks

If you aren't a wine drinker, I see no real reason to start. Instead, eat a variety of rich-colored fruits and vegetables to get a wide mixture of polyphenols. Try to include other fermented foods, like sauerkraut and kefir, into your diet. Cooking with red wine is also an option. The alcohol will evaporate, but beneficial polyphenols will remain to an extent.

If you are a wine drinker, try taking it out of your diet for 30 days. Then, add back in natural, organic wine, at moderate levels to see how you feel. If your sleep and mood are unaffected, then **moderate wine consumption is probably doing you more good than harm, in terms of health benefits and enjoyment.**

Now I'd like to hear from you. Do you think red wine has legitimate health benefits? Will you change the way you enjoy wine after this article? Let us know in the comments!

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Laura G

APRIL 4, 2018 AT 8:06 AM

I think moderate wine consumption in conjunction with a healthy diet has helped me stay healthy. As of several years ago, I haven't been able to drink red wine because it gives me a headache and can trigger vestibular symptoms. Chris, are the benefits of wine applicable to champagne and white wine?

Reply

Liz

FEBRUARY 13, 2018 AT 10:16 AM

Anyone have any suggestions of organic wines they enjoy?

Reply

Lisa BBB

FEBRUARY 13, 2018 AT 11:55 PM

Yes – check out Dry Farms Wine.

Reply

Fiona

JULY 12, 2017 AT 5:33 AM

I like to drink dry white wine for its taste, but I notice that if it is not very well chilled the sugar in it becomes much more evident and it tastes far less dry, indeed not really dry at all. I feel cross with myself if I've forgotten to put a bottle into the fridge before I want to pour a glass! Is drinking the sugar in a glass of wine really as bad for us as eating a piece of cake?

Reply

ROSS

JULY 11, 2017 AT 8:12 AM

Great article and like anything – it's extraordinarily difficult to really know the long term effects of moderate consumption. For example, we know that some traditional people can often have difficulty metabolizing the sugar in alcohol such as some native Americans and Asians.

It may also be a cumulative factor which is why I believe many allergies do not manifest until we are older.

As early onset dementia is sometimes referred to diabetes of the brain, it would seem the sugar in all alcohol is often overlooked as a potential longer term harm.

Reply

Hempsoft
JULY 3, 2017 AT 1:37 PM

Great blog its very informative thanks for sharing.

Reply

Susan George
JUNE 27, 2017 AT 1:01 AM

I think alcohol drinks should be banned. It has great health risks as well risk of unsocial activities.

Reply

Ana
JUNE 9, 2017 AT 2:07 PM

Very interesting. I would like to understand better which wines one could choose to occasionally enjoy... I try to avoid processed food. So if I am careful that way, why not be careful when drinking wine?

Reply

Vanessa
JUNE 9, 2017 AT 11:09 AM

Perhaps I don't understand the terms antioxidants, oxidative stress and free radicals as well as I could. What's the difference between the "first" and "second" ways polyphenols are beneficial as quoted here: "First, as antioxidants, they reduce the burden of oxidative stress, which is at the root of many diseases. (2) Second, they neutralize free radicals, which are very unstable and damage body tissues through volatile chain reactions." Isn't reducing oxidative stress by acting as an antioxidant the same thing as neutralizing free radicals? Thanks.

Reply

Kathryn
JUNE 6, 2017 AT 11:51 PM

I developed severe CFS when I tried to drink after recovering from it earlier in my life and, even though I enjoyed wine again, I was unaware that my gut dispiosis was back from the sugars inherent in alcohol and I'd really pretty much had it under control for so long. After the CFS resolved from quitting drinking and, with a strict diet, I still had damage to my adrenal glands that has developed into a severe case of Adrenal Fatigue which is a bear to heal. If I'd known how deeply wine would effect my health, I never would've tried to drink again. Be careful it you've got gut dispiosis.

Reply

mary
JUNE 6, 2017 AT 1:38 PM

Thanks for this. I've had the benefit of your views before and decided to keep wine drinking to a minimum. On the odd occasion it is a treat.

I've also heard, however, that spirits, such as vodka, if alcohol is being consumed, are less adverse. Though I can't remember why. Possibly something to do with the microbiome. Anyone??

Reply

Lisa BBB
FEBRUARY 13, 2018 AT 11:58 PM

Google the Bulletproof Guide to Alcohol and your question is exactly answered there with a nice infographic.

Reply

Lon Palmer
JUNE 6, 2017 AT 7:31 AM

I recall hearing that, in studies, drinkers do better than tea-totalers because the latter include alcoholics who now abstain but damaged their health during their drinking days. Could that be the case in some of the studies you refer to?

Reply
