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# Is alcohol actually bad for you?

Studies have long argued the pros and cons of having a tipple. Do the oft-quoted upsides really stack up?

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By Bianca Nogrady  
2 September 2015

Those of us who enjoy the occasional glass of beer or wine would dearly love to believe that we're doing our bodies a service.

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Any study suggesting a glass or two a day can keep the doctor away is greeted with

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disproportionate enthusiasm by the media and general public. But it is a complex task to determine whether or not alcohol in moderation has health benefits.

One of the earlier studies drawing a link between alcohol consumption and health was

performed by the late, great **Archie Cochrane**; the godfather of evidence-based medicine. In 1979, Cochrane and two colleagues tried to work out what exactly was responsible for the differing rates of death from heart disease across 18 developed countries, including the US, UK and Australia.


“

*It is a complex task to determine whether or not alcohol in moderation has health benefits*


Their analysis came up with a **clear and significant link** between increasing alcohol consumption – specifically of wine – and decreasing rates of ischaemic heart disease (heart disease caused by the build-up of fatty deposits inside the blood vessels supplying the heart).

Citing earlier studies that had found an association between alcohol consumption and lower rates of deaths from heart attack, Cochrane and colleagues suggested that the aromatic and other compounds in alcohol – recently hypothesised to be antioxidants such as plant-based polyphenols – were likely responsible for the benefits, rather than the alcohol itself. In the spirit of evidence-based medicine, they called for an experimental approach to the question.

Plying experimental subjects with alcohol, while amusing, is unlikely to reveal the kind of chronic disease benefits that alcohol is speculated to deliver. So instead, much of the research around alcohol and its health costs and benefits has been in the form of long-term, population-based studies.



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A 1986 study of male doctors' drinking habits found the more they drank, the lower the chance of coronary artery disease – but did it paint an accurate picture? (Credit: iStock)

In 1986, researchers **surveyed a group of more than 50,000 male doctors** in the US about their drinking and eating habits, their medical history and state of health over two years. They found that the more alcohol the doctors reported drinking, the lower their chance of developing coronary artery disease, despite their dietary habits.

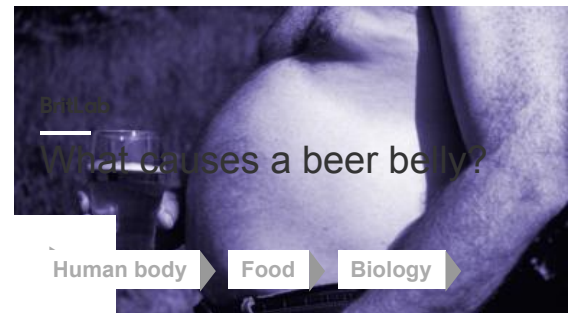
Another **large study published in 2000**, also in male doctors, found a 'U' shaped relationship between moderate alcohol consumption and – in this case – death, rather than coronary artery disease. Subjects who drank one standard drink a day were less likely to die within the 5.5-year-long study than those who drank less than one a week, or those who drank more than one a day.

This suggested there was a 'sweet spot' for alcohol consumption; a healthy middle ground between too little or too much, where the benefit for cardiovascular health balanced the risk of death from all causes.



*Are people who drink in moderation also the kind of people who generally look after themselves?*

But was the alcohol itself providing the benefits, or is it just a marker for other healthy behaviours? Are people who drink in moderation also the kind of people who exercise regularly, eat a balanced diet, and generally look after themselves?



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In 2005, yet another **study in medical professionals** – this time 32,000 women and 18,000 men – attempted to answer this question by looking at how their drinking habits affected not only their risk of heart attack, but also their physiology.

The people who drank one to two glasses of alcohol, three to four times a week, had a lower risk of heart attack, which the researchers hypothesised could be due to beneficial effects of alcohol on HDL cholesterol – the so-called ‘good’ cholesterol – as well as haemoglobin A1c (a marker of diabetes risk) and fibrinogen, an agent that helps the blood to clot. These three factors all play an important role in ‘metabolic syndrome’; the cluster of abnormalities that often heralds cardiovascular disease and diabetes. Other studies have found hints that alcohol might alter the balance of these factors for the better, which pointed to a possible mechanism by which alcohol in moderation could improve health.

Other studies have replicated this sweet-spot effect of alcohol for **ischaemic stroke** (strokes caused by a blood clot in the brain) and **death in general**. But before you dive out and prescribe yourself a couple of bottles a week – for your health, of course – you might want to read on.



Are abstainers at higher risk than people who have one or two alcoholic drinks? (Credit: Getty Images)

Do abstainers actually have a higher risk of death than people who have one or two alcoholic drinks a day? It isn't as straightforward as it looks.

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In 2006, a team of researchers **took a closer look** at how these studies were designed. Their meta-analysis showed a major flaw in the way drinkers – or rather abstainers – were classified: the abstainers in many of these studies included people who had cut back or stopped drinking because of ill health or old age. This could potentially make non-drinkers look like a far less healthy group than the general population.

Importantly, the studies without this misclassification didn't find a reduction in heart disease or death among moderate drinkers.

Other researchers have now explored this 'misclassification hypothesis' more closely, including a **huge UK-based population study** published this year.

It showed that when you simply compare alcohol consumption and health outcomes, you find a clear beneficial effect of moderate alcohol consumption. But if you take former drinkers out of the abstainers group, then the benefits don't look so rosy – in fact, they all but disappear.

Meanwhile, another team of researchers studied people whose bodies cannot process alcohol properly – and therefore who generally don't drink alcohol at all – and found those with this genetic marker had better cardiovascular health and a lower risk of coronary heart disease than those without it.



Many large studies have looked at the link between alcohol and heart disease – with many different results (Credit: Thinkstock)



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And then there's the really bad news. Whatever the effects that alcohol does or doesn't have on your heart disease risk, it can still hasten your death in a myriad of other colourful ways.

The World Health Organization **reported last year** that drinking can increase your risk of depression and anxiety, liver cirrhosis, pancreatitis, suicide, violence, and accidental injury.

Alcohol is also linked to cancer of the mouth, nose, larynx, oesophagus, colon, liver, and breast cancer in women. Between 4% and 30% of cancer deaths worldwide could be attributed to alcohol use (for breast cancer, the most common, the figure was 8%). Importantly, even moderate drinking confers some increased risk: just one glass a day increases the risk of breast cancer by 4%, while heavy drinking can increase **the risk by 40-50%**.

Heavy drinking weakens the immune system and is therefore linked with pneumonia and tuberculosis. It also encourages risky sexual behaviour which increases the chance of acquiring sexually transmitted infections such as HIV. And drinking during pregnancy can cause damage to the foetus, leading to Foetal Alcohol Syndrome.

In total, there are more than 200 diseases and injuries that can be linked to alcohol consumption, including 30 that are caused only by alcohol.

But the idea that moderate alcohol consumption might be beneficial has not entirely gone away, and even organisations dedicated to combating the problem of alcohol grudgingly say that small amounts of alcohol may have a **protective effect against heart disease and some types of stroke**.

Confused? You're not the only one. Perhaps the best summation of how alcohol affects our health comes from a **critical analysis published in early 2013**. Its author concluded that, while the evidence of alcohol's harmful effects was solid, there were plenty of reasons to take evidence of alcohol's health benefits with a grain of salt – but not, perhaps, a slice of lemon.



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