




# Alcohol

## The good, the bad and the iffy



*Moderate drinking appears to be good for your heart and your bone mineral density. But it's bad for your liver and increases your cancer risk. What's a body to do?*

Pat Rich

Two doctors walk into a bar.

"I'll have a glass of red wine," said the heart specialist "because a number of scientific studies show that one or two drinks a day — especially of red wine — can protect you from having a heart attack or dying from heart disease."

"Orange juice for me," said the cancer specialist, because she knew that even small amounts of alcohol can increase the risk of many cancers, including breast cancer.

Just then a journalist came into the bar. "Hey Joe, draw me a pint," he said, throwing a newspaper onto the bar. "Latest word from this big study in Norway is that abstainers are far



more likely to be depressed than those who drink regularly."

"No way," said his colleague, joining them. "This story in *The New York Times* suggests that moderate drinkers may be healthier than teetotalers because they have a number of other healthy habits. Alcohol has nothing to do with it."

The two of them looked over at the two physicians. "Well, docs," one of them asked, "what's the real scoop?"

Read on to find out.

Shannon, a 33-year-old marketing manager in Ottawa, enjoys a drink once in a while. She views it as "almost a reward" after a long workweek. She's aware of the recommendations calling for people to consume no more than one alcoholic drink a day in order to avoid the health hazards associated with excess consumption.

"I've exceeded two drinks at one time," she admits, and also acknowledges that "everything has its cost." But Shannon is not personally worried about the negative health effects of occasionally drinking to excess as long as it does not become a habit. On the positive side, she has also heard about the potential positive effects on the heart of a glass of red wine a day. She does not, however, confine her alcoholic beverages to red wine.

Shannon's outlook reflects that of many people when it comes to alcohol — a substance that pervades western social life. Drinking alcohol makes us feel relaxed and acts as a lubricant to make getting together with friends or strangers more relaxed and pleasant. Additionally, alcohol taken in moderation is known to have beneficial effects beyond the immediate positive effect on how you feel. But alcohol also costs billions of dollars a year in lost lives and productivity. Alcohol abuse can kill in numerous ways and excessive consumption over time or binge drinking (five or more drinks at any one sitting) has a negative effect on almost every part of the body. As a society, we well know the price paid as a result of traffic accidents, domestic violence, parental neglect and injuries caused by drinking to excess.

#### WHAT DOES ALCOHOL DO?

Alcohol is a natural substance formed when fermenting sugar reacts with yeast. When you drink, about 20% of the alcohol is absorbed directly into the bloodstream through the stomach, while the remainder is processed by the small intestine. Because alcohol does not have to be digested, its effects are almost immediate.

Low levels of alcohol have a mild tranquilizing effect on the central nervous system because alcohol is a depressant. Because of its action on the brain, alcohol reduces your inhibitions and improves your mood. As more alcohol enters your body, it acts to slow down your muscle coordination, reflexes, movement and speech. The liver processes alcohol but only at a fixed rate of about one drink every hour or two.

## BAD EFFECTS

Studies have shown that excess quantities of alcohol can have a negative effect on most parts of the body, especially the liver, where prolonged excess drinking can lead to cirrhosis of the liver and liver cancer.

Alcohol consumption has also been associated with many types of other cancers — and not just when consumed heavily. Excess alcohol intake can drive up blood pressure, boosting the risk of cardiovascular disease and stroke. It can interfere with nutrient absorption in the intestines, leading to vitamin and mineral deficiencies and weakened bone.

## GOOD EFFECTS

Most of the positive effects of drinking low or moderate amounts of alcohol are linked to the cardiovascular system, although alcohol consumption has also been associated with a reduced risk of diabetes and with modest benefits to bone mineral density.

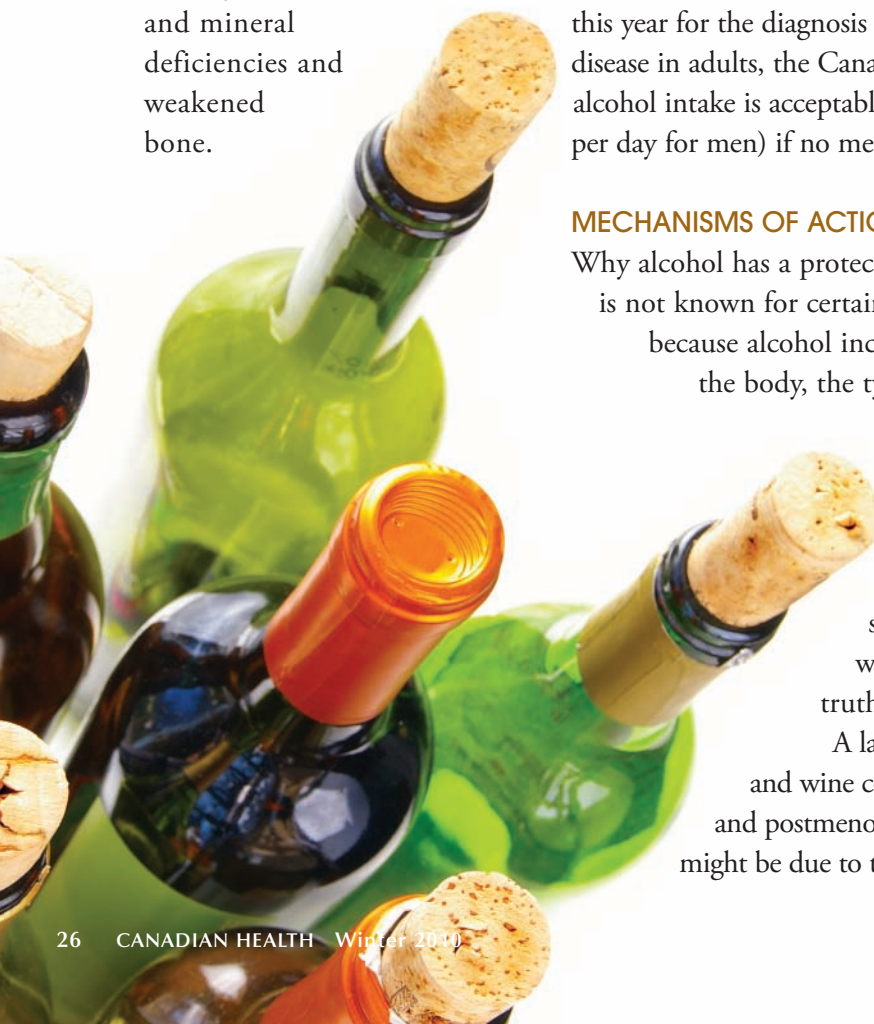
Dr. Lyall Higginson, the Victoria-based medical director of Heart Health, Vancouver Island Health Authority, and past president of the Canadian Cardiovascular Society, points to good evidence that moderate alcohol consumption is healthy for the heart. “What we have is some strong epidemiologic evidence that suggests alcohol in moderation is of benefit in regard to cardiovascular health,” he says. This evidence includes a 2006 paper by Italian researchers that evaluated 34 studies involving more than one million people. The analysis showed that deaths from heart disease were highest among abstainers and those who drank heavily, with the lowest mortality rate observed in those who drank about a half a drink daily.

As a result of these and other findings, Higginson says, heart specialists are asking their patients about their alcohol consumption and telling them that drinking moderately “is probably of benefit for your cardiovascular health.” Non-drinkers, however, should not be encouraged to start drinking because it is impossible to predict who may be susceptible to alcohol abuse and the health and social problems that go with it. In guidelines published this year for the diagnosis and treatment of high cholesterol and heart disease in adults, the Canadian Cardiovascular Society states that “moderate alcohol intake is acceptable (one drink per day for women and two drinks per day for men) if no metabolic or clinical contraindications are present.”

## MECHANISMS OF ACTION

Why alcohol has a protective effect on the heart and cardiovascular system is not known for certain. But scientists speculate that it could be because alcohol increases the amount of “good” HDL cholesterol in the body, the type that is transported by high-density lipoproteins and helps remove artery-clogging “bad” LDL cholesterol from the bloodstream. Or alcohol may make it less likely for coagulative platelets in the blood to come together and form clots — which can lead to heart attack or stroke. But when it comes to explaining precisely why alcohol can be beneficial, Higginson says “the truth is that no one is absolutely certain.”

A large U.K./U.S. study found that moderate beer and wine consumption increased bone mineral density in men and postmenopausal women, and speculated that the benefits might be due to the bone-building mineral silicon in beer and the



estrogen-like plant compound resveratrol in wine. However, groups such as Osteoporosis Canada warn that any more than two drinks daily can have a negative impact on bone health and actually increase the risk of osteoporosis.

While some studies — especially those from Europe — suggest that red wine is healthier than other alcoholic beverages, no research has definitively confirmed this. Other research suggests that alcohol consumption can help prevent or control diabetes by improving the way the body processes blood glucose.

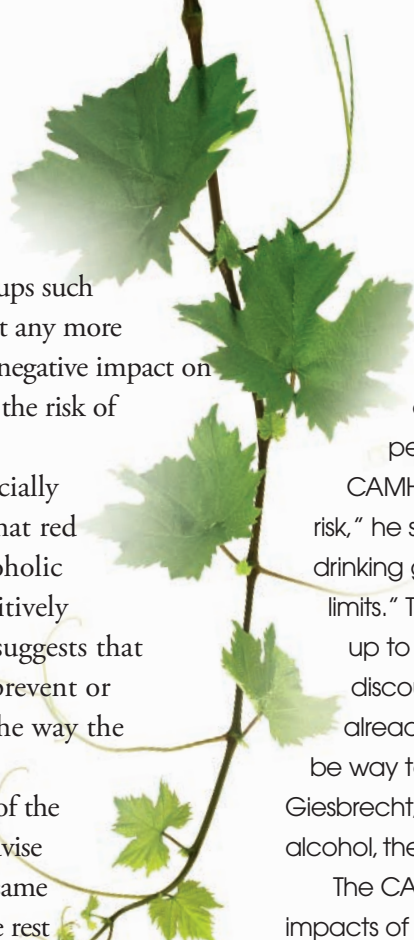
The 2008 recommendations of the Canadian Diabetes Association advise those with diabetes to follow the same low-risk drinking guidelines as the rest of the population. But in addition, the guidelines note that people using insulin-triggering drugs need to be cautious when they drink in order not to develop delayed hypoglycemia.

### HOW MUCH?

Dr. Norman Giesbrecht is a senior scientist in the public health and regulatory policy section at the Centre for Addiction and Mental Health (CAMH) in Toronto, the country's largest mental health and addiction teaching hospital. He notes that the amount a person can drink and still remain at low risk of negative health consequences is actually "quite modest — a drink or two a day or a drink every other day," he says.

The centre also defines low-risk drinking as up to 14 drinks a week for men and up to nine drinks weekly for women, with no more than two a day.

*“There are some very modest health benefits for middle-aged people who drink a small amount, but, of course, the increased risk for developing cancer intersects with that same level.”*



### SOCIAL AND ECONOMIC COSTS

Dr. Jürgen Rehm, also a senior scientist at CAMH, is the author of a landmark 2006 study looking at the costs of alcohol abuse and ways to reduce them. He agrees that people can minimize their risk by following the CAMH guidelines. "But low risk doesn't mean no risk," he stresses. Giesbrecht adds that the low-risk drinking guidelines refer to "upper limits and not lower limits." That is, people are not encouraged to drink up to the amounts indicated but, rather, are discouraged from drinking above them. "If you already have liver damage, even one drink may be way too much," Rehm adds. According to Giesbrecht, once you've become dependent on alcohol, the safest approach is not to drink at all.

The CAMH experts note that most of the negative impacts of alcohol could be avoided if people stuck to the low-risk limits, but many do not. "They reason that 14 drinks a week means 'I can have seven on Friday and seven on Saturday.' But, frankly, there is no health benefit to drinking seven drinks on Friday and seven drinks on Saturday and abstaining the rest of the week," says Rehm. He notes that family physicians are in a good position to advise individual patients about safe levels of alcohol consumption because they are aware of other conditions or family history that may put patients at increased risk from alcohol.



### WHAT'S THE BEST OPTION?

Will we ever be able to state for certain whether the risks of moderate alcohol consumption are greater than the benefits? The answer is no, if only because the answer depends so much on the individuals involved and the difficulty in properly researching a lifestyle issue.

Many of the studies on alcohol consumption involve small numbers of people or use imprecise measures of how much people are actually drinking and then look back at what happened to them with regard to some specific condition or illness. No rigorous study has ever been done in which two groups of people of similar age, sex,

health status and background were randomly divided ahead of time and then, over a prolonged period, given one drink a day or an inert placebo to see what happens to their health — the so-called randomized, controlled trial and the gold standard of research in the medical community.

“That would be the ideal, and we don’t have that,” says Higginson. And given the ethical and logistical issues involved in doing such a study, it is unlikely to ever take place.

The best available



evidence at this time shows that if you are not prone to alcohol abuse and have no other medical conditions that would caution against it, drinking in moderation is probably safe and, in some instances, may even be beneficial for you.

But if you have a family history of alcohol abuse or have abused alcohol in the past or are pregnant or suspect you are pregnant, then abstinence is probably the safest bet.

For Shannon and many like her, the positive effects of having a drink every so often currently outweigh any potential harmful long-term effects. “I

know scientifically there are harmful health effects to drinking,” she says. “But I grew up in a family where my great-grandmother, who lived to be 90-something, enjoyed her brandy now and again.

There has to be a balance.”

*3.8% — Proportion of worldwide deaths that can be attributed to alcohol*

— Centre for Addiction and Mental Health

## WOMEN AND ALCOHOL

Women’s bodies cannot deal with alcohol as quickly as men’s, which is why guidelines suggest lower safe levels of consumption for them. Alcohol can be diluted into water-holding muscle tissues but not fat, and women have more body fat and less muscle than men. And because of the different way a certain stomach enzyme functions, females cannot process alcohol as quickly, so they retain it longer in the bloodstream. Female heavy drinkers are at greater and earlier risk of alcoholic hepatitis and cirrhosis of the liver.

## COST OF ALCOHOL ABUSE

In 2006, Dr. Jürgen Rehm from the Centre for Addiction and Mental Health published an analysis of the costs in Canada associated with alcohol and other forms of substance abuse using 2002 figures. These are the most detailed findings to date on how much excessive alcohol consumption costs Canadian society.

Overall, Rehm calculated that alcohol abuse was costing an average of \$463 per year for every Canadian, or \$14.6 billion in total. The largest economic costs were \$7.1 billion for lost productivity due to illness and premature death. \$3.3 billion in direct health-care costs and \$3.1 billion in law enforcement costs.

An estimated 4,258 Canadian deaths in 2002 could be directly attributed to alcohol use — 1.9% of all deaths that year. Cirrhosis of the liver was the leading cause of death, followed by motor vehicle collisions caused by drinking and driving and suicides attributed to drinking.

## NEED TO CUT DOWN ON YOUR DRINKING?

If you're worried that you drink too much, you should discuss this with your doctor. But there is also a simple test you can do to get an idea of whether or not your alcohol consumption is having an impact on your health and well-being. Known as CAGE (C for cut down; A for annoyed; G for guilty; and E for eye-opener), this questionnaire can accurately identify the presence of an alcohol dependency.

### The CAGE questionnaire

- 1 Have you felt a need to cut down on your drinking?
- 2 Have you felt annoyed by criticism of your drinking?
- 3 Have you felt guilty about drinking?
- 4 Have you felt you needed a drink first thing in the morning (an eye-opener) to steady your nerves or get rid of a hangover?"

Answering yes to at least two of these questions means that you could have a drinking problem.

A more extensive questionnaire is available on the Alcohol Help Center's website at [www.alcoholhelpcenter.net/cyd/CYDScreenerP1\\_0.aspx](http://www.alcoholhelpcenter.net/cyd/CYDScreenerP1_0.aspx).



### Strategies for drinking less

CAMH has also published tips for helping you to reduce your alcohol consumption to a level that represents a low risk to your health. Low-risk drinking is defined as up to nine standard drinks a week for women and up to 14 standard drinks a week (no more than two daily) for men.

- 1 Monitor your drinking and keep track of how much you drink every day.
- 2 Pace yourself by mixing days of no drinking with days of low drinking. When you do drink, measure your drinks, dilute them with water, soft drinks or juice. Eat a snack and wait a while between each drink.
- 3 Spend time on other activities. Instead of drinking, participate in other things you enjoy such as reading or going to a movie.
- 4 Learn to resist temptation and don't give in to the pressure to drink. Plan ahead and set personal limits. Refuse drinks without feeling guilty and leave if you feel you are having trouble saying no to another drink.
- 5 Don't use alcohol as an escape to feel better or deal with difficult situations; it won't solve your problems. Instead of drinking for emotional comfort, talk about your feelings, show affection or assert yourself.

## SCALING BACK

Modern lifestyles don't always make it easy to cut down on our major social lubricant, alcohol. Here's a roundup of practical methods used by real people for scaling back relatively painlessly when you need to.

"Instead of meeting people for the typical drink after work, I make a point of getting together for lunch or mid-afternoon coffee — even if it's more hectic."

— Meagan, Calgary

"I love to cook gourmet dinners and pair courses with appropriate wines. To cut

back on drinking, I opt for a string of homey meals that I never associate with alcohol — for example, old-fashioned macaroni and cheese with spicy Clamato, an Oriental stir-fry with green tea or an Indian curry with a fruit-flavoured yogurt smoothie."

— Alison, Toronto

"If I find myself craving a glass of wine at the end of the workday, I revert to my pre-drinking childhood and treat myself to a little something sweet as a pick-me-up — a cookie or a piece of chocolate. Or I chew minty gum: no alcoholic drink in the world appeals to

me when that toothpaste taste is in my mouth!"

— Dorothy, Montreal

"If I'm trying to cut back on cocktail-hour drinking, I'll go have supper in a restaurant right after work, then do something else like shop or take in a movie. Not being hungry really helps."

— Jim, Halifax

— D.S.