

Alcohol: Balancing Risks and Benefits

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Abstract—Alcohol consumption has consequences for the health and well-being of those who drink and, by extension, the lives of those around them. The research reviewed here represents a wide spectrum of approaches to understanding the risks and benefits of alcohol consumption.

Alcohol's two-faced nature shouldn't come as a surprise. The active ingredient in alcoholic beverages, a simple molecule called ethanol, affects the body in many different ways. It directly influences the stomach, brain, heart, gallbladder, and liver. It affects levels of lipids (cholesterol and triglycerides) and insulin in the blood, as well as inflammation and coagulation. It also alters mood, concentration, and coordination

Keywords— *AOD (alcohol or other drug) associated consequences; health risk assessment; beneficial vs. adverse drug effect; protective drug effect; AODR (AOD related) mortality; AODE (effects of AOD use, abuse, and dependence) on stress; societal AODR problems; cognition; heart disorder*

1. INTRODUCTION

Throughout the 10,000 or so years that humans have been drinking fermented beverages, they have also been arguing about their merits and demerits. The debate still simmers today, with a lively back-and-forth over whether alcohol is good for you or bad for you. It is safe to say that alcohol is both a tonic and a poison. The difference lies mostly in the dose. Moderate drinking seems to be good for the heart and circulatory system, and probably protects against type 2 diabetes and gallstones. Heavy drinking is a major cause of preventable death in most countries. In India, alcohol is implicated in about half of fatal traffic accidents. Heavy drinking can damage the liver and heart, harm an unborn child, increase the chances of developing breast and some other cancers, contribute to depression and violence, and interfere with relationships.

These research findings can help shape the efforts of communities to reduce the negative consequences of alcohol consumption, assist health practitioners in advising consumers, and help individuals make informed decisions about drinking.

2. REVIEW OF LITERATURE:

Forty-four percent of the adult Indian population (age 18 and over) are current drinkers who have consumed at least 12 drinks in the preceding year (Dawson et al. 1995). Although most people who drink do so safely, the minority who consume alcohol heavily produce an impact that ripples outward to encompass their families, friends, and communities. The following statistics give a glimpse of the magnitude of problem drinking:

- Approximately 14 million Americans—7.4 percent of the population— meet the diagnostic criteria for alcohol abuse or alcoholism (Grant et al. 1994).
- More than one-half of American adults have a close family member who has or has had alcoholism (Dawson and Grant 1998).
- Approximately one in four children younger than 18 years old in the United States is exposed to alcohol abuse or alcohol dependence in the family (Grant 2000).

Alcohol consumption has consequences for the health and well – being of those who drink and, by extension, the lives of those around them. The research reviewed here represents a wide spectrum of approaches to understanding the risks and benefits of alcohol consumption. These research findings can help shape the efforts of communities to reduce the negative consequences of alcohol consumption, assist health practitioners in advising consumers, and help individuals make informed decisions about drinking.

What's Moderate Alcohol Intake? What's a Drink?

In some studies, the term “moderate drinking” refers to less than one drink per day, while in others it means three or four drinks per day. Exactly what constitutes “a drink” is also fairly fluid. In fact, even among alcohol researchers, there's no universally accepted standard drink definition. In India, one drink is usually considered to be 12 ounces of beer, 5 ounces of wine, or 1½ ounces of spirits (hard liquor such as gin or whiskey). Each delivers about 12 to 14 grams of alcohol.

The definition of moderate drinking is something of a balancing act. Moderate drinking sits at the point at which the health benefits of alcohol clearly outweigh the risks.

The latest consensus places this point at no more than one to two drinks per day for men, and no more than one drink per day for women. This is the definition used by the U.S. Department of Agriculture and the Dietary Guidelines for Americans, and is widely used in the United States. Measuring the Health Risks and Benefits of Alcohol

Over the years, scientists have documented the effects of alcohol on many of the body's organ systems and its role in the development of a variety of medical problems, including cardiovascular diseases, liver cirrhosis, and fetal abnormalities. Alcohol use and abuse also contribute to injuries, automobile collisions, and violence. Alcohol can markedly affect worker productivity and absenteeism, family interactions, and school performance, and it can kill, directly or indirectly. On the strength of this evidence, the United States and other countries have expended considerable effort throughout this century to develop and refine effective strategies to limit the negative impact of alcohol (Bruun et al. 1975; Edwards et al. 1994).

Much remains to be learned about this association, the extent to which it is due specifically to alcohol and not to other associated lifestyle factors, and what the biological mechanisms of such an effect might be.

Now is the time to step up, now is the time to shove the benefits of these 10 alcoholic drinks into the face of that class nerd, or that bartender who won't serve you. Alcohol can be healthy too. You have to, however, also understand that excess of anything can seriously harm you."

1. Vodka

Aids in reducing stress

Vodka has a sleep inducing effect which is proven by a research to be better than that of Red Wine. This effect leads to calming of the brain and helps you relax.

Relieves tooth ache

Squishing just a little amount of vodka on the aching tooth can help lessen its pain. Also, vodka mixed with cinnamon can work as a mouthwash.

Has cardio-protective benefits

Vodka tends to dilate the arteries thus stimulating free flow of blood, thus reducing stroke and possible heart related illnesses.

Perfect for anyone on a diet.

A shot of vodka has as little as 97 calories per shot. Obviously, if you binge drink you're surely gaining weight by tomorrow morning, but it is one of the healthier drinks our booze industry has to offer.

2. Wine

Promotes longevity of life

It has been proven through research that wine drinkers have a 34% lesser mortality rate than spirit drinkers.

Lowers risk of heart disease

Red wine contains 'Procyanidins', which is known to protect against heart diseases. A higher content of 'Procyanidins' is found in wines from southwest France and Sardinia.

Reduces risk of type-2 diabetes

Australian research shows that a drink or 2 of wine right after a meal gets the insulin level back to its normal level thus reducing the risk of diabetes.

3. Beer

Reduces Stress

According to the Mayo Clinic, the risk of dying because of a heart attack is lower for people that consume beer on a moderate level. Moderate can be defined as 12 ounces for women and 24 ounces for men.

Anti-Microbial Properties

Beer contains these flowers that are called 'Hops' for brewing. These flowers are antimicrobial and are used by the body to fight diseases.

Reduces Bone Deterioration

Research at Tuft University found a positive relationship between hip-bone density and beer consumption. Heavy drinking, however, led to bone loss.

Can help to prevent Alzheimer's Disease

Researchers at Loyola University Chicago Stritch School of Medicine analyzed a lot of studies and came to a conclusion that moderate beer drinkers are 23% less likely to develop different kinds of dementia, including Alzheimer's.

Reduces Cholesterol Level

The barley that is used in brewing of beer contains 'Betaglucan', a type of soluble fiber that is proven to help in lowering cholesterol levels.

4. Tequila

Helps Lose Weight

Tequila contains a type of sugar, agavins, that if consumed in moderate amounts can lead to weight loss. This sugar leads to a lot of calories passing the body without getting consumed, and thus leads to weight loss.

Helps In Digestion

A shot of tequila proven in some studies before a meal can help in increasing metabolism and after a meal helps indigestion.

Contains Both Prebiotic And Probiotic Bacteria

Prebiotic bacterias help to create a ground for the probiotic bacteria to grow. Probiotic bacteria are healthy bacterias that help naturally populate our intestines. Some of the carbohydrates that tequila is derived from supply these healthy bacteria.

Helps with Insomnia

We all know how well we sleep after alcohol, although most might refer to that as passing out, but well, tequila among all your favorite alcohol, helps you 'pass out' better. It's relaxing effect calms the nerves and therefore helps with insomnia.

Doesn't give you a Hangover

Yeah that's no health benefit, but you guys need to know this! If you're going to see your parents after this night out or have work/class early morning, tequila is your way to go!

5. Whiskey

Helps with Weight Loss

Research shows that this liquor has no fat, and very little sodium. The little calories it contains are in the form of alcohol and the left over amount is in sugars that is used by the body for energy. Obviously if you binge drink, don't blame us if you think the weighing scale is lying to you the next morning.

Reduces Blood Clotting

Whiskey works as a blood thinner, and therefore reduces the chances of blood clots and also increases the amount of good cholesterol in your body thus leading to a healthier heart.

Prevents Cancer

'Ellagic acid', present in high amounts in Whiskey, is one of the most effective antioxidant compounds the human body can consume. Antioxidants neutralize radicals that lead to diseases like cancer and dementia, therefore whiskey is known to be a strong preventive measure for cancer.

Boosts Immune System

Research proves that antioxidants can be used to cure illnesses like cold, fevers and also as a dressing for open wounds.

6. Gin

Remedy for Arthritis

Gin is made out of compounds that help with joint pains, loss of tissue, and rheumatoid arthritis.

Delays Aging Skin

All alcohol contain a lot of antioxidants but Gin contains an extra one called 'Juniperboost' that helps the body in regenerating cells thus leading to better, wrinkle-free skin.

Helps Fight Kidney and Liver Diseases

Gin consists of diuretic ingredients that help in kidney filtration, thus throwing out kidney bacteria.

Helps in Weight-Loss

Gin is also one of the drinks one can have when on a diet. There are as little as 97 calories in 1.5 ounces of Gin and it also doesn't bloat you.

7. Rum

Reduces Cholesterol

Rum, like whiskey, works as a blood-thinner and it also increases HDL cholesterol, also known as 'Good Cholesterol'.

Remedy for Common Cold

It consists of anti-microbial properties that provide the infected person with a soothing and warming effect.

8. Champagne

Improves Spatial Memory

Spatial memory is the ability of the human mind to perform complex tasks and solve calculations as well as understand it's surrounding. Consumption of champagne is known to improve ones spatial memory.

Lesser Calories Than White And Red Wine

A classic glass of champagne can contain as much as 80 calories of champagne, whereas a glass of wine has about 120. It is also because of it's fizzy nature that champagne makes you full faster, and therefore a lesser amount goes in.

Healthy For The Heart

Champagne is known to have as many benefits for the heart as a glass of wine, this is because it is made from both red and white grapes thus contains the most 'resveratrol'. Resveratrol is an antioxidant which prevents blood clots, reduces bad cholesterol and prevents damage of blood vessels.

Strengthens Short Term Memory

It has been proven that within 3 years of consumption of alcohol, the human brain produces 200% more of the memory boosting protein.

9. Cognac

Pure Product With No Additives

Cognac is a pure product with very little natural sugars and has no additives.

Cures Common Cold

Cognac widens blood vessels and helps in releasing head aches.

Protects Against Heart Disease

It is proven that some compounds help the blood cells from plumping together, thus reducing the amount of work the heart has to do.

10. Cider

Antioxidant, 'Polyphenol', May Help Prevent Cancer

Cider is studied to contain the same amount of antioxidants as wine, and are known help prevent cancer and certain cardiovascular diseases.

Apt For Gluten Allergic People

This drink is gluten free, so the people allergic to gluten can get drunk without any outbreak of ashes the next morning.

3. EFFECTS ON SOCIETY

Researchers have identified and classified a wide variety of adverse consequences for people who drink and their families, friends, co-workers, and others they encounter (Edwards et al. 1994; Harford et al. 1991; Hilton 1991a,b). Alcohol use is associated with increased risk of injury in a wide variety of circumstances, including automobile crashes, falls, and fires (Cherpitel 1992; Freedland et al. 1993; Hingson and Howland 1993; Hurst et al. 1994). Research shows that as people drink increasing quantities of alcohol, their risk of injury increases steadily and the risk begins to rise at relatively low levels of consumption (Cherpitel et al. 1995).

An analysis of risk in relation to alcohol use in the hours leading up to an injury has suggested that the amount of alcohol consumed during the 6 hours prior to injury is related directly to the likelihood of injury occurrence (Vinson et al. 1995).

The evidence showed a dose-response relationship between intake and injury risk and found no level of drinking to be without risk. Patterns of alcohol consumption also increase the risk of violence and the likelihood that aggressive behavior will escalate (Cherpitel 1994; Martin 1992; Martin and Bachman 1997; Norton and Morgan 1989; Zhang et al. 1997).

Alcohol appears to interact with personality characteristics, such as impulsiveness and other factors related to a personal propensity for violence (Lang 1993; Zhang et al. 1997). Violence – related trauma also appears to be more closely linked to alcohol dependence symptoms than to other types of alcohol-related injury (Cherpitel 1997).

Patterns of moderate drinking, on the other hand, have been associated with a key health benefit—that is, a lower CHD risk. Research is now in progress to clarify the extent to which alcohol itself, or other factors or surrogates such as lifestyle, diet, exercise, or additives to alcoholic beverages, may be responsible for the lower risk. Broader means of quantifying the relationships between relative risks and specific consumption levels and patterns are needed to describe epidemiologic findings more clearly and simply, and translate them into improved public health strategies.

4. THE OVERALL IMPACT

The overall impact of alcohol consumption on mortality can be assessed in two ways (Rehm and Bondy 1998): (1) by conducting meta-analyses using epidemiologic studies that examine all factors contributing to mortality, or (2) by combining risk for various alcohol-caused diseases with a weighted prevalence or incidence of each respective disease. The meta-analysis approach to assessing overall mortality was used by researchers to examine the results of 16 studies, 10 of which were conducted in the United States (English et al. 1995).

In this overview, researchers found the relationship between alcohol intake and mortality for both men and women to be J-shaped curves: the lowest observed risk for overall mortality was associated with an average of 10 grams of alcohol (less than one drink) per day for men and less for women. An average intake of 20 grams (between one and two drinks) per day for women was associated with a significantly increased risk of death compared with abstainers. The risk for women continued to rise with increased consumption and was 50 percent higher among those consuming an average of 40 grams of alcohol (between three and four drinks) per day than among abstainers. Men who averaged 30 grams of alcohol (two drinks) per day had the same mortality as abstainers, whereas a significant increase in mortality was found for those consuming at least 40 grams of alcohol per day. The proposed J-shaped relationship between alcohol intake and mortality does not apply in all cases, however. For example, because most of the physiologic benefit of moderate drinking is confined to ischemic cardiovascular conditions, such as CHD, in areas of the world where there is little mortality from cardiovascular diseases, alcohol provides little or no reduction in overall mortality. Rather, the relationship between intake and all-cause mortality assumes more of a direct, linear shape (Murray and Lopez 1996c), with increasing consumption associated with higher overall mortality. The same holds true for people under age 45, who have little ischemic cardiovascular mortality (Andréasson et al. 1988, 1991; Rehm and Sempos 1995).

Quantifying the level of disability and morbidity related to alcohol can be difficult, in large part because few

standardized measures exist. One way to quantify the relationship between alcohol and health-related consequences is to use a measure called the disability adjusted life year (DALY), which may prove useful in summarizing the effects of alcohol on the full spectrum of health outcomes.

Epidemiologic studies have long provided evidence of the harm alcohol can cause to individual health and to society as a whole. Newer studies have identified an association between low to moderate alcohol consumption and reduced CHD risk and overall mortality. The most significant association with lower CHD risk is largely confined to middle-aged and older individuals in industrialized countries with high rates of cardiovascular diseases. Elucidation of the mechanisms by which alcohol affects CHD risk will clarify the relationship and may enable scientists to develop pharmacologic agents that could mimic or facilitate the positive effect of alcohol on health (Hennekens 1996; UK Inter - Departmental Working Group 1995; USDA 1995). At this point, research clearly indicates that no pattern of drinking is without risks. However, for individuals who continue to consume alcohol, certain drinking patterns may help reduce these risks considerably.

Among teenagers and young adults in particular, the risks of alcohol use outweigh any benefits that may accrue later in life, since alcohol abuse and dependence and alcohol-related violent behavior and injuries are all too common in young people and are not easily predicted. To determine the likely net outcome of alcohol consumption, the probable risks and benefits for each drinker must be carefully weighed.

5. THE TAKEAWAY: CONTINUE LIGHTLY OR CUT BACK – BUT DON'T START

No one disputes that there are some health benefits of alcohol consumption – that is, of light alcohol consumption. Higher levels of alcohol use both chronically and acutely (i.e., bingeing) are linked to many more health risks than benefits, both to body and brain. The consensus seems to be that if you're a light drinker and it's working for you, keep on doing it – at that level. But starting to drink in one's 40s or beyond is still questionable, despite one author's controversial recommendation that doctors tell their non-drinking patients to go ahead and start. Most experts seem to agree that there's not enough evidence that the benefits outweigh the risks at this point in life, and in fact more people reduce drinking at this age than start it. Use common sense and listen to your body – and if you have any questions at all about your particular alcohol habits, consult with your doctor rather than the Internet.

The Bottom Line: Balancing Risks and Benefits

Given the complexity of alcohol's effects on the body and the complexity of the people who drink it, blanket

recommendations about alcohol are out of the question. Because each of us has unique personal and family histories, alcohol offers each person a different spectrum of benefits and risks. Whether or not to drink alcohol, especially for “medicinal purposes,” requires careful balancing of these benefits and risks.

Your health-care provider should be able to help you do this. Your overall health and risks for alcohol-associated conditions should factor into the equation. If you are thin, physically active, don't smoke, eat a healthy diet, and have no family history of heart disease, drinking alcohol won't add much to decreasing your risk of cardiovascular disease. If you don't drink, there's no need to start. You can get similar benefits with exercise (beginning to exercise if you don't already or boosting the intensity and duration of your activity) or healthier eating. If you are a man with no history of alcoholism who is at moderate to high risk for heart disease, a daily alcoholic drink could reduce that risk. Moderate drinking might be especially beneficial if you have low HDL that just won't budge upward with diet and exercise.

If you are a woman with no history of alcoholism who is at moderate to high risk for heart disease, the possible benefits of a daily drink must be balanced against the small increase in risk of breast cancer.

If you already drink alcohol or plan to begin, keep it moderate—no more than two drinks a day for men or one drink a day for women. And make sure you get plenty of folate, at least 600 micrograms a day.

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