Does Moderate Alcohol Consumption Prolong Life?

By ACSH Staff — July 1, 1993

Through the ages, conventional wisdom has been that the moderate intake of alcoholic beverages is consistent with a long and healthy life. Modern medicine became particularly interested in the effects of alcohol consumption on mortality in the 1950s and '60s when coronary heart disease became a major cause of death in the United States and in most other industrialized countries. Primarily from epidemiologic studies designed to identify factors associated with high death rates from coronary heart disease, it became apparent that these rates were lower among drinkers of small to moderate amounts of alcohol than among non-drinkers. However, these studies did not often explore effects of alcohol consumption on overall mortality rates. Specifically, it was not known whether increases in death from other diseases that are associated with alcohol abuse, such as cirrhosis of the liver and certain cancers, offset the apparent beneficial effects of low to moderate alcohol intake on mortality from coronary heart disease. This article takes a look at the net effects of drinking alcoholic beverages on the risk of the drinker's death.

Does Alcohol Protect Against Coronary Heart Disease?

While searching for the risk factors for coronary heart disease in comparisons among countries as well as among individuals, epidemiologists identified a potential benefit from alcohol consumption on mortality from heart disease. In the past three decades, almost every follow-up epidemiologic study has demonstrated that individuals who drink small to moderate amounts of alcohol have a lower risk than non-drinkers of dying from coronary heart disease. Among drinkers, the categories with the lowest coronary heart disease rates vary across studies, ranging from less than one drink per day to three to five drinks per day. In most studies, individuals who state that they normally consume six or more drinks per day, or who admit to having problems with alcohol abuse, have rates of dying from heart disease higher than both non-drinkers and moderate drinkers.

Many of the early studies were criticized for including in the category of non-drinkers both lifetime abstainers and ex-drinkers. Many ex-drinkers may have given up drinking due to alcoholism or other health problems (including cancer and heart disease) and thus would be expected to have a greater risk of early death. Other follow-up studies have demonstrated, however, that even when only lifetime abstainers or healthy abstainers make up the non-drinker category, the risk of coronary heart disease for non-drinkers is still higher than it is for moderate drinkers.

Effects of Alcohol on Other Diseases

Although there is little doubt that the moderate consumption of alcoholic beverages is associated with a lower risk of coronary heart disease, the risk of death from non-cardiac diseases or other causes depends on how much someone drinks.

Moderate Alcohol Intake

There are a number of diseases or conditions that are often attributed to the use of alcohol (e.g., cirrhosis of the liver, certain types of cancer, accidents). In general, cirrhosis and alcohol-related cancers are associated with alcohol abuse and not with the consumption of small to moderate amounts of alcohol.

However, even moderate amounts of alcohol may be related to the risk of death from hemorrhagic stroke. On the other hand, the risk of thrombotic stroke, the much more common type of stroke in the U.S. and Europe, is reduced by moderate amounts of alcohol. Therefore, the net effect of moderate alcohol intake in these parts of the world is a lowering of the risk of stroke.

Questions still remain on the apparent relation between moderate alcohol intake and breast cancer. Certain studies indicate that the risk of breast cancer in women may increase with only moderate levels of alcohol intake. However, other studies indicate no such relationship. It will require further research to clearly define what role, if any, alcohol plays in breast cancer.

Excessive Alcohol Intake

Alcoholics and other abusers of alcohol generally are at increased risk for a number of diseases and causes of death. Driving while intoxicated causes the most accidental alcohol-related deaths. Rates of suicide are also increased for alcohol abusers. Furthermore, excessive drinkers experience increased rates of oral, pharyngeal, esophageal and stomach cancer. This is presumably due to the direct toxic effect of alcohol, and probably other substances in alcoholic beverages, on the tissues lining the upper gastrointestinal tract. Frequently, rates of such cancers are much higher, or even seen almost exclusively, among drinkers who also smoke cigarettes. Indeed, the combination of heavy drinking and smoking is particularly harmful.

Effects of Alcohol Consumption on Total Mortality

One approach to determine the net effects of an exposure (such as alcohol consumption) on disease rates is to calculate the rates for all diseases that may be related to the exposure and then attempt to balance the beneficial and harmful effects. When considering death as the outcome, however, we can simply look at total, or all-cause, mortality to judge the net effects of varying levels of alcohol consumption.

The best way to judge the net effects of alcohol consumption on a variety of causes of death is to look at all-cause mortality in follow-up studies, where data on alcohol use are collected prior to the development of disease or death.

The net effects of alcohol consumption on all-cause mortality were recently reported in nine follow-up cohort studies. All of the studies show that the relative risk of dying from any cause is lower for individuals in at least one category of alcohol consumption than for individuals consuming no alcohol. While the changes were not always statistically significant for each category in each study, the general pattern is very clear. Usually, the lowest risk of death is found in the categories reflecting moderate consumption (one to two drinks per day or individuals classified as "moderate drinkers").

Some of the studies included ex-drinkers and lifetime abstainers in the non-drinking category. The greater the proportion of ex-drinkers in the non-drinking category, the higher the death rate is expected to be for that category.

Fortunately, a number of the studies separated the non-drinking category into ex-drinkers and lifetime abstainers. In each of these studies, moderate drinkers had lower death rates than even lifetime abstainers. Results are the same when only healthy abstainers are included in the non-drinking category. Thus, these studies do not support the contention that the inclusion of ex-drinkers or sick individuals in the non-drinking category is the reason that moderate drinkers have lower rates of cardiovascular and other diseases. Overall, the data indicate that, in comparison with non-drinkers (even when the category is limited to healthy, lifetime abstainers), the risk of dying of any cause is lower for individuals who consume moderate amounts of alcohol.

Does Alcohol Consumption Prolong Life?

In reviewing the results of the studies summarized above, two things become clear. First, individuals who reported that they consumed small to moderate amounts of alcohol had lower death rates than non-drinkers. Thus, on the average, the lives of moderate drinkers were prolonged. The second message from the epidemiologic studies is that those individuals who consumed large amounts of alcohol had higher death rates than non-drinkers (and usually much higher than moderate drinkers). Therefore, on the average, the lives of heavy drinkers were shortened.

How sure can we be that it was the consumption of alcoholic beverages that improved mortality rates in these studies? It is always difficult to prove scientifically that some factor that is associated with an effect causes that effect. It is still possible, though unlikely, that it is not alcohol consumption itself but some lifestyle factor associated with the moderate consumption of alcohol that tends to lead to a prolongation of life.

However, the accumulating evidence strongly suggests that it is the consumption of alcoholic beverages that results in the lower risk of death among moderate drinkers in epidemiologic studies. The evidence includes the following factors:

> *a marked consistency of the findings of lower total mortality among drinkers in both men and women, in different ethnic groups and in different geographic areas of the world;*
> *a consistency across different age groups;*
> *a reduction of coronary atherosclerosis following alcohol intake in animal studies;*
> *a large number of identified mechanisms (increase in HDL-cholesterol, decrease in platelet aggregation, etc.) by which alcohol would be expected to reduce the risk of heart disease;*
> *higher death rates among non-drinkers even when ex-drinkers or individuals with other diseases are excluded.*

Many Lifestyle Factors Affect Longevity

Many factors other than alcohol consumption affect life span. Genetics probably plays the largest role in determining longevity. However, diet, smoking habits, physical activity, obesity, use of seat belts and many other lifestyle factors play a role as well. When thinking of alcohol and life span, it is important to remember that any potential prolongation of life associated with moderate drinking varies markedly according to individual characteristics, especially other health-related habits and medical conditions.

Implications for Individuals

Many factors should be taken into account when someone is considering whether or not to drink alcoholic beverages. Inappropriate use can lead to addiction, as well as to an increased risk of accidents, violence and a number of severe and even fatal diseases. The societal and personal costs of alcohol abuse are great. Women at increased risk of breast cancer may decide that it is preferable not to drink because of the possibility of a relation between alcohol and this disease. Thus, it is not possible to make blanket recommendations for everyone in the population.

Even physicians find it difficult to know whether it is safe (or advisable) for a given individual to drink. We must rely on the answers to questions such as, "Is there a family history of alcoholism?" "Has that individual ever abused alcohol or other substances?" "Does heart disease or certain cancers tend to run in the family?" "What is the individual's age, sex, body size?" "Is the individual taking medications or ill with a disease?" Such information helps determine how alcohol affects an individual and, to some extent, the risk that the individual will become an abuser of alcohol. We know that, on the average, the consumption of small to moderate amounts of alcohol results in few adverse effects and large beneficial effects in terms of preventing heart disease. However, we can never be sure, a priori, that an individual who begins to drink will not become an alcoholic. The decision to drink alcohol must be an individual choice, based not only on average values from epidemiologic studies, but on individual characteristics and the recognition of all of the potential implications of the decision.

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