

## How drinking affects Women's Health by Harvey E. Finkel, M.D.

Medical researchers were criticized a few years ago for not including representative samples of women and minorities in their studies.

It is clear, however, that they are catching up. The health effects of alcohol upon women and other previously neglected groups are now being examined and reported at an increasing rate.

We shall herein survey recent research in this field as it relates to women, particularly women who drink moderately. (It is a given that immoderately heavy drinking is very harmful to all.)

To begin with, the not so new: for some years it has been observed that it takes less alcohol, in any form, to cause trouble, such as liver or heart damage, for women compared to men. Among explanations posited (without evidence) were women's small size, higher proportion of body fat, and hormonal differences. It turned out that the major difference resides in the stomach lining, the gastric mucosa. The body's first response to alcohol after it is swallowed is to begin to neutralize it, break it down in the stomach by means of the enzyme alcohol dehydrogenase before it is absorbed into the bloodstream. Women's stomachs contain only about 60% as much alcohol dehydrogenase as do men's, and so can neutralize only about 60% as much alcohol, which leads to a substantially higher blood level for the same drink. This is the basis for the recommended safe limit for women of half that of men.

Cardiovascular disease, our most disabling and deadly disorder, carries the greatest weight of

evidence in both sexes of the beneficial effects of moderate drinking. These benefits, which include large reductions of the risks of heart attack and stroke, and of deaths there from, appear to come about by a complex of mechanisms stimulated by alcohol itself and by the antioxidant polyphenols of wine, and dark beers, for example.

The benefits have been shown to be related to both the quantity (within the moderate range) and frequency of drinking. We were surprised by a recently published study from Copenhagen and the Beth Israel Deaconess Medical Center in Boston, which indicates that the primary determinant of risk reduction in women is quantity consumed, while that in men depends on frequency of drinking. Women in a particular subgroup had only about one quarter the risk of coronary heart disease of abstainers; others had risk reductions of 20 to more than 35 percent. These women drank from one to fourteen drinks per week. Frequency of drinking had little effect. The maximum benefit in men was a 40% reduction in coronary risk among those who drank five to seven days weekly, even if only a drink or two. Thus far, there is no ready explanation for the difference between women and men, but, obviously, the research continues.

High blood pressure (hypertension), a major cardiovascular risk factor, has now been studied in tens of thousands of women in relation to drinking. In brief, blood pressure follows the hallowed J-shaped curve. Blood pressure is lower, i.e.,

more nearly normal, in women who drink moderately than in abstainers, near-abstainers, and, especially, heavy drinkers. Women who exceed recommended limits more than five days per week do raise their blood pressure. Men appear to derive minimal if any blood-pressure benefit from moderate drinking.

While it has been clear that the risks of developing several cancers are multiplied by excessive drinking, the possibility that modest consumption might modestly increase the risks of particular cancers continues to elude definitive solution. The results of studies of breast and colorectal cancers vis-à-vis alcohol are conflicting. Even in those showing a slight increase in breast cancer incidence associated with drinking, this increase was seen only in current consumers of postmenopausal hormones and in women deficient in the vitamin folic acid (folate), found in abundance in liver, various green leafy vegetables, some beans, and other sources.

Work recently reported from Australia and from Denmark indicates that ensuring adequate folate intake (400 micrograms per day) may eliminate the alcohol-related increase of risk. We should remember that, despite its fearsome prospect, breast cancer ranks well behind heart disease as the prime cause of death of women, so the cardiovascular benefits of moderate drinking are likely to overwhelm any slight increase in cancer risk, if such an increase exists.

Recognition of fetal alcohol syndrome more than 30 years ago led to a nearly panicked aversion to any alcohol at all by women who

were or who might be pregnant.

With understanding that the only heavy binge drinkers, likely with other liabilities, risked the syndrome for their babies, the pendulum swung toward complacency. With more recent research, it has swung back a little. Let me summarize current understanding of alcohol's effects upon reproduction.

Abuse of alcohol in either sex can impair fertility, especially in women, who may lose their menstrual periods. Even modest drinking may be a bad idea for those trying to conceive and during early pregnancy. Both men and women consuming ten or more drinks during the week of conception increase the risk of early pregnancy loss. Women who consume four or more drinks per week increase risk of premature delivery. The female offspring of rats fed low to moderate amounts of alcohol during pregnancy develop more breast tumors than those of abstinent pregnancies. Some adolescent children of human mothers who had averaged even fewer than one drink daily during pregnancy continue to exhibit growth deficit.

A report from Baltimore finds that current alcohol use, even of minimal degree, reduces hot flashes in women transitioning to menopause. The mechanism is unclear, for sex hormone levels are not affected.

It might surprise some to learn that the brains of women and men differ. New research adds weight to the notion. Despite the heightened sensitivity to alcohol mentioned above of females versus males, Duke University researchers have demonstrated that adult female rats are less sensitive than males to

sedative effects of alcohol. This difference appears to be related in some way to the rats' sex cycle. Yet, both human observations and animal studies are suggestive of a differential increased susceptibility of females to brain damage from alcohol abuse.

This difficulty may also apply to dependence on and withdrawal from alcohol.

Interestingly, women derive more benefit from moderate drinking than do men in mental function (cognition). Twelve thousand older women studied in Australia demonstrate that frequent light-to-moderate drinking is associated with better general health and physical and social functioning, and fewer deaths, than abstention or rare drinking.

Finally, I must allude to bones, the strength of which may be of critical importance to women of at least middle age. The data on drinking's influence on calcium metabolism and bone strength (or its opposite, osteoporosis) remains conflicted and confusing.

Don't worry, most of these uncertainties will eventually be ironed out. Till then, be aware that sex counts.

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