

Alcohol Protective Against MS?

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January 08, 2014

Drinking alcohol appears to have a protective effect on the risk of developing multiple sclerosis (MS), results from 2 new case-control studies suggest.

The studies, [published online](#) in *JAMA Neurology* on January 6, were conducted by a group led by Anna Karin Hedström, MD, from the Karolinska Institute, Sweden, who conclude that their findings give no support to advising patients with MS to completely refrain from alcohol consumption.

"We didn't look at patients who already had MS, so cannot make firm recommendations on this, but previous research has shown an anti-inflammatory effect of moderate alcohol intake," Dr. Hedström commented to *Medscape Medical News*. "I would say that if an MS patient wants to drink alcohol that is absolutely fine."

She added: "MS patients often ask what their children can do to reduce their risk of developing their disease. Whilst we wouldn't recommend them drinking large quantities of alcohol because of other negative consequences, we can probably say that alcohol in moderation will not increase risk and may reduce it somewhat. So I wouldn't advise people to start drinking alcohol specifically to reduce their risk of developing MS, but I would say that you don't need to avoid alcohol or stop drinking alcohol."

Dose-Dependent Association

Three previous small studies looking at the association of alcohol and MS have had inconclusive results, Dr. Hedström noted. "The current case-control studies are the largest to look at this association. We wanted to study this as experimental studies and clinical observations have suggested that alcohol has an effect on the immune system and may have anti-inflammatory actions mediated by induction of interleukin-10. As MS is an inflammatory condition, we thought alcohol may have a protective effect," she explained.

The 2 current studies were the Epidemiological Investigation of Multiple Sclerosis (EIMS), which included 745 patients with MS (cases) and 1761 controls recruited between 2005 and 2011, and the Genes and Environment in Multiple Sclerosis (GEMS) study, with 5874 cases and 5246 controls recruited between 2009 and 2011.

Patients with MS were found from participating centers and from MS registries, and controls were randomly selected from the national population register, matched by age, sex, and residential area at the time of disease onset.

The 2 studies were set up to examine the effect of many different environmental and genetic factors on the development of MS. Previous findings from these studies on the effect of smoking have already been published, showing that smoking appears to increase the risk of developing MS, especially in those who also have genetic risk factors for MS, Dr. Hedström reported.

The current results showed a dose-dependent inverse association between alcohol consumption and risk of developing MS that was statistically significant in both sexes.

"In the current analyses, if we compare drinkers with nondrinkers there is a small increase in risk of developing MS in the nondrinkers, but there was a clear dose response, and those with the highest alcohol consumption had a reduction in risk of developing MS of about 50%. This was similar in both studies. We also saw a reduction in risk in the low and moderate drinkers but this was not so pronounced," Dr. Hedström said.

Table. Risk of Developing MS for Participants by Alcohol Intake vs Never Drinkers

Alcohol Intake	Odds Ratio (95% CI) in EIMS	OR (95% CI) in GEMS
Women		
Low	1.0 (0.8 - 1.2)	0.8 (0.7 - 0.9)
Moderate	0.8 (0.6 - 1.1)	0.8 (0.7 - 0.9)
High	0.6 (0.4 - 1.0)	0.7 (0.6 - 0.9)
Men		
Low	0.9 (0.6 - 1.4)	0.8 (0.6 - 1.0)
Moderate	0.7 (0.4 - 1.3)	0.7 (0.6 - 1.0)
High	0.5 (0.2 - 1.0)	0.7 (0.5 - 0.9)
CI = confidence interval; OR = odds ratio.		

The protective effect of alcohol was greater in smokers. "We saw quite a dramatic effect in smokers. Alcohol seems to take away some, but not all, of the negative effects of smoking on the risk of MS," Dr. Hedström commented.

"I do believe this is a real effect that we are seeing," she added. "There were similar results in both studies, and we took many different confounding factors into account. The greatest limitation with studies like this is that individuals are asked to recall their alcohol intake from several years previously. While this is obviously difficult to estimate completely accurately, people can generally remember whether they were light, moderate, or heavy drinkers, as there were quite large differences between the 3 groups."

For these studies, low consumption was defined as less than 50 g/wk for women and 100 g/wk for men; moderate consumption was 50 to 112 g/wk for women and 100 to 168 g/wk for men; and high consumption was more than 112 g/wk for women and 168 g/wk for men. Dr. Hedström estimated that a glass of wine contains about 12 g of alcohol.

In the paper the researchers point out that alcohol may also have a protective effect on developing cardiovascular disease and possibly also some other autoimmune conditions, such as hypothyroidism, systemic lupus erythematosus, and rheumatoid arthritis.

The study was supported by grants from the Swedish Medical Research Council, the Swedish Council for Working Life and Social Research, the Knut and Alice Wallenberg Foundation, the AFA Foundation, the Swedish Brain Foundation, and the Swedish Association for Persons With

Neurological Disabilities. Dr. Hedström has disclosed no relevant financial relationships; disclosures for coauthors can be found in the paper.

JAMA Neurol. Published online January 6, 2014. [Abstract](#)

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Cite this article: Alcohol Protective Against MS? *Medscape*. Jan 08, 2014.