

Alcohol alters DNA in young, otherwise healthy, social drinkers

December 31, 2013
3:46 AM MST



A few "harmless" weekend beers found to cause genetic damage in young adults.
George Stojkovic, Free Digital Photos

Alcohol's damage goes beyond physical and mental health, right down to the genetic material, according to research posted in the Nov. issue of the journal, *Alcohol*.

A study of university students analyzed the effect of weekend alcohol consumption on their DNA. Until now, the damage done to genes in the early stages of alcohol abuse has never been documented, according to the researchers, because most of the studies are done at later stages of the disease of alcoholism with people who have been consuming alcohol in an addictive way for many years. "That is why this study is pioneering because it deals with the effect of alcohol on young, healthy people," the researchers reported.

The idea of studying the demaging "oxidative" effect of weekend alcohol consumption came about when researcher Adela Rendón was lecturing in Clinical Biochemistry at the National Polytechnic Institute in Mexico. Many of the students turning up for class first thing on Monday morning displayed a lack of attention and general malaise due to having a social drinking weekend the students regarded as "harmless."

The students were divided into two groups: the control group made up of the students who did not drink alcohol and the study group of those who drank an average of around a six-pack of beer on the weekend. Blood tests confirmed the 18- to 23-year-olds were otherwise healthy.

Oxidative damage is evaluated by a biochemical test and although the researchers expected to find oxidative damage, they were surprised by the result, as Rendón explained. "We saw that the ones who drank sustained twice as much oxidative damage compared with the group that did not consume alcohol."

The results revealed damage in 8 percent of the cells in the non-drinking group and 44 percent in the drinkers: 5.3 times more damaged cells. "The fact is, there should not have been any damage at all because they had not been consuming alcohol for very long, they had not been exposed in a chronic way."

The means by which alcohol manages to alter DNA is unclear. "When we talk about youth alcohol abuse, we are referring to youngsters who drink alcohol without having become addicted. Addiction involves a more complex issue. This is social alcohol use," said the researcher, "but use which causes damage in the long term and you have to be aware of that."

Article first published on 

 Physician reviewed



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