

## Drinking binges are bad for the heart

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*A study has shown that young adults who regularly imbibe large quantities of alcohol are more likely to have high blood pressure and elevated cholesterol levels, two important risk factors for cardiovascular diseases.*

Numerous studies have shown that people who moderately consume alcoholic drinks, i.e. one to two glasses per day for men and a glass daily for women, have a decreased risk of premature death due to cardiovascular disease. For example, a large study involving 333,247 American subjects, recently published in the *Journal of the American College of Cardiology*, reported a reduction by 20% in the risk of death for light to moderate drinkers, compared to people who had never consumed alcohol in their lives<sup>1</sup>. At these weak doses, the alcohol increases the levels of cholesterol-HDL, improves the control of glycaemia and has anticoagulant and anti-inflammatory effects, which contribute overall to diminishing the risk of a cardiovascular event, particularly heart attacks.

The quantities at which alcohol offers these benefits is, however, a tight fit: abusive consumption of alcohol (three glasses or more daily for men, two glasses or more for women) annuls all protective effects and, in fact, becomes very bad for the health. For one thing, the metabolism of alcohol generates acetaldehyde, a very toxic molecule which considerably increases the risk for several cancers, particularly those of the digestive system (mouth, larynx, esophagus, colon and liver) and of breast. Neither are the heart and blood vessels spared because abuse of alcohol promotes the development of several pathologies in the cardiovascular system which elevate the risk of premature death, including atherosclerosis, hypertension and some cardiomyopathies as well as arrhythmias.

### TOO MUCH TOO FAST

This negative impact of excess alcohol is also observed in people who drink a lot of alcohol in a short period of time, commonly referred to as bingeing (six or more drinks for a man, four or more for a woman at one event). During one such event, the quantity of alcohol consumed exceeds the limit for detoxification by the liver and there can be an accumulation of large quantities of blood acetaldehyde, to levels which remain high even several hours after the end of the event.

One recent study compared the cardiovascular health of people aged 18 to 45 years who participated in (or abstained from) such occasional binges. The researchers found that those who regularly consumed large quantities of alcohol in this way (once or more per month) exhibited arterial pressure and blood cholesterol levels that were higher than normal, compared to those who never consumed alcohol in this manner<sup>2</sup>. These observations are disturbing in that the frequency of binge drinking has considerably increased in



recent years and it is well established that elevated arterial pressure before the age of 45 is associated with a significant increase in the risk of premature death due to cardiovascular events. For this reason, it should be noted that a recent study found that individuals who frequently participated in binge drinking were twice as likely to experience a heart attack<sup>3</sup>.

For those who appreciate alcohol, it would thus be best to regularly enjoy small quantities of alcohol (1-2 glasses per man, 1 glass or less per woman) rather than consume large quantities on a single occasion. It is also wise to recall that, to be truly beneficial, the consumption of alcohol should be part of an overall healthy lifestyle including a diet focused on plant-based foods, regular physical activity, maintaining a healthy body weight and, obviously, refraining from the use of tobacco.

- (1) Xi, B et al. Relationship of alcohol consumption to all-cause, cardiovascular, and cancer-related mortality in U.S. adults. *J. Am. Coll. Cardiol.* 2017;70:913-922.
- (2) Piano, MR et al. Effects of repeated binge drinking on blood pressure levels and other cardiovascular health metrics in young adults: National Health and Nutrition Examination Survey, 2011-2014. *J. Am. Heart Assoc.* 2018;7:pii:e008733.
- (3) Ilic M et al. Myocardial infarction and alcohol consumption: A case-control study. *PLoS One* 2018;13:e0198129.