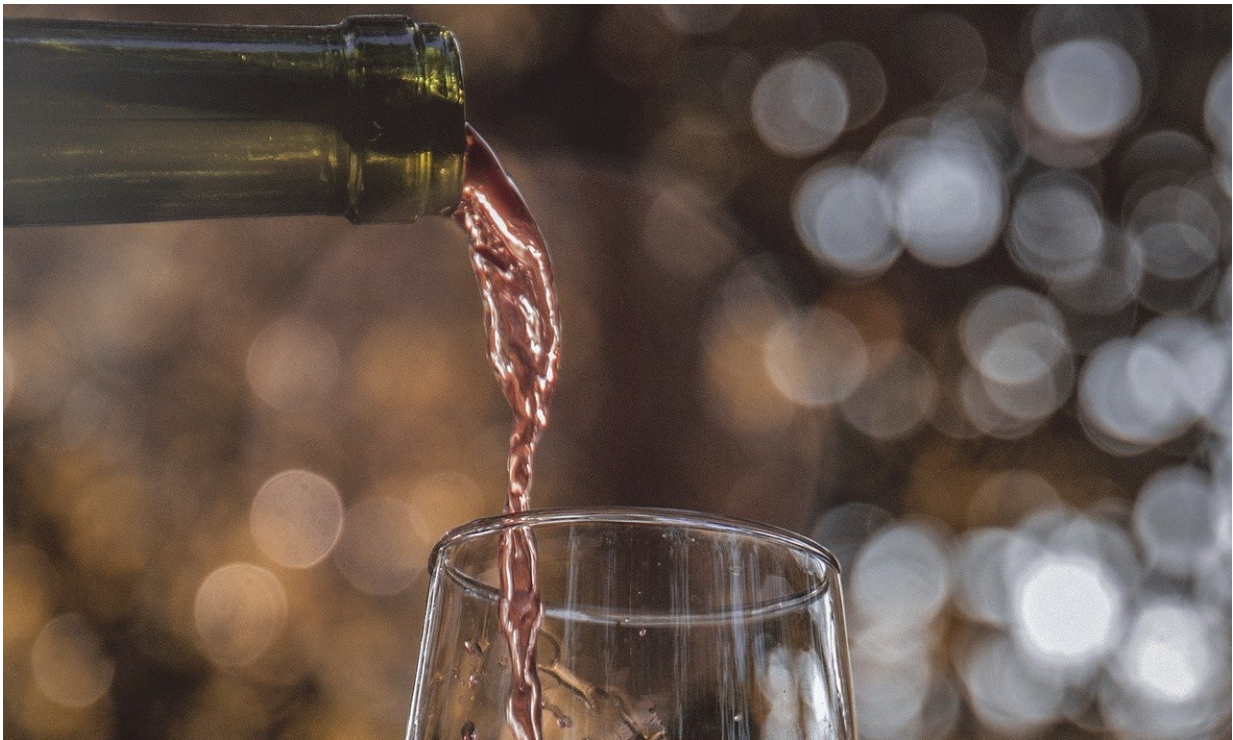


Smoking and drinking can damage arteries 'very early in life'

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The arteries of teenagers who drink alcohol and smoke, even very occasionally, are already beginning to stiffen by age 17, according to UCL research. Arterial stiffness indicates damage to the blood vessels, which predicts heart and blood vessel problems in later life, such as heart attacks and stroke.

The findings, published in the *European Heart Journal* today, also showed that a combination of high alcohol intake and [smoking](#) was linked to even greater arterial damage compared to [drinking](#) and smoking separately.

The researchers analysed data from 1,266 adolescents from Children of the 90s, the Avon Longitudinal Study of Parents and Children (ALSPAC), over a five-year period between 2004 and 2008.

"We found that in this large contemporary British cohort, drinking and smoking in adolescence, even at lower levels compared to those reported in adult studies, is associated with arterial stiffening and atherosclerosis progression," said senior author, Professor John Deanfield (UCL Institute of Cardiovascular Science)

"However, we also found that if teenagers stopped smoking and drinking during adolescence, their arteries returned to normal suggesting that there are opportunities to preserve arterial health from a young age."

Participants provided details of their smoking and drinking habits at ages 13, 15 and 17. Aortic stiffening was then assessed using a Vicorder device to measure carotid-femoral pulse wave velocity (the speed at which the arterial pulse propagates through the circulatory system).

Dr. Marietta Charakida, who carried out the research at UCL Institute of Cardiovascular Science but is now at King's College London, said, "Injury to the blood vessels occurs very early in life as a result of smoking and drinking and the two together are even more damaging.

"Although studies have shown teenagers are smoking less in recent years, our findings indicated approximately one in five teenagers were smoking by the age of 17. In families where parents were smokers, teenagers were more likely to smoke.

"Governments and policy-makers need to devise and implement effective educational strategies, starting in childhood, to discourage children and teenagers from adopting smoking and bad drinking habits. They should also be told about the benefits of stopping these unhealthy behaviours."

Participants recorded the number of cigarettes they had ever smoked and were grouped by intensity from 'low' (0-20 cigarettes) to 'moderate' (20-99 cigarettes) to 'high' (more than 100 cigarettes). Exposure to parental smoking was also assessed by questionnaires.

Teenagers in the 'high' intensity smoking group had a relative increase of 3.7% in the stiffening of their arteries (measured by mean increase in pulse wave velocity) compared to those in the 'low' smoking intensity group.

Participants also reported the age they started drinking alcohol and the frequency and intensity of alcohol consumption per month. Heavy, medium, and light intensity drinkers were defined as consuming more than 10 drinks, between 3-9 drinks and fewer than two drinks respectively on a typical day that they were drinking alcohol. One drink equated to eight grams of alcohol (roughly one third of a pint of beer).

Teenagers showed a preference for beer over wine or spirits, and those who tended to 'binge drink' (have more than 10 drinks in a typical drinking day, with the aim of becoming drunk), had a relative increase of 4.7% in the stiffening of their arteries compared to 'light' intensity drinkers. Participants in the 'high smoking and 'high' drinking intensity group had a relative increase of 10.8% in the stiffening of their arteries compared to those who had never smoked and low alcohol consumers.

"The age at which participants started drinking alcohol was not associated with arterial health, suggesting that duration of exposure

might not be that important at this young age," added Dr. Charakida. "In addition, no beneficial effect of low [alcohol](#) consumption was found with regards to arterial health."

More information: "Early vascular damage from smoking and alcohol in teenage years: the ALSPAC study", by Marietta Charakida et al *European Heart Journal*, [DOI: 10.1093/eurheartj/ehy524](https://doi.org/10.1093/eurheartj/ehy524)

The editorial, "Double hazard of smoking and alcohol on vascular function in adolescents", by Thomas Münzel et al *European Heart Journal* [DOI: 10.1093/eurheartj/ehy430](https://doi.org/10.1093/eurheartj/ehy430)

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