

Link between alcohol and blood pressure greater than previously thought

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Previous observational studies have reported that heavy alcohol intake is a risk factor for hypertension but such studies may be confounded by factors such as diet, smoking, exercise levels and socio-economic position. Clinical trials exploring the link are difficult to implement and have limited follow-up time.

The Bristol study, led by Dr Sarah Lewis of the University's Department of Social Medicine, took a different approach focused on people who have a mutation on a gene which affects their body's ability to eliminate alcohol.

Alcohol is initially metabolised to an intermediate compound, acetaldehyde, which is further metabolised and then eliminated from the body. The major enzyme responsible for this elimination is alcohol dehydrogenase 2 (ALDH2).

In some people, a genetic mutation leads to an inability to metabolize acetaldehyde and causes an accumulation of acetaldehyde after alcohol intake. This mutation is common in some Asian populations and results in facial flushing after consumption of alcohol coupled with intense nausea, drowsiness, headache and other unpleasant symptoms. People with this mutation therefore drink much less than those without it

The researchers looked at the ALDH2 genotype, comparing the blood pressure of those who have this mutation – the *2 *2 genotype – with those who do not – the *1 *1 genotype.

The study found that individuals with the *1 *1 genotype, who had an alcohol intake of around 3 units per day, had strikingly higher blood pressure than those with the *2 *2 genotype, who tend to drink only very small amounts, or no alcohol.

Dr Lewis said: “This study shows that alcohol intake may increase blood pressure to a much greater extent, even among moderate drinkers, than previously thought. Large-scale replication studies are required to confirm this finding and to improve the precision of our estimates.”

Source: University of Bristol

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