

Genetic component of alcohol consumption confirmed in Western populations

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How much alcohol you drink and how hard it affects you are rooted in your DNA. Much studied in Asian populations, this study at the University of Valencia contributes conclusive evidence to an emerging Western scientific literature on the subject.

A study carried out at the Universitat de València (University of Valencia, UV) has underlined the genetic component to the consumption and effects of alcohol. Specifically, it points to a "lazy" variant of the [alcohol dehydrogenase 1B \(ADH1B\)](#) gene, known to regulate the activity of a key group of enzymes.

When drinking, alcohol rushes into the bloodstream, where alcohol dehydrogenase enzymes metabolise the ethanol into acetaldehyde. If this happens quickly, lots of acetaldehyde accumulates in a short amount of time, which can lead to adverse effects such as flushing, nausea, and headaches. Conversely, if the ethanol is metabolised slowly, the alcohol remains intact in the blood for longer periods, prolonging its more pleasant, euphoric effects.

The speed at which this process takes place, the metabolic rate of ethanol, is where the ADH1B gene comes in. A super-efficient gene can make the effects of alcohol more unpleasant, while carriers of a "lazy" variant enjoy longer highs. This may influence the tendency of carriers of one or the other variant to drink more or less alcohol.

Francesc Francés, at the Department of Legal and Forensic Medicine at

the UV, says, "The main conclusion of this work is that this genetic polymorphism [the different variants of ADH1B carried by different people] seems to be linked to levels of alcohol consumption," adding that "this association is even more evident in the male population, perhaps due to the existence of fewer inhibiting social stereotypes".

The link between the "lazy" variant of the ADH1B gene and a greater [alcohol consumption](#) has long been proven by science within Asian populations. This study is one of the first to offer conclusive proof that it is also the case in the West.

Better treatment

As Francés points out, science is still in the early stages of understanding the influence of [genes](#) on certain behaviours. The findings of this study can be applied in alcohol detox treatments. Knowing whether a patient has this "lazy" gene variant can help determine the relative weight of genetic predisposition and environmental factors in their drinking habits, indicating one course of treatment or another.

In the longer term, this kind of study may have applications within legal and [forensic medicine](#), given the strong association between crime and [alcohol](#) consumption.

More information: 'Asociación entre el Polimorfismo ARG48HIS en el Gen de la Alcohol Deshidrogenasa 1B y el Consumo de Alcohol en Población Española.' *Gaceta Internacional de Ciencias Forenses*. ISSN 2174-9019

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