Genetic-based guidance reduces alcohol consumption among young adults, study finds

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Researchers from University of Tsukuba found that personalized guidance significantly reduced alcohol intake among young adults who

habitually engage in excessive drinking. This guidance was based on individual genetic information related to alcohol metabolism. Their findings underscore the effectiveness of personalized alcohol-reduction strategies.

Excessive alcohol consumption remains a global concern and has been included in the Sustainable Development Goals, also known as the Global Goals, adopted by the United Nations. In February 2024, the Ministry of Health, Labor and Welfare of Japan released the "Guidelines on Health-Conscious Drinking," which emphasize the importance of understanding genetic variations in alcohol degrading enzymes among individuals.

The guidelines highlight significant individual variations in the ability to break down alcohol, largely owing to genetic differences, which should be considered when consuming alcohol. However, limited research is available on how knowledge of one's own alcohol degrading enzyme strength impacts alcohol consumption.

In a study published in *BMC Medicine*, 196 adults aged 20–30 who exhibited excessive drinking behavior were randomly divided into an intervention group and a control group.

The intervention group received a session of alcohol-reduction instruction based on their individual genetic information related to alcohol metabolism, while the control group was given a pamphlet about alcohol.

The two genes involved in alcohol metabolism that were measured were type-1B alcohol dehydrogenase and type-2 aldehyde dehydrogenase.

The study observed considerable changes in alcohol consumption and Adult Alcoholic Beverage Habits Screening Test (AUDIT-C) scores,

with the intervention group showing significantly lower alcohol consumption and AUDIT-C scores than the control group three months after starting the program.

Although the intervention group continued to consume less alcohol than the control group six months into the program, the difference between the two groups was no longer significant. However, AUDIT-C scores in the intervention group continued to decrease significantly.

These results suggest that providing guidance on reducing alcohol consumption that emphasizes individuality, including personalized information on genes related to alcohol metabolism, is a useful approach for reducing excessive alcohol consumption.

Furthermore, a system that enables drinkers to understand their own constitution and self-manage their alcohol consumption may be necessary to reduce the health hazards caused by excessive alcohol consumption.

Provided by University of Tsukuba

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