

How harmful is alcohol for the adolescent brain?

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Credit: Leiden University

Under 18, no alcohol. In spite of this slogan, adolescents still have access to alcohol. But how harmful is that one beer for the adolescent brain? Research, including in Leiden, may provide the answer.

Over 43 per cent of young people between the ages of 14 and 18 have drunk [alcohol](#) at some point in time. The [adolescent brain](#) is still developing and the consequences of [moderate alcohol consumption](#) are as yet not fully known. Dr Sabine Peters, from Leiden University, who is one of the researchers in this project, comments: "We think that the [adolescent brain](#) is more sensitive than the adult brain to alcohol, simply

because the adolescent brain is still developing. The connections between brain cells are not as robust as in adults, which means they are more easily disrupted."

Existing brain scans

Leiden University is working with research groups at Erasmus MC, the Vrije Universiteit and UMC Utrecht. These four institutions each analyse their own data, taken from existing [brain scans](#) of some 1,400 adolescents. The research follows the adolescents over a number of years, during which two points in time are compared: a point when the [young people](#) have never drunk alcohol and a point after they have. These scans make it possible to map the consequences of alcohol use. The researchers are also studying the effect of alcohol use on adolescents' cognitive abilities.

Awareness

The large-scale research project is taking place at the request of the Brain Foundation of the Netherlands. "We want to use this research to show the possible risk factors and make people more aware of them," commented Dr Loes van Herten, Head of the Healthy Brain department at the Brain Foundation.

Replication

"Surprisingly enough, little research has been done on the effect of alcohol on the adolescent brain," Peters comments. "Most of the research has been done on animals, but it doesn't really translate well into humans." Peters explains that the research focuses directly on replication. "We first look per research group at the effects of alcohol use on the adolescent brain. We then look at whether we find the same

outcomes with other datasets where some other factor is being measured. To date, very little research has been done on this question, and certainly not in a replication study with several different large-scale datasets, so this is exciting [research](#)."

The data that Leiden University is making available comes from the Brain Time study, a large-scale longitudinal study in which three hundred adolescents have taken part. These young participants underwent MRI scans at two-year intervals, so that researchers could map the development of the brain.

Provided by Leiden University

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