

# Alcohol study

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The study has been carried out in [Helsinki University](#), at the [Department of Public Health](#) and the [Department of Psychology](#). The responsible researcher in Finland has been Prof. [Jaakko Kaprio](#), but the study group also has researchers from [Indiana University](#), USA.

- [The study in brief](#)
- [Why twins are been studied?](#)
- [Purpose of EEG study](#)
- [Summary of available data](#)

## The study in brief

The study consists of twin pairs who have participated in the [Finntwin16](#) and in the follow-up in 2000-2002. Both twin pairs with very similar alcohol use and twin pairs with dissimilar alcohol use have been picked up to the study. Additionally, included are some randomly picked twin pairs functioning as a control group for the study.

Abundant use of alcohol and its effects in brains has been studied a lot, but studies of minor use of alcohol and its effect to central nervous system are a lot more uncommon. One of the targets of this study is to understand how even a minor use of alcohol effects in brains. Results of the study can be utilized when new recommendations of alcohol use in relation to public health are given.

## Why twins are been studied?

In neuropsychological and neurophysiological studies divergence between individuals is great. In twin study, these differences can be minimized by comparing each twin pair so that the effect from genotypes and childhood can be scientifically controlled. This is the reason why the study requires both twin pairs with similar and dissimilar alcohol use. The alcohol use of people in the study represents normal distribution of alcohol use in Finland.

## Purpose of EEG study

[Electroencephalography](#) (EEG) is used to measure brain's voltage response related to attentiveness and function of short-term memory. According to previous studies voltage responses are very sensitive to the effects of large scale consumption of alcohol. This study is seeking to find out how minor use of alcohol effects the voltage responses of brains. This method gives precise information about the effects of alcohol in brains.

## Summary of available data

Description: mean age 26 years (range 23-30 y)		
Number of participants	Primary phenotypes	Other phenotypes

<p><b>602</b> subjects</p> <p>Zygosity is DNA-verified</p> <p><u>Same sex</u> <b>447</b> indiv</p> <p>MZ 217 indiv -&gt; 108 pairs, 1 odd</p> <p>DZ 230 indiv -&gt; 115 pairs</p> <p><u>Opposite sex</u> <b>155</b> indiv -&gt; 77 pairs, 1 odd</p>	<p><u>DSM-III-R diagnosis</u>: alcohol, cannabis and other illicit drugs, antisocial personality, depression, dysthymia, suicide, smoking, panic disorder, agoraphobia, social phobia</p> <p>Detailed alcohol information, FTND, GAF , Eating disorders</p> <p><u>Questionnaires</u>: TCI-R (temperament and character) *DSQ (defense styles) , TAS (alexithymia)</p> <p>*EEG (auditory &amp; visual)</p> <p><u>Neuropsychological tests</u>: attention, executive function, inhibition, verbal learning and memory, visual trajectory discrimination and recognition memory, working memory</p> <p><u>Anthropometrical measures</u>: height, weight and waist circumference</p> <p>*About 30% have missing information</p>	<p><u>Past</u>: 4 Qs from age 16,17,18 and adulthood (wt, ht, waist), MMPI, Zuckerman sensation seeking, GHQ, multiple alcohol inromation, smoking, exercise, symptoms, astma, hay fever etc.</p> <p>(Kaprio, Pulkkinen, Rose, Twin Res 2002)</p> <p>-</p> <p><u>FT16 epidemiological sample</u>: Self reported alcohol &amp; tobacco at age 16, 17, 18 &amp; ~25.MmMAST and RAPI at age 25</p> <p>-</p> <p><u>Personality</u>: MMPI (partly) at age 16, SSS (sensation seeking) at age 17 and 18, GHQ at age 25</p>
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Koskinen SM, Ahveninen J, Kujala T, Kaprio J, O'Donnell BF, Osipova D, Viken RJ, Näätänen R, Rose RJ. A longitudinal twin study of effects of adolescent alcohol abuse on the neurophysiology of attention and orienting. *Alcohol Clin Exp Res.* 2011 Jul;35(7):1339-50. doi: 10.1111/j.1530-0277.2011.01470.x. Epub 2011 Apr 4. PubMed PMID: 21463336; PubMed Central PMCID: PMC3117054.

Latvala A, Tuulio-Henriksson A, Dick DM, Vuoksima E, Viken RJ, Suvisaari J, Kaprio J, Rose RJ. Genetic origins of the association between verbal ability and alcohol dependence symptoms in young adulthood. *Psychol Med.* 2011 Mar;41(3):641-51. doi: 10.1017/S0033291710001194. Epub 2010 Jun 9. PubMed PMID: 20529418.