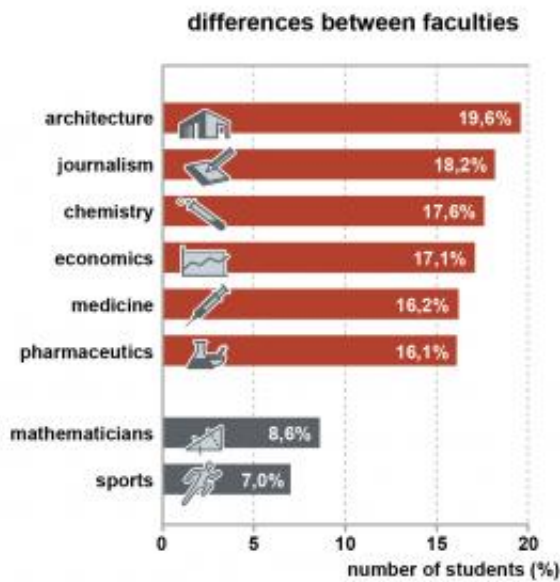
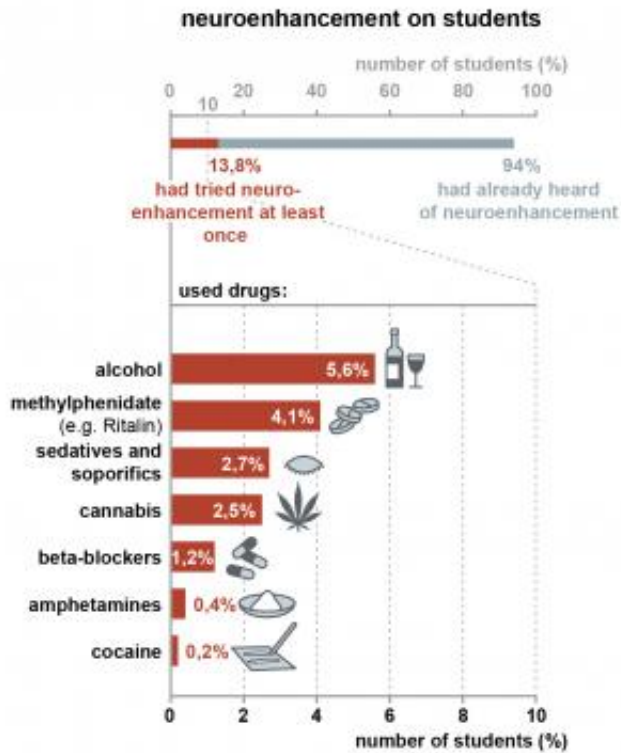


One in seven students has dabbled in "smart" drugs

November 14 2013



Source: Larissa J. Maier, Matthias E. Liechti, Fiona Herzig, Michael P. Schaub. To dope or not to dope: Neuroenhancement with prescription drugs and drugs of abuse among Swiss university students, PLOS ONE

Besides psychostimulants like Ritalin, students also consume sedatives, alcohol or cannabis. Credit: UZH

American and European studies prove that students use prescription medication or drugs to enhance their cognitive performance.

Researchers from the universities of Zurich and Basel examined whether Swiss students have also experimented with neuroenhancement and which substances they take by conducting a survey of 6,725 students with an average age of 23 at the two universities and ETH Zurich.

Majority consumes soft enhancers

Around 94 percent of the [students](#) surveyed had already heard of neuroenhancement. 13.8 percent of these students had tried to improve their [cognitive performance](#) with [prescription medication](#) or legal or [illegal drugs](#) at least once during their degrees. The substance most used was alcohol (5.6%), followed by methylphenidate such as Ritalin (4.1%), sedatives and soporifics (2.7%), cannabis (2.5%), beta-blockers (1.2%), amphetamines (0.4%), and cocaine (0.2%).

The respondents primarily took these [substances](#) during the exam preparation period, only consuming stimulating substances rarely in the exam situation or for general stress during their degrees. While daily neuroenhancement was a rare occurrence (1.8%), the majority consumed "soft enhancers" such as caffeinated products, non-prescription vitamin products or herbal sedatives before their last big exam – around a third even every day.

The number of Swiss students who take neuroenhancing drugs is comparable with recent studies conducted at European universities. "The purported frequency of neuroenhancement at Swiss universities needs to be put into perspective as we asked about psychoactive and calmative substances," says PD Michael Schaub, the study leader and head of the Swiss Research Institute for Public Health and Addiction.

Narrow majority obtained desired effect

As a rule, advanced students who also had a job alongside their degrees and reported higher stress levels consumed performance-enhancing substances more frequently. Certain differences were apparent depending on the degree course: In Switzerland, students of the subjects architecture (19.6%), journalism (18.2%), chemistry (17.6%), economics (17.1%), medicine (16.2%), or pharmaceuticals (16.1%) had more experience of neuroenhancement than budding mathematicians (8.6%) or sports students (7%), for instance.

According to the survey, the intended effect was only achieved in a narrow majority of the students, which is why only around half would actually take these substances to boost their brain power again. "The development of neuroenhancement at Swiss universities should be monitored as students constitute a high-risk group that is exposed to increased stress and performance pressure during their degrees," concludes Schaub. "However, there is no need to intervene as yet."

More information: Larissa J. Maier, Matthias E. Liechti, Fiona Herzig, Michael P. Schaub. "To dope or not to dope: Neuroenhancement with prescription drugs and drugs of abuse among Swiss university students." *PLOS ONE*. DOI: [10.1371/journal.pone.0077967](https://doi.org/10.1371/journal.pone.0077967)

Provided by University of Zurich

Citation: One in seven students has dabbled in "smart" drugs (2013, November 14) retrieved 10 April 2024 from <https://medicalxpress.com/news/2013-11-students-dabbled-smart-drugs.html>

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