

Toxicological analyses find that alcohol is the most dangerous out of 10 commonly used illegal and legal drugs.

Toxicology
 Ranking drugs
MOE
 alcohol

Ten drugs (heroin, cocaine, cannabis - THC, nicotine, alcohol, methadone, amphetamine, methamphetamine, MDMA and diazepam) were analysed for their margin of exposure (MOE), which measures the ratio between their toxic threshold and their intake, giving an indication of whether individuals are exposed to (or use) a drug at a lower level of risk or not.

An MOE of 100 means that the drug is being consumed at one hundredth of the toxic dose; an MOE of 1 means that the drug is being consumed at the toxic dose - thus, the higher the MOE, the lower the level of risk. MOE for drugs can be calculated taking into account a range of hazard outcomes in health and other well-being domains, as long as suitable dose-response data are available (which is not the case for most drugs). Therefore, analyses to date are primarily restricted to lethal outcomes based on animal studies, also a surrogate indicator of broader impact on functioning and well-being. Results for European adults are summarized in Figure 1. Alcohol is found to be the most dangerous drug, with a MOE of 1.0 when based on risk of death from liver cirrhosis. The low MOE for alcohol (and thus high risk) is due to the high exposure levels of alcohol use by European adults.

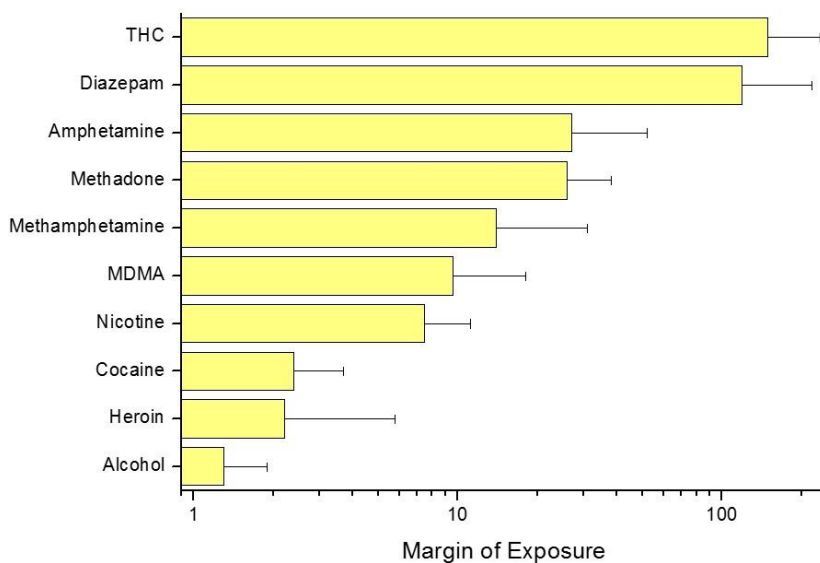


Figure 1 Margin of exposure for daily drug use estimated using probabilistic analysis. Source: Lachenmeier & Rehm (2015).

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Lachenmeier, D.W., & Rehm, J. (2015). [Comparative risk assessment of alcohol, tobacco, cannabis and other illicit drugs using the margin of exposure approach. Sci. Rep. 5, 8126; DOI:10.1038/srepo8126](#)

Rehm, J., Lachenmeier, D. W. & Room, R. (2014) [Why does society accept a higher risk for alcohol than for other voluntary or involuntary risks? BMC Med. 12, 189.](#)

Lachenmeier, D.W., & Rehm, J. Classification of addictions: Addendum Analyses of margins of exposure. [Deliverable 4.1 - Addendum, Work Package 4.](#)

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