

THE LANCET: PRESS RELEASE

EMBARGO: 0001H (UK time) Friday 16 October 2009

- **PROPHYLACTIC ADMINISTRATION OF PARACETAMOL TO CHILDREN RECEIVING VACCINATIONS CAN REDUCE VACCINE RESPONSE**
- **1 IN 25 ADULTS AGED 15-64 YEARS WORLDWIDE USING CANNABIS, DESPITE ADVERSE HEALTH EFFECTS**

1 IN 25 ADULTS AGED 15-64 YEARS WORLDWIDE USING CANNABIS, DESPITE ADVERSE HEALTH EFFECTS

In 2006, it was estimated that 166 million adults worldwide aged 15-64 years (1 in 25 people in that age range) had used cannabis, despite the risks of its adverse effects on health. The issues surrounding cannabis use are discussed in a [Review](#) in this week's edition of *The Lancet*, written by Professor Wayne Hall, School of Population Health, University of Queensland, Brisbane, Australia, and Professor Louisa Degenhardt, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia.

The estimates on cannabis use come from the UN Office on Drugs and Crime. Use was highest in the USA, Australia and New Zealand, followed by Europe. Because of their large populations, 31%, 25% and 24% of the world's cannabis users are estimated to be from Asia, Africa, and the Americas respectively, with Europe next on 18% and Oceania on 2%.

Trends in cannabis use are highly variable within and between regions. Although Australia and New Zealand are in the highest use category (>8% of the population aged 15-64 years are users), in both countries use is declining; similar trends have been reported in Western Europe. In contrast, use may be increasing in some low and middle income countries, a trend that has been reported in Latin America and several countries in Africa.

North American research has shown 10% of ever-users of cannabis become daily users, while 20–30% become weekly users. Use typically begins in teenage years, peaks in early and middle 20s, before declining as young people enter full-time employment, marry, and have children.

The active component of cannabis, tetrahydrocannabinol (THC), leaves users with a mild euphoric high, occurring around 30 minutes after smoking and typically lasting 1–2 hours. Between 5% and 24% of the 'smoked' THC reaches the brain. Acute adverse effects include anxiety, panic reactions and psychotic symptoms, most commonly reported by those new to the drug. Concerns exist regarding increasing THC content in cannabis, but evidence on this issue is very limited. Over the past three

decades some research has suggested that THC content in seized cannabis products may have risen over that time.

Cannabis use slows reaction time, information processing, and co-ordination—increasing the risk of road accidents for intoxicated users. Cannabis use impairs driving ability more modestly than alcohol use, since cannabis-affected drivers drive more slowly and take fewer risks. But studies suggest cannabis use at least doubles the risk of a road accident, with some suggesting an even steeper increase. A French study estimated that 2.5% of fatal accidents could be attributed to cannabis, compared to 29% to alcohol. Use of cannabis in pregnancy could reduce birthweight, but does not appear to cause birth defects.

Around 9% of people who ever use cannabis will become dependent, with 1–2% of adults affected in any one year. The equivalent lifetime risks are 32% for nicotine, 23% for heroin, 17% for cocaine, 15% for alcohol, and 11% for stimulant users. Some cannabis users seek help to stop report withdrawal symptoms, which include anxiety, insomnia, appetite disturbance, and depression. Cognitive-behavioural therapy reduces cannabis use and cannabis-related issues, but only 15% of people remain abstinent 6-12 months after treatment.

Regular cannabis smokers report more symptoms of chronic bronchitis (wheeze, sputum production, and chronic coughs) than do non-smokers. Cannabis smoke contains many of the same carcinogens as does tobacco smoke, with some present in higher concentrations. Case-control studies of lung cancer have found associations with cannabis use but their interpretation is uncertain because of confounding: most frequent and long-term cannabis users also smoke tobacco.

Deficits in verbal learning, memory, and attention are most consistently reported in heavy cannabis users, but these have been variously related to duration and frequency of use, and cumulative dose of THC. More functional brain imaging studies on larger samples of long-term users are needed to see if cognitive impairments in long-term users are correlated with structural changes in brain areas implicated in memory and emotion.

Cannabis use is associated with poor educational attainment, but the cause and effect of this relationship is unclear. The most plausible hypothesis is that impaired educational outcomes are attributable to a combination of higher pre-existing risk, effects of regular cannabis use on cognitive performance, increased affiliation with peers who reject school, and a strong desire to make an early transition into adulthood.

In the USA, Australia, and New Zealand, regular cannabis users are much more likely to use other illicit drugs later on, including heroin and cocaine, and the earlier the age at which a young person uses cannabis, the more likely they are to use heroin and cocaine. This could be for a number of reasons: cannabis users have more opportunities to use other illicit drugs because cannabis is supplied by the same black market; those who are early cannabis users are more likely to use other illicit drugs

for reasons that are unrelated to their cannabis use; and pharmacological effects of cannabis increase the propensity to use other illicit drugs. This issue remains the subject of considerable debate.

Cannabis can have an effect on the mental health of users. Studies suggest the risk of schizophrenia more than doubles in those who have tried cannabis by age 18. A meta-analysis reported in *The Lancet* in 2007 showed a 40% increase in risk of psychotic symptoms or disorders in people who had ever used cannabis, with the highest risk among regular users, and particularly among those with a vulnerability to psychosis. In the case of depressive disorders and suicide, the relationship with cannabis is uncertain.

The authors say that the public health burden of cannabis use is probably modest compared with that of alcohol, tobacco, and other illicit drugs. A recent Australian study estimated that cannabis use caused 0.2% of total disease burden in Australia—a country with one of the highest reported rates of cannabis use. Cannabis accounted for 10% of the burden attributable to all illicit drugs (including heroin, cocaine, and amphetamines). It also accounted for around 10% of the proportion of disease burden attributed to alcohol (2.3%), but only 2.5% of that attributable to tobacco (7.8%).

They conclude: “The most probable adverse effects [of cannabis] include a dependence syndrome, increased risk of motor vehicle crashes, impaired respiratory function, cardiovascular disease, and adverse effects of regular use on adolescent psychosocial development and mental health.”

Professor Wayne Hall, School of Population Health, University of Queensland, Brisbane, Australia. T) +61 7 3365 5330 E) w.hall@sph.uq.edu.au

Professor Louisa Degenhardt, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia. T) + 61 2 9385 0230 E) l.degenhardt@unsw.edu.au

For full **Review**, see: <http://press.thelancet.com/cannabis.pdf>