|  |  |  |  |
| --- | --- | --- | --- |
| Testo di partenza  \*NON TRADURRE IL TESTO EVIDENZIATO IN GIALLO | Testo tradotto dal candidato | Spazio a disposizione del correttore | Penalità |
| A little cannabis every day might keep brain ageing at bay By Michael Le Page |  |  |  |
| In some cultures, it’s traditional for elders to smoke grass, a practice said to help them pass on tribal knowledge. It turns out that they might just be onto something.  Teenagers who toke perform less well on memory and attention tasks while under the influence. But low doses of the active ingredient in cannabis, THC, might have the opposite effect on the elderly, reversing brain ageing and restoring learning and memory – at least according to studies of mice. |  |  |  |
| “We repeated these experiments many times,” says team leader [Andreas Zimmer](http://www.molpsychiatrie.uni-bonn.de/) at the University of Bonn, Germany. “It’s a very robust and profound effect.” |  |  |  |
| Zimmer’s team has been studying the mammalian endocannabinoid system, which is involved in balancing out our bodies’ response to stress. THC affects us by mimicking similar molecules in this system, calming us down. |  |  |  |
| The researchers discovered that mice with genetic mutations that stop this endocannabinoid system from working properly age faster than normal mice, and show more cognitive decline. This made Zimmer wonder if stimulating the endocannabinoid system in elderly mice might have the opposite effect. |  |  |  |
| Brain boost |  |  |  |
| To find out, the team gave young (2-month-old), middle-aged (12-month-old) and elderly (18-month-old) mice a steady dose of THC. The amount they received was too small to give them psychoactive effects. |  |  |  |
| After a month, the team tested the mice’s ability to perform cognitive tasks, such as finding their way around mazes, or recognizing other individuals. |  |  |  |
| In the control groups, which received no THC, the young mice performed far better than the middle-aged and elderly mice. But the middle-aged and elderly mice who had been given THC performed as well as the young mice in the control group. |  |  |  |
| Further studies showed that THC boosted the number of connections between brain cells in the hippocampus, which is involved in memory formation. “It’s a quite striking finding,” says Zimmer. |  |  |  |
| Age effect |  |  |  |
| But THC seemed to have the opposite effect in young mice: when they were given THC, their performance in some tasks declined. |  |  |  |
| Young people also perform worse in learning and memory tests in the hours and days after smoking cannabis, but a joint delivers far higher doses than the mice received. Claims that heavy marijuana use can [permanently impair cognition](https://www.newscientist.com/article/mg17323330-500-the-war-on-weed/) are [disputed](https://www.newscientist.com/article/mg15721224-700-marijuana-a-safe-high-cannabis-faces-serious-charges-from-the-us-government-you-are-the-jury/). |  |  |  |
| Zimmer thinks his findings show that both too much and too little stimulation is harmful. |  |  |  |
| The [endocannabinoid system](https://www.newscientist.com/blog/shortsharpscience/labels/drugs.html) is most active in young mice (and people), so extra THC may overstimulate it. In older mice, by contrast, endocannabinoid activity declines, so a little THC restores it to optimum levels. |  |  |  |
| Human trial |  |  |  |
| The team’s findings aren’t that surprising, says neuropsychopharmacologist [David Nutt](https://www.imperial.ac.uk/people/d.nutt) of Imperial College London. Animal studies have shown that the cannabinoids the body produces itself can have beneficial effects on the brain. |  |  |  |
| And Nutt and his colleagues have also found that THC use protects alcoholics from alcohol-induced brain damage. |  |  |  |
| Zimmer’s team is now planning human trials to find out whether older people can benefit from low doses of THC too and, if so, from what age it is beneficial. “There is no formula to translate mouse months into human years,” Zimmer says. |  |  |  |
| The trials will use purified THC rather than weed so the dosage can be precisely controlled. It might be administered as a mouth spray, for example. |  |  |  |
| Even if the trials get similar results, it is unlikely that doctors will start prescribing spliffs to older people. “The dosing is important,” Zimmer says. “Smoking marijuana is very different.” |  |  |  |