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In the news

MIND CONTROL

The stress of having to write this article in just 1 hour makes it easy to focus the mind. However, in normal daily life there is a constant barrage of distractions to contend with. For people with attention deficit and hyperactivity disorder (ADHD), filtering out these unwanted distractions and concentrating on the task in hand is no easy matter. ADHD sufferers essentially "pay attention to too many things" says Candice Drouin, University of Philadelphia (*New Scientist*, 3 June 2006).

The drug Ritalin has been used to treat ADHD patients for more than two decades. However, despite its common use, little was known about how this amphetamine relative actually worked. Now, Drouin and her colleagues report in the *Journal of Neurophysiology* that, in rats, Ritalin raises the level of the neurotransmitter noradrenaline and simultaneously suppresses the brain's response to extraneous sensory input. "It probably helps the animal to focus on what's new and not be distracted by what's familiar" says Druoin (*New Scientist*, 3 June 2006).

The team measured the activity of neurons of the somatosensory cortex of rats while stimulating their whiskers. They found that in rats that were given a low or moderate dose of methylphenidate (Ritalin) the level of noradrenaline was higher, and also that the long-latency phase of the brain's response to sensory stimuli was reduced. This is believed to help filter out the sensory noise (*Medical News Today*, 31 May 2006).

So how does this study relate to ADHD in humans? Barry Waterhouse, who co-authored the paper, says "this experiment adds to our knowledge of what the drug is doing at the cellular level" and suggests that the question for future studies is "how does the individual's perception of what is an important stimulus factor into the equation?" (*Medical News Today*, 31 May 2006).

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