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Better sleep may put Huntington's disease sufferers back on track

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Mice carrying the genetic mutation that causes Huntington's Disease (HD) showed marked improvements in alertness and their ability to learn after they were given drugs that put them to sleep.

Researchers at the University of Cambridge found that daily treatments of Alprazolam or chloral hydrate, two different sedative drugs, enabled them to develop a regular sleep pattern and improved their cognitive function – their ability to understand and act on information.

According to the Cambridge neuroscientists conducting the research, HD mice have abnormal circadian rhythms; their daily sleeping and waking cycles are disrupted and irregular. Since sleep disruption contributes to problems with perception and learning in healthy people, the team wondered whether the circadian disruption and cognitive disturbances in HD mice were linked.

To test this, drugs were administered to regulate sleep patterns in the mice. The results, published today in the *Journal of Neuroscience*, show that both drugs caused a noticeable improvement in learning and Alprazolam also improved arousal. The study shows for the first time that treatments aimed at restoring normal sleep-wake activity could slow the cognitive decline that is such a devastating feature of the disease.

Dr. Jenny Morton, lead author of the study, said: “In the future, more attention should be paid to understanding sleep and circadian disturbance in HD. Management of these patterns may not only improve patients

ability to think, learn and perform, but would also improve quality of life for both them and their carers."

The results have short-and long-term implications for treatment of HD and for the reversal of the disease's impairments. Recognising that sleep disturbance is a part of the disease means that clinicians should include focussed management of sleep symptoms in their treatment of HD patients.

Source: University of Cambridge