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Thursday, September 7, 2006

Rats can teach humans something about jetlag

By Andrew Ryan, Globe Correspondent

Rats, it seems, not only suffer from jetlag, but the furry rodents can teach frequent human flyers how to skip between time zones without losing too much sleep.

No, the researchers from the University of Massachusetts Amherst did not hopscotch with a pack of rats from Boston, to Tahiti, to Norway, just to see how the animals handled the time changes.

Instead the computer scientists, who published their findings in the current issue of the Journal of Biological Rhythms, spent almost two years building a computer model with data from earlier laboratory studies examining the circadian rhythms, or internal clocks, of rats. The results offered the researchers some insight into how humans handle time change.

"People can control their own jet lag," said Hava Siegelmann, a professor at UMass professor who built the analytical model with professor Tanya Leise.

Humans, like rats, have a series of internal clocks that are influenced by the exposure to light. Each cell and organ in the body has its own clock that is synced with a master clock in the brain, Siegelmann said.

When travelers jump several time zones, it can throw the time mechanism in the body in flux. While a person may be able to force themselves to sleep and reset the master clock in their brain, the individual clocks in the lungs or the liver, for example, can take several days to adjust, leaving the body feeling groggy and jetlagged.

By manipulating the time laboratory rats are exposed to light, scientists have long been able to simulate and study jetlag. Siegelmann and her colleagues took the data from years of lab tests and fed it into a computer. The computer model showed Siegelmann that rats could endure a four hour time jump before their internal clocks jumbled and jetlag set in.

The solution, the research showed, is to travel in steps, giving the body time to acclimatize to a new time zone. If it isn't practical to spread long distance travel over several days, Siegelmann suggested adjusting the time you eat, sleep and exercise at home.

"Before you travel," Siegelmann said, "You have to do some changing of your own schedule."

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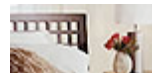
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