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NEWS

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Viagra cures hamster jetlag

Little blue pill might help people shift their body clock forwards.

Heidi Ledford

It's a safe bet that most people who take sildenafil — better known under its commercial name, Viagra — aren't looking for a good night's rest. But it turns out that the 'little blue pill' commonly used to treat erectile dysfunction is also good for relieving some forms of jetlag. Well, at least in hamsters.

Diego Golombek and his colleagues at the National University of Quilmes in Buenos Aires, Argentina, injected hamsters with sildenafil and then



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pushed the animals' light/dark schedule ahead by six hours, roughly the equivalent of putting them on a plane from New York to Paris. Hamsters who'd had a dose of sildenafil adjusted their busy wheel-running schedules to the new light regime 50% faster, the team reports in *Proceedings of the National Academy of Sciences*¹.

Hamsters on viagra could deal more easily with the jetlag of going from New York to Paris.

Getty

Although the results seem to provide relief to jetsetting hamsters, whether sildenafil will have the same effect in humans remains to be seen. If the drug does work in humans, it could be easier to use than melatonin, a hormone used to overcome jetlag that requires several doses to have a significant effect. Golombek's hamsters only needed a single dose of sildenafil to accelerate their adjustment to new time zones. But the drug was administered by injection and it isn't yet known whether taking one of those little blue pills will have the same effect.

And what about the other effects of sildenafil? In hamsters as in humans, sildenafil is, to use the parlance of the field, 'erectogenic'. But Golombek says the hamsters were able to adjust 33% faster to the six-hour time change at what is thought to be suberectogenic doses of the drug. Still, he admits, "We don't know if this will be true in humans."

No drug treatment to reset body clocks works well unless coupled with active exposure to the new light regime. "You still want to get out in the light in the morning and get active," says Martha Gillette, a neurobiologist at the University of Illinois, Urbana-Champaign. "That's still the first stimulus for phase resetting."

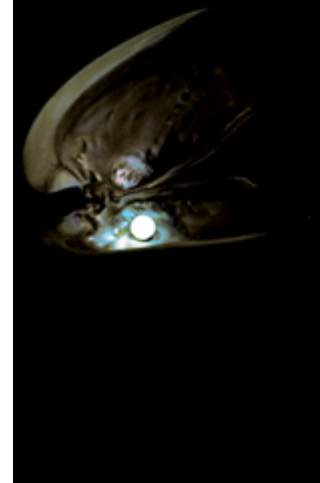
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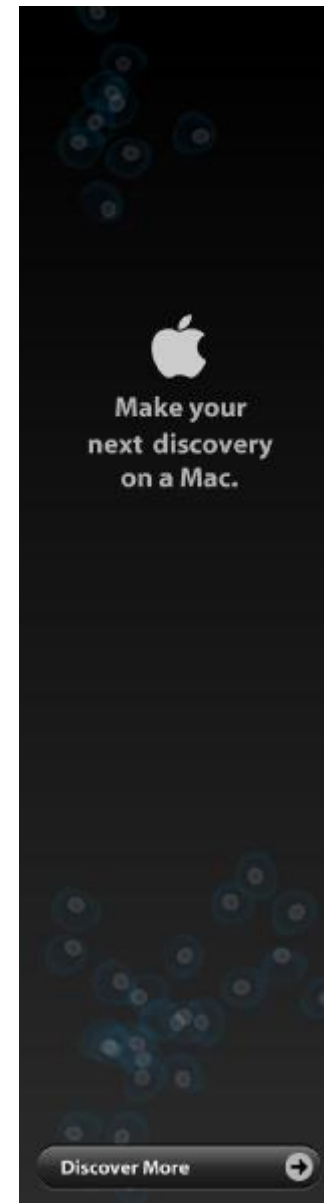
Sildenafil probably targets both erectile dysfunction and jetlag by boosting levels of a signalling compound known as cGMP. cGMP signals blood-vessel dilation as well as modulation of the body's internal clock in response to changes in light/dark cycles. Sildenafil acts by inhibiting an enzyme that breaks down cGMP, and Golombek found that hamsters treated with the drug accumulated twice as much cGMP in the region of the brain responsible for controlling the body's internal clock.

Previous research has shown that cGMP is involved in setting the internal clock forward, as would be necessary when flying from west to east, but not in moving the clock back. That is supported by this study: hamsters that received the drug showed no improved adaptation when light/dark cycles were delayed by six hours.

Still, many people say it's that west-to-east trip that's particularly tough, says Golombek. "The human internal clock has a period which is slightly longer than 24 hours. When you fly eastward, you're making your day less than 24 hours, which is more difficult for the clock. If you fly westward, you've got a longer day and it's relatively easier for the clock to cope with that."

Out of synch

Jetlag is more than a nuisance; chronic jetlag has been linked to increases in heart disease, obesity, diabetes and even accelerated tumour growth. "When you disrupt the internal clock, you disrupt the synchrony among every process in your body," says Lance Kriegsfeld, a neurobiologist at the University of California, Berkeley. "When you're jetlagged, all your different rhythms catch up at a different rate to the new time zone," says Kriegsfeld. "They're out of synch relative to one another."



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Kriegsfeld compares the result to a game of volleyball in which one player sets the ball, but no one is there to hit it.

At this point, it isn't clear whether sildenafil can successfully restore synchrony among all body processes, says Kriegsfeld. The fact that the hamsters have adjusted their running schedule suggests that the brain's central timekeeper has reset itself to the new regime. "But does everything else catch up?" Kriegsfeld asks. "Or are you pushing some things further out of phase

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1. Agostino P. V., Plano S. A. & Golombek D. A. Proc. Natl Acad. Sci. USA, doi:10.1073/pnas.0703388104 (2007).

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