



EVERYDAY JET LAG

How sleeping against type can affect your health.

By **GRETCHEN REYNOLDS**

If you consider yourself to be a born morning person or an inveterate night owl, there is new research that supports your desire to wake up early or stay up late. Each of us has a personal “chronotype,” or unique circadian rhythm, says Till Roenneberg, a professor

of chronobiology at Ludwig Maximilian University in Munich and one of the world’s experts on sleep. In broad strokes, these chronotypes are usually characterized as early, intermediate or late, corresponding to people who voluntarily go to bed and wake early, at a moderate hour or vampirishly late. If you are forced to wake up earlier than your body naturally would, you suffer from what Roenneberg calls “social jet lag.”

People with an early chronotype may do well with a 7 a.m. workday rising time, but others do not. Sleeping out of sync with your innate preferences can be detrimental to your health, especially for late chronotypes, who tend to be the most at odds with typical work schedules. A study conducted by the National Institutes of Health and published in

March in PLOS ONE found that obese adults with late chronotypes tended to eat larger meals, develop more sleep apnea and have higher levels of stress hormones and lower levels of HDL, or “good,” cholesterol than obese people with other chronotypes.

Their chronotype may also have contributed to weight gain in the first place, Roenneberg says. Research has shown that a single hour of social jet lag, the mismatch between your chronotype and your schedule, increases your risk for obesity by about 33 percent. In a study published in June in Chronobiology International, late-night chronotypes gained more weight during their freshman years at college than other new students did, even though college is one of the best fits for night owls.

The brain can also be affected. Another study in Chronobiology found that “individuals having a preference for evening hours to carry out their daily activities are prone to depression,” more than earlier chronotypes are. In an August study in NeuroImage, scientists in Germany scanned the brains of young men and found that white matter, which carries and amplifies signals between neurons, was less cohesive in certain parts of the brain in late chronotypes than in the other volunteers. This could make the brains of late chronotypes a little “less efficient,” says Jessica Rosenberg, a researcher at the Institute of Neuroscience and Medicine in Jülich, Germany, and an author of the study, although, she points out, it’s impossible to tell whether the lack of sleep caused the brain changes or vice versa.

Almost every cell in our bodies is likely to reflect our chronotype. In a study in May in Chronobiology, scientists typed volunteers using a questionnaire, then examined cells from their inner cheeks and found that late chronotypes tended to have activity in genes that contribute to later sleep onset, offering further evidence that the urge to stay up late or to rise early is not a lifestyle choice but resides in our DNA.

Few people have the luxury of organizing their lives by their chronotypes. If you can’t convince your boss that your body clock requires a later start, consider “getting outside more,” Roenneberg says. Infusions of sunlight nudge most chronotypes toward an earlier sleep time. More immediately, look forward to Nov. 3, the end of daylight saving time. The summertime clock typically disrupts sleep for all chronotypes, he says. “Everybody sleeps better when it ends.” ♦

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