Early birds less prone to depression

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Middle-to-older aged women who are naturally early to bed and early to rise are significantly less likely to develop depression, according to a new study by researchers at University of Colorado Boulder and the Channing Division of Network Medicine at Brigham and Women's Hospital in Boston.

The study of more than 32,000 female nurses, published in the *Journal of Psychiatric Research*, is the largest and most detailed observational study yet to explore the link between chronotype, or sleep-wake preference, and mood disorders.

It shows that even after accounting for environmental factors like light exposure and work schedules, chronotype—which is in part determined by genetics—appears to mildly influence depression risk.

"Our results show a modest link between chronotype and depression risk. This could be related to the overlap in genetic pathways associated with chronotype and mood," said lead author Céline Vetter, director of the Circadian and Sleep Epidemiology Laboratory (CASEL) at CU Boulder.

Previous studies have shown that night owls are as much as twice as likely to suffer from depression. But because those studies often used data at a single time-point and didn't account for many other factors that influence depression risk, it has been hard to determine whether depression leads people to stay up later or a late chronotype boosts risk of depression.

To shed light on the question, researchers used data from 32,470 female participants, average age 55, in the Nurses' Health Study, which asks nurses to fill out health questionnaires biennially.

In 2009, all the participants included in the study were free of depression. When asked about their sleep patterns, 37 percent described themselves as early types, 53 percent described themselves as intermediate types, and 10 percent described themselves as evening types.

The women were followed for four years to see who developed depression.

Depression risk factors like body weight, physical activity, chronic disease, sleep duration, or night shift work were also assessed.

The researchers found that late chronotypes, or night owls, are less likely to be married, more likely to live alone and be smokers, and more likely to have erratic sleep patterns.

After accounting for these factors, they found that early risers still had a 12—27 percent lower risk of being depressed than intermediate types. Late types had a 6 percent higher risk than intermediate types (this modest increase was not statistically significant.)

"This tells us that there might be an effect of chronotype on depression risk that is not driven by environmental and lifestyle factors," said Vetter.

Genetics play a role in determining whether you are an early bird, intermediate type, or night owl, with

research showing 12-42 percent heritability. And some studies have already shown that certain genes (including PER2 and RORA), which influence when we prefer to rise and sleep, also influence depression risk.

"Alternatively, when and how much light you get also influences chronotype, and light exposure also influences depression risk. Disentangling the contribution of light patterns and genetics on the link between chronotype and depression risk is an important next step" Vetter said.

Vetter stresses that while the study does suggest that chronotype is an independent risk factor for depression, it does not mean night owls are doomed to be depressed.

"Yes, chronotype is relevant when it comes to depression but it is a small effect," she says, noting that her study found a more modest effect than previous ones have.

Her advice to night owls who want to lower their risk?

"Being an early type seems to beneficial, and you can influence how early you are" she said. Try to get enough sleep, exercise, spend time outdoors, dim the lights at night, and try to get as much light by day as possible.

More information: Céline Vetter et al, Prospective study of chronotype and incident depression among middle- and older-aged women in the nurses' Health Study II, *Journal of Psychiatric Research* (2018). DOI: 10.1016/j.jpsychires.2018.05.022

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