

Shift workers with high blood pressure may face higher heart disease, diabetes risk

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People with high blood pressure may be at higher risk for developing cardiovascular disease and diabetes if they work frequent night shifts,

new research suggests.

The higher risk was more pronounced among people who also slept too much or too little when they weren't working, according to the findings published Monday in the *Journal of the American Heart Association*.

The research builds on previous studies showing an association between shift work and a higher risk for cardiovascular disease, Type 2 diabetes and [high blood pressure](#), also called hypertension, in people who were otherwise healthy.

The new study is the first to investigate the role of shift work in the progression from high blood pressure—a single cardiometabolic condition—to cardiometabolic multimorbidity, defined by the researchers as having high blood pressure in addition to diabetes, [coronary heart disease](#) or stroke.

"Since shift work is increasingly common and hypertension is a leading risk factor for cardiometabolic multimorbidity, it is crucial to clarify the association between shift work and cardiometabolic multimorbidity risks," said the study's senior author Dr. Yongping Bai, an associate professor in the department of geriatric medicine at Xiangya Hospital of Central South University in Changsha, China.

The new findings, when added to previous research, suggest "working night shifts can be dangerous to health in both hypertensive individuals and healthy individuals," Bai said.

Researchers analyzed health and employment data for 36,939 participants in the UK Biobank, a large biomedical database of people living in the United Kingdom. Participants, who enrolled in the study between 2006 and 2010, were 40 to 69 years old. They were followed for nearly 12 years on average.

Among people with high blood pressure, usually or always working night shifts was associated with a 16% higher risk of developing diabetes, heart disease or stroke than those who worked during typical daytime work hours. Shift work was defined as any work done during non-standard working hours, or any time between 6 p.m. and 7 a.m. Shift workers make up about 20% of U.S. and European workers, the study said.

To analyze how night shift frequency affected cardiometabolic health, researchers looked at 17,639 study participants who answered questions about lifetime employment. Compared to people who worked day shifts, working an average of one to 10 night shifts per month over a lifetime led to a 14% higher risk for developing an additional cardiometabolic condition. Risk was even higher—19%—among those who worked more than 10 [night shifts](#) per month.

The risk of developing additional cardiometabolic conditions was higher even if night shift workers got the same seven to eight [hours of sleep](#) as daytime workers. The risk was even more pronounced if they slept less than seven hours or more than eight.

"It's actually really difficult to get good sleep if you are a shift worker," said Girardin Jean-Louis, director of the Center for Translational Sleep and Circadian Sciences and a professor of psychiatry and neurology at the University of Miami.

Alternating between night and day shifts can make it difficult for the body to adjust and harder to maintain healthy sleep habits, said Jean-Louis, who was not involved in the new study.

The [human body](#) has an internal clock that regulates when it should be awake and when it should be asleep, which responds to light and dark as triggers for these circadian rhythms. "That process is inverted for shift workers," Jean-Louis said. "We can teach someone to completely

become a night worker without comorbid conditions. But once you become habituated to that shift, you don't want to go back to the day shift. That's the problem. It's the constant shifting."

Most adults need from 7 to 9 hours of sleep each night to promote good heart health, according to the American Heart Association's Life's Essential 8 checklist for improving and maintaining cardiovascular health. The Centers for Disease Control and Prevention recommends maintaining a consistent sleep schedule; sleeping in an environment that is dark, quiet and at a comfortable temperature; removing [electronic devices](#) from the bedroom; avoiding large meals, caffeine and alcohol before bedtime; and getting regular physical activity to maximize the chances of getting sufficient, quality sleep.

Jean-Louis said future research should focus on whether [shift work](#) affects cardiometabolic risks differently based on race, ethnicity or gender, especially for people already at increased risk for [cardiovascular disease](#), such as Black adults, who have disproportionately high rates of high blood pressure.

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