

# Sleeping with Abnormal Blood Pressure Increases the Risk of Heart Failure and Stroke, according to a New Report

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## Editorial

According to new research, people who have high blood pressure while sleeping are more likely to develop potential cardiovascular disease, especially heart failure, even if their blood pressure during the day is normal. The findings were published today in *Circulation*, the flagship publication of the American Heart Association. In-office and daytime blood pressure tests are widely used by health care providers to assess a patient's hypertension medication requirements and dosages. Many patients, however, may have nocturnal hypertension, or elevated blood pressure while sleeping, which goes unnoticed. The study participants were told to sleep or rest during the night and continue with their normal activities during the day. In a diary, they documented their everyday tasks, as well as their sleep and wake times. Almost every participant took 20 automatic blood pressure readings during the day and seven at night. Patients self-reported the moment they fell asleep and woke up to assess night-time measurements. All other readings were taken throughout the day.

Annual phone or clinic visits were used for follow-up, with average follow-up ranging from two to seven years. Researchers looked at the rates of cardiovascular disease incidents among the participants, such as heart attacks, strokes, heart failure, and death. The timing and frequency of heart attacks in relation to blood pressure fluctuations were investigated to see whether there was any connection. A total of 306 cardiovascular events occurred in study participants, including 119 strokes, 99 diagnoses

of coronary artery disease, and 88 diagnoses of heart failure.

According to the findings, elevated levels during sleep—defined as a systolic blood pressure reading 20 mm Hg higher than a person's daytime systolic reading—were linked to a higher risk of atherosclerotic cardiovascular disease and heart failure. Excessive blood pressure reduction during sleep can also be dangerous. When nighttime systolic pressure dropped to dangerously low levels, patients with well-controlled hypertension had a substantially increased risk of stroke.

Because of the participants' advanced age, the research focused on systolic rather than diastolic measurements. Furthermore, echocardiograms were not included in the study analyses, preventing any degree of distinction between forms of heart failure.

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