

Sudden blood pressure drop with position change linked to higher risk of heart failure

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People whose blood pressure drops rapidly when they move from lying down to standing, known as orthostatic hypotension, may have a higher risk of developing heart failure, according to research published in *Hypertension*, an American Heart Association journal.

The link between orthostatic hypotension and heart failure was stronger in people 45-55 years old compared to those 56-64, researchers said. [High blood pressure](#), which was present in over half of people who developed heart failure, may be partially responsible for the association.

Over an average 17.5 years of follow-up, researchers looked at the association between orthostatic hypotension and developing heart failure. They measured patients' blood pressure while lying down and shortly after standing up.

They defined orthostatic hypotension as a decrease of 20 points or more in the systolic (top number) or a decrease of 10 or more points in the diastolic (bottom number) blood pressure measurements.

The researchers, who based the definition of heart failure on either [hospital admission](#) or death certificate diagnoses, found:

- About 11 percent of patients who developed heart failure had orthostatic hypotension at the start of the study, compared with only 4 percent of those who did not develop heart failure.
- People with orthostatic hypotension had 1.54 times the risk of developing heart failure than those without orthostatic hypotension; however, after excluding those with high blood pressure, the risk fell to 1.34 times.

"Orthostatic hypotension appears to be related to

the development of heart failure along with other conditions known to cause heart failure," said Christine DeLong Jones, M.D., study lead author and [preventive medicine](#) resident at the University of North Carolina at Chapel Hill.

"Hypertension, diabetes and [coronary heart disease](#) are already known to contribute to a person's risk of developing heart failure. Orthostatic [blood pressure measurement](#) may supplement what is already known about the risk for heart failure and requires no additional equipment, just a standard blood pressure cuff."

Researchers found that even when adjusting for existing diseases, such as high blood pressure, diabetes, and coronary [heart disease](#), participants with orthostatic hypotension at the start of the study were still more likely to develop heart failure than those without it.

The study is the first of its kind to include both Caucasian and African-Americans. Prior studies in Europe included mostly Caucasians.

"The association of orthostatic [hypotension](#) with heart failure did not vary greatly when we compared white and African-American participants," Jones said.

Study participants were part of the Atherosclerosis Risk In Communities (ARIC) Study, an ongoing longitudinal study of men and women in communities throughout the United States.

Heart failure, which affects about 5.7 million people in the United States and caused over 281,000 deaths in 2008, cost the healthcare system about \$34.4 billion in 2010, according to the [American Heart Association](#).

The disease occurs when the heart pumps inefficiently, which results in inadequate delivery of blood to the body's cells and organs. Discovering

factors that may predict [heart failure](#) is important to preventing the disease, Jones said.

Provided by American Heart Association

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