

# Researchers develop way for physicians to determine risk in chronic heart disease patients

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(Medical Xpress)—Physicians who treat heart disease patients often wonder how to determine if their patients are at risk of another heart attack or stroke. Now, University of Florida researchers and their colleagues have created a simple risk score that can help them do so.

Being able to sort patients by [risk factors](#) may guide clinicians in determining therapy and help researchers design better clinical trials.

"Collectively, this simple information carries important prognostic information in this group of patients," said Dr. Anthony Bavry, a UF Health physician and an assistant professor of cardiology in the College of Medicine. He and his colleagues reported their findings in the Aug. 15 issue of the *Journal of the American Heart Association*.

"When cardiologists see patients in the clinic, we often lump them together in regards to thinking about their risk of a [cardiovascular event](#)," Bavry said. "We wanted to create a simple risk score that could be determined with information already available at the clinic."

The researchers considered age, weight, [heart rate](#) and blood pressure, and medical history as factors in the model. Over the course of two years, they examined the records of 20,537 patients enrolled in an international study, looking at these factors and three different outcomes: [heart attack](#), stroke or death. Each factor considered had a

"hazard ratio" that was rounded to the nearest integer to construct score weights. A score of 0 to 4 indicated a low risk of adverse events, a score of 5 to 6 medium risk and a score of 7 or greater was considered high risk. The incidence of heart attack, stroke or death in the low-risk group was less than 3 percent; in the intermediate-risk group it was 6.5 percent and in the high-risk group it was 18 percent.

Some aspects of the risk score turned out to be intuitive, such as advancing age or prior incidence of heart attack and stroke. However, the researchers did find somewhat unexpected outcomes: Patients with the lowest blood pressure had worse outcomes than patients with less stringently controlled blood pressure. In addition, patients with a body mass index of less than 20 also had worse outcomes than patients with healthy body weight.

"If their blood pressure is that low, there may be other factors contributing to poor outcomes," Bavry said. These might include heart failure, cancer or over-treating with blood pressure medicine. A low body mass index also may indicate underlying health issues that could contribute to [adverse events](#).

Until now, cardiologists did not have a way of determining which of these patients would be most at risk of a heart attack, stroke or death. The score enables them to better tailor a course of care.

"This [risk score](#) applies to the majority of patients that cardiologists see in their office practice," Bavry said. "By risk-stratifying the patients, we can help guide clinicians in making more informed decisions about patient care."

Provided by University of Florida

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