Medical Xpress

Age is the biggest risk for heart disease, but lifestyle and meds have impact

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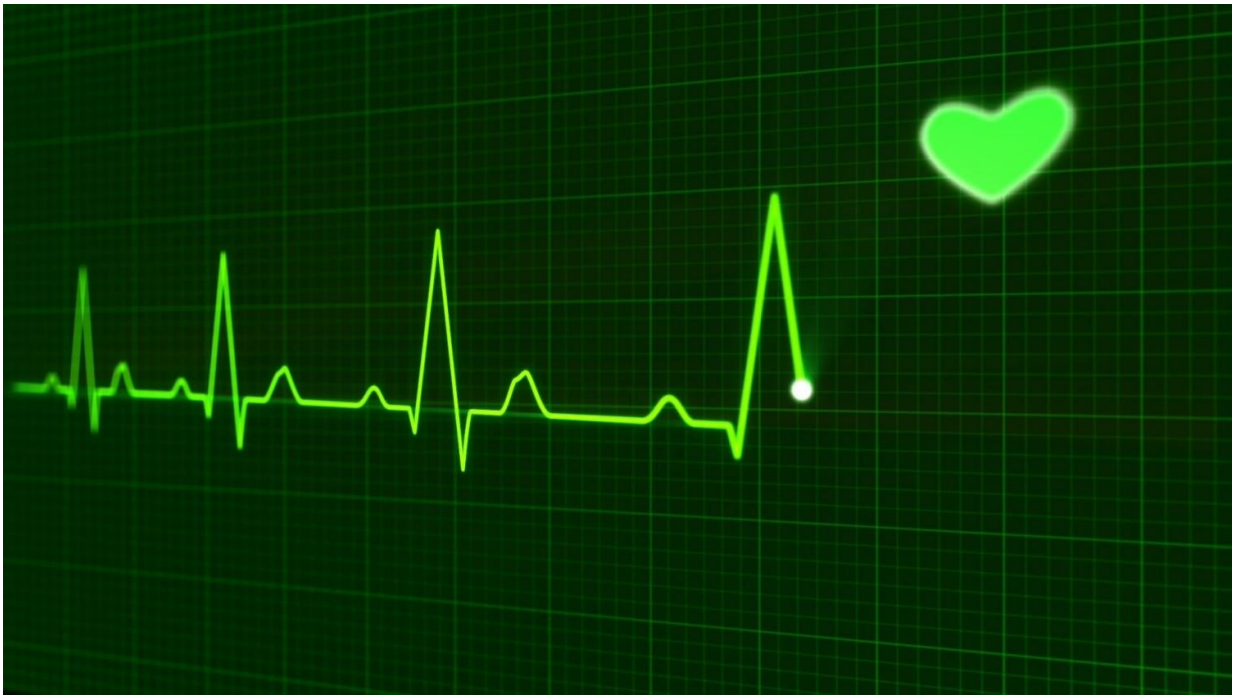

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Of all the risk factors for heart disease, age is the strongest predictor of potential trouble.

While no one can stop the march of time, making healthy lifestyle choices or adhering to medication regimens for conditions such as high cholesterol, hypertension or diabetes can substantially reduce the risk of

heart disease.

Understanding which risk factors modifications are actually effective, and by how much, is increasingly important for doctors and patients to understand in light of new blood pressure and cholesterol guidelines that drive medical care.

In a study published online Dec. 7 in the journal *Circulation*, a research team led by the Duke Clinical Research Institute provided a statistical analysis that answers the question of what works to lower heart disease risk, and by how much.

"Guidelines of who to treat for cardiovascular disease depend on risk, so we need to accurately estimate that risk," said lead author Michael Pencina, Ph.D., vice dean for Data Science and Information Technology at Duke School of Medicine and member of DCRI.

"Although taken individually, each modifiable risk factors contributes only modestly to the heart disease risk model performance," Pencina said. "But our analysis indicates that eliminating or controlling these factors can lead to substantial reductions in serious cardio-vascular events."

Pencina and colleagues analyzed key modifiable heart disease risk factors, including lipids/cholesterol, systolic blood pressure, diabetes and smoking. Each of those factors was assessed for associations with major heart events such as myocardial infarction, angina or cardiac arrhythmia.

Using pooled participant-level data from four National Heart, Lung and Blood Institute studies that included more than 22,000 people aged 45-85, the researchers found that:

- Age, sex, and race account for about 80 percent of the predictive

power of cardiovascular risk models, with age being the main predictor.

- Adding either systolic blood pressure, high cholesterol, diabetes, or smoking to a model with other risk factors only minimally increases the ability of the model to determine who will suffer heart disease events.
- Lowering blood pressure to current recommendations (systolic measurement of less than 130) and lowering low-density lipoprotein cholesterol by 30 percent could reduce the 10-year coronary heart disease risk by as much as a third.

Pencina said there are two ways to achieve lower blood pressure and cholesterol: Never acquire the adverse conditions by maintaining a healthy weight and exercising, or manage them with appropriate lifestyle modifications and medications. The better of the two approaches is, not surprisingly, not developing risk factors.

"Our models suggest that when making individual treatment decisions, clinicians and patients should consider not only the 10-year risk of coronary heart disease, but also the expected benefit from the intervention," Pencina said. "We are moving from models that focus either on the causes or the risks, to a model that combines both and focuses on potential risk reduction."

More information: Quantifying Importance of Major Risk Factors for Coronary Heart Disease. *Circulation*. www.ahajournals.org/doi/10.116… LATIONAHA.117.031855

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