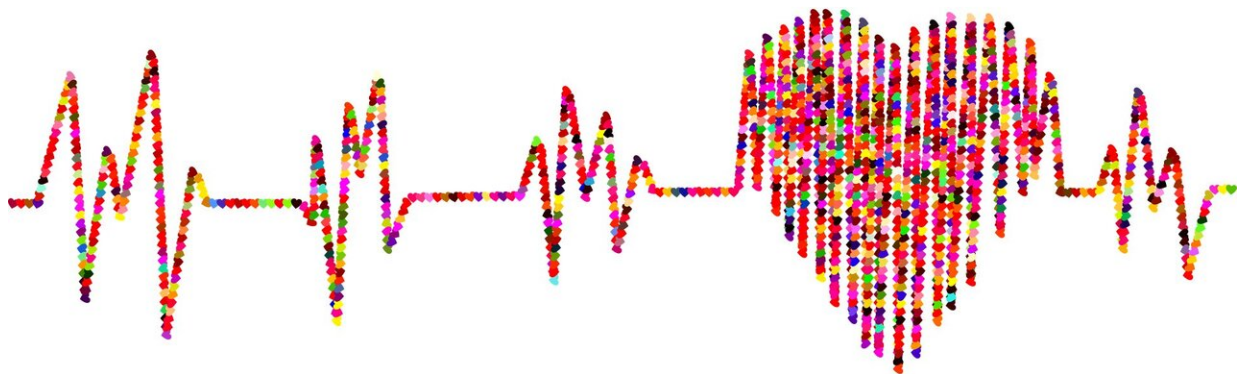


New advice for treating high blood pressure

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New research led by a professor at NUI Galway is set to change how doctors treat some patients with high blood pressure—a condition that affects more than one in four men and one in five women.

The study by researchers at NUI Galway, Johns Hopkins University and Harvard Medical School found no evidence that diastolic [blood](#) pressure—the bottom reading on a blood pressure test—can be harmful to patients when reduced to levels that were previously considered to be too low.

Lead researcher Bill McEvoy, Professor of Preventive Cardiology at NUI Galway and a Consultant Cardiologist at University Hospital Galway, said the findings have the potential to immediately influence the clinical care of patients.

Professor McEvoy said: "We now have detailed research based on genetics that provides doctors with much-needed clarity on how to treat patients who have a pattern of high systolic values—the top reading for blood pressure—but low values for the diastolic, or bottom, reading.

"This type of blood pressure pattern is often seen in [older adults](#). Old studies using less reliable research methods suggested that the risk for a [heart attack](#) began to increase when diastolic blood pressure was below 70 or above 90. Therefore, it was presumed there was a sweet-spot for the diastolic reading."

High blood pressure is a major cause of premature death worldwide, with more than 1 billion people having the condition. It is linked with brain, kidney and other diseases, but it is best known as a risk factor for heart attack. More recently, high blood pressure has emerged as one of the major underlying conditions that increase the risk of poor outcomes for people who become infected with Covid-19.

Professor McEvoy and the international research team analyzed genetic and survival data from more than 47,000 patients worldwide. The study, published in the prestigious medical journal *Circulation*, showed:

- There appears to be no lower limit of normal for diastolic blood pressure and no evidence in this [genetic analysis](#) that diastolic blood pressure can be too low.
- There was no genetic evidence of increased risk of heart disease when a patient's diastolic blood pressure reading is as low as 50.
- The authors also confirmed that values of the top, systolic, blood

pressure reading above 120 increased the risk of heart disease and stroke.

Blood pressure medications reduce both systolic and diastolic values.

Professor McEvoy added: "Because doctors often focus on keeping the bottom blood pressure reading in the 70-90 range, they may have been undertreating some adults with persistently high systolic blood pressure.

"The findings of this study free up doctors to treat the systolic value when it is elevated and to not worry about the diastolic blood pressure falling too low.

"My advice now to GPs is to treat their patients with [high blood pressure](#) to a systolic level of between 100-130mmHg, where possible and without side effects, and to not worry about the diastolic blood [pressure](#) value." Dr. Joe Gallagher, Irish College of General Practitioners' Lead, National Heart Programme, said: "This data helps remove uncertainty about how to treat people who have an elevated systolic [blood pressure](#) but low [diastolic blood pressure](#). This is a common clinical problem which causes much debate. It will help impact [clinical practice](#) internationally and shows the importance of Irish researchers in clinical research."

The research team used new technologies to take into account genetic information that is unbiased, which was not the case with prior observational studies. They assessed data from 47,407 patients in five groups with a median age of 60.

More information: Marios Arvanitis et al, Linear and Nonlinear Mendelian Randomization Analyses of the Association Between Diastolic Blood Pressure and Cardiovascular Events, *Circulation* (2020). [DOI: 10.1161/CIRCULATIONAHA.120.049819](https://doi.org/10.1161/CIRCULATIONAHA.120.049819)

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