

Reducing blood pressure is even more beneficial than previously thought

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Blood pressure medication can prevent heart attacks and strokes—even in people with normal blood pressure. That's the finding of late breaking research presented in a Hot Line session today at ESC Congress 2020.

"Greater drops in [blood pressure](#) with medication lead to greater reductions in the risk of heart attacks and strokes," said principal investigator Professor Kazem Rahimi of the University of Oxford, UK. "This holds true regardless of the starting blood pressure level, in people who previously had a heart attack or stroke, and in people who have never had heart disease."

"The fact that the relative effects are similar for everyone does not mean that everyone should be treated," he added. "This decision will depend on an individual's likelihood of suffering [cardiovascular disease](#) in the future—there are a number of risk calculators health professionals can use. Other factors to consider are the potential for side effects and the cost of treatment."

There has been controversy about whether pharmacological blood pressure lowering is equally beneficial in people with versus without a prior heart attack or stroke, and when blood pressure is below the threshold for hypertension (typically 140/90 mmHg). Evidence from previous studies has been inconclusive, leading to contradictory treatment recommendations around the world.

This was the largest—and most detailed—study ever conducted to examine these questions. The researchers combined data on individuals who had participated in a randomized clinical trial and conducted a meta-analysis. The study included 348,854 participants from 48 trials.

Participants were divided into two groups: those with a prior diagnosis of cardiovascular disease and those without. Each group was divided into seven subgroups based on systolic blood pressure at study entry (less than 120, 120-129, 130-139, 140-149, 150-159, 160-169, 170 and above mmHg).

Over an average four years of follow-up, each 5 mmHg reduction in

[systolic blood pressure](#) lowered the relative risk of major cardiovascular events by about 10%. The risks for stroke, ischaemic [heart disease](#), heart failure and death from cardiovascular disease were reduced by 13%, 7% and 14% and 5%, respectively.

Neither the presence of cardiovascular disease nor the level of blood pressure at study entry modified the effect of treatment.

Professor Rahimi said: "The decision to prescribe [blood pressure medication](#) should not be based simply on a prior diagnosis of cardiovascular disease or an individual's current blood pressure. Rather, blood pressure medication should be viewed as an effective tool for reducing cardiovascular risk when an individual's probability of having a [heart attack](#) or stroke is elevated."

More information: Abstract title: Pharmacological blood pressure-lowering for primary and secondary prevention of cardiovascular disease across different levels of blood pressure: an individual participant meta-analysis of 48 randomized clinical trials and 348,854 participants.

Provided by European Society of Cardiology

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