

Changing how blood pressure is measured will save lives

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Credit: University College London

Traditional methods of testing for high-blood pressure are no longer

adequate and risk missing vital health signs, which can lead to premature death, a study co-led by UCL has found.

The research, the largest ever [cohort study](#) of its kind, published in the *New England Journal for Medicine*, assessed 63,000 doctors' patients, who had their blood pressure tested using traditional 'in clinic' methods, such as an automated or hand operated devices.

Separately, the same patients, were also measured using a pocket-sized ambulatory blood pressure monitoring (ABPM) device, which records blood pressure regularly across a 24 hour period. This device is worn at home and takes measurements every 20 to 30 mins.

High blood pressure is the leading preventable cause of [premature death](#) globally and affects approximately 25% of all adults. The study, which was co-led by Professor Bryan Williams (UCL Institute of Cardiovascular Sciences), found that measuring blood pressure using an ABPM device was 50% more accurate than the traditional way blood pressure is measured in the clinic, and therefore a significantly more accurate way of predicting a patient's risk of death.

Using an ABPM to measure the blood pressure at home, during day-to-day activities and during sleep, also means known variations in patients' blood pressure caused by using 'in clinic' methods, can be more accurately diagnosed. Namely 'masked hypertension', where blood pressure presents as normal in the clinic, but is elevated out of office, and 'white-coat hypertension', where blood pressure is elevated in the clinic, but normal outside the office.

"For decades doctors have known that blood pressure measured 'in-clinic' could be masked or elevated, simply because the patient was in a medical setting, and this could lead to the wrong or a missed diagnosis," Professor Williams said.

"This research is a clear game-changer, as for the first time, it definitively shows that blood pressure measured regularly during a 24 hour period predicts the risk of heart disease, stroke and death much better than blood pressure measured in a doctor's surgery or clinic.

"Quite simply, measuring blood pressure over 24 hours is what doctors and medics should be using to make clinical decisions about treatment.

"With a much more accurate assessment of a patient's [blood pressure](#), doctors will be able to provide the most effective treatments at the earliest opportunity, which will save many more lives.

"With one billion people around the world having high [blood pressure](#), this study, the largest ever of its kind, should lead to changes in clinical practice across the world, with the use of ABPM becoming much more common place."

More information: José R. Banegas et al. Relationship between Clinic and Ambulatory Blood-Pressure Measurements and Mortality, *New England Journal of Medicine* (2018). [DOI: 10.1056/NEJMoa1712231](https://doi.org/10.1056/NEJMoa1712231)

Provided by University College London

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