

Long-term variations in blood pressure raises risk of early death

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Anyone who has had frequent blood pressure checks knows that blood pressure is never constant.

We've all had stressful days and we generally attribute high swings in blood pressure to this. Needless to say we are reassured if a subsequent blood pressure check a few days or weeks later shows a lower reading.

Now scientists have found that variations in blood pressure over long periods, of months and years, raises the risk of ill-health and is a predictor of early mortality in hypertensive patients.

Researchers at the Institute of Cardiovascular and Medical Sciences at the University of Glasgow calculated the variability of blood pressure, over long periods of time – one, four, five and nine years, in 14,522 hypertensive patients attending the Glasgow blood pressure clinic.

Their results showed that the magnitude of visit-to-visit blood pressure variation was a strong predictor of mortality, independent of their long-term average blood pressure. Even those individuals who would be considered well-controlled in terms of blood pressure values at each visit, showed a higher risk if they had wide swings in their [blood pressure readings](#) between clinic visits.

The findings have been published in the journal *Hypertension* with an accompanying editorial which stated: "The demonstration that ultra long-term BPV recorded over up to 9 years is also a strong predictor of

mortality in treated hypertensives further emphasizes the importance of not only achieving but also maintaining stable BP control in the long term."

High blood pressure is considered a [silent killer](#), as it causes no symptoms and if untreated results in early stroke, [heart attack](#) and death. The current treatment of [high blood pressure](#) revolves around regular blood pressure checks and adjusting treatment to get the blood pressure down to safe levels.

Dr Sandosh Padmanabhan, who led the study, said: "Blood pressure is inherently variable and will fluctuate due to a complex interaction of various factors.

"Factors such as stress, seasonal effects and people not taking medication regularly can cause increased blood pressure fluctuations.

"The research has implications for how we best manage hypertension in patients. For example, physicians will need to give more consideration to blood pressure variability when monitoring and treating high blood pressure. The results of our study also highlight the importance of not only taking blood pressure medicines to reduce [blood pressure](#) but also taking them regularly. Further studies could help identify specific drugs that could reduce variability."

Provided by University of Glasgow

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