

How Reliable Are Home Blood Pressure Monitors



A Canadian study finds that 70 percent of readings from home blood pressure monitors are unacceptably inaccurate. UAlberta researchers tested dozens of home monitors and found they weren't accurate within five mmHg about 70 percent of the time. The devices were off the mark by 10 mmHg about 30 per cent of the time.

The findings, published in the American Journal of Hypertension, are extremely relevant given millions of patients are asked to monitor their blood pressure through a device at home and report the results back to their doctor.

"High blood pressure is the number one cause of death and disability in the world," said medical researcher Jennifer Ringrose, who led the research study. "Monitoring for and treating hypertension can decrease the consequences of this disease. We need to make sure that home blood pressure readings are accurate."

The study examined the results of 85 patients. The researchers compared the results of the volunteers' home monitors with the gold standard – two observers taking several blood pressure measurements simultaneously, blinded to one another, with a third person ensuring agreement between both observers' readings.

While the average difference between the home monitors and the gold standard measurements was acceptable, the majority of individual devices demonstrated clinically-relevant inaccuracy.

According to the research team, there are steps that can be taken to minimise inaccurate readings.

"Compare the blood pressure machine measurement with a blood pressure measurement in clinic before exclusively relying upon home blood pressure readings," advised Ringrose. "What's really important is to do several blood pressure measurements and base treatment decisions on multiple readings. Taking home readings empowers patients and is helpful for clinicians to have a bigger picture rather than just one snapshot in time."

In 2015 Canadian guidelines were updated to endorse greater use of home blood pressure monitoring. The guidelines recommend 28 measurements over one week for home devices.

The researchers note the difficulty in determining precisely why the inaccuracies are occurring in home monitors. They say the various formulas the devices use to determine blood pressure are considered proprietary and kept secret by the manufacturer. They believe a greater effort needs to be made among industry and academia to develop more highly accurate devices in the future.

Source: [University of Alberta Faculty of Medicine & Dentistry](#)

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