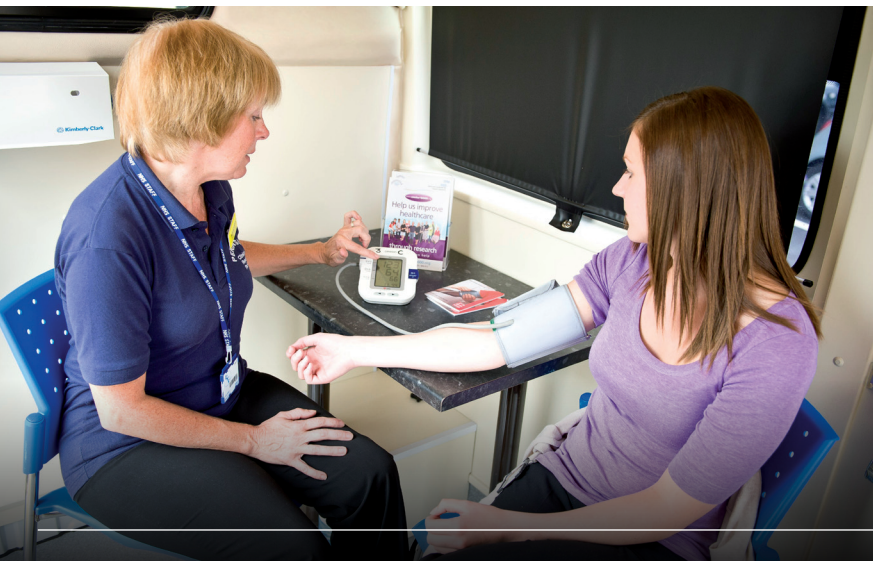


CLAHRC BITE

A bite-sized summary of a piece of research supported by Peninsula CLAHRC

June 2012
BITE 03

Differences Between Arms in Blood Pressure Readings Indicate Likelihood of Vascular Risk and Death



“Our findings indicate a strong association, suggesting that differences of 10mm Hg or 15mm Hg or more might help to identify patients who are at risk and who need further vascular assessment.”

Dr Christopher Clark, Academic Research Fellow at Peninsula College of Medicine and Dentistry and a Devon GP

Deciding which patients with raised blood pressures are at particular risk is a key clinical problem. Two studies supported by PenCLAHRC have identified inter-arm differences in blood pressure as a useful marker of subsequent risk and possibly of the need for more aggressive investigation and management.

» Who is this relevant to?

Clinicians in both primary and secondary care settings looking after patients with hypertension.

» Background

The first study, a systematic review, identified 28 papers assessing the association between inter-arm difference in systolic blood pressure and cardiovascular outcome (published online in *The Lancet*, 30th January 2012). The second study reported the findings of a cohort study of 230 patients over a 10-year period examining the association between differences in blood pressure at baseline and subsequent cardiovascular events (published by *BMJ* online on 20th March 2012). The findings from these studies suggest that inter-arm blood pressure differences may be a clinically useful marker of increased risk amongst hypertensive patients.

» Findings

- The systematic review provided strong evidence that a difference of 15mm Hg or more between arms is associated with an increased risk of peripheral vascular disease, cerebrovascular disease and mortality
- Smaller differences of around 10mm Hg or more were associated with an increased risk of peripheral vascular disease
- The second study, a 10 year long cohort study based in general practice found similar results
- During the study period there were 59 deaths and 100/230 patients experienced at least one cardiovascular or cerebrovascular event. Baseline inter-arm blood pressure differences were a strong predictor of risk

» Recommendations

- The findings have been passed to the UK Vascular Check programme
- An assessment of blood pressure in both arms is recommended by guidelines and should become a core component of blood pressure measurement in primary care
- Detection of an inter-arm difference should prompt consideration of further vascular assessment and the aggressive management of risk factors

Reference

Clark CE, Taylor RS, Shore AC, Ukoumunne OC, Campbell J. The association of an inter-arm difference in systolic blood pressure with vascular disease and mortality: A systematic review and meta-analysis. *Lancet* 2012. doi:10.1016/S0140-6736(08)61345-8

Clark CE, Taylor RS, Shore AC, Campbell J. The difference in blood pressure readings between arms and survival: primary care cohort study. *BMJ* 2012. doi: 10.1136/bmj.e1327



What is Peninsula CLAHRC?

The CLAHRC (Collaboration for Leadership in Applied Health Research and Care) for the South West Peninsula is a partnership between the University of Exeter, Plymouth University and the NHS in the South West.

We are funded by NIHR (the National Institute for Health Research) with a mission to undertake high-quality applied health research focused on the needs of patients and a requirement to improve health services locally and further afield.

Website

www.clahrc-peninsula.nihr.ac.uk

For further project information, please visit:

www.clahrc-peninsula.nihr.ac.uk/project/40-hypertension.php

The research project is supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care based in the South West Peninsula (PenCLAHRC). The views expressed are those of the author and not necessarily those of the NHS, the NIHR or the Department of Health.