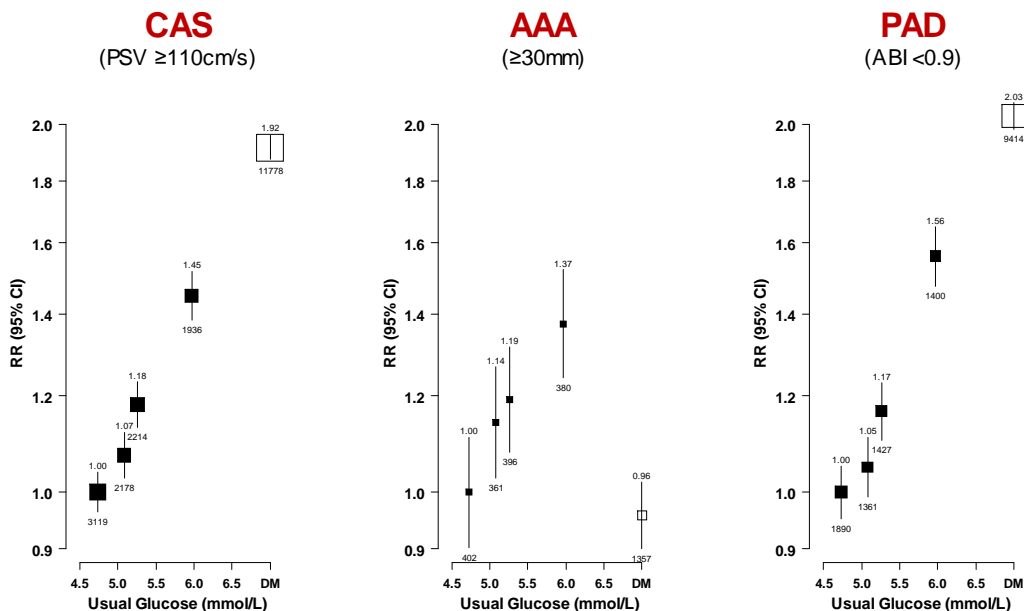


Dylan Morris, Paul Sherliker, Rachel Clack, Kin Bong Hubert Lam, Jennifer Carter, Alison Halliday, Richard Bulbulia, Sarah Lewington

MRC Population Health Research Unit, Clinical Trial Service Unit & Epidemiological Studies Unit  
Nuffield Department of Population Health, University of Oxford

Previous studies report inverse associations between diabetes and abdominal aortic aneurysm (AAA). The reasons for this are unclear.



**Figure 1: The association of blood glucose, diabetes, and peripheral vascular disease by territory.**

RRs adjusted for age, sex, region, BMI, and are plotted against the means of the survey values. Closed squares indicate people without diabetes. Open squares indicate people with diabetes. RR, risk ratio; CI, confidence interval; CAS, carotid artery stenosis; PAD, peripheral artery disease; PSV, peak systolic velocity; ABI, ankle-brachial index.

## Methods

- 3.3M attended vascular screening (LifeLine Screening), US/UK 2008-13.
- **2 067 106** individuals with triple vascular screening, no prior CVD
- Blood glucose in **382 023** people (>90% fasting)
- Screened for AAA, carotid stenosis (CAS), peripheral artery disease (PAD)
- Diabetes: prior diagnosis or treatment.
- Associations adjusted for age, sex, region, BMI, and corrected for within-person measurement variability

## Results

- Mean age  $64 \pm 10y$ , 66% ♀
- Prevalence of AAA 0.5%, CAS 3.0%, PAD 2.3%
- 10.9% had diabetes
- Diabetes associated with ↑ risk of: **CAS: RR 1.72; 95% CI 1.68 - 1.75, PAD: RR 1.71; 1.67-1.75**
- Diabetes associated with lower risk of **AAA: RR 0.88; 0.83 - 0.93**
- Among people without diabetes, there were positive linear associations between blood glucose and all 3 types of vascular disease (Figure 1)

## Discussion

Across the normal range, higher blood glucose concentrations are associated with increased risk of vascular disease

**The inverse association between diabetes and AAA is not due to hyperglycaemia**

**Acknowledgements:** Data was provided courtesy of Life Line Screening. DM is funded by a General Sir John Monash Scholarship and an Avanti Doctor in Training Research Scholarship. SL, PS, HL and JC are funded by the Medical Research Council and a Henry Goodger foundation grant. RB, SL and AH have received project grants from the British Heart Foundation.