Blood glucose, diabetes and AAA among 2 million screened individuals

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

Methods

- 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±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

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