

Diabetes risk increased between spouses

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Commentary on: **Leong A, Rahme E, Dasgupta K. Spousal diabetes as a diabetes risk factor: a systematic review and meta-analysis. BMC Med 2014;12:12.**

Implications for practice and research

- Recognising shared couple risk may result in greater support and collaboration within the family to engage with diabetes prevention efforts.
- Clinicians and healthcare professionals should encourage couple-based interventions aimed at adopting healthier lifestyle habits.
- Diabetes screening may be warranted in the partners of people with diabetes to allow for early detection and prevention of diabetes-related complications.

Context

It is well known that diabetes history in biologically related family members increases diabetes risk.¹ In contrast, the contribution of socio-environmental factors assessed through diabetes concordance in spouses (ie, biologically unrelated family members) is less studied.² Better estimates of shared diabetes risk within couples may improve prevention and management of diabetes, and motivate partners to increase collaborative efforts to improve their health behaviours. This study by Leong and colleagues evaluated spousal diabetes concordance in a systematic review and meta-analysis.

Methods

Cross-sectional, case-control and cohort studies published between 1 January 1997 and 28 February 2013 examining spousal association for diabetes and/or prediabetes (ie, impaired fasting glucose or impaired glucose tolerance) were included. Six articles (75 498 couples with a mean age of 52–74 years) were included in the systematic review and five in the meta-analysis. Effect estimates with body mass index (BMI) adjustment were pooled separately from those without BMI adjustment (random effects models) to distinguish BMI-dependent and BMI-independent concordance.

Findings

By random-effects analyses, to account for within-study and between-study variability to estimate the pooled effect measures, the overall effect estimate for diabetes in those with a spousal diabetes history was 1.26 (95% CI 1.74 to 5.10; adjusted for age and other covariates but not BMI), with some evidence of heterogeneity (Higgins I^2 statistic=65.4%, $p=0.03$). Heterogeneity refers to the percentage of variance between studies attributable to chance. The effect estimate with BMI adjustment was lower (1.18, 95% CI 0.97 to 1.40), with less suggestion of heterogeneity ($I^2=9.3%$, $p=0.35$). Overall, the findings suggest that a spousal history of diabetes is associated with an 18% higher risk of diabetes with BMI adjustment, and 26% higher without.

Commentary

This study is highly relevant and has implications for clinical and public health interventions. The findings agree with those of a previous study showing the spread of obesity within social networks.³ In particular, the previous study reported that if one spouse became obese, the likelihood that the other spouse would become obese increased by 37%. Given that obesity and type 2 diabetes mellitus are caused by similar determinants, addressing the 'unhealthy' drivers of the problem in one partner may also have an influence on the other partner.

The observation that spousal concordance for diabetes was attenuated with adjustment for BMI suggests that excess adiposity certainly plays a role in this association, but does not fully explain it. Other contributory factors may explain shared diabetes risk, including (but not limited to) unhealthy dietary habits, physical inactivity and tobacco smoking. Recent studies also highlight the possibility that other, less traditional factors such as lack of sleep and chemical pollutants should not be overlooked.^{4–6}

More studies are definitively needed in this field of research because the present study is limited by the inclusion of only six studies, the possibility of residual confounding by unmeasured variables, and the relatively large variation of findings between studies. Be that as it may, recognising the presence of shared diabetes risk in couples may help to facilitate cooperation and collaboration towards healthier lifestyle.

Competing interests None.



References

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