

Parenthood and cardiometabolic disease risk in China

Findings from 0.5 million men and women from the China Kadoorie Biobank

SANNE PETERS | PhD
The George Institute for Global Health
University of Oxford



sanne.peters@georgeinstitute.ox.ac.uk

Background



- Studies report a graded relationship between number of children (or pregnancies or livebirths) and cardiometabolic disease risk
- Uncertain whether biological factors of child-bearing or socioeconomic or lifestyle factors of child-rearing underpin these associations
- We examined the association between number of children the risk of CHD, stroke, and diabetes in men and women from the China Kadoorie Biobank

China Kadoorie Biobank

0.5 million individuals aged 30-79 from 10 diverse regions

Baseline examination, questionnaire and blood sample

Prospective follow-up (~7 years)

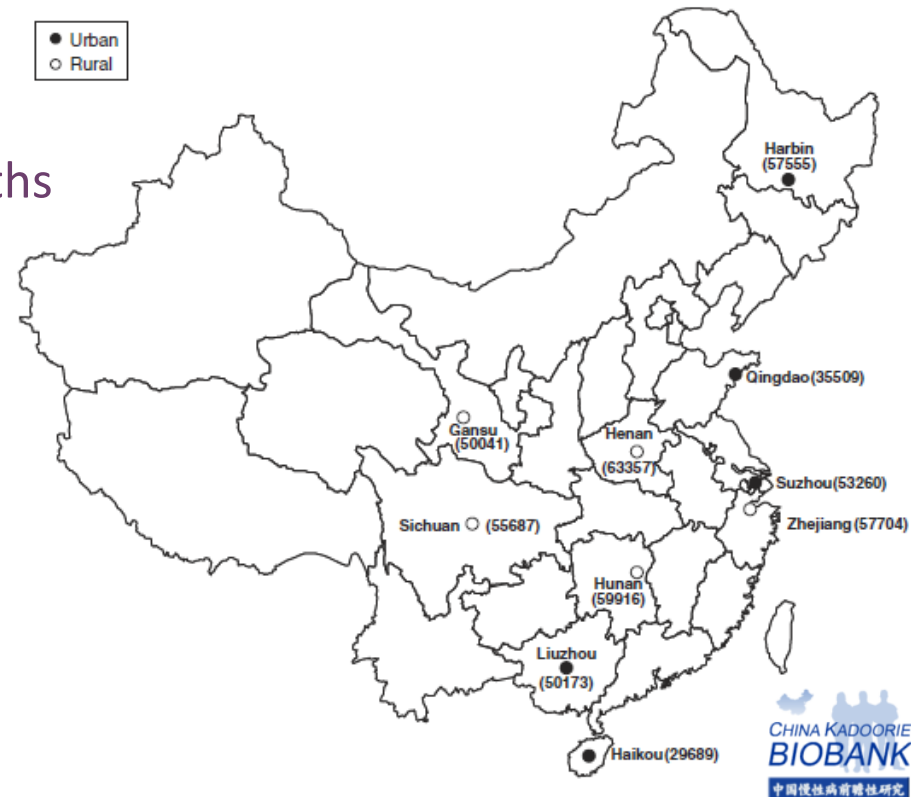
- 25,000 CHD, 36,000 stroke, 25,000 deaths

2 resurveys, each with 20-25K

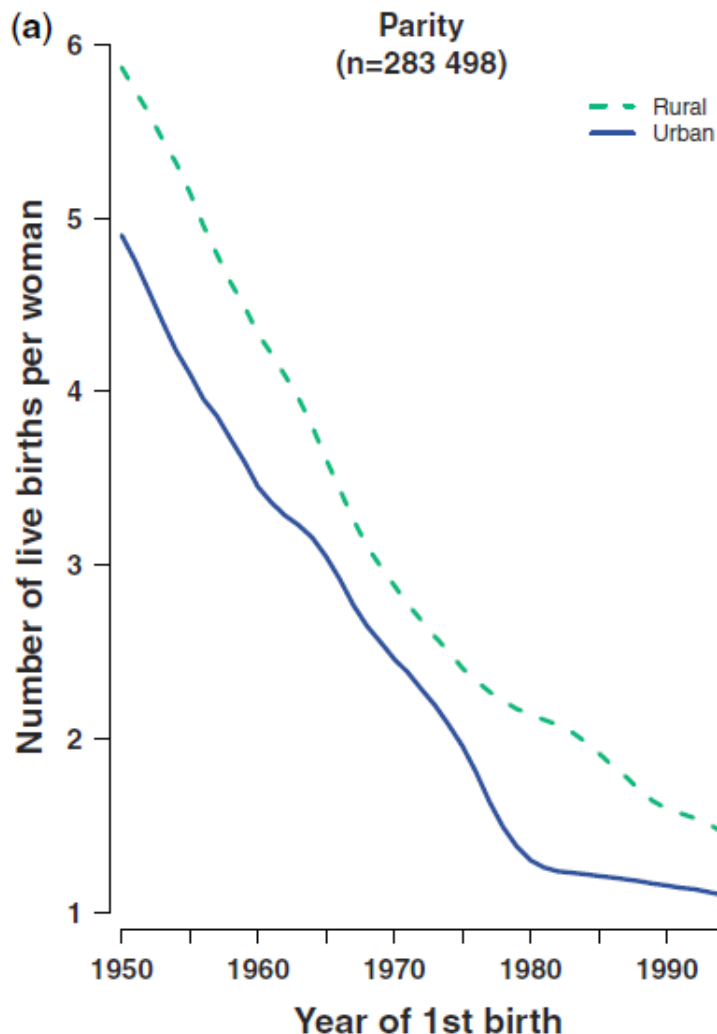
- Enhancements (eg, cIMT, ECG)

DNA extracted in 300,000

- ~100K genotyped for ~400 SNPs



Family size has fallen



- Parity fell steadily from 1950, with no obvious inflection after the introduction of the one-child policy
- I.e. fertility rates may have eventually fallen to below replacement level without strict fertility control, particularly in some urban areas.

Analyses



- 289 573 women and 200 189 men without a history of CVD and diabetes (for incident diabetes only)
- Outcomes
 - CHD : 14 400 in women, 9 992 in men
 - Stroke: 19 925 in women, 15 811 in men
 - Diabetes: 5 579 in women, 3 261 in men
- Cox proportional hazards models to obtain hazard ratios and 95% confidence intervals
 - Models are stratified for age and region, and adjusted for education, household income, smoking status, alcohol use, systolic blood pressure, hypertension, physical activity, body mass index, and diabetes (not for incident diabetes).



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Original article



Original article

Parenthood and the risk of cardiovascular diseases among 0.5 million men and women: findings from the China Kadoorie Biobank

Diabetologia

DOI 10.1007/s00125-016-3980-x

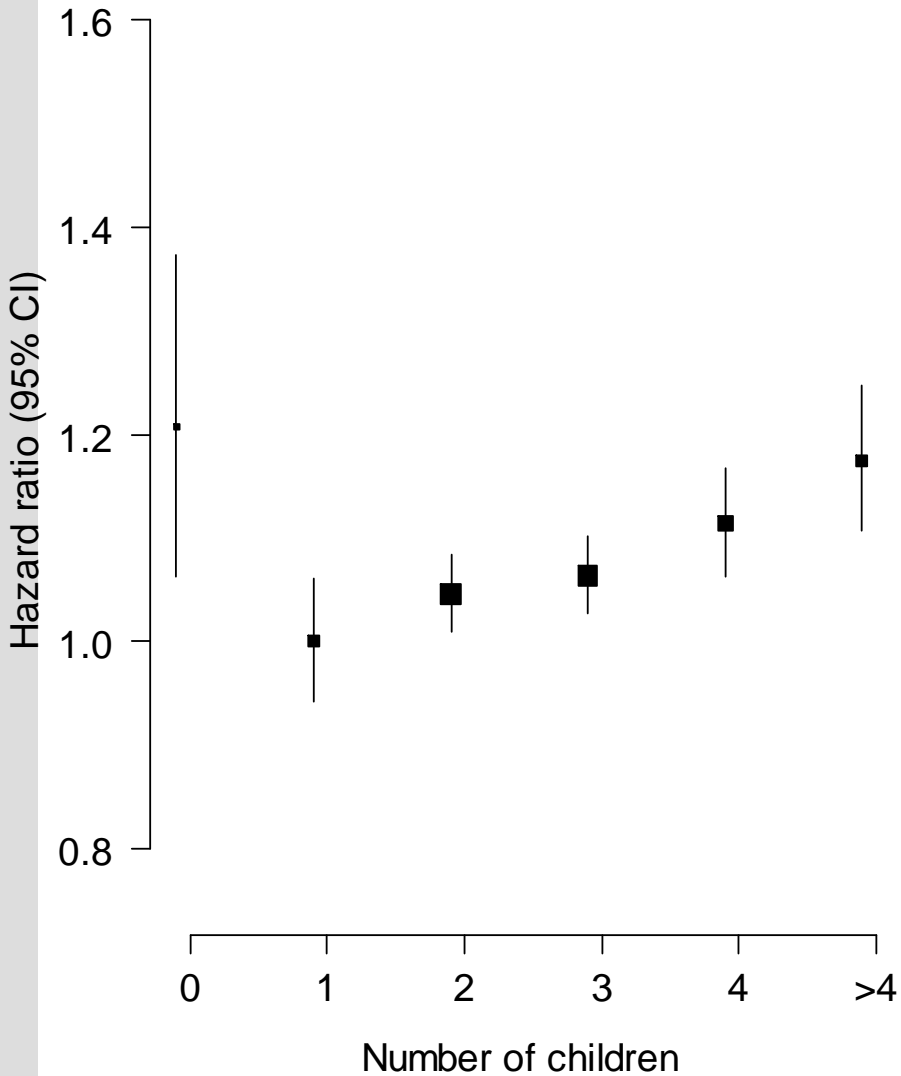


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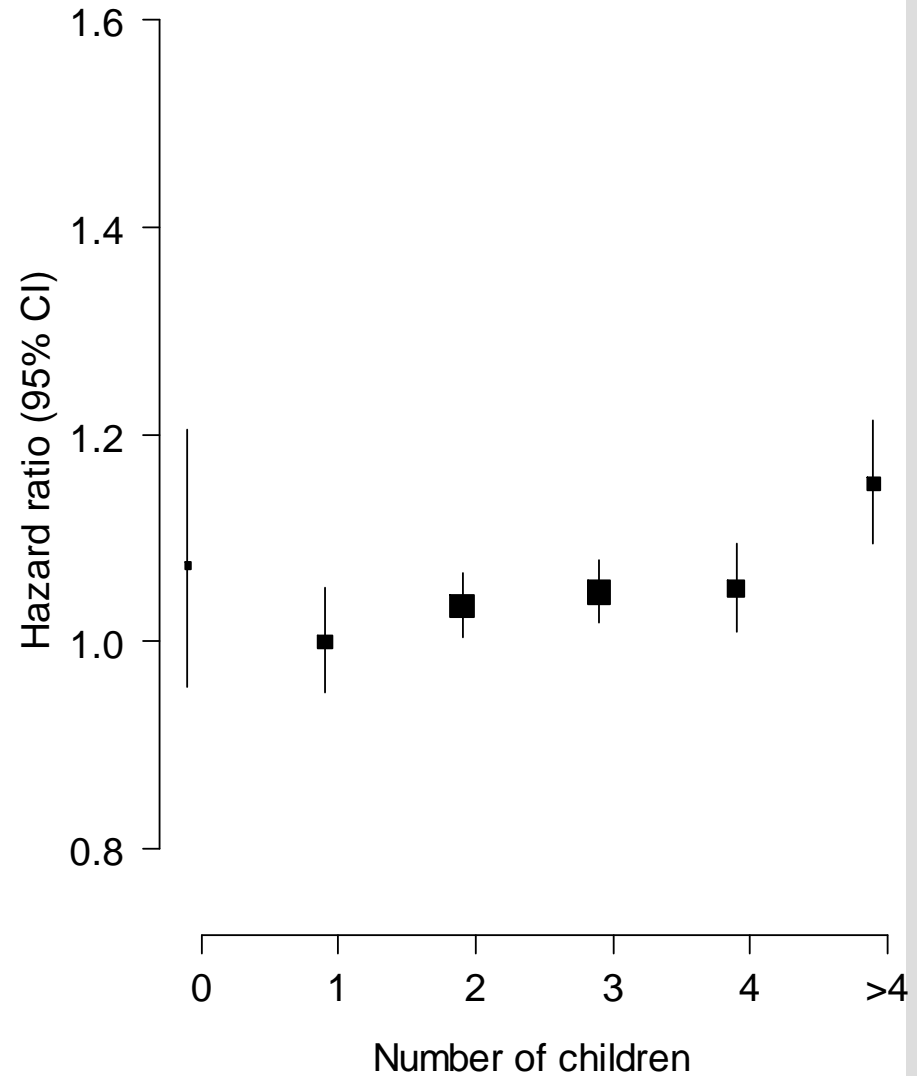
Parenthood and the risk of diabetes in men and women: a 7 year prospective study of 0.5 million individuals

Parenthood and risk of CHD and stroke in women

Coronary Heart Disease

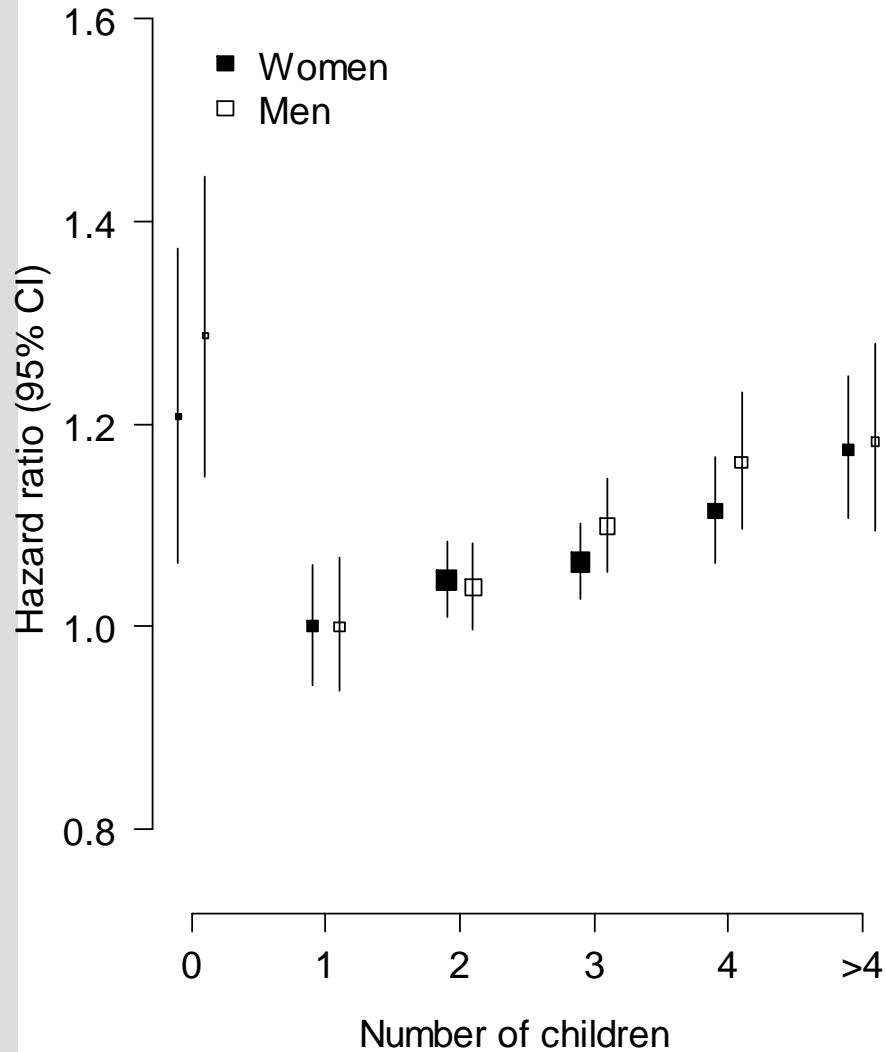


Cerebrovascular disease

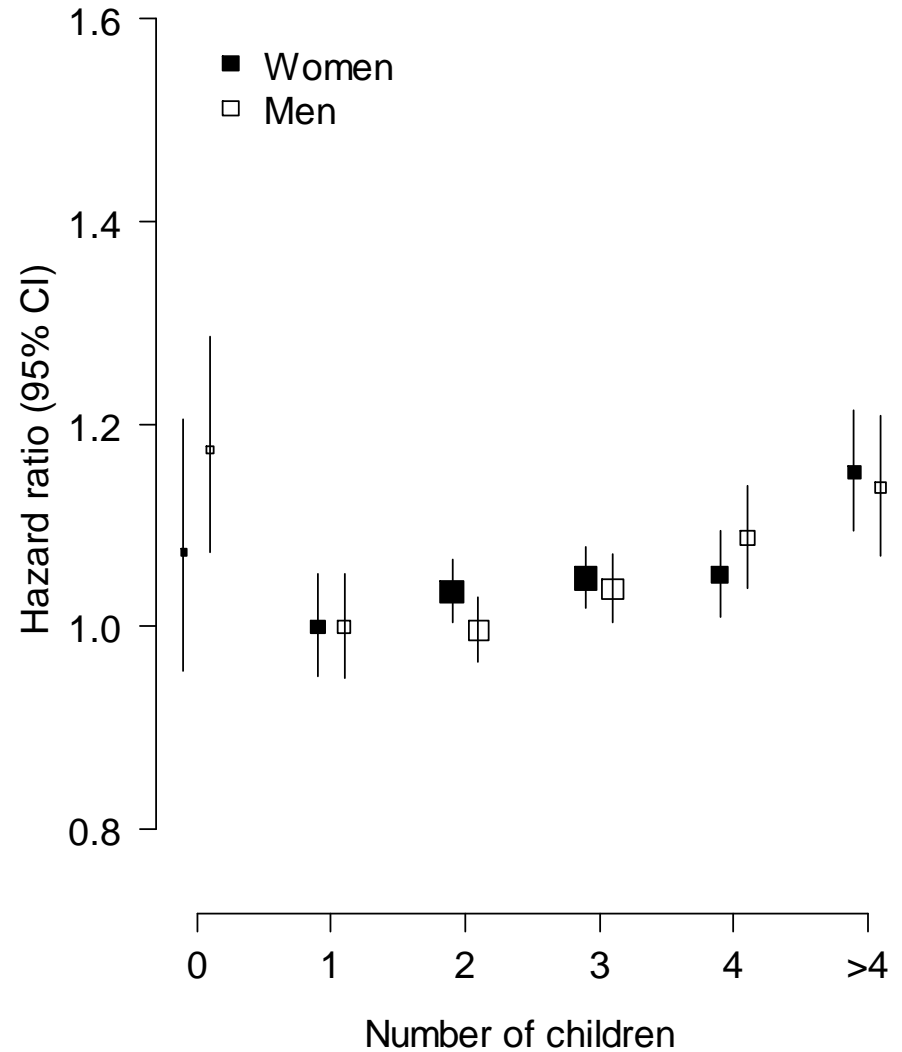


Parenthood and risk of CHD and stroke in women and men

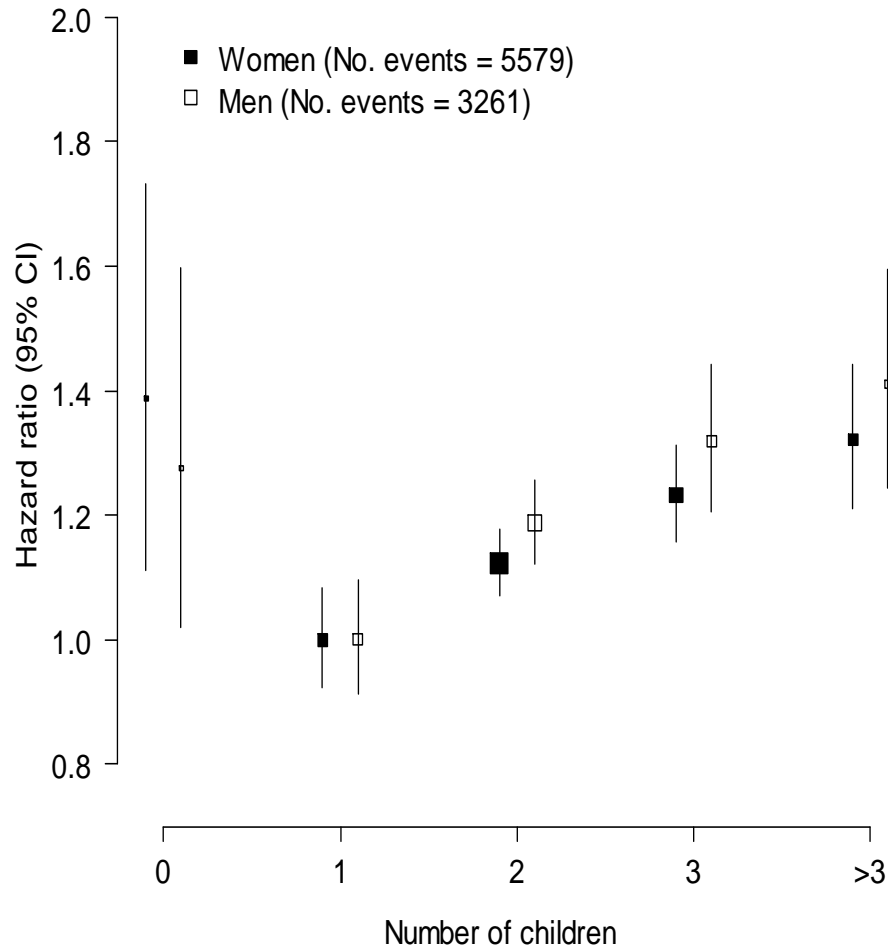
Coronary Heart Disease



Cerebrovascular disease



Parenthood and risk of diabetes in women and men



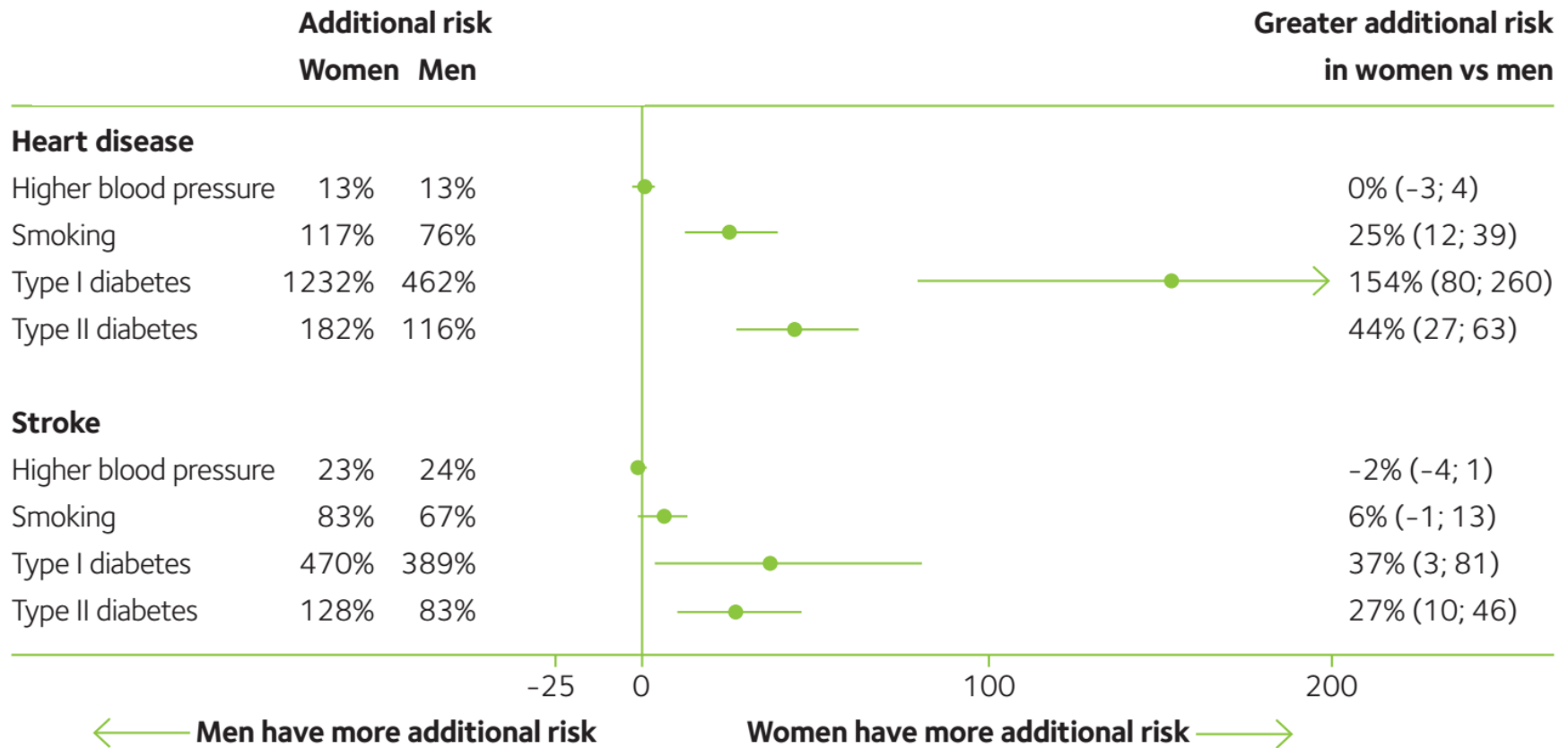
- Among individuals with children, each additional child was associated with a ~5% increased risk of cardiometabolic diseases.

Conclusion



- In both women and men, individuals without children or with multiple children were at a higher risk of cardiometabolic diseases.
- Parenthood is most likely to affect cardiometabolic disease risk through factors associated with childrearing rather than via biological effects of childbearing.
- These findings demonstrate the importance of a sex-disaggregated approach to medical research

Sex-disaggregated studies



Oxford Martin Policy Paper



Women's Health: A New Global Agenda

Redefining women's health

A sex-disaggregated approach to the measurement, prevention and management of health

Policy recommendations



**All-Party Parliamentary Group
on Global Health**

OXFORD MARTIN POLICY PAPER

