

## International meta-analysis of 684,660 men with vasectomies: a study utilising the International Population Data Linkage Network

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### Introduction

Evidence on the effect of vasectomy and vasectomy reversal on risk of prostate cancer is conflicting, with the issue of detection bias a key criticism. In this study we examined the effect of vasectomy reversal on prostate cancer risk in a cohort of vasectomised men.

### Objectives and Approach

A proof of concept study involving the International Population Data Linkage Network which pooled aggregated result data from participating centres in Australia, Canada and the United Kingdom. De-identified linked data extractions took place at each centre. Each participating centre locally conducted Cox proportional hazards regression analysis compared the risk of prostate cancer in those with/without vasectomy reversal in a cohort of vasectomised men. These results were then combined in a meta-analysis. Evidence of a protective effect of vasectomy reversal would suggest the harmful effect of vasectomy on prostate cancer risk, while nullifying detection bias.

### Results

Data were received from Australia (the states of Western Australia and New South Wales), Canada (the province of Ontario), Wales and Scotland. In total, there were 9,754 men with vasectomy reversals, and 684,660 men with a vasectomy.

The combined analysis showed no protective effect of vasectomy reversal on incidence of prostate cancer when compared to those who had vasectomy alone (HR, 95%CI: 0.92, 0.70-1.21). As such, the results align with previous studies which found little or no evidence of a link between vasectomy and prostate cancer.

### Conclusion/Implications

The study, originally conceived at the first IPDLN meeting in London, found no obvious protective effect of vasectomy reversal on prostate cancer in vasectomised men. The project demonstrated the utility and feasibility of collaborative studies fostered through the IPDLN, despite methodological challenges faced when aggregating international data.

