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Active and passive smoking and development of glucose intolerance among young adults in a prospective cohort: CARDIA study

This reasonably high quality study found evidence that exposure to environmental tobacco smoke was associated with a small increase in risk of glucose intolerance [a pre-diagnostic indicator of diabetes] within a 15 year timescale.

This was a 15 year follow-up study of adults aged 18 to 30 at baseline and who had no sign of glucose intolerance. The cohort comprised current smokers, previous smokers, never smokers with validated environmental tobacco smoke (ETS) exposure, and never smokers with no ETS exposure. ETS exposure among former smokers was not separately analysed.

Over 15 years, a higher proportion of smokers and passive smokers became glucose intolerant. Hazard ratios were 1.7 (95% CI = 1.3 to 2.1) (dose dependent) and 1.4 (95% CI = 1.1 to 1.7) respectively. There were associations with male gender; HR = 1.9 (95% CI = 1.6 to 2.4), African-American origin; HR = 1.4 (95% CI = 1.2 to 1.7), and high triglyceride levels; HR = 1.3 (95% CI = 1.2 to 1.4) per mmol/l. There were no increased risks for previous smokers even though there is some likelihood that they have continued ETS exposure.

There were some inconsistencies between tabulated results and the narrative of the report.

Comment

A link between ETS exposure and glucose intolerance (possibly a sign of diabetes) has not yet been established; this paper provides evidence in favour of an association. Repeat measurement of exposure status would have improved the interpretation of the research.

Between 1 and 10% of people with glucose intolerance will develop diabetes per year. The condition is more properly known as impaired glucose tolerance and actually means that glucose levels are too high but not high enough to trigger a diagnosis of diabetes.
