EDITORIAL

Smoking just one cigarette a day raises risk of CHD and stroke

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SMOKING ONE CIGARETTE PER DAY CARRIES A RISK FOR CARDIOVASCULAR DISEASE OF AROUND HALF that of those who smoke 20 per day, a systematic review and meta-analysis has found.[1]

Using Medline, the investigators undertook a systematic review of articles published in English between 1946 and May 2015 that reported the association between cigarette smoking levels and coronary heart disease (CHD) and stroke.

The meta-analysis included 55 publications covering 141 prospective cohort studies. To avoid bias, cohorts with at least 50 cardiovascular disease events were included, healthy populations studied, adjustments made for age and sex, and studies had to include at least three smoking categories as well as never smokers.

'We show clearly that no safe level of smoking exists for cardiovascular disease'

Complex statistical analyses were performed to extract meaningful comparative data from each study. The main quantitative measure was the percentage change in risk (excess relative risk) associated with smoking one (or five) cigarette(s) per day, expressed as a proportion of the percentage change from smoking 20 cigarettes per day. Among men, the pooled relative risk, adjusted for confounders, for CHD was 1.74 (95% CI: 1.50-2.03) for smoking one cigarette per day and 2.27 (95% CI: 1.90-2.72) for 20 cigarettes per day, using all studies. Among women, the corresponding risks for CHD were 2.19 (95% CI: 1.84-2.61) and 3.95 (95% CI: 3.34-4.67) respectively. Men who smoked one cigarette per day had 53% of the adjusted excess relative risk for smoking 20 cigarettes per day and women had 38% of the adjusted excess risk.

For stroke, the pooled adjusted relative risks for men were 1.30 (95% CI: 1.11-1.53) and 1.56 (95% CI: 1.31-1.86) for smoking one or 20 cigarettes per day respectively, with figures of 1.46 (95% CI: 1.20-1.78) and 2.42 (95% CI: 1.67-3.52) for women, respectively. The excess risk for stroke associated with smoking one cigarette per day was 64% for men and 36% for women using relative risks adjusted for multiple factors.

The importance of these findings needs to be set in the context of the Health Survey for England (2013 and 2014), which found that 26% of current smokers reported that they wanted to cut down but were not trying to give up altogether.[2] Furthermore, the percentage of smokers who smoke one to five cigarettes per day increased from 18.2% to 23.6% between 2009 and 2014.[2]

Smoking few cigarettes is perceived by smokers to be relatively safe. However, although there is an almost linear relation between risk of lung cancer and number of cigarettes smoked per day previous studies have shown the dose-response for cardiovascular disease is steep at low levels of smoking and then plateaus off. This paper sought to extend the previous work on CHD, by using a systematic review to provide a major body of evidence. It also aimed to show that a similar non-linear relation exists between stroke and low smoking levels.

This research concludes that even smoking one cigarette per day carries risks for CHD and stroke of around half that for people who smoke 20 per day. These risks are much greater than previously thought.

The study authors conclude: 'Smoking only one to five cigarettes per day is associated with a risk of coronary heart disease and stroke that is substantially higher than many health professionals or smokers recognise (as much as half the risk of smoking 20 per day). We show clearly that no safe level of smoking exists for cardiovascular disease.

'Smokers need to quit completely rather than cut down if they wish to avoid most of the risk associated with heart disease and stroke, two common and major disorders caused by smoking.'

This paper gives added impetus to the need to warn 'light' smokers of their continuing significant cardiovascular risk.

REFERENCES
1 Hackshaw A, Morris JK, Boniface S et al. Low cigarette consumption and risk of coronary heart disease and stroke: meta-analysis of 141 cohort studies in 55 study reports. *BMJ* 2018;360:j5855
2 NHS Digital. Health Survey for England. https://data.gov.uk/dataset/health_survey_for_england

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