

Aetiology and harm

Light smoking confers up to half the amount of the cardiovascular risk associated with smoking a pack of cigarettes a day

10.1136/bmjebm-2018-110986

Rachel R Huxley

La Trobe University College of Science, Health and Engineering, Melbourne, Victoria, Australia

Correspondence to: Professor Rachel R Huxley, La Trobe University College of Science, Health and Engineering, Melbourne, VIC 3086, Australia; r.huxley@latrobe.edu.au

Commentary on: Hackshaw A, Morris JK, Boniface S, Tang JL, Milenkovic D. 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.

Context

Smoking is widely accepted to approximately double the risk of coronary heart disease (CHD) and stroke—but this is an average; there are currently 1.1 billion smokers worldwide, the smoking habits of whom differ in terms of quantity smoked, and in the type of cigarette smoked, duration of exposure and age of initiation.¹ Therefore, it is reasonable to assume that smokers differ in terms of smoking-associated vascular risk. Although it is well recognised that there is a linear dose–response association between smoking and risk of lung cancer, the relationship with CHD and stroke has been less well defined.

Methods

In this carefully conducted meta-analysis, Hackshaw *et al* included data from more than 140 cohort studies that had been published over a period spanning more than 70 years². For both men and women (where data permitted) age-adjusted estimates of the effect for the relationship between cigarette consumption and risk of CHD and stroke were extracted and pooled using standard meta-analytic techniques. The authors used regression modelling to quantify the relative risk associated with different levels of cigarette consumption (1, 5 and 20 per day).

Findings

In men, smoking only one cigarette per day was associated with (at least) a 48% and 35% increase in the risk of CHD and stroke, respectively, relative to never smokers. In turn, smoking one cigarette per day explained more than 40% of the excess risk of CHD and stroke conferred by smoking 20 cigarettes a day. The relative risk estimates for CHD and stroke were even more extreme for women: relative to never smokers, smoking one cigarette per day increased coronary risk by 54% and stroke risk by 31%,

and explained more than 30% of the excess risk associated with smoking 20 a day. In a nutshell, the difference between heavy and light smokers, in terms of vascular risk, is much smaller than previously recognised, with the risk of having a coronary event or stroke increasing within virtually the first few puffs of a cigarette.

Commentary

That a 'safe' level of smoking exists is untrue—which is bad news, particularly for the many young people who consider that 'social smoking' or only smoking one or two a day is not going to cause them any harm in the long run.³ Similarly, these findings are also relevant to the significant proportion of 'low-intensity' smokers (<10 cigarettes a day) who cut the number of cigarettes smoked per day in the mistaken belief that this will significantly reduce any future harm associated with smoking.³

Smoking kills both men and women, but the effects are not equal. Women tend to smoke fewer cigarettes a day and they tend to start smoking at a later age compared with men. And yet, compared with never smokers, smoking confers a significantly greater risk of CHD in women than in men who smoke.⁴ The findings from Hackshaw and colleagues support this observation: compared with never smokers, men smoking 20 cigarettes a day have double the risk of CHD compared with quadruple the risk in women, but why this is remains unknown.

Implications for practice

'Light' smoking is heavy on risk; the only safe smoking level is that of no smoking. Communicating this simple message to the billion smokers is, however, anything but simple. Approximately 80% of people who smoke live in countries where tobacco control measures are not strictly enforced. According to the latest estimates from the WHO, only 16% of the world's population is protected by comprehensive smoke-free laws.¹ Advertising campaigns that target children and adolescents to dissuade them from lighting that first cigarette are essential. For clinical professionals, disavowing smokers with the belief that their one-a-day habit is not doing them any harm is an important, and necessary, conversation to have.

Competing interests None declared.

Provenance and peer review Commissioned; internally peer reviewed.

© Author(s) (or their employer(s)) 2019. No commercial re-use. See rights and permissions. Published by BMJ.



To cite: Huxley RR. *BMJ Evidence-Based Medicine* 2019;24:77.

References

1. World Health Organisation. Tobacco Free Initiative. <http://www.who.int/tobacco/control/en/>.
2. 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.
3. Amrock SM, Weitzman M. Adolescents' perceptions of light and intermittent smoking in the United States. *Pediatrics* 2015;135:246–54.
4. Huxley RR, Woodward M. Cigarette smoking as a risk factor for coronary heart disease in women compared with men: a systematic review and meta-analysis of prospective cohort studies. *Lancet* 2011;378:1297–305.