Smoking cessation

Even smoking some days increases risk of premature death

Individuals who do not smoke every day have a significantly higher risk of all-cause mortality compared with those who have never smoked. For those who smoke daily, the mortality risk increases as the number of cigarettes smoked increases, a large study from the USA has found.

The researchers analysed data, from 1999 to 2014, from the National Health and Nutrition Examination Survey. This is a population-based, representative survey and multistage stratified cluster sample of the non-institutionalised civilian population of the United States. The survey is conducted by the National Center for Health Statistics. Participants with a history of cardiovascular disease (CVD) or cancer at baseline were excluded.

The cohort analysed included adults aged 20-79 years for whom follow-up mortality information was available including underlying cause of death. Participants with missing information on smoking and covariate data were excluded.

A total of 30,674 participants (48.8% men), mean age 42.7 years, were included in the final analysis. During 255,100 person-years of follow-up, 2,008 participants died, including 347 from CVD and 501 from cancer.

Participants who smoked either every day or some days were more likely to be men, have a higher energy intake and have a poorer quality diet. They were also less likely to undertake moderate and vigorous physical activity, had lower education levels and lower incomes than those who had never smoked.

Those participants who had never smoked had lower mean systolic BP and fasting blood glucose, lower triglyceride, low-density lipoprotein cholesterol and total cholesterol levels, and higher high-density lipoprotein cholesterol levels compared with daily smokers.

The multivariable-adjusted hazard ratios (HR) for mortality are shown below.

All-cause mortality

Compared with those who had never smoked a significant increase in the risk of all-cause mortality was observed for all categories of smokers.

- **Nondaily smokers:** HR 1.50 (95% CI: 1.08-2.08)
- **Smoking < 20 cigarettes per day:** HR 1.54 (95% CI: 1.24-1.90)
- **Smoking 20–39 cigarettes per day:** HR 2.09 (95% CI: 1.65-2.63)
- **Smoking ≥ 40 cigarettes per day:** HR 2.78 (95% CI: 1.75-4.43)

Deaths from cancer

Compared with those who had never smoked, there were increased risks of cancer mortality for all daily smokers.

- **Smoking < 20 cigarettes per day:** HR 1.45 (95% CI: 1.01-1.29)
- **Smoking 20–39 cigarettes per day:** HR 2.66 (95% CI: 1.75-4.03)
- **Smoking ≥ 40 cigarettes per day:** HR 3.25 (95% CI: 1.34-7.87)

Deaths from CVD

Compared with those who had never smoked a significant increase in the risk of death from CVD was observed for:

- **Smoking < 20 cigarettes per day:** HR 1.70 (95% CI: 1.01-2.87)
- **Smoking 20–39 cigarettes per day:** HR 1.97 (95% CI: 1.17-3.29)

Former smokers who had quit five or more years ago had a lower risk of all-cause mortality compared with current smokers.

The study found that nondaily smokers have a higher all-cause mortality risk compared with those who have never smoked.

It also confirmed that there is an increased mortality rate in those who smoke regularly, with a clear dose-response relationship.

The study authors state: 'Regardless of how frequently they smoke, people who continue to smoke are more likely to die than those who have never smoked.'

'This study also indicates that the mortality risk for former smokers decreases gradually over time,' they add.

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Zhu D, Zhao G, Wang X. Association of smoking and smoking cessation with overall and cause-specific mortality. *Am J Prev Med* 2021;60(4):504-12