

## **30-year follow-up study: 'Tremendous' impact of smoking on mortality and cardiovascular disease**

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Non-smokers live longer and have less cardiovascular disease than those who smoke, according to a 30-year follow-up study of 54,000 men and women in Norway. Smoking, say the investigators, is "strongly" related to cardiovascular morbidity and mortality from various causes.

The results, presented in Stockholm at EuroPREvent 2009, reflect what many other studies have indicated, but, says investigator Professor Haakon Meyer from the University of Oslo and Norwegian Institute of Public Health, these results provide a picture of the long-term, absolute "real life" risk.

Behind his conclusions lies a far-reaching follow-up study which began in 1974 with an invitation to every middle aged man and woman (aged 35-49) living in three counties of Norway to take part in a basic cardiovascular screening examination. The invitation had a huge response, with 91% attending for the baseline screen.

Over the next three decades deaths were recorded by linkage to the Norwegian population registry and, between 2006 and 2008, those surviving responded to a follow-up questionnaire. This allowed division of the participants according to their smoking status - never-smokers, ex-smokers, current smokers of 1-9 cigarettes a day, 10-19 cigarettes a day and more than 20 cigarettes a day (the last group referred to as "heavy smokers").

Results showed that, from the original 54,075 participants, 13,103 had died by the time of follow-up. But it was a significant finding that, of these, 45% of the heavy-smoking men had died during the 30 years, compared to just 18% of the never-smokers. Similarly, 33% of the heavy-smoking women had died, but only 13% of the never-smokers.

"These results show what a tremendous impact smoking has on [mortality](#)," says Professor Meyer. "We are talking about very high numbers of people."

A similar pattern was seen in the cardiovascular incidence rates reported in the follow-up questionnaire. In men the cumulative incidence of [myocardial infarction](#) was 10% in never-smokers and 21% in heavy smokers; in women 4% in never-smokers and 11% in heavy smokers. There were also strong associations found between smoking and stroke and diabetes.

"What these results show is the cumulative long-term association between smoking and death and cardiovascular risk," says Professor Meyer. "Around two-thirds of the middle-aged heavy-smoking men and half the heavy-smoking women had died or had a [cardiovascular disease](#) within the next 30 years. The incidence was much lower in never-smokers and reflects the tremendously adverse effect of smoking on health and longevity. The difference in outcome between the never-smokers and heavy smokers was substantial.

"This study underlines the public health messages about smoking. We have seen declines in the prevalence of smoking in developed countries, but challenges still remain. Certain population groups - young women, immigrant communities - still have high rates of [smoking](#), and there's more to be done here."

Source: European Society of Cardiology ([news](#) : [web](#))

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