

# Unhealthy lifestyle more than doubles stroke risk

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People who lead unhealthy lifestyles are more than twice as likely to suffer a stroke than those who eat and drink sensibly, don't smoke, and take regular exercise, finds a study published on [bmj.com](http://bmj.com) today.

Stroke is one of the leading causes of illness and death worldwide. In the UK alone, the estimated annual cost of caring for stroke is around £7 billion. There is good evidence to suggest that lifestyle behaviours like smoking, physical activity and diet can influence the risk of heart disease, but their impact on stroke is less well known.

So researchers based in the east of England set out to examine the impact of four health behaviours on stroke risk in a large group of men and women living in Norfolk.

The study involved 20,040 men and women aged 40-79 years old who were taking part in the European Prospective Investigation into Cancer Study (EPIC). Between 1993 and 1997, participants completed a detailed health and lifestyle questionnaire and underwent a thorough health examination by trained nurses.

Participants scored one point for each of four healthy behaviours: current non-smoking, physically not inactive, moderate alcohol intake (1-14 units per week) and blood vitamin C levels of 50  $\mu\text{mol/l}$  or more, indicating fruit and vegetable intake of at least five servings a day.

An individual could therefore have a total health behaviour score ranging

from zero to four, with a higher score indicating more protective behaviour.

Participants were then followed for an average of 11 and a half years. Strokes were recorded using death certificates and hospital discharge data.

There were a total of 599 incident strokes during the follow-up period. After adjusting for other factors that may have affected the results, the risk of stroke was 2.3 times greater in those with a score of zero compared to those with a score of four.

A significantly higher percentage of women scored four compared to men.

The risk of stroke increased in linear fashion with every point decrease in health behaviour score. So, for example, those with a score of two were one and a half (1.58) times more likely to have a stroke than those with a score of four, while those with a score of just one were just over twice (2.18) as likely to have a stroke.

The authors acknowledge that their study has some limitations, but suggest that the results may provide further incentive and support for the notion that small differences in lifestyle may have substantial potential impact on stroke risk.

The conclusion that lifestyle predicts the risk of stroke should help to inform individuals' choices and policy-makers' decisions, writes Dr Matthew Giles from the Stroke Prevention Research Unit at John Radcliffe Hospital Oxford in an accompanying editorial.

However, less encouraging is the small proportion of participants with a lifestyle that protects against stroke - although lifestyle interventions

could be of great benefit, a huge shift in behaviour will be needed to achieve this, he concludes.

Source: British Medical Journal

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