

# A good night's sleep increases the cardiovascular benefits of a healthy lifestyle

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A good night's sleep can increase the benefit of exercise, healthy diet, moderate alcohol consumption and non-smoking in their protection against cardiovascular disease (CVD), according to results of a large population follow-up study.(1) Results showed that the combination of the four traditional healthy lifestyle habits was associated with a 57% lower risk of cardiovascular disease (fatal and non-fatal) and a 67% lower risk of fatal events. But, when "sufficient sleep" (defined as seven or more hours a night) was added to the other four lifestyle factors, the overall protective benefit was even further increased - and resulted in a 65% lower risk of composite CVD and a 83% lower risk of fatal events.

"If all participants adhered to all five healthy lifestyle factors, 36% of composite CVD and 57% of fatal CVD could theoretically be prevented or postponed," the authors report. "The public health impact of sufficient sleep duration, in addition to the traditional healthy lifestyle factors, could be substantial."

The study is published today in the *European Journal of Preventive Cardiology*, and is the first to investigate whether the addition of sleep duration to the four traditional healthy lifestyle factors contributes to an association with CVD.

The Monitoring Project on Risk Factors for Chronic Diseases (MORGEN) is a [prospective cohort study](#) in the Netherlands from which 6672 men and 7967 women aged 20 years and free of CVD at baseline were followed up for a mean time of 12 years. Details of physical

activity, diet, alcohol consumption, smoking and sleep duration were recorded between 1993 and 1997, and the subjects followed-up through a cross-link to national hospital and mortality registers.

As expected, results showed that adherence to each of the four traditional lifestyle factors alone reduced the risk of CVD. Those at baseline who recorded sufficient [physical activity](#), a healthy diet and [moderate alcohol consumption](#) reduced their risk of composite CVD from 12% for a [healthy diet](#) to 43% for not smoking; and risk reduction in fatal CVD ranged from 26% for being physically active to 43% for not smoking.

However, sufficient sleep duration alone also reduced the risk of composite CVD by about 22% (HR 0.78) and of fatal CVD by about 43% (HR 0.57) when compared with those having insufficient sleep. Thus, non-smoking and sufficient sleep duration were both strongly and similarly inversely associated with fatal CVD.

These benefits were even greater when all five lifestyle factors were observed, resulting in a 65% lower risk of composite CVD and an 83% lower risk of fatal CVD.

As background to the study, the investigators note that poor sleep duration has been proposed as an independent risk factor for CVD in two other (non-European) studies, but without adding the effect of sleep to other healthy lifestyle benefits. This study - in a large population - now suggests that sufficient sleep and [adherence](#) to all four traditional [healthy lifestyle](#) factors are associated with a lower CVD risk. When sufficient sleep duration is added to the traditional [lifestyle factors](#), the risk of CVD is even further reduced.

As an explanation for the results, the investigators note that short sleep duration has been associated with a higher incidence of overweight,

obesity and hypertension and with higher levels of blood pressure, total cholesterol, haemoglobin A, and triglycerides, effects which are "consistent with the hypothesis that short sleep duration is directly associated with CVD risk".

The study's principal investigator, Dr Monique Verschuren from the National Institute for Public Health and the Environment in the Netherlands, said that the importance of sufficient sleep "should now be mentioned as an additional way to reduce the [risk of cardiovascular disease](#)". "It is always important to confirm results," she added, "but the evidence is certainly growing that sleep should be added to our list of CVD [risk factors](#)."

Dr Verschuren noted that seven hours is the average sleeping time that "is likely to be sufficient for most people". An earlier study from her group in the Netherlands, which included information on sleep quality, found that those who slept less than seven hours and got up each morning not fully rested had a 63% higher risk of CVD than those sleeping sufficiently - although those who woke rested, even from less than seven hours' sleep, did not have the increased risk.(2)

**More information:** 1. Hoevenaar-Blom M, Spijkerman AMW, Kromhout D, Verschuren WMM. Sufficient sleep duration contributes to lower cardiovascular disease risk in addition to four traditional lifestyle factors: the MORGEN study. *Eur J Prevent Cardiol* 2013; [DOI: 10.1177/2047487313493057](https://doi.org/10.1177/2047487313493057)

2. Hoevenaar-Blom MP, Spijkerman AM, Kromhout D, et al. Sleep duration and sleep quality in relation to 12-year cardiovascular disease incidence: the MORGEN study. *Sleep* 2011; 34: 1487-92.

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