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## Sauna bathing reduces the risk of stroke in Finnish men and women

A prospective cohort study

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## Abstract

**Objective** To assess the association between frequency of sauna bathing and risk of future stroke.

**Methods** Baseline habits of sauna bathing were assessed in 1,628 adult men and women aged 53–74 years (mean age, 62.7 years) without a known history of stroke in the Finnish Kuopio Ischemic Heart Disease prospective cohort study. Three sauna bathing frequency groups were defined: 1, 2–3, and 4–7 sessions per week. Hazard ratios (HRs) (95% confidence intervals [CIs]) were estimated for incident stroke.

**Results** During a median follow-up of 14.9 years, 155 incident stroke events were recorded. Compared with participants who had one sauna bathing session per week, the age- and sex-adjusted HR (95% CI) for stroke was 0.39 (0.18–0.83) for participants who had 4–7 sauna sessions per week. After further adjustment for established cardiovascular risk factors and other potential confounders, the corresponding HR (95% CI) was 0.39 (0.18–0.84) and this remained persistent on additional adjustment for physical activity and socioeconomic status at 0.38 (0.18–0.81). The association between frequency of sauna bathing and risk of stroke was not modified by age, sex, or other clinical characteristics ( $p$  for interaction  $> 0.10$  for all subgroups). The association was similar for ischemic stroke but modest for hemorrhagic stroke, which could be attributed to the low event rate ( $n = 34$ ).

**Conclusions** This long-term follow-up study shows that middle-aged to elderly men and women who take frequent sauna baths have a substantially reduced risk of new-onset stroke.

## Glossary

**BMI** = body mass index; **CHD** = coronary heart disease; **CI** = confidence interval;

**CVD** = cardiovascular disease; **HR** = hazard ratio; **ICD-10** = International Classification of

Diseases–10; **IQR** = interquartile range; **KIHD** = Kuopio Ischemic Heart Disease; **LDL-C** = low-density lipoprotein cholesterol; **SES** = socioeconomic status

## Footnotes

Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

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Submitted June 29, 2018

### Reader Response: Healthy subject bias may explain observed effect of sauna bathing on stroke risk

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