

Embargoed: Wednesday, 15 May 2024, 00:01 CEST

Higher income reduces stroke mortality risk by a third, new study shows

(Wednesday, 15 May 2024, Basel, Switzerland) New research, presented today at the 10th European Stroke Organisation Conference (ESOC) 2024, has revealed that high-income individuals have a 32% lower risk of post-stroke mortality.¹ Additionally, those with a higher education have a 26% lower risk of death post-stroke, highlighting striking disparities in stroke survival based on key social determinants of health (SDoH).

The register-based study analysed data from 6,901 stroke patients in Gothenburg, Sweden between November 2014 to December 2019 to examine the impact of SDoH factors on post-stroke mortality risk. The study focused on four SDoH factors: living area, country of birth, education and income.

As well as identifying a significant connection between income, education level and post-stroke mortality risk, the study uncovered a concerning trend regarding the cumulative impact of SDoH factors. Patients with one unfavourable SDoH factor faced an 18% higher risk of mortality compared to patients without any unfavourable SDoH factors. This risk escalated to 24% for patients with two to four SDoH factors.

Lead author Professor Katharina Stibrant Sunnerhagen, University of Gothenburg, Clinical Neuroscience, Gothenburg, Sweden, comments, “Our findings underscore a stark reality - an individual’s socioeconomic status can be a matter of life or death in the context of stroke, especially when they are confronted with multiple unfavourable SDoH factors. While our study was conducted in Gothenburg, we believe these insights resonate across Europe, where similar healthcare structures and levels of social vulnerability exist, highlighting a pervasive issue throughout the continent.”

The study also found a link between increased mortality risk and additional risk factors like physical inactivity, diabetes, alcohol abuse and atrial fibrillation.

Notably, insights emerged regarding gender disparities and the potential impact of risk factors when examining patient characteristics within the study cohort. The proportion of female patients increased with the number of unfavourable SDoH factors; 41% of the group with no unfavourable SDoH factors were female, whereas 59% of the group with two to four unfavourable SDoH factors comprised females. Additionally, smoking, whether current or within the past year, was more prevalent in the group with two to four unfavourable SDoH factors compared to those with none (19% versus 12%).

Commenting on the actions required to reduce the future stroke burden, Professor Stibrant Sunnerhagen explains, “As the number of people affected by stroke in Europe is projected to rise by 27% between 2017 and 2047, the need for effective interventions is more pressing than ever.² In light of our study’s findings, targeted strategies are essential. Policymakers, for instance, must tailor legislation and approaches to account for the specific circumstances and needs of diverse communities, while clinicians should consider identifying patients with unfavourable SDoH factors to prevent post-stroke mortality.”

“By addressing these disparities, we will not only support the principles of health equity, but also have the potential to significantly enhance public health outcomes.”

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Note to editors:

A reference to ESOC 2024 must be included in all coverage and/or articles associated with this study.

For more information or to arrange an expert interview, please contact Hannah Murray or Luke Paskins at press@eso-stroke.org.

About the study author:

Professor Stibrant Sunnerhagen is a physician, researcher and educator specialised in rehabilitation medicine. She is best known for her research in stroke rehabilitation. She is currently the Professor and Head of the Rehabilitation Medicine Research Group at the University of Gothenburg.

About the European Stroke Organisation (ESO):

The ESO is a pan-European society of stroke researchers and physicians, national and regional stroke societies and lay organisations that was founded in December 2007.

The aim of the ESO is to reduce the burden of stroke by changing the way that stroke is viewed and treated. This can only be achieved by professional and public education, and by making institutional changes. ESO serves as the voice of stroke in Europe, harmonising stroke management across the whole of Europe and taking action to reduce the burden of stroke regionally and globally.

References:

1. Stibrant Sunnerhagen, K., *et al.* A register-based study on associations between stroke mortality and risk factors including social determinants of health. Presented at the European Stroke Organisation Conference; 15 May 2024; Basel, Switzerland.
2. Wafa, H.A., *et al.* Burden of stroke in Europe: Thirty-year projections of incidence, prevalence, deaths and disability-adjusted life years. *Stroke*. 2020; 51(8): 2418-2427.