

Studies reveal stroke increasingly affecting younger people, suggest global burden may double by 2030

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Stroke, a condition traditionally associated with old age, is increasingly affecting young and middle aged people, according to a major new analysis from the Global and Regional Burden of Stroke in 1990-2010 study, published in *The Lancet*.

Worldwide, there has been a startling 25% increase in the number of stroke cases among people aged 20 to 64 years over the last 20 years. Strokes in this age group now make up 31% of the total number of strokes, compared to 25% before 1990.

Furthermore, the overall amount of disability and illness and premature death caused by stroke is projected to more than double worldwide by 2030.

The findings come from the first comprehensive and comparable analysis of the regional and country-specific burden of stroke between 1990 and 2010.

For the first time, researchers were also able to study incidence of stroke in children and young people, and found that more than 83 000 people aged 20 years and younger are affected by stroke in the world each year. Strikingly, 0.5% of all strokes happen in this age group.

A second major study published in *The Lancet Global Health* shows that

in 2010, three fifths (61.5%) of the disability and more than half (51.7%) of the lives lost to stroke were the result of haemorrhagic strokes (the deadliest form, mainly caused by high [blood pressure](#) and unhealthy lifestyles), despite being half as common as ischaemic strokes. Most affected are people younger than 75 years and those living in low-income and middle-income countries (LMIC) where incidence of haemorrhagic stroke has risen by around 19%.

The authors warn that the shift in stroke burden towards younger populations is likely to continue globally unless effective preventive strategies are urgently implemented.

Led by Professor Valery Feigin, Director of the National Institute for Stroke and Applied Neurosciences at AUT University in New Zealand, a team of international researchers performed a comprehensive search of the available data to estimate the incidence, prevalence, and premature death and disability caused by stroke (and the two primary subtypes ischaemic and haemorrhagic) in all 21 regions of the world for 1990, 2005, and 2010.

Key findings include:

- While the average age of people with stroke has slightly increased, most of the burden of stroke (overall illness and death) has shifted from people older than 75 years to people 74 years and younger. This group accounts for 62% of new strokes, 45% of deaths, and 72% of illness and disability. These figures are significantly greater in LMIC and are on the rise (see *Lancet* Article table 1).
- Although the rate (age-standardised per 100,000 population) of people who die from stroke has declined worldwide over the last 20 years, the actual numbers of stroke related deaths increased to 5.9 million (26% increase).

- Numbers of people having a first stroke increased significantly to 16.9 million in 2010 (up by 68%), stroke survivors to 33 million (84% increase), and associated disability and illness to 102.2 million (up by 12%). If present trends continue, stroke deaths, survivors, and disability and illness will more than double by 2030 (to 12 million, 70 million, and 200 million respectively).
- In high-income countries (HIC), reductions in the age-standardised incidence of stroke (decrease 12%), premature death rates (37%), and illness and disability rates (36%) over the last two decades probably reflect improved education, prevention and care (eg, smoking cessation, control of blood pressure, acute stroke units), and diagnosis.
- In LMIC, the opposite is true, stroke claims more lives (42% higher mortality) and is associated with more disability and illness (46% greater) than in HIC. This is in part because of a rise in the prevalence of risk factors involving unhealthy diet, high blood pressure, obesity, physical inactivity, and smoking in these countries.
- Overall findings showed striking differences in stroke burden between world regions and national income levels, with up to ten times as many stroke deaths and overall illness and disability between the most affected LMIC countries in eastern Europe, sub-Saharan Africa, and south and east Asia compared with the least affected HIC countries in western Europe, Australasia, and North America. For more detailed findings for each country in all regions see *Lancet Article* figures 1-4 and appendix.

According to Professor Feigin, "This is the first study to compare incidence and impacts of stroke between countries on a global scale. Now every country in the world has estimates of their stroke burden, based on the best available evidence. The worldwide stroke burden is growing very fast and there is now an urgent need for culturally acceptable and affordable stroke prevention, management and

rehabilitation strategies to be developed and implemented worldwide."

Writing in a linked Comment published in *The Lancet*, Maurice Giroud, Agnes Jacquin, and Yannick Béjot from the University of Burgundy in France say, "Despite some improvements in stroke prevention and management in high-income countries, the growth and ageing of the global population is leading to a rise in the number of young and old patients with stroke. Urgent preventive measures and acute stroke care should be promoted in low-income and middle-income countries, and the provision of chronic stroke care should be developed worldwide."

In a second Comment published in *The Lancet Global Health*, Graeme J Hankey from the University of Western Australia writes, "Key priorities in the quest to reduce the global and regional burden of stroke are prevention of [haemorrhagic stroke](#), particularly in low-income and middle-income countries, and in people younger than 75 years... Population-based mass strategies to reduce consumption of salt, calories, alcohol, and tobacco by improving education and the environment will complement high-risk strategies of identifying those at risk of haemorrhagic (and ischaemic) [stroke](#), thus empowering these individuals to improve their lifestyle behaviours and, if necessary, lower their mean blood pressure and blood pressure variability with appropriate doses of antihypertensive drugs."

More information: [www.thelancet.com/journals/lan... \(13\)61953-4/abstract](http://www.thelancet.com/journals/lan... (13)61953-4/abstract)

[www.thelancet.com/journals/lan... \(13\)70089-5/abstract](http://www.thelancet.com/journals/lan... (13)70089-5/abstract)

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