

Reducing stroke risk beyond lifestyle changes

By B. Kasadha

Standfirst: Public health stroke awareness campaigns have led to greater understanding of the signs of stroke. However, what can be done to raise awareness of stroke prevention interventions? Bakita Kasadha explores the actions that can be taken beyond individual lifestyle changes, and critiques whether all modifiable risk factors are easy to implement.

Key points:

- People with atrial fibrillation must be offered the necessary assessments and treatment to reduce their greater risk of having a stroke.
- The 'post code' lottery determines access and offering of stroke prevention interventions.
- People who have experienced a stroke are more likely to experience another, therefore stroke survivors need adequate and quality rehabilitation care.
- The impact of comorbidities and environmental factors on stroke risk are under researched.

In England, one in six people will have a stroke in their lifetime (PHE, 2018). Stroke is the leading cause of death and disability across the UK, however 90% of strokes are preventable (NICE, 2019). Over the years there has been public health messaging, including the Act FAST stroke campaign, to help the public recognise the signs of stroke. The earlier a person receives treatment, the greater their outcome; survival rates have improved (NICE, 2019).

Although the majority of people experience a stroke in older age, first time strokes are happening at a younger age (PHE, 2018). In 2016, 38.2% of strokes occurred in the 40 to 69 age group compared to 33.7% in 2007 (PHE, 2018). People who have a stroke are more likely to experience another one (NHS, 2019). It is important that the population understands other risk factors beyond age.

Modifiable risk factors

Lifestyle changes are an effective way to prevent strokes (NHS, 2019). Dietary management, such as a balanced diet, lowering salt intake and BMI can reduce blood pressure and protect against stroke (NHS, 2019). As can lifestyle changes such as exercising regularly, smoking cessation and getting enough sleep (NHS, 2019).

While stress is seen as a modifiable risk, the extent to which it can be managed depends on one's circumstances. More research is exploring the impact of discrimination-related stress on health outcomes (Stanley, 2019). People from racially minoritised communities have increased incidents of strokes (British Heart Foundation, 2010). Improving minoritised groups' overall access to healthcare has long been recognised (Szczepura, 2005). Structural discrimination

and lack of culturally tailored services all impact access and the quality of the services they might receive (Ajayi Sotubo, 2021).

In addition, the impact of repeated discrimination may contribute too. 'Weathering' is a term first coined by Arline Geronimus a professor in public health at the University of Michigan (Geronimus, 1992). The term describes the premature biological ageing and associated health risks due to repeated discrimination (Geronimus, 2006). Research in America has found that racial differences in weathering; black people have accelerated biological ageing compared to white people (Forrester et al, 2019). A London study on racial differences in distribution stroke subtypes concluded that differences between black and white patients could not be explained by differences in the assessed traditional risk factors and other factors, including environmental needs to be further explored (Gulli et al, 2016).

Location impacts access to medical interventions

People with atrial fibrillation are up to 5 times more likely to have a stroke (NHS). Atrial fibrillation is a heart condition that causes an irregular and often abnormally fast heart rate. In 2016, it was estimated that around 1.4 million people have a diagnosis of atrial fibrillation in England and just under half a million of people have undiagnosed atrial fibrillation (NICE, 2019).

Atrial fibrillation contributes to one in five strokes in the UK (Stroke Association, 2021). That risk is compounded by age and risk factors such as hypertension, diabetes, and cardiovascular disease (NHS). It has long been evidenced that atrial fibrillation related strokes are often more severe with higher mortality and greater disability (Lin, 1996). It is thought that 7,000 strokes could be prevented and over 2,000 lives saved every year in England if people with atrial fibrillation were adequately treated (NICE, 2019).

National Institute for Health and Care Excellence (NICE) is a non-departmental public body of the Department of Health. NICE provides evidence-based guidance and advice to help improve health and social care services. In 2014, NICE updated its recommendations stating that people with atrial fibrillation should be assessed using the CHA² DS² -VASc tool, to ascertain their risk of having a stroke. Where a person has a score of two or more, the NICE guidance recommends offering anticoagulants. The guidelines also recommend that patients should be offered a choice of which anticoagulants to take, to improve adherence.

Between 2011 and 2016 hospitalised atrial fibrillation related strokes reduced from 98 per 100,000 patients per week to 86 per week, which is impart due to identifying more people with atrial fibrillation and increasing uptake of anticoagulation therapy (Cowan, 2019).

Data from the Quality and Outcomes Framework (QOF) show that, in 2017/18, 94% of people with atrial fibrillation were risk assessed using this tool. However around 15% of people assessed as being at higher risk of stroke are not receiving anticoagulants in primary care. The NICE impact stroke report (2019) states that it is unclear whether this is due to patient choice or not.

The Sentinel Stroke National Audit Programme (SSNAP), led by King's College London found that the proportion of people presenting to hospital with a stroke, who had atrial fibrillation, and were receiving anticoagulation before they had a stroke increased, from 38.3% in 2013/14 to 52.8% in 2016/17 . However, this varied from 24% to 91% across CCGs in England. There continues to be incremental increases but where a person lives continues to determine their access (King's College London, 2020). Incidence of stroke appears to be highest in the most deprived areas, however not significantly more than most deprived areas (PHE, 2018). Generally, people who live in areas of high deprivation likely to have more complex health needs but have on average shorter GP consultations than those in wealthier areas (Gopfert, 2007).

Identifying atrial fibrillation is essential in reducing the number of people strokes and supporting those with greater risk. However, Mathur et al (2018) found that although people of South Asian descent were at higher risk of stroke there was reduced prevalence of atrial fibrillation compared to white and black African and Caribbean patients. This research illustrates the importance of capturing disaggregated data among minoritised groups.

Rehabilitation

Around 30% of people who have a stroke will go on to experience another stroke (PHE, 2018). Data from SSNAP show that, in 2017/18, 92% of people had their rehabilitation goals agreed within 5 days of arrival in hospital. NICE (2019) has commented that there is no record whether these goals were reviewed, however. NICE (2013) official guidance recommends assessments six months after stroke. The proportion of people having an assessment has increased, from 20% in 2013/14 to 30% in 2017/18. NICE (2019) reported that 45% of stroke survivors reported to us that they feel abandoned after they leave hospital.

Conclusions

Strokes can be life-threatening and are a leading cause of disability in the UK (Newton, 2015), so prevention interventions are critical. NICE guidelines demonstrate the effective measures that can be taken beyond lifestyle changes. There is still room for improvement in rehabilitation care and ensuring equal access to preventative care regardless of place of residence.

More research is needed to understand the impact on comorbidities, environmental factors and racial disparities to further assess risk factors and support patients to make informed decisions about their care.

Conflicts of interest

The author declares that there are no conflicts of interest.

References

Ajayi Sotubo O. (2021). A perspective on health inequalities in BAME communities and how to improve access to primary care. *Future healthcare journal*, 8(1), 36–39.
<https://doi.org/10.7861/fhj.2020-0217> (accessed on 28 July 2021).

British Heart Foundation (2010). *Ethnic differences in cardiovascular disease 2010*. London: British Heart Foundation. Available at: www.bhf.org.uk/information-support/publications/statistics/ethnic-differences-in-cardiovascular-disease-2010 (accessed on 28 July 2021).

Cowan J, Wu J, Hall M. A 10 year study of hospitalized atrial fibrillation-related stroke in England and its association with uptake of oral anticoagulation (2018) DOI: [10.1093/eurheartj/ehy411](https://doi.org/10.1093/eurheartj/ehy411) (accessed 2 July 2021)

[Forrester S, Jacobs D, Zmora R et al.](#) Racial differences in weathering and its associations with psychosocial stress: The CARDIA study Science Direct.
<https://doi.org/10.1016/j.ssmph.2018.11.003> SSM - Population Health, Volume 7, 2019, 100319, ISSN 2352-8273, <https://doi.org/10.1016/j.ssmph.2018.11.003>. (accessed 2 July 2021)

Geronimus AT. The weathering hypothesis and the health of African-American women and infants: evidence and speculations. *Ethn Dis*. 1992 Summer;2(3):207-21. PMID: 1467758.

Geronimus, A, Hicken, M, Keene, D. et al. 2006. "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. *American journal of public health*, 96(5), 826–833. <https://doi.org/10.2105/AJPH.2004.060749> (accessed 28 July 2021)

Gopfert A, Deeny S, Fisher R, Stafford M. Primary care consultation length by deprivation and multimorbidity in England: an observational study using electronic patient records. *British Journal of General Practice*; 2021; 71 (704): e185-e192
(<https://doi.org/10.3399/bjgp20X714029>).

King's College London. Clinical CCG/LHB/LCG Results Apr2019Mar2020-AnnualCCGResultsPortfolio. 2021. <https://www.strokeaudit.org/results/Clinical-audit/Clinical-CCG-LHB-LCG.aspx> (accessed 28 July 2021)

Mathur R, Pollara E, Hull S et al. Ethnicity and stroke risk in patients with atrial fibrillation
[https://www.qmul.ac.uk/blizard/ceg/media/blizard/images/documents/ceg-documents/publications/cvd-and-prevention/Ethnicity-and-stroke-risk-in-patients-with-atrial-](https://www.qmul.ac.uk/blizard/ceg/media/blizard/images/documents/ceg-documents/publications/cvd-and-prevention/Ethnicity-and-stroke-risk-in-patients-with-atrial-fibrillation.pdf)

[fibrillation-2013.pdf](#) Heart 2013;99:1087–1092. doi:10.1136/heartjnl-2013-303767 (accessed 24 July 2021)

National Institute for Health and Care Excellence (2019). *NICE impact stroke* <https://www.nice.org.uk/media/default/about/what-we-do/into-practice/measuring-uptake/nice-impact-stroke.pdf> (accessed 2 July 2021)

National Institute for Health and Care Excellence (2013). *Stroke rehabilitation in adults: Recommendations* <https://www.nice.org.uk/guidance/cg162/chapter/1-recommendations#organising-health-and-social-care-for-people-needing-rehabilitation-after-stroke> (accessed 2 July 2021)

National Institute for Health and Care Excellence (2021) *Atrial fibrillation: How common is it?* <https://cks.nice.org.uk/topics/atrial-fibrillation/background-information/prevalence/> (accessed 15 June 2021)

Newton, J, Briggs, A, Murray, C. et al. 2015. Changes in health in England, with analysis by English regions and areas of deprivation, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013', The Lancet. vol. 386, no. 10010, p2257-2274. [https://doi.org/10.1016/S0140-6736\(15\)00195-6](https://doi.org/10.1016/S0140-6736(15)00195-6)

NHS (2019) *Stroke: Recover.* <https://www.nhs.uk/conditions/stroke/recovery/> (accessed 28 July 2021)

NHS (2019) *Stroke: Overview.* <https://www.nhs.uk/conditions/stroke/> (accessed 28 July 2021)

NHS (2019) *Stroke: Prevention.* <https://www.nhs.uk/conditions/stroke/prevention/> (accessed 28 July 2021)

NHS Digital. 2018 Quality and Outcomes Framework, Achievement, prevalence and exceptions data - 2017-18 [PAS] – QOF 2017-18: Annex 1 – Report tables and charts. <https://digital.nhs.uk/data-and-information/publications/statistical/quality-and-outcomes-framework-achievement-prevalence-and-exceptions-data/2017-18#resources> (accessed 2 July 2021)

Public Health England (2018) *Briefing document: First incidence of stroke Estimates for England 2007 to 2016.* <https://www.gov.uk/government/publications/first-stroke-estimates-in-england-2007-to-2016> (accessed 24 July 2021)

Royal College of Physicians. Sentinel Stroke National Audit Programme (SSNAP) Results for Clinical Commissioning Groups (CCG) in England and Local Health Boards (LHB) in Wales <https://www.strokeaudit.org/Documents/National/Clinical/AugNov2017/AugNov2017-CCGLHBPublicReport.aspx> (accessed 2 July 2021)

Stanley, J., Harris, R., Cormack, D. et al. The impact of racism on the future health of adults: protocol for a prospective cohort study. BMC Public Health 19, 346 (2019).
<https://doi.org/10.1186/s12889-019-6664-x> (accessed 28 July 2021)

Stroke Association (2021) *Atrial Fibrillation: information and resources*.
<https://www.stroke.org.uk/professionals/atrial-fibrillation-information-and-resources> (accessed 28 July 2021)

Szczepura A. Access to health care for ethnic minority populations
Postgraduate Medical Journal 2005;81:141-147. <http://dx.doi.org/10.1136/pgmj.2004.026237>
(accessed 28 July 2021)

Wolf PA, Abbott RD, Kannel WB. Atrial fibrillation as an independent risk factor for stroke: the Framingham Study. Stroke 1991;22:983–8. 3 DOI: [10.1161/01.str.22.8.983](https://doi.org/10.1161/01.str.22.8.983) (accessed 24 July 2021)