

## **Age-, sex-, and risk-specific trends of stroke, ischemic heart disease, and dementia in Africa, 1990–2019: A Global Burden of Disease Study 2019**

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**Background/Rationale:** Stroke, ischemic heart disease, and dementia share common risk factors and pose risks to each other. Africa is suffering inequalities and scarce resources, which may aggregate the burden of the three conditions, necessitating scrutinisation of their trends and implementation of an optimised prevention approach.

**Methods:** We analysed data from the Global Burden of Disease Study (GBD) 2019 estimates for new and prevalent patients with stroke, ischemic heart disease, and dementia and their mortality and burden in 62 African countries within four regions. We also assessed the burdens (ie, disabilities and deaths combined) of the three conditions attributed to 12 risk factors and measured the changes from 1990 to 2019. We compared the measures with those in America, Asia, Europe, and the world. Data are presented in mean absolute number, age-standardised rate per 100,000 population, and 95% uncertainty intervals (UI).

**Results:** In 2019, Africa had 1,208,520 new strokes, 2,006,179 new ischemic heart diseases, and 387,421 new dementias, which all doubled compared to those in 1990. Africa compared with America, Asia, and Europe, had a lower age-standardised rate per 100,000 of dementia (89.7, 95% UI 76.8–102.2) but a higher rate of stroke (172.3, 158.1–188.7) and ischemic heart disease (337.9, 304.7–372.9) in 2019. From 1990 to 2019, the highest decline in the stroke incidence rate was observed in Eastern Sub-Saharan Africa (-20.6%) and Western Sub-Saharan Africa (-10.7%). For ischemic heart disease, the changes were generally less favourable; -4.5% in Southern Sub-Saharan Africa, and -3.8% in Central Sub-Saharan Africa. Dementia rates did not change significantly, except in Western Sub-Saharan Africa (-2.5%). From 1990 to 2019, the median age of onset occurred earlier for stroke (from ~65 to ~60 years), ischemic heart disease (from ~70 to ~65 years), and later for dementia (from ~65 to ~70 years). However, the proportion of 12 modifiable risk factors is comparable to global figures (83 to 88%) providing the basis for prevention.

**Conclusions:** Africa has the highest rates of disability and death combined as well as unfavourable temporal trends during the last three decades and declining age of onsets for stroke, ischemic heart disease, and dementia compared to other regions. These alarming trends in addition to the shortage of human, infrastructural, and financial resources in Africa endanger brain health and necessitate urgent action.

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