

Understanding the global impact of neurological disorders



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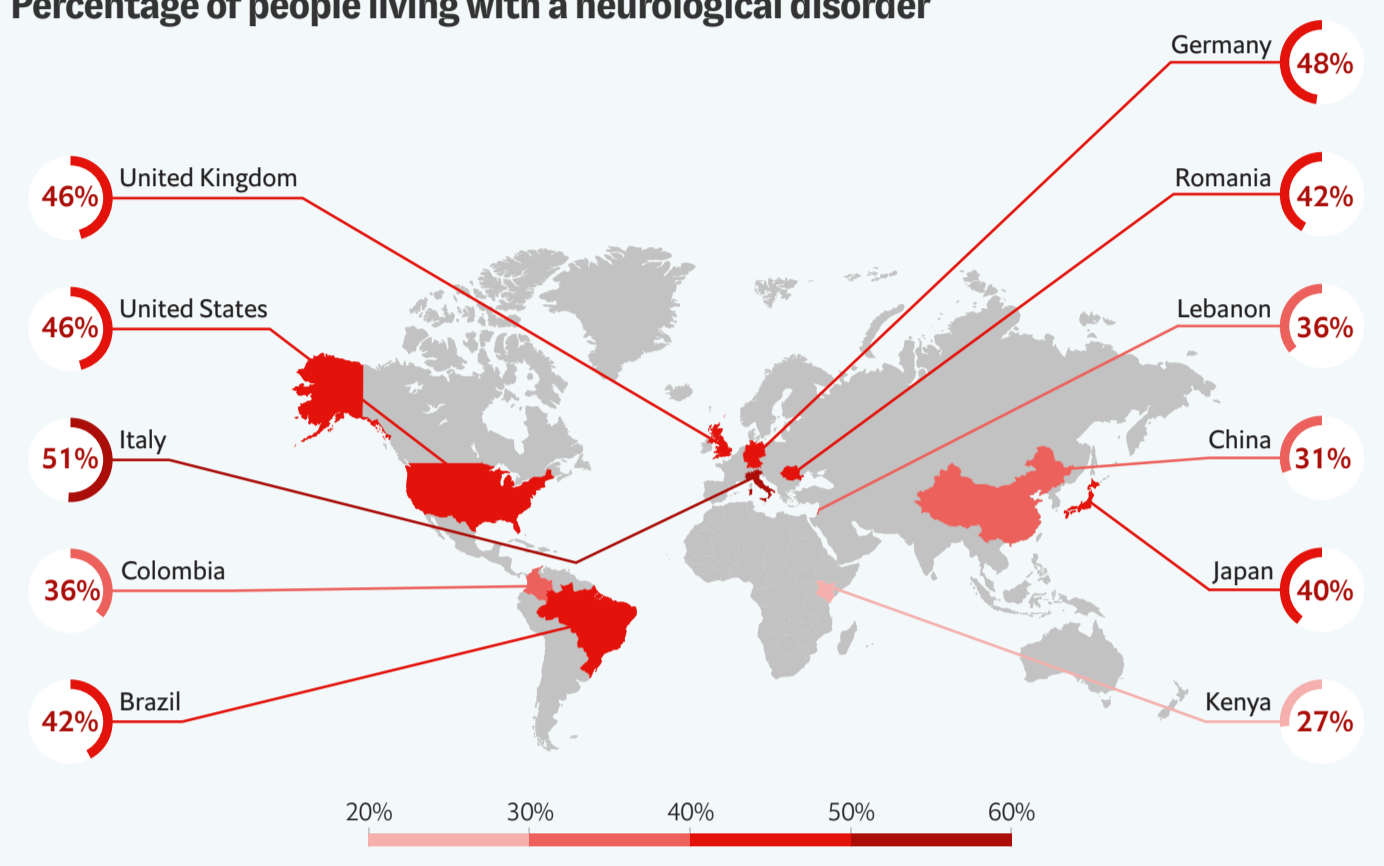
Neurological disorders are the leading cause of disability and the second leading cause of death worldwide.^{1,2}

Some regions are more affected by these disorders than others.

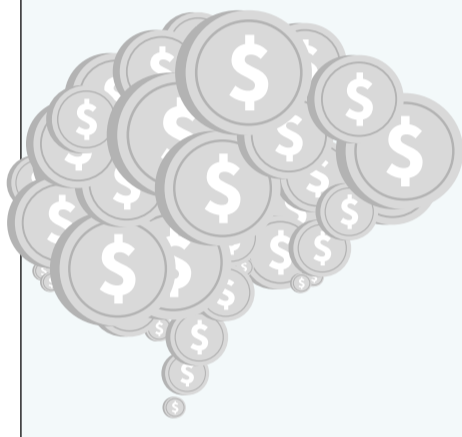
Alzheimer's disease and other dementias are one of the three most common causes of disability (measured in DALYs*) in the EU and larger WHO Europe region, along with stroke and headaches.³

*Disability adjusted life-years, a measure of overall burden of disease represented as years lost due to disability, premature death or poor health.

Percentage of people living with a neurological disorder



Neurological disorders are costly



In the Americas and Japan, caregiver burden weighs most heavily.

- In the **US** the annual cost of nine neurological disorders was \$789 billion in 2014.⁴
- The caregiver burden in **Latin America** is among the highest in the world. Long-term care options are scarce and costly, leaving the burden of care to family members.⁵
- In **Japan**, the healthcare cost of Alzheimer's disease and dementia was \$9.7bn in 2018, of which only 14% was due to medicine. Family caregivers aged 20-69 experienced productivity losses equal to \$14bn in 2010.⁶

Workforce shortages and resource scarcity limit access to care in rural areas

This issue is far worse in low- and middle-income countries (LMICs) than in high-income countries (HICs).

In **LMICs** there is **1 neurologist per million people**

In **HICs** there are **71 neurologists per million people**⁷



In **Colombia** many patients living with Parkinson's disease often utilise the judicial system to access treatment.⁸



In **Kenya**, the mean time from multiple sclerosis diagnosis to treatment was 22.2 months, almost 4x longer than the recommended guideline of 6 months.⁹



In **Arab countries**, specialised care for advanced Parkinson's disease is scarce, highlighting a significant gap in services and need for rehabilitation centres to manage motor symptoms.

Neurological disorders remain a low priority for most countries

...despite the significant social and economic consequences of neurological disorders.



70% of the global burden of neurological disorders are in LMICs, but only **28% of these countries have neurological policies** with specific plans outlined by governments to manage neurological disorders.¹⁰



Only **12% of all countries** in the WHO's Neurology Atlas (2017) report a separate budget for neurological disorders.⁷

In 2010, the total cost of neurological disorders in Europe was \$1.06tn, equivalent to the cost of heart disease, cancer and diabetes combined.¹¹



\$ Heart disease



\$ Cancer



\$ Diabetes



= \$ Neurological disorders

Prioritising research in neurological disorders and policymaking will maximise benefits to society and improve neurological care

High-yield opportunities include:



Improving data collection and sharing within and across countries can better inform better research, innovating and treatment.



Mobilising greater mechanisms for assistance and cross-national resources is key to reducing the global impact of neurological disorders, especially among LMICs who experience a disproportionate burden with limited resources.



Through collaboration, integrated health systems facilitate timely access to diagnosis and treatment.

Roche Products Limited conducted a factual accuracy check of this infographic, but any decisions to incorporate information were made solely at the discretion of Economist Impact.

References

- Theadom A, Krishnamurthi RV, Feigin VL, et al. Global, regional, and national burden of neurological disorders, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet Neurology*. 2019;18(5):459-80.
- UNGA. Progress on the prevention and control of non-communicable diseases. New York: United Nations, 2017. Available from: <https://digitalibrary.un.org/record/1474584?ln=en>.
- Korhonen K, Einiö E, Leinonen T, et al. Midlife socioeconomic position and old-age dementia mortality: a large prospective register-based study from Finland. *BMJ open*. 2020;10(1):e033234.
- Katan M, Luft A, editors. Global burden of stroke. *Seminars in neurology*; 2018: Thieme Medical Publishers.
- OECD. Policies to Support Family Carers. Paris: Organisation for Economic Co-operation and Development, 2011. Available from: <https://www.oecd.org/els/health-systems/47884889.pdf>.
- Jia L, Quan M, Fu Y, et al. Dementia in China: epidemiology, clinical management, and research advances. *The Lancet Neurology*. 2020;19(1):81-92.
- WHO. ATLAS country resources for neurological disorders. Geneva: 2017. Available from: <https://www.who.int/publications/i/item/atlas-country-resources-for-neurological-disorders>.
- Muñoz BE, Quintana-Peña V, Gonzalez MC, et al. Saturdays-in-Motion: Education and Empowerment through an Interdisciplinary Team Approach for Parkinson's Disease in Cali-Colombia. *Parkinson's Disease*. 2020;2020.
- Kalincik T, Diouf I, Sharmin S, et al. Effect of Disease-Modifying Therapy on Disability in Relapsing-Remitting Multiple Sclerosis Over 15 Years. *Neurology*. 2021;96(5):e783-e97.
- WHO. Intersectoral Global Action Plan on Epilepsy and Other Neurological Disorders 2022 – 2031. First draft. Geneva: World Health Organization, 2021. Available from: https://www.ilae.org/files/dmfile/first-draft-action-plan-on-epilepsy-and-other-neurological-disorders_180621.pdf.
- Schlueter M, Chan K, Lasry R, et al. The cost of cancer—A comparative analysis of the direct medical costs of cancer and other major chronic diseases in Europe. *PLoS one*. 2020;15(11):e0241354.