

Health improvements occurred worldwide since 2010 despite COVID-19 pandemic, but progress was uneven: Study

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Rates of early death and poor health caused by HIV/AIDS and diarrhea have been cut in half since 2010, and the rate of disease burden caused

by injuries has dropped by a quarter in the same time period, after accounting for differences in age and population size across countries, based on a new study published in *The Lancet*.

The study measures the burden of disease in years lost to early death and [poor health](#). The findings indicate that total rates of global disease burden dropped by 14.2% between 2010 and 2019. However, the researchers found that the COVID-19 pandemic interrupted these downward trends: rates of disease burden increased overall since 2019 by 4.1% in 2020 and by 7.2% in 2021. This is the first study to measure premature death and disability due to the COVID-19 pandemic globally and compare it to other diseases and injuries.

The study reveals how [healthy life expectancy](#), which is the number of years a person can expect to live in good health, rose from 61.3 years in 2010 to 62.2 years in 2021. Pinpointing the factors driving these trends, the researchers point to rapid improvements within the three different categories of disease burden: communicable, maternal, neonatal, and nutritional diseases; non-communicable diseases; and injuries.

Among communicable, maternal, neonatal, and nutritional diseases, the burden of disease declined for neonatal disorders (diseases and injuries that appear uniquely in the [first month of life](#)), [lower respiratory infections](#), diarrhea, malaria, tuberculosis, and HIV/AIDS between 2010 and 2021, ranging from reductions of 17.1% for neonatal disorders to 47.8% for HIV/AIDS. In the category of [non-communicable diseases](#), disease burden from stroke dropped by 16.9%, while disease burden from ischemic heart disease fell by 12.0% during this period.

For injuries, the years of healthy life lost due to road injuries was slashed by nearly a quarter (22.9%), while disease burden from falls was reduced by 6.9%. Progress in reducing disease burden varied by countries' Socio-demographic Index—a measure of income, fertility, and

education—underscoring inequities. For example, the burden of disease due to stroke dropped by 9.6% from 2010 to 2021 in countries with the lowest Socio-demographic Index, but it declined faster—by 24.9%—among countries with higher Socio-demographic Index.

"Our study illuminates both the world's successes and failures," said Dr. Alize Ferrari, Affiliate Associate Professor at the Institute for Health Metrics and Evaluation (IHME) at the University of Washington, Honorary Associate Professor at the School of Public Health at the University of Queensland, and co-first author of the study.

"It demonstrates how the world made huge strides in expanding treatment for HIV/AIDS and combating vaccine-preventable diseases and deaths among children under 5. At the same time, it shows how COVID-19 exacerbated inequities, causing the greatest disease burden in countries with the fewest resources, where health systems were strained and vaccines were difficult to secure. Governments should prioritize equitable pandemic preparedness planning and work to preserve the momentum that we've seen in improving children's health."

The research presents updated estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021. The GBD 2021 study analyzes incidence, prevalence, years lived with disability (years lived in less-than-ideal health), and disability-adjusted life years (lost years of healthy life) at global, regional, national, and subnational levels. It presents estimates of health and health loss in age-adjusted rates and total rates per 100,000 people.

The study provides globally comparable measures of healthy life expectancy and is the first study to fully evaluate burden of disease amid the first two years of the COVID-19 pandemic. COVID-19 was the single leading cause of disease burden worldwide in 2021, accounting for 7.4% of total disease burden globally.

The study also examined how the COVID-19 pandemic affected males and females differently. The researchers found that males were more likely than females to die of COVID-19; the age-standardized disease burden rate for COVID-19 among males was nearly twice that of females. However, the secondary effects of the COVID-19 pandemic, including long COVID and mental disorders, hit females hardest. For example, females were twice as likely as males to develop long COVID.

Depression, which increased sharply during the pandemic, was most likely to affect females between ages 15 and 65. Looking at differences between age groups, COVID-19 caused the most disease burden in older adults. For COVID-19, adults 70 years and older had more than double the levels of disease burden compared to adults between the ages of 50 and 69.

The study highlights not only the diseases and injuries that cut life short and cause poor health, and how the burden of disease from different causes has changed over time, but also examines how these patterns differ across countries and regions. "In essence," the authors write, the study "provides a comprehensive toolkit to inform and enhance decision-making processes across various levels of governance and practice."

GBD 2021 shines a light on the different causes of disease burden, showing which ones have improved and which are stagnating or worsening. It also tallies the number of years that people are living healthy lives. Healthy life expectancy rose significantly in 59 countries and territories between 2010 and 2021, with the greatest improvements in countries ranking lowest on the Socio-demographic Index, jumping from 52.2 years in 2010 to 54.4 years in 2021.

In contrast, healthy life expectancy showed minimal change among countries in the highest levels of the Socio-demographic Index, decreasing slightly from 68.9 years in 2010 to 68.5 years in 2021. The

findings on healthy life expectancy demonstrate that even though people are living longer lives all over the world, they aren't spending all those years in good health. The researchers found that the main causes of poor health were [low back pain](#), depressive disorders, and headache disorders.

"With low back pain, the leading cause of poor health globally, we see that the existing treatments aren't working well to address it," said Dr. Damian Santomauro, Affiliate Assistant Professor of Health Metrics Sciences at IHME; Stream Lead at Queensland Centre for Mental Health Research; Adjunct Fellow at the School of Public Health at the University of Queensland; and co-first author of the study. "We need better tools to manage this major cause of global disease burden."

"In contrast, for depressive disorders, we know what can work: therapy, medication, or both in combination for an adequate period of time. However, most people in the world have little or no access to treatment, unfortunately," he said. "Considering how depression increased dramatically during the COVID-19 pandemic, it's urgent to ensure that everyone with this disorder can get treatment."

Another way to understand what is making people ill is by looking at which diseases are growing fastest. GBD 2021 reveals that diabetes experienced the most rapid growth among the different causes of poor health, what the researchers call years lived with disability. Age-adjusted years lived with disability due to diabetes rose by 25.9% between 2010 and 2021. Poor health from diabetes increased in every country and territory that the researchers studied.

"Diabetes is a major contributor to stroke and ischemic heart disease, which are among the top three causes of disease burden worldwide," said Dr. Theo Vos, Professor Emeritus at IHME and one of the study's senior authors. "Without intervention, more than [1.3 billion people](#) in the world will be living with diabetes by 2050. To counter the threat of diabetes,

we must ensure that people in all countries can access preventive care and treatment, including to anti-obesity medications, which can lower a person's risk of developing diabetes."

More information: *The Lancet* (2024).

[www.thelancet.com/journals/lan ... \(24\)00757-8/fulltext](https://www.thelancet.com/journals/lan.../S0140-6736(24)00757-8/fulltext)

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