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FROM THE ALZHEIMER'S ASSOCIATION INTERNATIONAL CONFERENCE 2021

GLOBAL DEMENTIA CASES FORECASTED TO TRIPLE BY 2050

—New analysis shows a decrease in prevalence due to education countered by increase due to heart health risk factors

DENVER, JULY 27, 2021 — Positive trends in global education access are expected to decrease dementia prevalence worldwide by 6.2 million cases by the year 2050. Meanwhile, anticipated trends in smoking, high body mass index and high blood sugar are predicted to increase prevalence by nearly the same number: 6.8 million cases. Both according to new global prevalence data reported at the [Alzheimer's Association International Conference® \(AAIC®\) 2021](#) in Denver and virtually.

With these forecasts incorporated, researchers with the Institute for Health Metrics and Evaluation at the University of Washington School of Medicine reported at AAIC 2021 that they estimate the number of people with dementia will nearly triple to more than 152 million by 2050. The highest increase in prevalence is projected to be in eastern sub-Saharan Africa, North Africa and the Middle East.

“Improvements in lifestyle in adults in developed countries and other places — including increasing access to education and greater attention to heart health issues — have reduced incidence in recent years, but total numbers with dementia are still going up because of the aging of the population,” said Maria C. Carrillo, Ph.D., Alzheimer's Association chief science officer. “In addition, obesity, diabetes and sedentary lifestyles in younger people are rising quickly, and these are risk factors for dementia.”

The U.S. National Institute on Aging [estimates](#) people over the age of 65 will make up 16% of the world's population by 2050 — up from 8% in 2010.

Also reported at AAIC 2021 were two other prevalence/incidence studies. Key findings include:

- Each year, an estimated 10 in every 100,000 individuals develop dementia with early onset (prior to age 65). This corresponds to 350,000 new cases of early onset dementia per year, globally.
- From 1999 to 2019, the U.S. mortality rate from Alzheimer's in the overall population significantly increased from 16 to 30 deaths per 100,000, an 88% increase.
- Among all areas of the U.S., mortality rates for Alzheimer's were highest in rural areas in the East South Central region of the U.S., where the death rate from Alzheimer's is 274 per 100,000 in those over 65.

Global Prevalence of Dementia Expected to Grow Rapidly through 2050

To more accurately forecast global dementia prevalence and produce country-level estimates, Emma Nichols, MPH, a researcher with the Institute for Health Metrics and Evaluation at the University of Washington School of Medicine, and colleagues leveraged data from 1999 to 2019 from the Global Burden of Disease (GBD) study, a comprehensive set of estimates of health trends worldwide. This study also aimed to improve on prior forecasts by incorporating information on trends in dementia risk factors.

Nichols and team found dementia would increase from an estimated 57.4 (50.4 to 65.1) million cases globally in 2019 to an estimated 152.8 (130.8 to 175.6) million cases in 2050. The highest increases were observed in eastern sub-Saharan Africa, North Africa and the Middle East. Their analysis suggested that projected increases in cases could largely be attributed to population growth and aging, although the relative importance of these two factors varied by world region.

What's more, Nichols and team forecasted dementia prevalence attributable to smoking, high body mass index (BMI) and high fasting plasma glucose using the expected relationship between these risk factors and dementia prevalence. They found an increase of 6.8 million dementia cases globally between 2019 and 2050 due specifically to expected changes in these risk factors. Separately and conversely, the researchers found that expected changes in education levels will lead to a decline in dementia prevalence of 6.2 million individuals globally between 2019 and 2050. Taken together, these opposing trends come close to balancing each other out.

“These estimates will allow policymakers and decision makers to better understand the expected increases in the number of individuals with dementia as well as the drivers of these increases in a given geographical setting,” Nichols said. “The large anticipated increase in the number of individuals with dementia emphasizes the vital need for research focused on the discovery of disease-modifying treatments and effective low-cost interventions for the prevention or delay of dementia onset.”

[Recently published](#) in *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, Nichols and team used the same data set to estimate that Alzheimer's mortality rates increased by 38.0% between 1990 and 2019.

“Without effective treatments to stop, slow or prevent Alzheimer's and all dementia, this number will grow beyond 2050 and continue to impact individuals, caregivers, health systems and governments globally,” Carrillo said. “In addition to therapeutics, it's critical to uncover culturally-tailored interventions that reduce dementia risk through lifestyle factors like education, diet and exercise.”

The Alzheimer's Association U.S. Study to Protect Brain Health Through Lifestyle Intervention to Reduce Risk ([U.S. POINTER](#)) is a two-year clinical trial to evaluate whether lifestyle interventions that simultaneously target many risk factors protect cognitive function in older adults who are at increased risk for cognitive decline.

Incidence Estimates for Younger Onset Dementia Suggest 350,000 New Cases per Year

Data on [younger-onset dementia](#) (YOD), a form of dementia where the onset of symptoms happens before age 65, is extremely limited. To better understand the incidence of YOD, Stevie Hendriks, M.Sc., student at Maastricht University in the Netherlands, and colleagues conducted a systematic literature review of all studies published during the past 30 years that reported figures on how many people developed dementia before the age of 65.

Hendriks and team found that, overall, the global incidence rate was 10 new cases each year per 100,000 persons. They also found incidence increases with age. This suggests that around 350,000 people worldwide develop younger-onset dementia every year. Incidence rates for men and women were similar, and were highest for Alzheimer's disease, followed by vascular dementia and frontotemporal dementia.

“Our findings should raise awareness in healthcare professionals, researchers and policy makers because they show that a significant number of people are newly affected by young-onset dementia every year,” Hendriks said. “This shows the need for investment in tailored healthcare for this special patient group and more research into how we can best support but also prevent and treat young-onset dementia.”

“People living with [younger-onset Alzheimer's](#) face unique challenges when it comes to diagnosis, family, work, finances, future care and — with the recent FDA action — possible treatment options. But support and information is available,” said Kristen Clifford, Alzheimer's Association chief program officer. “And you have the power to make a new plan and determine how you choose to live your [best life](#) with the disease.”

Rural Areas of American South Experience Disproportionate Burden of Alzheimer's Mortality

Even though average lifespan has been steadily increasing over the past several decades in the U.S., there is an increasing divergence in mortality rates among urban and rural populations. This discrepancy is likely the result of many health disparities experienced by rural residents compared to their urban counterparts, including lower socio-economic status, higher levels of chronic disease, limited availability of internet services, and less access to health services including primary care.

To specifically understand geographic variations in Alzheimer's disease mortality, Ambar Kulshreshtha, M.D., Ph.D., from Emory University, and colleagues used data from the National Center for Health Statistics to examine trends in Alzheimer's death rates between 1999 and 2019 by urbanization levels.

Kulshreshtha and team found that, from 1999 to 2019, the mortality rate from Alzheimer's in the overall population significantly increased from 16 to 30 deaths per 100,000, an 88% increase. Rural areas across the United States were shown to have higher mortality rates from Alzheimer's compared to urban areas. Those rates were highest in rural areas in the East South Central region at 274 per 100,000 in those 65 years and older, more than three times that of urban areas in the mid-Atlantic region in which mortality rates were the lowest.

“Our work shows that there is an increasing discrepancy in Alzheimer's mortality between urban and rural areas. This discrepancy could be related to, or might be the result of, other urban-rural health disparities, including access to primary care and other health services, socio-economic level, time to diagnosis, and the rising proportion of older Americans living in these areas,” Kulshreshtha said. “Identifying and understanding the reasons for these health disparities is critical for allocating key social and public health resources appropriately.”

This study was partially funded by the Alzheimer's Association.

About the Alzheimer's Association International Conference (AAIC)

The Alzheimer's Association International Conference (AAIC) is the world's largest gathering of researchers from around the world focused on Alzheimer's and other dementias. As a part of the Alzheimer's Association's research program, AAIC serves as a catalyst for generating new knowledge about dementia and fostering a vital, collegial research community.

AAIC 2021 home page: www.alz.org/aaic/

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About the Alzheimer's Association

The Alzheimer's Association is a worldwide voluntary health organization dedicated to Alzheimer's care, support and research. Our mission is to lead the way to end Alzheimer's and all other dementia — by accelerating global research, driving risk reduction and early detection, and maximizing quality care and support. Our vision is a world without Alzheimer's and all other dementia®. Visit alz.org or call 800.272.3900.

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- Emma Nichols, MPH, et al. The estimation of the global prevalence of dementia from 1990-2019 and forecasted prevalence through 2050: An analysis for the Global Burden of Disease (GBD) study 2019. (Funder(s): Gates Ventures)
- Stevie Hendriks, M.Sc., et al. The incidence of young onset dementia: a systematic review and meta-analysis. (Funder(s): Alzheimer Nederland; Gieskes-Strijbis Foundation; Dutch Knowledge Center on Young-Onset Dementia)
- Ambar Kulshreshtha, M.D., Ph.D., Alzheimer's Disease Mortality High in Rural Areas in South: 1999-2019. (Funder(s): Alzheimer's Association)