Twenty-seven-year time trends in dementia incidence in Europe and the United States

The Alzheimer Cohorts Consortium

Frank J. Wolters, MD, PhD, Lori B. Chibnik, PhD, MPH, Reem Waziry, MD, PhD, et al.

Cite as: Neurology® 2020;95:e519-e531. doi:10.1212/WNL.0000000000010022

Correspondence
Dr. Hofman
ahofman@hsph.harvard.edu

Study objective
This study examined changes in dementia incidence rates in Europe and the US.

What is known and what this paper adds
Recent analyses of data from North America and Europe have suggested that dementia incidence rates declined over the past 40 years. This investigation builds off of the previous findings, bringing together multiple cohorts, and expands the evidence of decreasing incidence rates for dementia.

Participants and setting
These analyses included data from 49,202 individuals with baseline ages ≥65 years who participated in 7 population cohort studies linked to the Alzheimer Cohorts Consortium. These 7 studies followed residents of France, the Netherlands, the US, Sweden, the UK, and Iceland and had starting dates between 1948 and 1999.

Design, size, and duration
The individual cohort studies collected follow-up data on diagnoses of all-cause dementia from 1988 onwards. The present study’s investigators used Poisson regression to calculate cohort-specific 5-year incidence rates of dementia with stratification by age and sex. They then used Cox proportional hazard regression models to calculate hazard ratios per 10-year changes in calendar time and conducted a meta-analysis to determine overall trends.

Primary outcome measures
The primary outcomes were per-decade changes in dementia incidence rates.

Main results and the role of chance
Over 256,805 person-years, 4,253 participants in the cohort studies received dementia diagnoses, with similar incidence rates for women and men across strata of age. Between 1988 and 2015, dementia incidence rates declined, on average, by 13% per calendar decade (95% confidence interval [CI], 7%–19%). The per-decade declines were somewhat more pronounced for women than for men (24% [95% CI, 14%–32%] vs 8% [95% CI, 0%–15%]).

Bias, confounding, and other reasons for caution
The cohorts had varying attrition rates. The criteria for cohort inclusion might have biased the samples in favor of healthier individuals.

Generalizability to other populations
The present study’s reliance on data from the US and Europe may limit generalizability to dissimilar parts of the world.

Study funding/potential competing interests
This study was funded by the Janssen Prevention Center (Leiden, the Netherlands). Some authors report being employees of Janssen Pharmaceuticals and GlaxoSmithKline; owning shares in healthcare companies; and receiving personal fees and funding from the Swedish government and healthcare companies, including Janssen Pharmaceuticals. Go to Neurology.org/N for full disclosures.

A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The corresponding author(s) of the full-length article and the journal editors edited and approved the final version.
Twenty-seven-year time trends in dementia incidence in Europe and the United States:
The Alzheimer Cohorts Consortium
Frank J. Wolters, Lori B. Chibnik, Reem Waziry, et al.
Neurology 2020;95:e519-e531 Published Online before print July 1, 2020
DOI 10.1212/WNL.0000000000010022

This information is current as of July 1, 2020

Updated Information & Services
including high resolution figures, can be found at:
http://n.neurology.org/content/95/5/e519.full

References
This article cites 31 articles, 2 of which you can access for free at:
http://n.neurology.org/content/95/5/e519.full#ref-list-1

Subspecialty Collections
This article, along with others on similar topics, appears in the
following collection(s):
All Cognitive Disorders/Dementia
http://n.neurology.org/cgi/collection/all_cognitive_disorders_dementia
Cohort studies
http://n.neurology.org/cgi/collection/cohort_studies
Incidence studies
http://n.neurology.org/cgi/collection/incidence_studies
Memory
http://n.neurology.org/cgi/collection/memory

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in
its entirety can be found online at:
http://www.neurology.org/about/about_the_journal#permissions

Reprints
Information about ordering reprints can be found online:
http://n.neurology.org/subscribers/advertise

Neurology ® is the official journal of the American Academy of Neurology. Published continuously since
1951, it is now a weekly with 48 issues per year. Copyright © 2020 The Author(s). Published by
Wolters Kluwer Health, Inc. on behalf of the American Academy of Neurology. All rights reserved. Print
ISSN: 0028-3878. Online ISSN: 1526-632X.