Alzheimer’s Disease Risk Calculator

Unmet Need
About 10% of people above the age of 65 have Alzheimer’s disease (AD). AD varies significantly across patients, both in initial presentation and severity, as well as in the rate of disease progression. Disease progression is challenging to address, particularly because there is no established method to reliably predict it. There is a need for novel tools that are capable of accurately predicting AD progression using clinical data that are routinely collected, without any additional testing.

Technology
Duke inventors have developed a new method that can be used to accurately predict Alzheimer’s disease progression. This is intended to be used by clinicians to help determine the path of AD. Specifically, this calculator reports survival probabilities as well as probability of the need for full-time care (FTC) over the next 10 years. These calculations are based on inputs of patient demographic data, fixed information about the patient, and disease-relevant information that are generally collected from the initial baseline assessment of patients presenting with AD. The method uses the longitudinal Grade of Membership (L-GoM) model to compute chance of mortality and the probability of requiring FTC over each successive 6-month interval from the initial assessment. This tool has been validated in a cohort of 250 people who were monitored annually for up to 7 years. The validation revealed that the observed survival and need for FTC followed the L-GoM model trajectories for most patients.

Other Applications
This method has also been applied and validated in patients with mild cognitive impairment (MCI.)
Advantages

- Tool for calculating patient survival and requirement for FTC over a 10-year period
- High degree of accuracy
- Does not require additional scans or invasive procedures
- Incorporates data that are collected as part of routine clinical visits
- Streamlined user interface that is easy to use

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Meet the Inventors

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Publication(s)

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External Link(s)

- Link to Alzheimer's Disease Risk Calculator
- From the lab of Dr. P.J. Eric Stallard
- From the lab of Dr. Yaakov Stern
- New method predicts time from Alzheimer's onset to nursing home, death (Columbia University, 2013)