



**"EARLY INTERVENTION: BRIDGING THE EARLY DIAGNOSIS AND TREATMENT GAP"**



**THE POTENTIAL BENEFIT  
OF TREATING ALZHEIMER'S  
DISEASE BEFORE THE ONSET  
OF DEMENTIA**

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EBC RESEARCH PROJECT - THE **VALUE OF TREATMENT** FOR BRAIN DISORDERS

# Dementia imposes a major burden on patients, carers and society. Timely diagnosis and early intervention can help to change the patient pathway, potentially improving outcomes for patients and carers while reducing costs.

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With a rapidly ageing population, Alzheimer's disease (AD) is a growing public health concern worldwide. In Europe, an estimated 10.5 million people have dementia, and this number is expected to increase to 18.7 million in 2050<sup>1</sup>. AD is the underlying cause in 70 % of people with dementia. AD is a neurodegenerative disease that progresses in stages, beginning with a long silent phase before symptoms appear.

**The European Brain Council (EBC)** is a non-profit organisation gathering patient associations, major brain-related societies as well as industries. Established in March 2002, its mission is to improve the lives of those living with brain disorders by advancing the understanding of the healthy and diseased brain through bringing together science and society.

The Alzheimer's Disease case study within the *Value of Treatment for Brain Disorders* project was supported by Biogen, Janssen, MSD, Pfizer and Takeda.



COUNTING THE COSTS

Of all the chronic diseases, dementia is one of the most important contributors to dependence and disability. The total cost of caring for people with dementia disorders in European in 2015 was estimated to be \$300 billion<sup>1</sup>. The largest costs are related to long-term care facilities and informal care, with costs increasing as dementia progresses<sup>2,3</sup>.

IMPROVING OUTCOMES

Today, several potentially transformative AD treatments are on the horizon. These disease-modifying treatments have the potential to slow the progression of the disease. It is believed that these potential treatments will be most effective in people with subjective cognitive decline or mild cognitive impairment, which represent the early stages of the disease. Such treatments would have the power to reduce the dementia-related burden and associated care costs in the long run<sup>4</sup>.

The availability of biological markers (biomarkers) for timely diagnosis is a game-changer<sup>5</sup>. Identifying people at risk of Alzheimer’s disease before symptoms develop would present a crucial window for intervention if new pharmaceutical treatments become available in the future.

- **10.5 million** Europeans living with dementia<sup>1</sup>
- **1 in 5 people** over 80 affected by dementia
- **70%** of dementia due to Alzheimer’s disease
- **€22,000** per patient per year<sup>2</sup>
- **56%** of dementia costs arise from informal care by families, friends and neighbours<sup>2</sup>

Background

*In January 2016, the European Brain Council (EBC) launched the Value of Treatment project. The initiative explored the burden of brain disorders, providing evidence-based and cost-effective policy recommendations for the adoption of patient-centred care models. This paper draws on Alzheimer’s disease case studies developed as part of that work.*

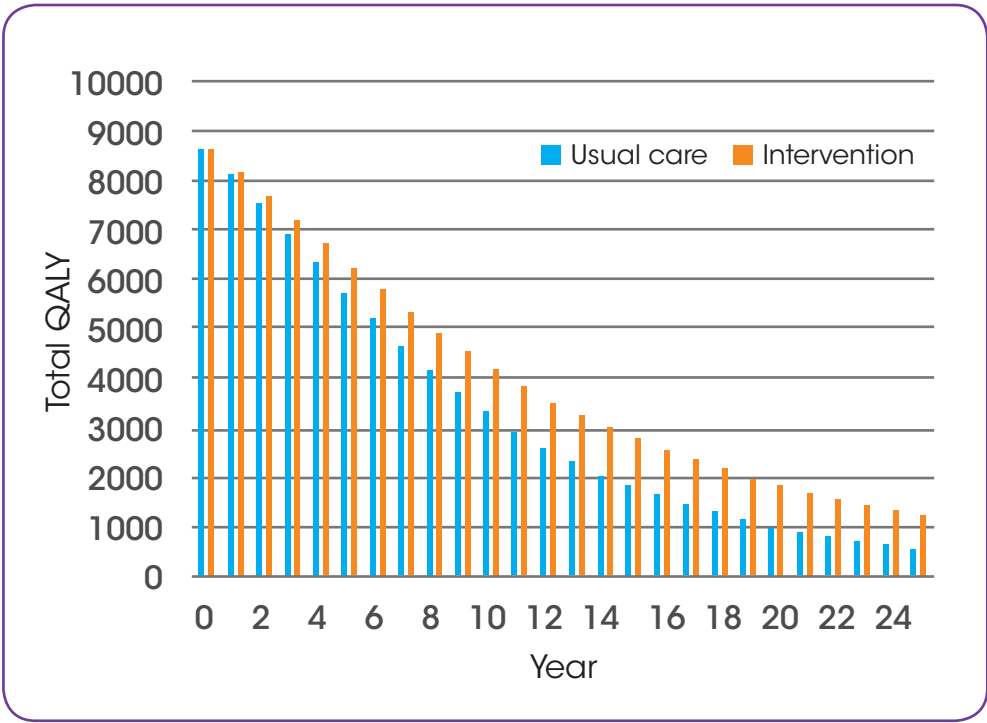
DELAYING DEMENTIA ONSET IMPROVES QALYS AND REDUCES COSTS

As part of the EBC Value of Treatment project, the potential impact of a hypothetical Alzheimer’s medicine was assessed by researchers from Maastricht University, the Karolinska Institutet, the University Medical Center Amsterdam and the London School of Economics<sup>6</sup>.

A hypothetical treatment that delays the rate of disease progression by 50% would mean that a smaller proportion of people would progress to advanced stages of disease.


This would result in **an increase of quality adjusted life years (QALYs) of 1.75 per patient**. Overall, the treatment was estimated to reduce the total lifetime care costs by **€12,406 per person over 25 years** (treatment costs excluded).

Quality-adjusted life years over time




## NOTES

- 1 Martin Prince, A. et al. World Alzheimer Report 2015 The Global Impact of Dementia: An Analysis of Prevalence, Incidence, Cost and Trends. (2015). at: <https://www.alz.co.uk/research/WorldAlzheimerReport2015.pdf>
- 2 Wimo A et al. The economic impact of dementia in Europe in 2008-cost estimates from the Eurocode project. Int J Geriatr Psychiatry. 2011 Aug;26(8):825-32. doi: 10.1002/gps.2610
- 3 L. Jonsson and A. Wimo. *The cost of dementia in Europe: a review of the evidence, and methodological considerations.* <https://www.ncbi.nlm.nih.gov/pubmed/19586077>
- 4 P. Scheltens et al. Alzheimer's disease. The Lancet, Volume 388, No. 10043, p505–517, 30 July 2016 DOI: [http://dx.doi.org/10.1016/S0140-6736\(15\)01124-1](http://dx.doi.org/10.1016/S0140-6736(15)01124-1)
- 5 Alz.org | research center. Alzheimer's and Dementia Testing for Earlier Diagnosis [http://www.alz.org/research/science/earlier\\_alzheimers\\_diagnosis.asp](http://www.alz.org/research/science/earlier_alzheimers_diagnosis.asp)
- 6 Potential health-economic impact of treating Alzheimer's Disease (AD), Handels R, Sikkes SAM, Vermunt L, Scheltens P, Knapp M, Visser PJ. <http://www.braincouncil.eu/activities/projects/the-value-of-treatment/dementia>
- 7 Patient journey for people with Alzheimer's disease, Sikkes SAM, Handels R, Vermunt L, Scheltens , Quoidbach V, Visser PJ, <http://www.braincouncil.eu/wp-content/uploads/2017/05/VoT-Posters-AD.pdf>



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