

# Alzheimer's Disease Dementia Guidelines for Diagnostic Testing: A Systematic Review

American Journal of Alzheimer's Disease & Other Dementias®  
28(2) 111-119  
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DOI: 10.1177/1533317512470209  
aja.sagepub.com



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## Abstract

Alzheimer's disease dementia (AD dementia) is one of the most common neurodegenerative diseases worldwide, with a growing incidence during the last decades. Clinical diagnosis of cognitive impairment and presence of AD biomarkers have become important issues for early and adequate treatment. We performed a systematic literature search and quality appraisal of AD dementia guidelines, published between 2005 and 2011, which contained diagnostic recommendations on AD dementia. We also analyzed diagnostic recommendations related to the use of brief cognitive tests, neuropsychological evaluation, and AD biomarkers. Of the 537 retrieved references, 15 met the selection criteria. We found that Appraisal of Guidelines Research and Evaluation (AGREE)-II domains such as applicability and editorial independence had the lowest scores. The wide variability on assessment of quality of evidence and strength of recommendations were the main concerns identified regarding diagnostic testing. Although the appropriate methodology for clinical practice guideline development is well known, the quality of diagnostic AD dementia guidelines can be significantly improved.

## Keywords

diagnosis, Alzheimer's disease dementia, systematic review, clinical practice guidelines

## Background

The world population is rapidly aging, which causes a significant increase in chronic and neurodegenerative diseases, with serious consequences in terms of global public health. The prevalence of diseases such as dementia is nearly 42 million patients in 2012, with approximately 4.6 million new cases a year.<sup>1</sup> These figures would increase up to 300% by 2040, with an impact on expenditure of over US\$ 422 billion.<sup>1,2</sup>

Alzheimer's disease dementia (AD dementia), the most common dementia in the Western world, is defined as a cognitive decline documented by standardized testing on 2 or more domains, which interferes with daily function and represents a decline in previous levels.<sup>3</sup> Recently, the National Institute of Neurological and Communicative Disorders and Stroke–Alzheimer's Disease and Related Disorders Association criteria have been updated and presented 3 different types of AD dementia according to presence of core clinical criteria only (probable), an atypical course without differential diagnosis (possible), or neuropathological evidence (definitive).<sup>4</sup>

The presence of cognitive impairment, especially in the memory domain, is a fundamental part of the clinical criteria used to diagnose AD dementia. This impairment must be detected and

diagnosed through a combination of clinical history analysis and objective cognitive assessment by means of a brief mental evaluation or comprehensive neuropsychological testing.<sup>4</sup> The latter reflects the clinical dimension of the disease and characterizes the type of presentation. However, new trends in AD dementia

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