







# Middelheim Frontality Score may be useful for differentiating between Alzheimer's disease and frontotemporal dementia

De Deyn PP, Engelborghs S, Saerens J, *et al*. The Middelheim Frontality Score: a behavioural assessment scale that discriminates frontotemporal dementia from Alzheimer's disease. *Int J Geriatr Psychiatry* 2005;**20**:70–9.

## Q Does the Middelheim Frontality Score differentiate between Alzheimer's disease and frontotemporal dementia?

### METHODS

|   |   |
|---|---|
|  | <b>Design:</b> Prospective cohort study.  |
|  | <b>Setting:</b> Memory Clinic, Middelheim General Hospital, Belgium.  |
|  | <b>Patients:</b> 462 people with probable Alzheimer's disease or frontotemporal dementia.   |
|  | <b>Test:</b> Middelheim Frontality Score.   |
|  | <b>Diagnostic standard:</b> Clinical diagnosis made by consensus of at least two neurologists. Alzheimer's disease diagnosis based on NINCDS/ADRDA criteria and frontotemporal dementia based on criteria described by Neary <i>et al</i> . |
|  | <b>Outcomes:</b> Mean total Middelheim Frontality Score, sensitivity, specificity, positive predictive value, negative predictive value.  |

### MAIN RESULTS

Mean total Middelheim Frontality Score was significantly higher for frontotemporal dementia than for Alzheimer's disease (6.3 for frontotemporal dementia *v* 3.1 for Alzheimer's disease;  $p < 0.001$ ). Calculation of sensitivity and specificity at different cut-off points for the Middelheim Frontality Score showed that  $>5$  was the optimum threshold score for discriminating frontotemporal dementia from Alzheimer's disease (sensitivity 88.7%; specificity 89.0%; positive predictive value 0.37; negative predictive value 0.98).

### CONCLUSIONS

Middelheim Frontality Score adequately differentiates between frontotemporal dementia and Alzheimer's disease.

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### NOTES

The authors note that further validation of this scale is needed, using autopsy to confirm the diagnosis of frontotemporal dementia or Alzheimer's disease.

### Commentary

Accurate clinical diagnosis of the dementias is important for proper management and assessment of prognosis. Alzheimer's disease (AD) is the most common cause of dementia. Frontotemporal dementia (FTD) is less common than AD, accounting for 10–15% of all cases of dementia. FTD is as common as AD among patients younger than 65 years. Neuropathological examination is the diagnostic gold standard for both AD and FTD.

Clinically, the main problem in diagnosing FTD is its differentiation from AD. Clinical consensus criteria for FTD have been proposed and are widely used at research centres ('the Neary criteria').<sup>1</sup> However, these criteria have been validated against autopsy diagnoses in only one retrospective study, which was limited to FTD and AD cases. Excellent specificity (97%) but relatively low sensitivity (63%) were reported.<sup>2</sup> In routine practice, a lower diagnostic accuracy can be expected, because other causes of dementia have to be considered as well.

The paper by De Deyn *et al* proposes a set of clinical criteria for FTD. The study has a number of limitations. The proposed criteria were validated against the Neary criteria, not autopsy diagnoses. The sensitivity, specificity, and negative predictive value for a diagnosis of FTD were high (89%, 89%, and 98%, respectively), which is not surprising, as the proposed criteria are essentially a subset of the Neary criteria. However, the positive predictive value was low (37%). Rather than starting with the full set of criteria and then using stepwise logistic regression to find the subset of criteria with the highest discriminatory power, the proposed criteria were based on the authors' perception of which criteria might be the most useful. Those looking for a short version of the Neary criteria should consider the neuropathologically validated set of five clinical features proposed by Rosen *et al*.<sup>2</sup>

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1 Neary D, Snowden JS, Gustafson L, *et al*. Frontotemporal lobar degeneration: a consensus on clinical diagnostic criteria. *Neurology* 1998;**51**:1546–54.

2 Rosen HJ, Hartikainen KM, Jagust W, *et al*. Utility of clinical criteria in differentiating frontotemporal lobar degeneration (FTLD) from AD. *Neurology* 2004;**58**:1608–15.



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