

Language performances in dementia with Lewy bodies and Alzheimer’s disease: a longitudinal comparative study of naming and fluency

P1-001

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KEY TAKE-AWAY

Language abilities, particularly naming, remain relatively preserved over a 4-year follow-up in DLB, contrasting with the marked and progressive decline observed in AD. In DLB, naming appears increasingly correlated to **executive functions** rather than semantic integrity, highlighting **distinct language trajectories** and **neurocognitive profiles** between the two pathologies.

INTRODUCTION

Dementia with Lewy bodies (DLB)¹ = second leading cause of major neurocognitive disorder after Alzheimer’s disease (AD)².

Language deficits in DLB → rarely the presenting symptom³⁻⁵
→ often considered preserved early on⁶

... but likely **underevaluated**:

- caregiver-reported word-finding and comprehension difficulties⁷
- existing language data: scarce^{6,8}
- no longitudinal study to date^{8,9}

Objective: Compare **4-year trajectories of naming** and verbal fluency in DLB, AD and healthy aging (HC), and identify **cognitive correlates** of naming performance over time.

METHODS

111 participants (62 DLB, 26 AD, 23 HC)

0

12

24

48

48-month follow-up

Main outcomes

- naming (DO-80)
- verbal memory (RL/RI-16)
- visuospatial functions (VOSP)
- 2-min verbal fluency (letter, semantic)
- executive functions (FAB, TMT-B)

Statistical analyses

- Linear Mixed Models (LMM) → longitudinal trajectories (Visit x Group) adjusted for age/sex/education
- Spearman correlations → transversal cognitive associations

RESULTS

Figure 1. Evolution of DO-80, letter fluency and semantic fluency mean scores for DLB, AD and HC groups.

Legend: - - - No score for HC at the 12-month visit. One DLB patient had a score of 23/80 at the DO-80 at the 24-month visit. This score was not included in this figure but was included in the statistical analyses.

1) Intra- group longitudinal trajectories

Naming (DO-80):

- stable in DLB (p=0.296) and HC (p=0.180)
- **AD declines** (p<0.001), drop-off at M24

Letter fluency:

- stable in DLB (p=0.209) and HC (p=0.227)
- **AD declines** M12→ M24 (p=0.018)

Semantic fluency:

- decline in **DLB** (p=0.002) and **AD** (p=0.001)
- stable in HC (p=0.382)

2) LMM: between-group trajectory comparison (naming - DO-80)

Significant Time x Group interaction (F=7.902, p<0.001) → **distinct trajectories across groups**

- **AD: steepest decline** (−7.77 pts)
- DLB (−1.15 pts) and HC (−0.26 pts): **near-stable**
- AD vs DLB: significantly steeper decline (t=−3.513, p<0.001)

3) Naming (DO-80): Transversal between-group comparisons

- DLB and AD < HC at inclusion, M24, M48 (all p<0.05)
- DLB > AD at M48 only (p=0.002)

4) Correlations with naming (DO-80)

- **FAB: increasing** positive correlation in DLB (rho 0.416→0.578)
Also present in AD at M12-M24 (no significant group difference)
- **MMSE: increasing** positive correlation in DLB; only at M12 in AD
- **VOSP: correlated** in DLB at baseline and M24 only
- **Episodic memory (RL/RI-16):** correlation with free recall in DLB; ∅ in AD
- **Letter/semantic fluency:** correlated with naming in both groups;
→ AD > DLB (GroupxFluency interaction, p<0.05)

Figure 3. DO-80 scores for each group at each visit.

CONCLUSION

Distinct language trajectories in DLB compared to AD.

DLB: naming relatively preserved vs. AD: global collapse
→ increasingly relies on **executive control**, not semantic integrity

Highlights value of **longitudinal language assessment** to differentiate DLB/AD and guide **tailored cognitive interventions**

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