

## Supplementary Data

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# The Comparison of Cognitive and Functional Performance in Children and Alzheimer's Disease Supports the Retrogenesis Model

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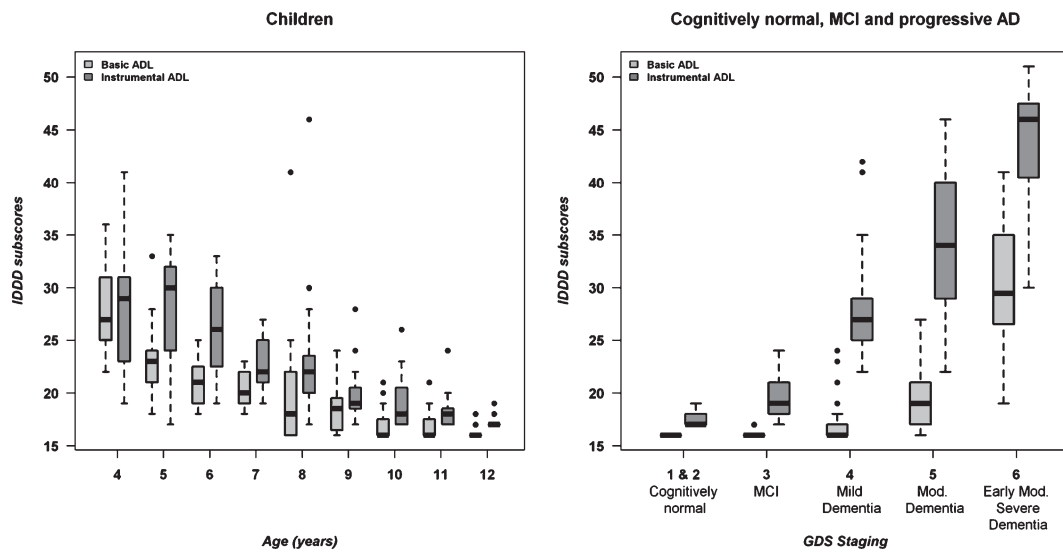
## REFERENCE

- [1] Teunisse S, Derix MM (1991) Measurement of activities of daily living in patients with dementia living at home: Development of a questionnaire. *Tijdschr Gerontol Geriatr* **22**, 53-59.

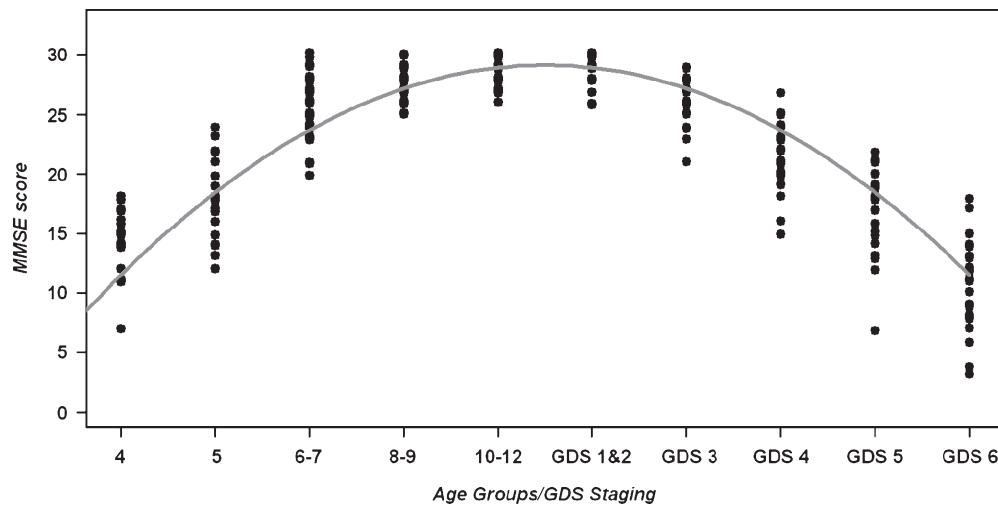
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<sup>1</sup>Both authors contributed equally to this work.

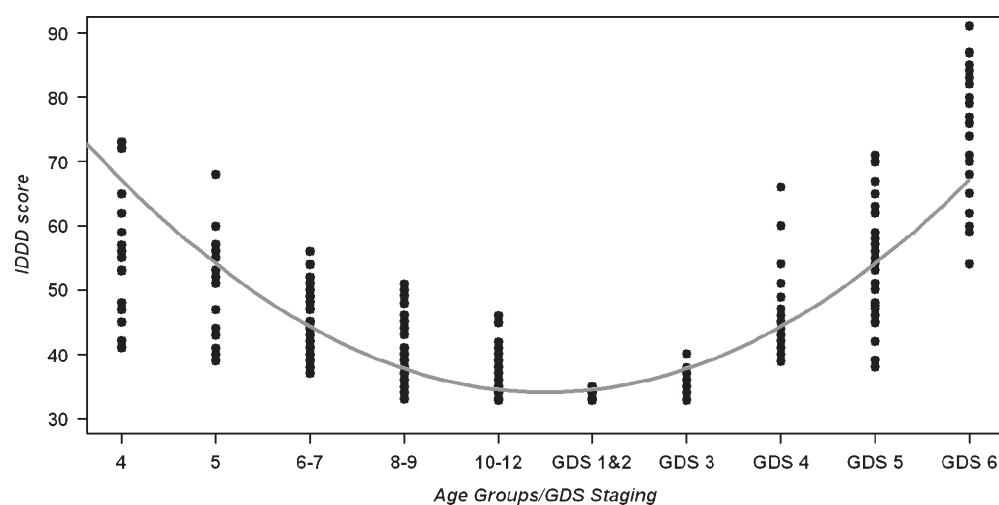
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Supplementary Figure 1. Box-plot diagrams of scores in the different items of the Interview for Deterioration in Daily Living Activities in Dementia (IDDD) obtained by mentally and physically healthy children aged 4 to 12 years and elderly participants with normal cognition (GDS [Global Deterioration Scale] stages 1 and 2), mild cognitive impairment (MCI) (GDS stage 3), mild dementia (GDS stage 4), moderate dementia (GDS stage 5), and early moderately severe dementia (GDS stage 6 and Functional Assessment Staging stage 6a and 6b) symptomatology. All dementia subjects had probable AD. IDDD items have been grouped as basic and instrumental activities of daily living (ADLs).



Supplementary Figure 2. Total Mini-Mental Status Examination (MMSE) scores obtained by mentally and physically healthy children aged 4 to 12 years and elderly participants with normal cognition (GDS [Global Deterioration Scale] stages 1 and 2), mild cognitive impairment (GDS stage 3), mild dementia (GDS stage 4), moderate dementia (GDS stage 5), and early moderately severe dementia (GDS stage 6 and Functional Assessment Staging stage 6a and 6b) symptomatology. All dementia subjects had probable AD. Results indicate a substantial correspondence in cognitive status (MMSE total score) as a function of age (children) and GDS staging (adults), respectively. The curve represents the fit of a linear regression model with a quadratic term ( $R^2 = 0.83$ ).



Supplementary Figure 3. Total Interview for Deterioration in Daily Living Activities in Dementia (IDDD) scores obtained by mentally and physically healthy children aged 4 to 12 years and elderly participants with normal cognition (GDS [Global Deterioration Scale] stages 1 and 2), mild cognitive impairment (GDS stage 3), mild dementia (GDS stage 4), moderate dementia (GDS stage 5), and early moderately severe dementia (GDS stage 6 and Functional Assessment Staging stage 6a and 6b) symptomatology. All dementia subjects had probable AD. Results indicate a substantial correspondence in functional status (IDDD total score) as a function of age (children) and GDS staging (adults), respectively. The curve represents the fit of a linear regression model with a quadratic term ( $R^2 = 0.71$ ).

Supplementary Table 1

Adapted version of the Interview for Deterioration in Daily Living Activities in Dementia (IDDD) [1] administered to children in the present study for the assessment of functional ability

Name:..... Family name:..... Age: .....		TOTAL SCORE	
Date:..... Reference Num..... Schooling: .....			
<b>Scoring</b>			
1. No help needed to perform this/these activities independently		Basic activities scoring: .....	
2. Sometimes help and/or supervision is needed		Complex activities scoring: .....	
3. Dependent for the performance of this/these activities		Substitute 8 and 9 for <u>Sumatory</u>	
8. Has never performed these activities/no evaluation possible		Nº items (1 - 3)	
9. The informant cannot provide information on the child's performance/not applicable			
<b>SELF-CARE ACTIVITIES</b>			
1. After eating, do you have to tell him that he should wash himself (take the initiative to wash his hands or face)?		1	2 3 8 9
2. Do you have to assist him in washing (finding soap; soaping and rising of the body)?		1	2 3 8 9
3. Do you have to tell him that he would dry himself (take the initiative to dry himself, for example looking or fetching for the towel)?		1	2 3 8 9
4. Do you have to assist him in drying (drying individual body-parts)?		1	2 3 8 9
5. Do you have to tell him that he should dress himself (take the initiative to dress himself, for example walking to the wardrobe)?		1	2 3 8 9
6. Do you have to assist him in dressing himself (putting on individual clothes in right order)?		1	2 3 8 9
7. Do you have to assist him in doing up his shoes, using zippers or buttons?		1	2 3 8 9
8. Do you have to tell him that he should brush his teeth or comb his hair?		1	2 3 8 9
9. Do you have to assist him in brushing his teeth?		1	2 3 8 9
10. Do you have to assist him in combing his hair?		1	2 3 8 9
11. Do you have to tell him that he should eat (take the initiative to eat spontaneously)?		1	2 3 8 9
12. Do you have to assist him in preparing a slice of bread?		1	2 3 8 9
13. Do you have to assist him in carving meat or potatoes?		1	2 3 8 9
14. Do you have to assist him in drinking or eating?		1	2 3 8 9
15. Do you have to tell him that he should use the lavatory (take the initiative to go to the lavatory)?		1	2 3 8 9
16. Do you have to assist him in using the toilet (undressing him, using toilet, using closet paper)?		1	2 3 8 9
<b>COMPLEX ACTIVITIES</b>			
17. Do you have to assist him in finding his way at school (finding the correct locations: classroom, dining room, toilet)?		1	2 3 8 9
18. Would the child be able to finding his way in familiar neighborhood outside the house (for example, manage to go to school on his own)?		1	2 3 8 9
19. Does he take the initiative shopping (take the initiative to figure out what he needs for school)?		1	2 3 8 9
20. Do you have to assist him in shopping (finding his way in the shops; getting good in needed quantity)?		1	2 3 8 9
21. Do you –parents or the shop assistant- have to tell him that he should pay?		1	2 3 8 9
22. Do you –or the shop assistant- have to assist him in paying (knowing how much he should pay and how much should be reimbursed)?		1	2 3 8 9
23. Is he interested in written items (books, short stories, comic books or magazines)?		1	2 3 8 9
24. Do you have to assist him in reading (understanding written language)		1	2 3 8 9
25. Do you have to assist him in writing a letter or card (for example writing a short letter to the Three Kings (Three Wise Men) or a greeting card), writing more than a single sentence?		1	2 3 8 9
26. Does he start spontaneously a conversation with others?		1	2 3 8 9
27. Do you have to assist him in expressing himself verbally?		1	2 3 8 9
28. Does he pay attention to conversation by another person?		1	2 3 8 9
29. Do you have to assist him in understanding spoken language (giving him additional explanations)?		1	2 3 8 9
30. Does he take the initiative to use the phone (both answering the phone or calling someone)?		1	2 3 8 9
31. Do you have to assist him in using the phone (either answering the phone or calling someone)?		1	2 3 8 9
32. Do you have to assist him in finding things in the house?		1	2 3 8 9
33. Do you have to tell him to turn off any electrical appliance (forgetting to do it)?		1	2 3 8 9