***Supplementary Material***

**Diminished Posterior Precuneus Connectivity with the Default Mode Network Differentiates Normal Aging from Alzheimer’s Disease**

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All subjects performed cognitive tasks on a computerized NeuroCart® test battery measuring alertness, mood and calmness (Visual Analogue Scales (VAS) Bond & Lader), vigilance and visual motor performance (Adaptive Tracking task), reaction time (Simple Reaction Time task), attention, short-term memory, psychomotor speed, task switching and inhibition (Symbol Digit Substitution Test and Stroop task), working memory (N-back task) (Bond and Lader, 1974; Borland and Nicholson, 1984; Laeng et al., 2005; Lezak, 2004; Norris, 1971; Rogers et al., 2004; Stroop, 1935; Wechsler, 1981). All repeatedly measured NeuroCart® endpoints were analyzed using a mixed effects model with group, time and group by time as fixed effects, subject, subject by group and subject by time as random effects (SAS for Windows V9.1.3; SAS Institute, Inc., Cary, NC, USA). As data of the Simple Reaction Time task were not normally distributed, these data were log-transformed before analysis and back transformed after analysis. Group comparisons for the cognitive and subjective tests showed differences between the young and elderly subjects and between the elderly and AD patients for memory function, learning, attention and visuomotor skill. An overview of the results on performance tasks is provided in Supplementary Figure 1.





**Supplementary Figure 1.** Bar graphs of least squares means of performance on the NeuroCart® cognitive test battery with standard error of the means as error bars. Abbreviations: YA = young adults; OA = older adults; AD = patients with Alzheimer’s disease; \* = significant at *p* < 0.05; \*\* = significant at *p* < 0.01. Note: the N-back task for AD patients is an adapted (easier) version. It was therefore not possible to compare performance between AD patients and elderly controls.

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