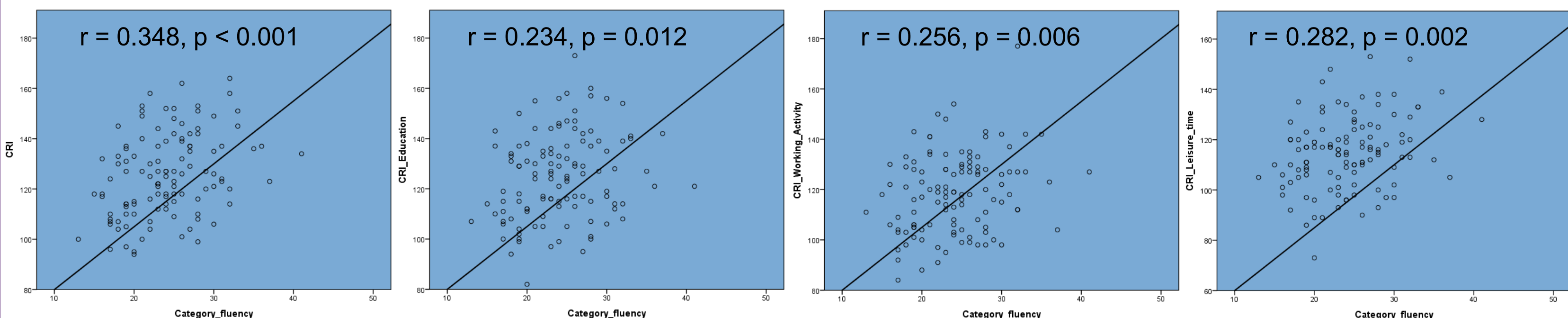


Cognitive Reserve Drives Category Fluency in Women

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Higher cognitive reserve is associated with better performance across multiple cognitive domains, particularly category fluency. Cognitive reserve appears to be a stronger predictor of semantic memory and executive function than traditional risk factors like age, education, APOE ε4 status, menopause, smoking, or even brain reserve (head circumference). These findings suggest that an active lifestyle may enhance cognitive resilience long before the onset of Alzheimer's disease.

INTRODUCTION		RESULTS																																																																												
- Women bear a higher lifetime risk of AD, yet whether CR shapes cognitive performance even in non-demented women remains poorly understood. - The objective of this study was to examine cognitive functioning in healthy, working-age women in relation to their level of CR.	- The distribution of females by CRI level included 32 participants with medium, 39 with medium-high, and 43 with high CRI. - The most pronounced CR-related cognitive differences were observed in Category Fluency Test (CFT) performance. Higher CRI was also associated with better visuo-construction, rapid visual processing and spatial recognition memory, independent of age (Table 1). - CFT correlated with total CRI and with CRI education, CRI working activity and CRI leisure time (Figure 1). - In models including age, education, APOE ε4, menopausal status and smoking, total CRI predicted CFT, while leisure-time CRI was an independent predictor (Table 2).	<table><tr><th colspan="7">Table 1. Differences in cognitive performance by CRI level</th></tr><tr><th></th><th>M CRI</th><th>MH CRI</th><th>H CRI</th><th>M vs MH</th><th>M vs H</th><th>MH vs H</th></tr><tr><td>N</td><td>32</td><td>39</td><td>43</td><td></td><td></td><td></td></tr><tr><td>Age</td><td>44,38(9,587)</td><td>48,31(8,709)</td><td>50,81(5,97)</td><td>0,103</td><td>0,002</td><td>0,148</td></tr><tr><td>SRM Percent correct</td><td>77,65(9,99)</td><td>78,08(10,11)</td><td>83,14(9,26)</td><td>0,856</td><td>0,026</td><td>0,034</td></tr><tr><td>Category fluency</td><td>21,50(4,52)</td><td>24,67(4,81)</td><td>25,47(5,39)</td><td>0,026</td><td>0,003</td><td>1,000</td></tr><tr><td>RVP A'</td><td>0,89(0,09)*</td><td>0,92(0,06)*</td><td>0,917(0,06)*</td><td>0,011</td><td>0,030</td><td>0,669</td></tr><tr><td>ROCFT Copy</td><td>28,09(3,43)</td><td>30,33(3,23)</td><td>30,30(2,04)</td><td>0,005</td><td><0,001</td><td>0,993</td></tr></table> The values are shown as mean(SD) and median(interquartile range)*. Legend: M – Medium; MH – Medium High; H – High; SRM - Spatial Recognition Memory, CANTAB; RVP - Rapid Visual Processing, CANTAB; ROCFT - Rey–Osterrieth complex figure test							Table 1. Differences in cognitive performance by CRI level								M CRI	MH CRI	H CRI	M vs MH	M vs H	MH vs H	N	32	39	43				Age	44,38(9,587)	48,31(8,709)	50,81(5,97)	0,103	0,002	0,148	SRM Percent correct	77,65(9,99)	78,08(10,11)	83,14(9,26)	0,856	0,026	0,034	Category fluency	21,50(4,52)	24,67(4,81)	25,47(5,39)	0,026	0,003	1,000	RVP A'	0,89(0,09)*	0,92(0,06)*	0,917(0,06)*	0,011	0,030	0,669	ROCFT Copy	28,09(3,43)	30,33(3,23)	30,30(2,04)	0,005	<0,001	0,993														
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- This baseline analysis is part of a longitudinal study of non-demented adults aged 30-65 years. - We examined 114 cognitively healthy women (mean age 48.15 ± 8.41 years; education 19.02 ± 4.1 years). - CR was assessed using the Cognitive Reserve Index Questionnaire (CRIq), which evaluates CR based on three key domains: education, working and leisure activities. - Neuropsychological testing included category fluency, visuo-construction, visual memory and rapid visual processing.		- In cognitively healthy women, CR—particularly that derived from cognitively stimulating leisure activities—drives category fluency, a key semantic and executive domain affected early in AD. - These findings indicate that CR is a stronger determinant of this domain than traditional demographic or genetic factors and highlight the importance of mentally active lifestyles for cognitive health.																																																																												