

# Prevalence of, and predictors for, vascular cognitive impairment in CADASIL.

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## Background

CADASIL is the most common monogenic form of stroke and is associated with recurrent stroke and early onset dementia.

## Methods

We determined the prevalence of VCI in CADASIL and its associations with: clinical risk factors, mutation location (EGFr 1-6 versus EGFr 7-34), and MRI markers (lacunes, white matter hyperintensity volume, brain volume and cerebral microbleeds). Cognition was assessed in genetically confirmed CADASIL patients (n = 176) and healthy controls (n = 265) using the Brief Memory and Executive Test (BMET, score of  $\leq 13$  = VCI, [www.bmet.info](http://www.bmet.info)) and Montreal Cognitive Assessment (MoCA, score of  $\leq 25$  = VCI).

## Results

- VCI was present in **39.8%** (BMET) and **48.9%** (MoCA) of the **CADASIL group** (M(SD) age 50.95 (11.3)).
- In **controls** VCI was present in **10.2%** (BMET) and **21.1%** (MoCA) (M(SD) age 52.37 (7.93)).
- CADASIL patients had significantly worse performance on total MoCA and across all domains of the BMET.
- Stroke was the only significant predictor of VCI on the MoCA.
- Stroke and Lacune count were significant predictors of VCI on the BMET.

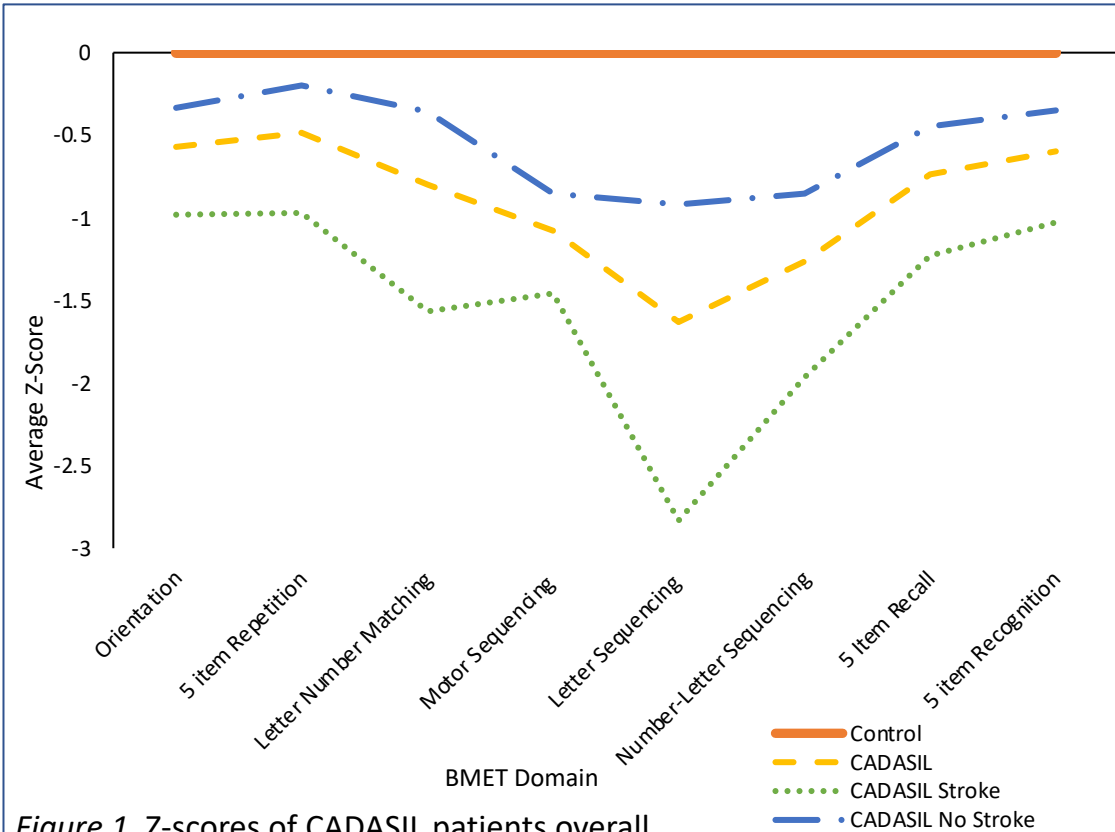


Figure 1. Z-scores of CADASIL patients overall, with and without stroke and controls on the individual BMET tasks.

	VCI as defined by the BMET		VCI as defined by the MoCA	
	OR [95% CI]	p value	OR [95% CI]	p value
History of Stroke	2.10 [1.06, 4.17]	p = 0.03	2.55 [1.24, 5.24]	p = 0.01
Lacune Count	1.67 [1.14, 2.44]	p = 0.008	1.33 [0.92, 1.93]	p = 0.13

Table 1. Odds ratios for significant variables. All analyses controlled for age and sex.

## Conclusions

VCI is present in 40-50% of CADASIL patients with a mean age of 50 years. Reductions were seen across all cognitive domains. Stroke and lacune count on MRI were both independent predictors of VCI.