

Mediation of Age-related Cognitive Outcomes by Stroke and Vascular Risk Factors in the Canadian Longitudinal Study on Aging (CLSA)

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Key Takeaway: Stroke and vascular risk factors account for a small but statistically significant portion of the relationship between age and cognition in CLSA, highlighting vascular health as a potential target for healthy aging.

INTRODUCTION	METHODS	RESULTS						
- Cognition changes with age. - Stroke & Vascular Risk Factors (VRFs) can affect brain aging. - Many VRFs are modifiable. Objective: To examine whether stroke & VRFs mediate the association between chronological age and cognitive outcome	- Canadian Longitudinal Study on Aging (CLSA) - N=51,338 adults aged 45-85 years 2 cohorts, tracking cohort (n=21,241), and comprehensive cohort (n=30,097) - Baseline & first follow-up (~3 years) Analysis: Structural Equation Modeling (SEM)							
		Outcome	N	Total effect β (95% CI)	Direct effect β (95% CI)	Mediation (%)	Indirect effect β (95% CI)	p-value
		Baseline cognition	23,820	-0.0086 (-0.0092, -0.008)	-0.0083 (-0.009, -0.0077)	2.6	-0.0002 (-0.0004, -0.00008)	0.002
		Cognitive change	17,492	-0.01334 (-0.0155, -0.0112)	-0.0123 (-0.0146, -0.0102)	7.3	-0.001 (-0.0015, -0.0004)	0.001
		CONCLUSION						
		- Stroke & VRFs partially mediated the relationship between age and cognitive outcomes. - The mediated proportion was modest but statistically significant for both baseline and change in cognition over follow-up. - Preventing and managing VRFs may support healthier cognitive aging.						

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graph LR; Age[Age] --> Cognition((Cognition)); Age --> StrokeVRFs((Stroke/VRFs)); StrokeVRFs --> Cognition; Cognition --- Outcomes[Outcomes: Baseline cognition and change];
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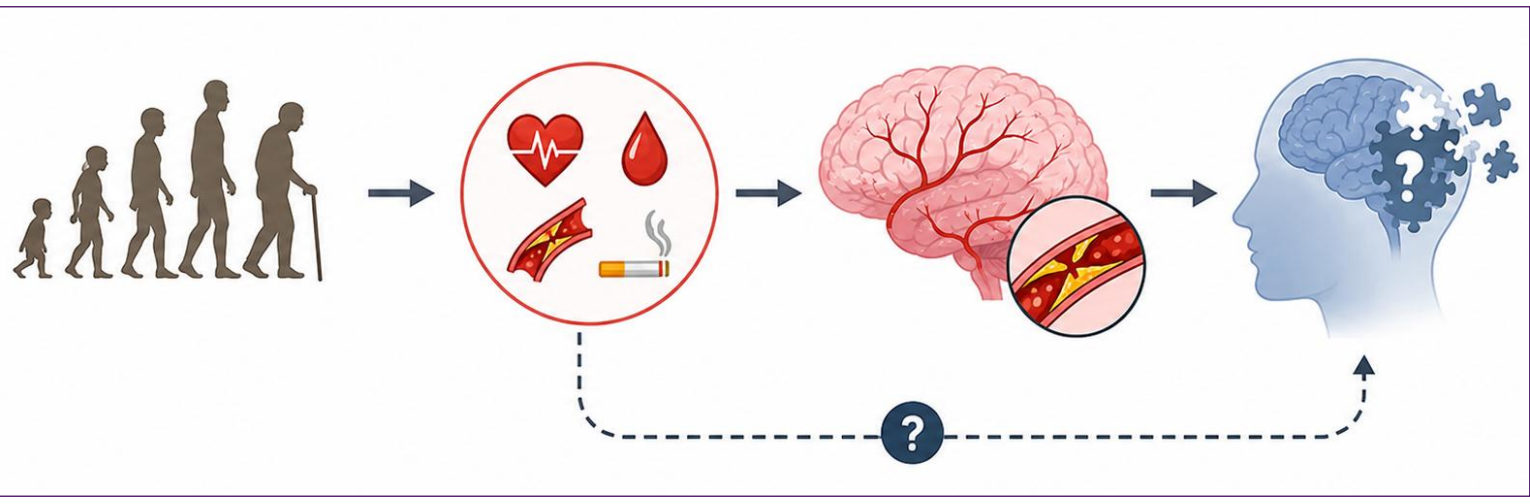
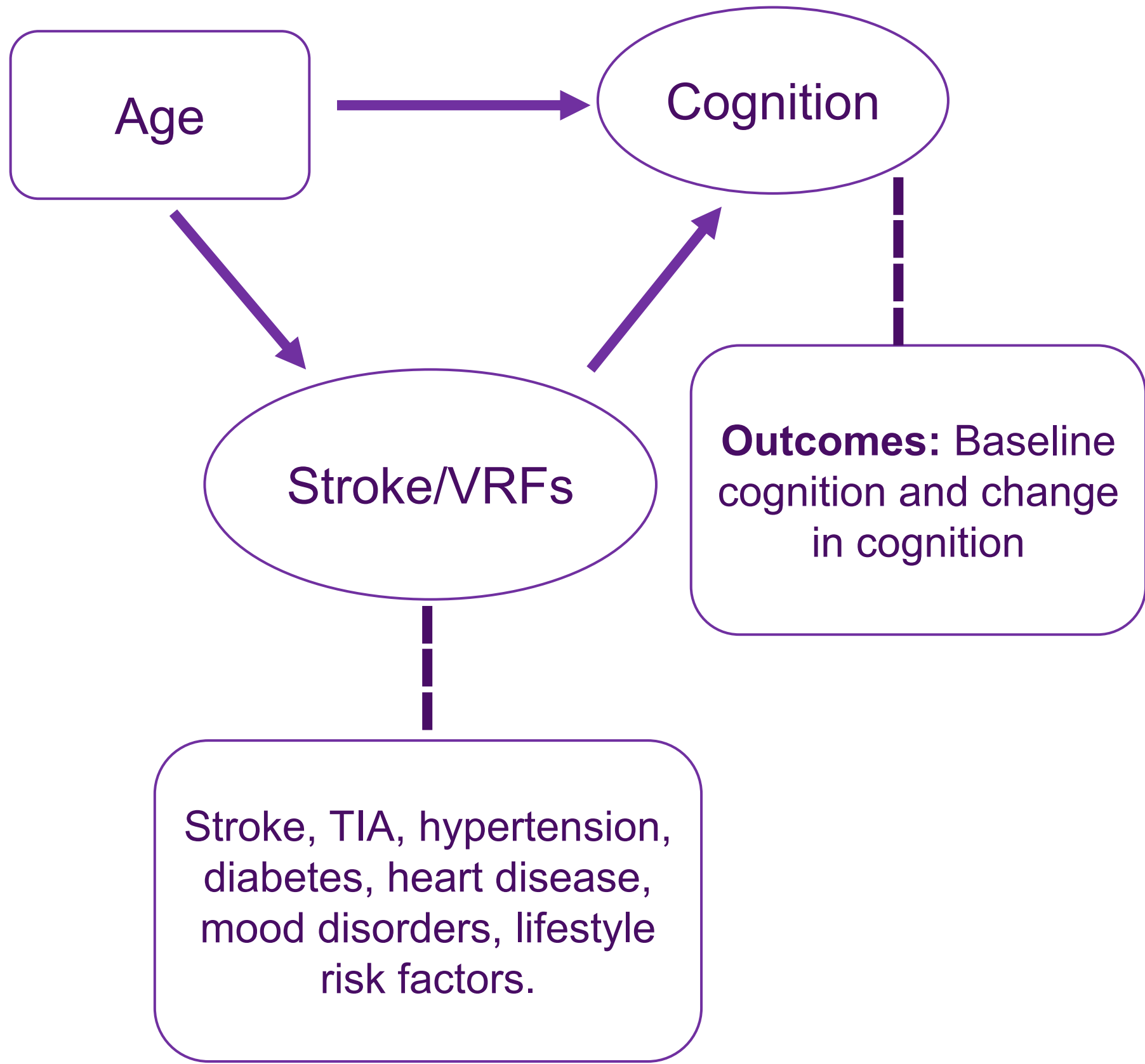


Fig. 1 Pathway linking age, vascular risk, and cognition



References:

- Reddin C, et al. (2025) Influence of age on the association of vascular risk factors with acute stroke (INTERSTROKE): a case–control study. *Lancet Healthy Longev.*
- Joundi RA, et al. (2024). Mediation of Post-Stroke Function by Cognition in the Canadian Longitudinal Study on Aging. *Canadian Journal of Neurological Sciences.*

