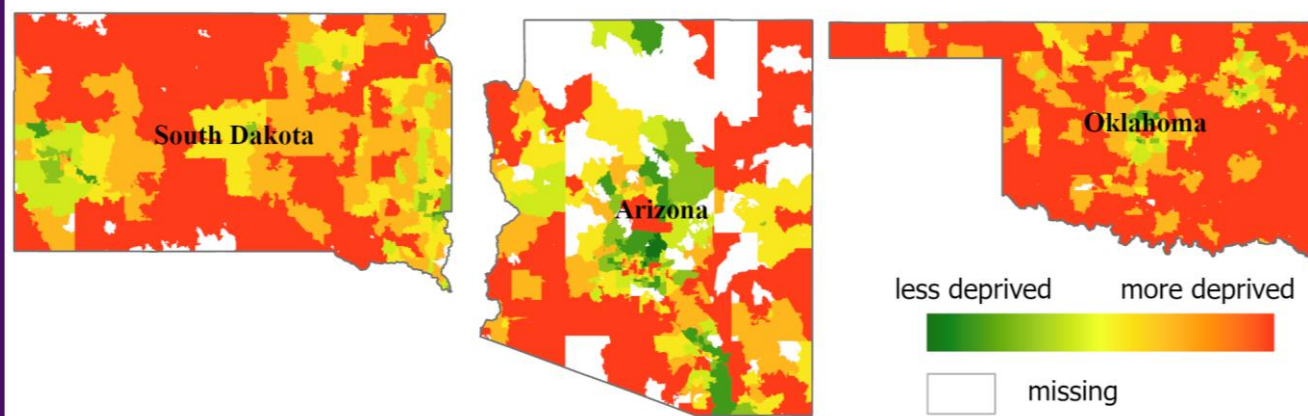


Area Deprivation Index, Rurality, Segregation
and Brain Volume: Strong Heart Study

P1-001

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Area deprivation was associated with differences in selected brain volumetric measures. These findings indicate that the relationship between area deprivation and brain structure is heterogeneous across brain regions and does not follow a uniform neurodegenerative pattern.

INTRODUCTION		METHODS	RESULTS	CONCLUSIONS	REFERENCES																																		
Subjective Cognitive Decline: Prevalence 17% among American Indian people compared with 5-11% among other racial and ethnic groups. Neighborhood Socioeconomic Status: Higher ADI was associated with smaller total brain volume and reduced cortical thickness. Associations with entorhinal cortex and hippocampal volumes were inconsistent across studies.		Cohort: Cerebrovascular Disease and its Consequences in American Indians (CDCAI). Participants: 818 American Indian adults at Visit I (2010–2013); 403 returned for Visit II (2017–2019). Outcome Variables: Brain volumetric measures and sulcal and ventricle atrophy. Neighborhood Variable: Area Deprivation Index (ADI): Composite measure based on 17 US Census indicators. Analysis: Generalized linear mixed models adjusted for age, sex, and education.	Participants in more deprived areas: slightly older and lower educational attainment compared with those in less deprived areas.  <table><tr><th rowspan="2">Variables</th><th colspan="2">Descriptive statistics (mean (standard deviation))</th><th rowspan="2">Regression results (β (standard error)) Model 2</th></tr><tr><th>Less deprived</th><th>More deprived</th></tr><tr><td>Cerebellar white matter volume (%)</td><td>22.48 (3.74)</td><td>23.70 (3.94)</td><td>0.64 (0.29) *</td></tr><tr><td>Cerebral white matter volume (%)</td><td>404.95 (59.21)</td><td>446.75 (68.03)</td><td>24.86 (3.86) ***</td></tr><tr><td>Entorhinal cortex volume (%)</td><td>2.99 (0.67)</td><td>3.26 (0.82)</td><td>0.16 (0.06) **</td></tr><tr><td>Gray Matter volume (%)</td><td>520.76 (50.90)</td><td>524.86 (48.62)</td><td>-7.73 (2.68) **</td></tr><tr><td>Hippocampal volume (%)</td><td>6.85 (0.80)</td><td>7.00 (0.78)</td><td>0.03 (0.05)</td></tr><tr><td>Mean cortical thickness (mm-2)</td><td>2.28 (0.12)</td><td>2.22 (0.13)</td><td>-0.05 (0.01) ***</td></tr><tr><td>Parahippocampal gyrus volume (%)</td><td>3.28 (0.53)</td><td>3.31 (0.62)</td><td>-0.04 (0.05)</td></tr></table> *<i>p</i><0.05; **<i>p</i><0.01; ***<i>p</i>< .001	Variables	Descriptive statistics (mean (standard deviation))		Regression results (β (standard error)) Model 2	Less deprived	More deprived	Cerebellar white matter volume (%)	22.48 (3.74)	23.70 (3.94)	0.64 (0.29) *	Cerebral white matter volume (%)	404.95 (59.21)	446.75 (68.03)	24.86 (3.86) ***	Entorhinal cortex volume (%)	2.99 (0.67)	3.26 (0.82)	0.16 (0.06) **	Gray Matter volume (%)	520.76 (50.90)	524.86 (48.62)	-7.73 (2.68) **	Hippocampal volume (%)	6.85 (0.80)	7.00 (0.78)	0.03 (0.05)	Mean cortical thickness (mm-2)	2.28 (0.12)	2.22 (0.13)	-0.05 (0.01) ***	Parahippocampal gyrus volume (%)	3.28 (0.53)	3.31 (0.62)	-0.04 (0.05)	Living in more deprived areas: Associated with lower cortical thickness and gray matter volume. Higher sulcal and ventricular atrophy ratings. Larger cerebellar white matter, cerebral white matter, and entorhinal cortex volumes.	doi:10.1002/trc2.12039; doi:10.1159/000443277; doi:10.1212/WNL.00000000000011918; doi:10.1038/s41380-024-02591-9
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