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**Long-term effects of compulsory schooling on physical, mental and cognitive ageing: a natural experiment**

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**ABSTRACT**

**BACKGROUND** - Longer schooling is associated with better physical, mental and cognitive functioning, but there is controversy as to whether these associations are causal. We examine the long-term health impact of a policy that increased compulsory schooling by 2 years in France for cohorts born on or after January 1953, offering a natural experiment. **METHODS** - Data came from Constances, a randomly selected cohort of the French population assessed for cognition, depressive symptoms and physical functioning at ages 45 and older (n=18 929). We use a Regression Discontinuity Design to estimate the impact of increased schooling duration on health. Cognition was measured based on five validated neuropsychological tests and combined into an overall score. The Center for Epidemiological Studies Depression scale was used to assess depressive symptoms levels. Physical functioning was included as finger tapping, hand grip strength and walking speed. **RESULTS** - The reform increased average schooling, particularly among participants from disadvantaged families. Estimates suggest that for men, this reform improved cognitive scores ( $\beta=0.15$ , 95% CI 0.02 to 0.27), but had no impact on physical functioning. Among women, the reform did not increase cognitive scores or physical functioning but led to higher levels of depressive symptoms ( $\beta=1.52$ , 95% CI 0.32 to 2.72). Results were robust to a range of sensitivity analyses. **CONCLUSION** - These findings highlight the need to carefully consider the potential limits of policies that increase the length of compulsory schooling as strategies to improve population health.

**KEYWORDS:** -

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