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## **Associations of Inequality of Educational Opportunities and Later-life Cognitive Trajectories**

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*Background.* Later-life cognitive function is linked to education, supposedly by educational attainment increasing cognitive reserve. Early-life inequalities of educational opportunities (IEO), i.e. tracking according to parental educational background, may lead to shorter, inappropriate schooling and children not reaching full cognitive potential. The study is the first to test this link.

*Methods.* Data come from five waves of SHARE (2004-2012/3). A total of 14,223 respondents aged 50-59 from 15 European countries and Israel provided  $\geq$  two cognitive assessments and non-missing information on covariates. Cognitive function was assessed by tests of immediate, delayed recall and executive function. Education was derived from ISCED categories. Country-level IEO was indicated by associations of age-matched respondents' education and that of their parents in the EU Statistics on Income and Living Conditions, with higher associations indicating higher inequality of educational opportunities. Country-level health development was indexed by WHO data on life expectancy at age 60. Longitudinal mixed (random-effects) models were run, controlling for an extensive set of confounders.

*Research results.* In fully mutually adjusted models, later-life cognitive levels were negatively associated with country-level IEO (Coef. -0.625, SE 0.223). Results were similar for respondents aged 70- 79 years.

*Conclusions.* Findings suggest that later-life cognitive function at older mid-adulthood can partly be explained by inequality in educational opportunities at time of schooling. Selection into education is not limited to individual skills, but also depends on educational practices. Policies reducing IEO may have long-lasting benefits for cognitive function.

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