Cardiorespiratory fitness as a mediator of the relationship between birth weight and cognition in school children

Álvarez-Bueno C.

Cavero-Redondo I.

Díez-Fernández A.

Pardo-Guijarro M.J.

Sánchez-López M.

Martínez-Vizcaíno V.

Objectives: To examine differences in cognition parameters by birth weight categories and to analyze whether the relationships between birth weight and cognitive functions are mediated by cardiorespiratory fitness (CRF) in schoolchildren. Methods: A cross-sectional study using a sample of 664 school children from the MOVI-Kids study. Variables: i) cognitive function measured by the Battery of General and Differential Aptitudes (BADyG); ii) birth weight, reported by parents; and iii) CRF (20-m shuttle run test). ANCOVA models were estimated to assess differences in cognitive function categories across birth weight and CRF categories. Mediation analysis was conducted with Hayes? PROCESS macro. Results: CRF is a full mediator of the association between birth weight with the verbal and numerical factors, and general intelligence; and is a partial mediator when logical reasoning and the spatial factor were the dependent variables. The available data suggest that, in schoolchildren, the influence of birth weight on cognitive function is mediated by CRF. Conclusions: These findings highlight that children with lower birth weight values and lower fitness levels should be target subgroups to improve children?s cognition, in which long-life physical activity interventions at early ages are a priority.

Academic performance

Birth weight

Children

Cognition

Fitness

academic achievement

analysis of covariance

article

birth weight

cardiorespiratory fitness

child

cross-sectional study

dependent variable

female

human

human experiment

human tissue

intelligence

major clinical study

male

mediator

physical activity