

Early socioeconomic circumstances and cardiometabolic health in 10-year-old children

Fraga Sílvia

S Soares^{1,2}, AC Santos^{1,2}, F Soares Peres¹, H Barros^{1,2}, S Fraga^{1, 2}

¹EpiUnit, Instituto de Saúde Pública, Universidade do Porto, Rua das Taipas, Porto, Porto, Portugal

²Dep. Ciências da Saúde Pública e Forenses e Educação Médica, Faculdade de Medicina, Porto, Portugal

Contact: silviafraga14@gmail.com

Background:

Social adversity is thought to become biologically embedded during sensitive periods of development, setting children on a trajectory of increased risk for later chronic diseases. Thus, social differences are expected to be expressed as biological alterations and might have their origins in early life. Therefore, we aim to estimate the association between early socioeconomic position (SEP) and cardiometabolic health during childhood.

Methods:

Data from 2962 participants in the population-based birth cohort Generation XXI, from Porto, Portugal, was collected following standardized procedures at all study waves. Early SEP definition included household income, parental education and occupation at child's birth. Cardiometabolic health was characterized at the age of 7 and 10, considering the triglycerides, cholesterol, fasting glucose, body mass index, systolic and diastolic blood pressure. Logistic regression was

used to estimate the association between early SEP and a favorable cardiometabolic health profile.

Results:

A favorable cardiometabolic profile was observed in almost half of participants at both ages, particularly among high SEP children who remain more frequently without alterations. For girls, higher paternal education at 7 years (OR:1.49;95%CI:1.03-2.15) and higher SEP at 10 were associated with better cardiometabolic health profile. In boys, a better cardiometabolic health profile was observed with increasing levels in maternal and paternal education and occupation, but at the age of 10, social differences were more evident according to parental education.

Conclusions:

We provide evidence that children from more advantaged SEP at birth have an increased likelihood of presenting better cardiometabolic health at early ages. Social differences in cardiometabolic health biomarkers are already found in childhood, suggesting that the short-term impact of early life SEP on the physiology dysregulation takes place already in the first decade of life.

Key messages:

- Social differences in cardiometabolic health are already established in the first decade of life, with children from higher SEP presenting a better cardiometabolic health.
- Cardiovascular events are not expected to develop during childhood, however the underlying atherosclerotic process might already be in course as social differences appear to widen with age.