

# Relationship between exclusive breast feeding and cardiorespiratory fitness in children and adolescents: A protocol for a systematic review and meta-analysis

Berlanga-Macías C.

Pozuelo-Carrascosa D.P.

Álvarez-Bueno C.

Martínez-Hortelano J.A.

Garrido-Miguel M.

Martínez-Vizcaíno V.

**Introduction** Breast feeding has been considered important due to its short-term and long-term benefits on infant and maternal health. Regarding the long-term benefits, the influence of exclusive breastfeeding on cardiorespiratory fitness (CRF) during childhood and adolescence has been studied, although with controversial conclusions. This study protocol aims to provide a clear and standardised procedure for systematically reviewing the relationship between breast feeding, in terms of duration and exclusivity, and CRF in children and adolescents. **Methods and analysis** This systematic review and meta-analysis protocol is reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols. A literature search will be conducted in MEDLINE, EMBASE, Web of Science and Cochrane Library. Observational studies regarding the association between breast feeding and CRF in children and adolescents written in English or Spanish will be included. A Critical Appraisal Checklist for Analytical Cross Sectional Studies and The Newcastle-Ottawa Quality Assessment Scale for longitudinal studies will be used for quality assessment of included studies. Standardised mean differences of CRF by exclusive breastfeeding categories will be calculated as the primary outcome. Subgroup analyses and meta-regression will be performed based on the sources of heterogeneity. **Ethics and dissemination** This evidence-based systematic review will summarise the relevant information on the association of exclusive breast feeding and CRF in children and adolescents. The results will be disseminated by publication in a peer-reviewed journal. Given that the data used for this systematic review will be exclusively

extracted from published studies, ethical approval will not be required. © 2018 Author(s) (or their employer(s)).

adolescents

breastfeeding

cardiorespiratory fitness

children

adolescent

article

breast feeding

cardiorespiratory fitness

checklist

child

Cochrane Library

cross-sectional study

Embase

ethics

female

human

infant

longitudinal study

male

Medline

observational study

outcome assessment

publication

quality control

systematic review

Web of Science

meta analysis

Adolescent

Breast Feeding

Cardiorespiratory Fitness

Child

Humans