INPLASY PROTOCOL

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Conflicts of interest:
None declared.

A systematic review on the associations between prenatal phthalate exposure and childhood glycolipid metabolism and blood pressure: evidence from epidemiological studies

Gao, H[1]; Gong, C[2]; Shen, SC[3]; Zhao, JY[4]; Xu, DD[5]; Tao, FB[6]; Wang, Y[7]; Fan, XC[8].

Review question / Objective: **The present systematic review was performed to obtain a summary of epidemiological evidence on the relationships of in utero exposure to phthalates with childhood glycolipid metabolism and blood pressure.**
Condition being studied: **Childhood cardiovascular risk factors including blood pressure, lipid profile (e.g., triglycerides, total cholesterol, HDL–C, LDL–C) and glucose metabolism (e.g., insulin, insulin resistance, insulin sensitivity, glucose) were the interested outcomes.**
Eligibility criteria: **In brief, epidemiological studies including cohort study, case-control study and cross-sectional survey were screened. Studies regarding relationships between human exposure to organophosphate esters and neurotoxicity were possible eligible for the present systematic review. The adverse neurodevelopmental outcomes included development of cognition, behavior, motor, brain change, emotion, etc. Studies that did not meet the above criteria were not included in this systematicreview.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 June 2022 and was last updated on 29 June 2022 (registration number INPLASY202260111).

INTRODUCTION

Review question / Objective: **The present systematic review was performed to obtain a summary of epidemiological evidence on the relationships of in utero exposure to phthalates with childhood glycolipid metabolism and blood pressure.**

Condition being studied: **Childhood cardiovascular risk factors including blood pressure, lipid profile (e.g., triglycerides,**

total cholesterol, HDL–C, LDL–C) and glucose metabolism (e.g., insulin, insulin resistance, insulin sensitivity, glucose) were the interested outcomes.

METHODS

Participant or population: Pregnant women and their children or adolescent.

Intervention: Prenatal phthalate exposure.

Comparator: A comparison population exposed to lower levels or no exposure/ exposure below detection levels, or with different levels of target outcome group, or no target disease control group.

Study designs to be included: All observational studies including cohort study, case-control study, case-cohort study and cross-sectional survey.

Eligibility criteria: In brief, epidemiological studies including cohort study, case-control study and cross-sectional survey were screened. Studies regarding relationships between human exposure to organophosphate esters and neurotoxicity were possible eligible for the present systematic review. The adverse neurodevelopmental outcomes included development of cognition, behavior, motor, brain change, emotion, etc. Studies that did not meet the above criteria were not included in this systematic review.

Information sources: The systematic literature search was performed in MEDLINE (accessed through PubMed), Web of Science and CNKI (Chinese National Knowledge Infrastructure) until May 2022.

Main outcome(s): Childhood cardiovascular risk factors including blood pressure, lipid profile (e.g., triglycerides, total cholesterol, HDL–C, LDL–C) and glucose metabolism (e.g., insulin, insulin resistance, insulin sensitivity, glucose) were the interested outcomes.

Quality assessment / Risk of bias analysis: Adherence to a modified instrument (Supplemental Table S3) of the Cochrane Collaboration's "Risk of Bias" tool(Cumpston et al., 2019; Lam et al., 2017), two authors (ZJY and XDD) independently assessed the risk of bias. Inconsistencies were resolved by discussion. The selection bias, exposure assessment, outcome assessment, confounding, incomplete outcome data, selective outcome reporting outcome, and other sources of bias were rated as "low", "probably low", "probably high", or "high", respectively.

Strategy of data synthesis: A narrative synthesis of the results with associations between prenatal phthalate exposure and childhood BP, lipid profile and glucose metabolism.

Subgroup analysis: None.

Sensitivity analysis: None.

Country(ies) involved: China.

Keywords: Phthalates; Cardiometabolic risk; Childhood; Birth cohort study; Systematic reviewPhthalates; Cardiometablic risk; Birth cohort study.

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