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Determinants of Organophosphate Pesticide Exposure in Pregnant Women: A population-based cohort study in the Netherlands

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Abstract

Background

In the Netherlands organophosphate (OP) pesticides are frequently used for pest control in agricultural settings. Despite concerns about the potential health impacts of low-level OP pesticides exposure, particularly in vulnerable populations, the primary sources of exposure remain unclear. The present study was designed to investigate the levels of DAP metabolites concentrations across pregnancy and to examine various determinants of DAP metabolite concentrations among an urban population of women in the Netherlands.

Method

Urinary concentrations of six dialkyl phosphate (DAP) metabolites, the main urinary metabolites of OP pesticides, were determined at <18, 18–25, and >25 weeks of pregnancy in 784 pregnant women participating in the Generation R Study (between 2004 and 2006), a large population-based birth cohort in Rotterdam, the Netherlands. Questionnaires administered prenatally assessed demographic and lifestyle characteristics and maternal diet. Linear mixed models, with adjustment for relevant