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Supplemental Material

Association of Prenatal Exposure to Organophosphate, Pyrethroid, and Neonicotinoid Insecticides with Child Neurodevelopment at 2 Years of Age: A Prospective Cohort Study

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Figure S4. Spearman's rank correlation analysis was conducted to explore the correlation matrix of the urinary specific gravity (SG)-adjusted concentrations of mOPPs, mPYRs, and mNNIs. Correlation matrix of analytes based on the concentrations in the 3rd trimester among the participants from a birth cohort study in Wuhan, China, 2014–2017 (N = 1041 participants, n = 1041 samples). *p < 0.05; **p < 0.01. Details of chemical abbreviations are provided in Table S3 and the numerical values are listed in Excel Table S5.

Table S1. Differences on the demographic characteristics of mother-child pairs among the recruited population (N = 5112), the population of their children completing the evaluation of Bayley scales at two years old (N = 2782), and the study population (N = 1041) from Wuhan, China, 2014–2017.

Table S2. China Recommendations for total weight gain during pregnancy, by pre-pregnancy body mass index (BMI).

Table S3. Related information for target analytes (Li et al., 2022; Mahai et al., 2022).

Table S4. The gradient of mobile phase (flow rate = 0.30 mL/min) for the analysis of target analytes (**except for** DAPs, PNP, and DN-IMI).

Table S5. The gradient of mobile phase (flow rate = 0.25 mL/min) for the analysis of DAPs, PNP, and DN-IMI.

Table S6. The distribution of the Bayley scores (means ± SD) at two years of age based on the average urinary concentrations (ng/mL) of insecticide biomarkers throughout pregnancy for participants from a birth cohort study in Wuhan, China, 2014–2017 (N = 1041 participants, n = 3123 samples).

Table S7. Multivariate linear regression model evaluating associations between the average SG-adjusted maternal urinary analytes concentrations (ln-transformed, ng/mL) over three trimesters and children's MDI and PDI at two years of age in participants from a birth cohort study in Wuhan, China, 2014–2017 (N = 1041 participants, n = 3123 samples, data correspond to Figure 1).

Table S8. Generalized estimating equation model evaluating trimester-specific associations between SG-adjusted maternal urinary analytes concentrations (ln-transformed, ng/mL) with children's MDI and PDI scores at two years of age in participants from a birth cohort study in Wuhan, China, 2014–2017 (N = 1041 participants, n = 1041 samples for 1st trimester, n = 1041 samples for 2nd trimester, n = 1041 samples for 3rd trimester, data correspond to Figure 2).

Table S9. Weighted quantile sum regression (WQSR) analysis for the associations of weighted quantile sum regression index of pesticide biomarkers [based on the concentrations in the 1st trimester (N = 553 participants, n = 553 samples) and the averaged concentrations over the three trimesters (N = 553 participants, n = 1659 samples)] with boy's MDI scores estimated in the repeated holdout validation in participants from a birth cohort study in Wuhan, China, 2014–2017 (Data correspond to Figure 3).

Table S10. Weighted quantile sum regression (WQSR) analysis for the associations of weighted quantile sum regression index of pesticide biomarkers [based on the concentrations in the 1st trimester (N = 553 participants, n = 553 samples) and the averaged concentrations over the three trimesters (N = 553 participants, n = 1659 samples)] with boy's PDI scores (n = 553) estimated in the repeated holdout validation in participants from a birth cohort study in Wuhan, China, 2014–2017.

Table S11. Comparison of the exposure levels and the associations of prenatal exposure to OPPs and PYRs (characterized by biomarkers) with child neurodevelopment observed in our study with other studies.

References

Additional File- Excel Document