

S-115**PRENATAL AND POSTNATAL PERMETHRIN EXPOSURE AND NEURODEVELOPMENT AT AGE 7 IN CHILDREN FROM THE CHAMACOS BIRTH COHORT****Authors:**

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Background: Animal studies suggest that early life exposures to pyrethroid pesticides are of particular concern; however, no human studies have assessed their neurodevelopmental effects on school-age children.

Objective: To examine associations between prenatal and postnatal exposure to permethrin, a commonly used pyrethroid, and neurodevelopment in 7-year-old children from the CHAMACOS cohort.

Methods: Permethrin (cis- and trans-) was measured in dust samples collected during pregnancy and at 6 and 12 months (n=137 at each visit). We assessed cognition using the Wechsler Intelligence Scale for Children and motor skills using the McCarthy Scales of Children's Abilities, pegboard and finger tapping tests. We assessed attention using the Test of Everyday Attention for Children and had mothers and teachers complete the Conners' ADHD/DSM-IV Scales. Generalized linear models were used to examine the association between prenatal and postnatal permethrin exposure and neurodevelopmental outcomes.

Results: Permethrin was detected in >80% of the samples; geometric mean concentrations ranged between 162-500 ng/g (trans-) and 149-404ng/g (cis-). Preliminary results suggest that cognition (verbal comprehension, working memory, and full scale intellectual quotient-IQ) and motor skills (finger tap test) are borderline negatively associated with prenatal exposure (trans-) in girls (average deficit of 5 IQ points, $p < 0.10$). We observed a positive association between prenatal exposure (trans-) and performance on pegboard tests in boys ($p = 0.04$). Preliminary results also suggest that postnatal exposure is not associated with poorer neurodevelopment in 7-year-old children.

Conclusions: Further analysis will be conducted, including hierarchical models, to properly account for repeated measures of exposure. Additional analysis will also include results from other neurodevelopmental assessments.

Keywords: pesticides, pyrethroids, dust, neurodevelopment, permethrin