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Title: Reducing Exposure to Pesticides for Preschool-Age Children Attending Child Care Centers in California, USA

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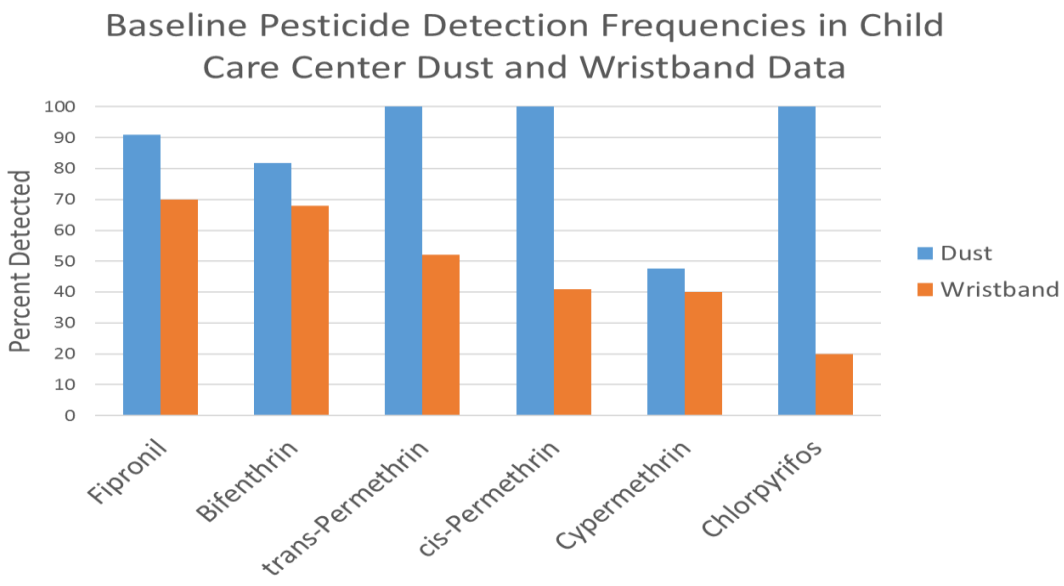
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I. Abstract Body (250)

Chronic, low level indoor pesticide exposures are associated with adverse health outcomes in children, including cancer and cognitive, neurological, and respiratory problems.[1-3] Studies show that pesticides applied as sprays are used in child care facilities.[4] Interventions to reduce pesticide exposure in child care centers have focused on integrated pest management (IPM) but have not included objective measures of pesticides or children's individual exposures.[5,6] A randomized-control trial in four counties in California, United States was designed to compare changes in pesticide exposure between centers assigned to an IPM intervention versus physical activity attention control intervention. Eighty-eight centers serving socio-economically and ethnically diverse preschool-age children will be enrolled over 5 years. The 7-month intervention includes an educational workshop, materials, and center-specific consultation. The study aims are to determine if an IPM intervention increases child care staff's IPM knowledge, improves center's IPM policies and practices, reduces pest problems, and reduces pesticide exposures in center environments and child-level pesticide exposures in intervention versus control centers. **B**aseline and post-intervention measures include director interviews, family surveys, and assessments of IPM policies, practices, pests, and products. Child measures include height, weight, activity level, and silicone wristbands to measure 13 pesticides and dust samples of carpets in child care centers to measure 16 pesticides. Preliminary results showed dust detection frequencies in 30 centers with a range of pesticides across time and groups. Children's wristbands detected five of the same pesticides as center dust at lower detection levels (Figure). Cumulative results for years 1 and 2 will be presented.

II. Figure



III. References

1. Chen M, Change C-H, Tao L, Lu C. Residential exposure to pesticide during childhood and childhood cancers: A meta-analysis. *Pediatrics,.* 2015;136(4):719-729.
2. Liu J, Schelar E. Pesticide exposure and child neurodevelopment: summary and implications. *Workplace Health and Safety* 2012;60(5):235-242.
3. Eskenazi B, Marks AR, Bradman A, et al. Organophosphate pesticide exposure and neurodevelopment in young Mexican-American children. *Environmental Health Perspectives.* 2007;115(5):792-798.
4. Bradman A, Gasper F, Castorina R, Tong-Lin E, McKone T, Maddelena R. *Environmental exposures in early childhood education environments.* Berkeley, CA, USA: Center for Environmental Research and Children's Health at University of California - Berkeley, California Air Resources Board, California Environmental Protection Agency; April 5 2012. Agreement Number 08-305.
5. Mir D. Impact of population characteristics on Illinois childcare adoption of integrated pest management (IPM). *Journal of Public Health.* 2011;20(4):431-440.
6. Alkon A, Nouredini S, Swartz A, et al. Integrated pest management intervention in child care centers improves knowledge, pest control, and practices. *Journal of Pediatric Health Care.* 2016;In Press.

III. Biography (100 words)

Dr. Abbey Alkon is a Professor at the University of California, San Francisco School of Nursing. Dr. Alkon has her PhD in Epidemiology from University of California, Berkeley (UCB) and is a Certified Pediatric Nurse Practitioner. She is the director of the California Childcare Health Program (cchp.ucsf.edu), a reputable organization that provides education, service and research for child care providers and parents. Dr. Alkon is also the Investigator at UCB Center for Environmental Research and Children's Health (CERCH). She

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