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Dr Raúl Harari
Corporación IFA
Domingo de Brieva N38-107 y Villalengua.
Urbanización Granda Centeno.
Quito. Ecuador.
P.O.Box 17-08-8386 Quito
Ecuador
Email: ifa@ifa.org.ec

Combined effects of prenatal pesticide exposure and malnutrition in developing countries.

Raúl Harari* MD,PhD (Corporación Para el Desarrollo de la Producción y el Medio Ambiente Laboral-IFA, Quito, Ecuador), Philippe Grandjean MD (Institute of Public Health, University of Southern Denmark, Odense, Denmark), Dana B. Barr, PhD (National Center for Environmental Health, Centers for Disease Control and Prevention, Atlanta, GA, USA), and Frodi Debes, PsyD (Institute of Public Health, University of Southern Denmark, Odense, Denmark)

Childhood development and diseases that appear in later life stages may appear as an apparent consequence of have malnutrition prevalent in developing countries. Stunting is often used as a marker of malnutrition during early development. The associated neurobehavioral diseases and deficits can have serious social and economic effects. The wider implications of this adverse health effects have recently been explored with a focus on malnutrition but the concomitant impact of exposures to pesticides and other neurotoxicants also deserves consideration.

In our first pilot study, we studied 79 children attending the two lowest grades of a public school in a community with extensive floriculture activities. Thirty-seven of the mothers have been working in flower plantations during pregnancy, while the others had no known neurotoxicant exposures of concern.

Among a small number of clinical outcomes, we found that increased (systolic)blood pressure and deficits on a neuropsychological test of visuospatial function were associated with prenatal pesticide exposure. Stunting was also associated with adverse health outcome in this age group, but no confounding was apparent, and the effects appeared to be additive. Current exposure to pesticides was associated with an increased simple reaction time only.

Prenatal pesticide exposure may cause lasting neurotoxic damage that add to the adverse effects of malnutrition in developing countries. The effects differ from those due to acute pesticide exposure.