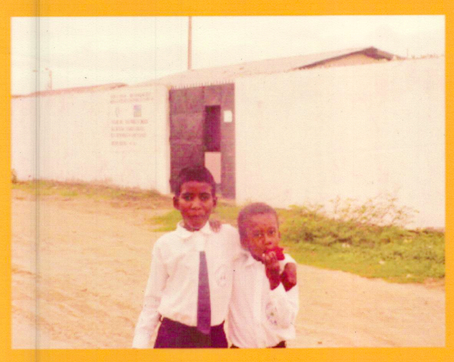
CHILDREN´S ENVIRONMENT AND HEALTH IN ECUADOR : FOUR EXAMPLES

Raúl Harari*, MD, PhD, Homero Harari*, Env. Eng. Rocío Freire* N. MSc
*IFA Corporation

CHILDREN AT SCHOOL EXPOSED TO A REFINERY EMISSION



A study in five schools in Esmeraldas, Ecuador, was carried out. Children from 1st and 2nd degree were interviewed and urine samples were collected. Those schools are a different distance from the refinery. Emissions from this refinery were measured some times showing the presence of aromatic hydrocarbons, heavy metals and dust all around it. Children from Schools closer to the refinery showed higher level of nickel in urine than those from other schools.
This exposure is important due the possible chronic effects for children. Preventive measurements are needed to avoid exposure to children and monitoring is important to check emissions from this refinery.

POVERTY AND OTHER RISK FACTORS FOR ASTHMA AND WHEEZE AMONG AFROECUADORIAN CHILDREN

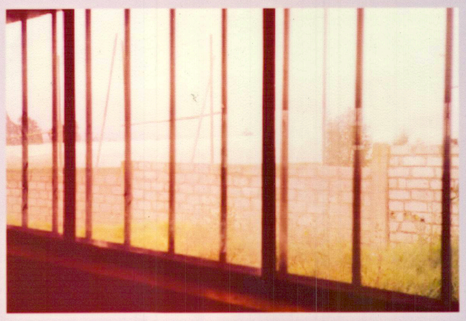
It is an important discussion about the influence of socio-economic factors in the presence of asthma. Also the presence of environmental risks and ethnical factors are considered. In Esmeraldas it is a refinery and around it there are many schools. Most of the students are afro - ecuadorian children. A sample of approximately 1500 students were studied. The ISAAC Questionnaire was used with the parents of the students.1170 questionnaires were fulfilled, that is 78.6% of the whole sample. A high prevalence of lifetime asthma (25.0%), any wheeze in the past 12 months (36.6%) and dyspnea with wheeze (17.9%) was identified.
There was an inverse and significant association between family income and most of the respiratory items.
Some factors like humidity, houses made of cane, and presence of cockroach appeared to be associated with asthma and wheeze.
Poverty seems to be determinant in the asthma prevalence in this situation.

CHILDREN AT WORK AS AN IMPORTANT RISK FOR HEALTH

Two surveys were done in children at work in the construction industry and banana plantations.
In the construction industry, children were exposed to the same risk factors than adults and overload, exposure to solvents, dust and other chemicals were common among them. Bad safety conditions lead to and important level of work accidents. Work accidents were four folds higher in children than in adults.
In the banana plantations a large number of children are working under precarious working conditions. Those children works in the same activities than adults and are heavily exposed to pesticides. These pesticides are spread by airplanes and also with backpacks. It was estimated that more than 60.000 children under 18 years old have been working in this conditions.
Both examples showed that children at work is a particular condition of environmental risks to children in Ecuador, also associated with poverty, absenteeism at school and other social contradictions.

CHILDREN AT SCHOOL EXPOSED TO PESTICIDES FROM A FLOWER PLANTATION

Students of a College situated beside a flower plantation in Cotopaxi, Ecuador, started with symptoms and signs of pesticide exposure. A study was done among this students and compared with a control group from other similar college isolated from flower plantations. Soil and dust samples collected between the school and the plantation and in the classroom and demonstrated the presence of pesticides. Initial results indicates that Acetyl cholinesterase was more inhibited, some neurobehavioral tests showed lower performance and symptoms and signs were more frequently associated with the exposed compared with the non exposed group. Further analysis are needed to go in deep in some other health effects.
Preventive measurements like to separate greenhouses from the school, to build a green curtain between the school and the plantation, and to do not spread pesticides during school activities were recommended.



Raúl Harari MD, PhD
Domingo de Brieva N38-107 y Villalengua
Urbanización Granda Centeno
Phone: 00593-2-2439929
Fax: 00593-2-2275662
E-Mail address: ifa@ifa.org.ec
P. O. Box: 17-08-8386
Quito- Ecuador