

The use of passive samplers to determine levels, and exposure on children, of 1,3-butadiene and benzene in Mexico City Metropolitan Area

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Our contributions to Milagro

The use of passive samplers to determine levels, and exposure on children, of 1,3-butadiene and benzene in Mexico City Metropolitan Area

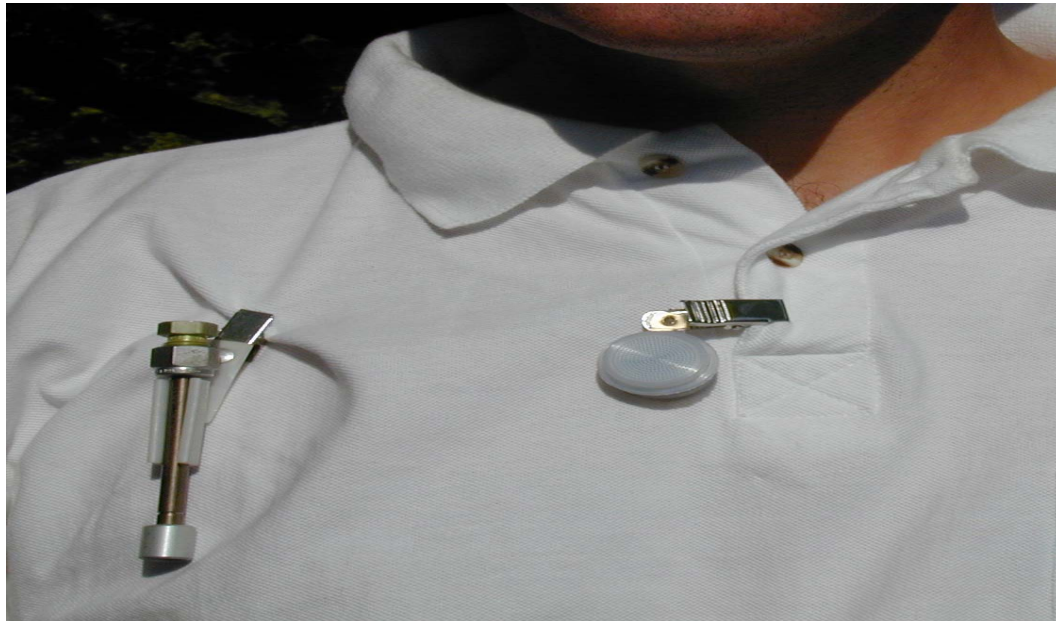
Levels of persistent organic pollutants by polyurethane foam passive samplers in indoor and outdoor air in Mexico City Metropolitan Area

Introduction

- Many organic compounds are of concern because of their well-known impact on human health and the environment.
- Two classes
 - +Volatile Organic Compounds (VOCs); Ex 1,3-butadiene, benzene, toluene, xylenes.....
 - +Semi-volatile Organic Compounds (SVOCs or POPs); Ex PAHs, PCBs, organochlorine pesticides, brominated flame retardants.....
- Diffusive samplers offer advantages
- There is a need to develop diffusive samplers, for long periods (weeks) as well as for shorter periods (8-24 h) to measure the exposure of the general population



POP compounds



VOC compounds

Sampling strategy VOCs

- Compounds: 1,3-butadiene and benzene
- Three sampling sites within Mexico City Metropolitan Area denoted T0, T2 and T3
- Perkin Elmer:
 - + Stationary in- and outdoors school children's homes.
 - + 1 week
- SKC-Ultra
 - + Stationary in- and outdoor school children's homes.
 - + Personal sampling.
 - + 24 h

Are the levels different between sampling sites?

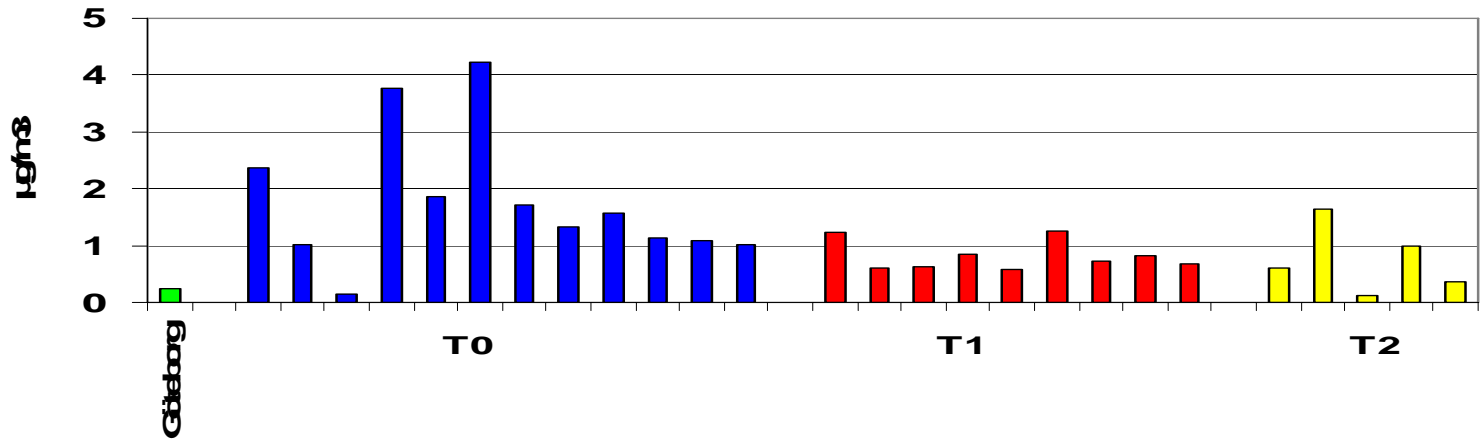
Are the levels high in the Mexico City region?

Are the levels different in- and outdoors?

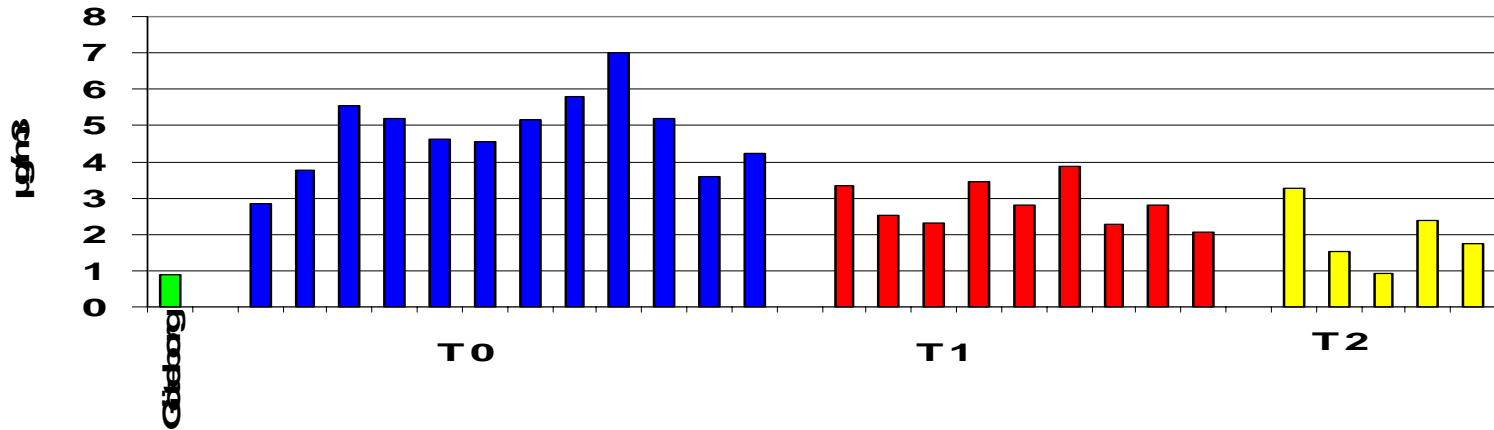
How are the children exposure pattern?

Result "cookies"

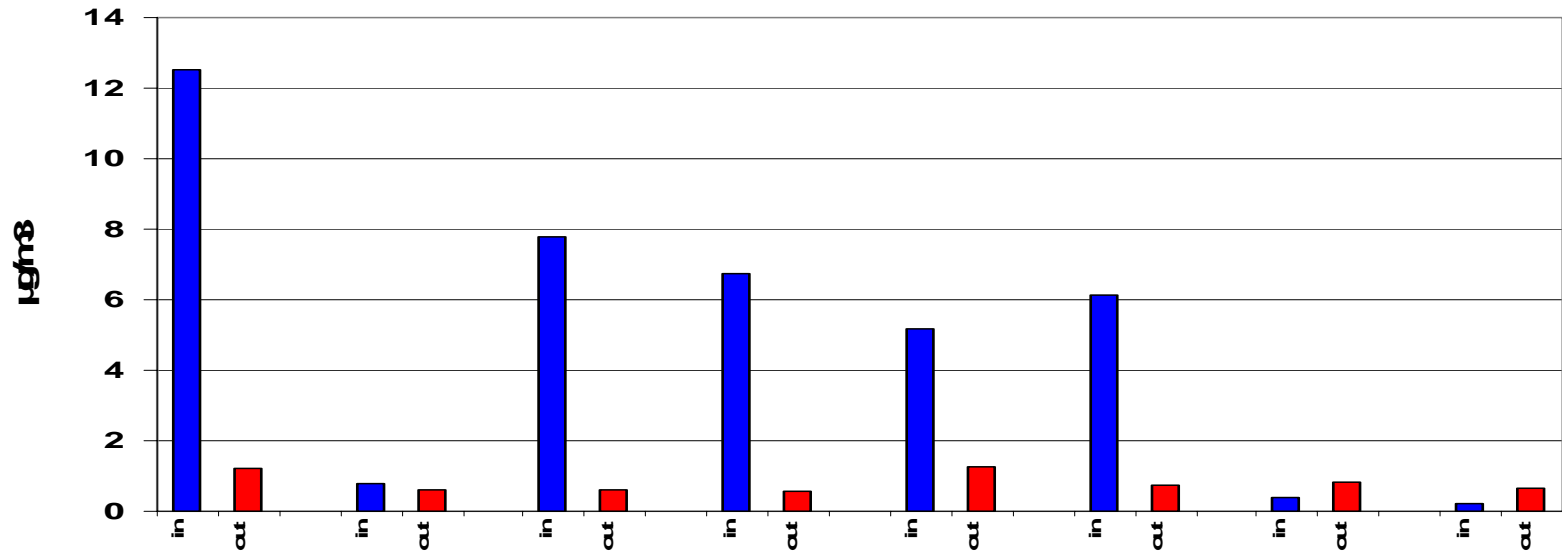
1,3-butadiene, out door 1 week stationary sampling



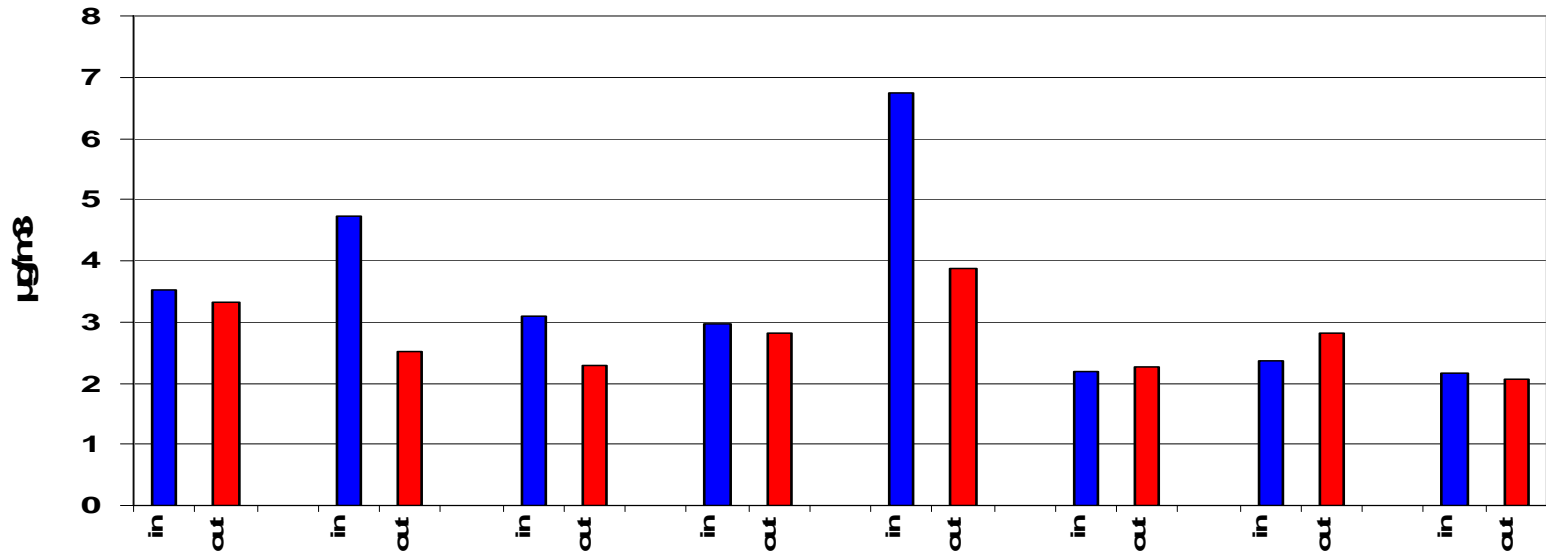
benzene, outdoor 1 week stationary sampling



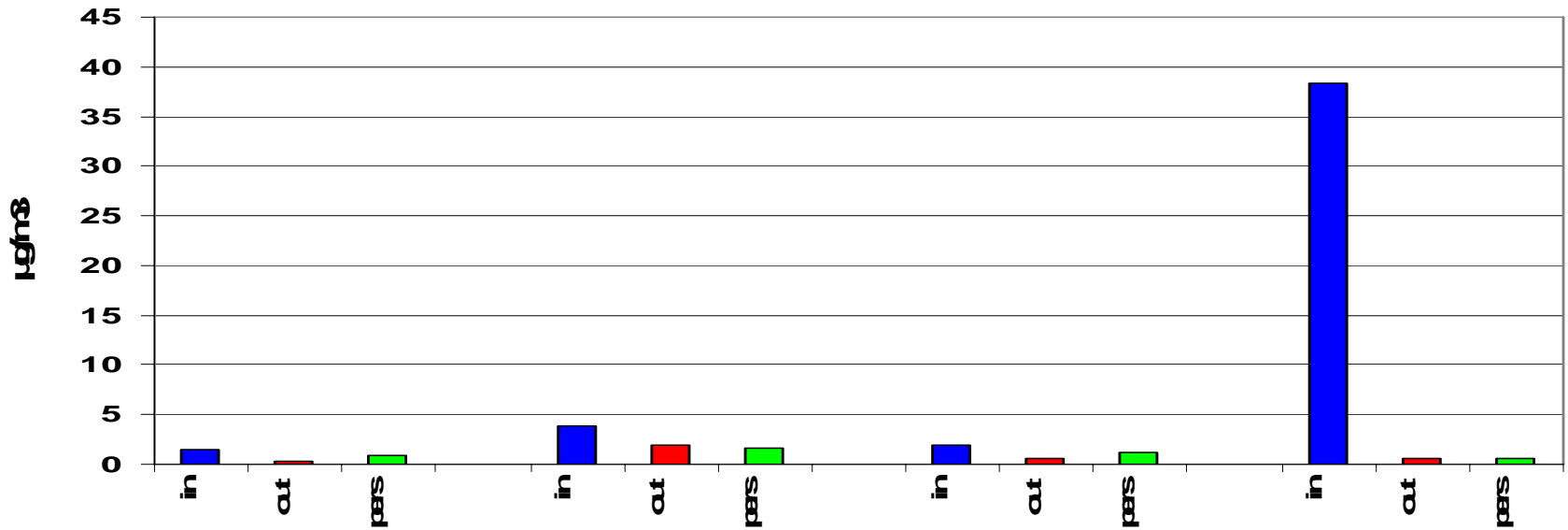
1,3-butadiene, 8 homes at T1, 1 week stationary sampling



Benzene, 8 homes at T1, 1 week stationary sampling



1,3-butadiene, 4 homes at T2, 24h in- out and personal sampling



benzene, 4 homes at T2, 24h in- out and personal sampling

