

# **The MAPEC\_LIFE study (LIFE12 ENV/IT/000614): monitoring air pollution effects in children for supporting public health policy**

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The use of genetic biomarkers has been studied largely in adult population exposed to air pollution, but few studies have investigated genetic damage in children. The aim of the project is to evaluate the associations between the concentration of urban air pollutants and early biological effects in children. The study will be carried out on 1000 children 6-8 years old living in five Italian towns in two different seasons by analyzing two biomarkers of early biological effects: DNA damage detected with the comet assay and frequency of micronuclei in buccal cells. A questionnaire will be used to collect the details of children diseases, socio-economic status, exposures to other pollutants and life-style. Ultra-fine particulate samples (PM 0.5) collected in the school areas will be analyzed for PAHs and nitro-PAHs concentrations, lung toxicity and in vitro genotoxicity on bacterial and human cells. All data will be statistically tested to investigate the possible associations between levels of air pollutants, air mutagenicity and early effect biomarkers. The final purpose of the project will be to elaborate a model for calculating the global absolute risk of early biological effects.

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