Evaluation of air pollution genotoxic effects in children by the buccal micronucleus cytome assay

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Background: the aim of the MAPEC (*Monitoring Air Pollution Effects on Children for supporting public health policy*) study is the evaluation of early biological effects of air pollution in children by mean of the buccal micronucleus cytome (BMCyt) assay.

Methods

- The BMCyt assay was performed in exfoliated buccal mucosa cells of 6-8-year-old children from five Italian towns (Brescia, Torino, Pisa, Perugia and Lecce) characterized by different concentrations of air pollutants.
- Biological samples were collected from the same children at two separate times: Winter 2014 and Spring 2015.

Results & discussion

- Preliminary results, relative to 717 children sampled on winter 2014, revealed a statistically significant increase in MN frequency with increasing level of air pollution;
- The BMCyt assay may become a relevant biomonitoring tool in the future for early detection of genotoxic risk associated with air pollution.