

Monitoring air pollution effects on children For supporting public health policy





Air pollution

In Italian cities, air pollution showed different intensity depending on seasons and geographical areas.



Particulate matter

PM10.5 caused mild toxicity and DNA damage in the cells treated in the laboratory.

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Early biological effects

Micronucleus frequency in buccal cells of children was generally low compared to other investigated populations and was influenced by:

- › **Season:** the biological effect was higher in winter than in spring.
- › **City of residence:** children living in Brescia and Pisa showed a greater effect than those living in Perugia, Torino and Lecce.
- › **Levels of benzene, PM2.5, SO2, ozone and PAHs:** higher concentrations were associated with higher micronucleus frequency in children's cells.
- › **Children's characteristics:** healthy eating reduce the effect while passive smoke exposure and overweight worsen it.

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Conclusion

In conclusion, although the investigated children show a modest level of DNA damage in buccal cells, it should be noted that even low levels of biomarkers of early effect may be an indicator of possible adverse health effects in the future.



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