

3rd HBM-PT

Workshop on Human BioMonitoring in Portugal

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Online edition



Book of abstracts

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Air pollution in urban environments: implications for citizens' health

Klara Slezakova ^{1*}, Joana Madureira ^{2,3}, João Paulo Teixeira ^{2,3}, Maria do Carmo Pereira ¹

¹ LEPABE - Faculty of Engineering, University of Porto, Portugal; ² Environmental Health Department, National Institute of Health, Porto, Portugal; ³ EPIUnit, Instituto de Saúde Pública, Universidade do Porto, Portugal

* Corresponding author: slezakov@fe.up.pt

Currently, 54% of worldwide population lives in urban areas. While growing urbanization causes environmental pollution and energy demand, it has also adverse implications on health, living conditions and lifestyle habits of the respective citizens. To protect human health, numerous organizations have implemented guidelines to limit environmental pollution, or even proposed recommendation on human activity, but how do these translate to the exposure and risks of the respective population? This work aimed to explore how urban development, using time series data from 2015 to 2018, might influence air quality and potential health risks of citizens living in these zones.

PM_{2.5} and PM₁₀ levels were retrieved from urban and suburban air monitoring stations of Portuguese Environmental Agency (North-Porto) during 2015–2018. Portuguese age-specific anthropometric data were obtained.

In spite of growing urbanization, the results demonstrated that health based protective guidelines were fulfilled. PM_{2.5} and PM₁₀ obliged annual limits during all 3 years, possibly also due to improved urban planning and use of clean energy. Lifestyle habits strongly impacted estimation of individual dose (range 0.28–1.36 $\mu\text{g kg}^{-1}$; 0.08–0.34 $\mu\text{g kg}^{-1}$) and potential effects on health.

While the ambient data monitoring is relevant component of national and international public health programs, personal exposure measurements should be integrated in order to fully protect human health of citizens.

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