*Arh. farm 2022; 72: S601–S602* ***T-PP24***

# ASSESSMENT OF CHILDREN'S EXPOSURE TO AIR POLLUTANT $PM_{10}$ AND LEAD IN CRTITICAL DISTRICTS IN THE REPUBLIC OF SERBIA

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$PM_{10}$ particles present in excessive concentrations in polluted air can negatively affect respiratory and cardiovascular system, whereas lead exposure shows adverse effects on renal, hematological, immunological, reproductive and neurological system, especially in children (1). This study was carried out to assess children's exposure to $PM_{10}$ and lead through the air in critical districts of Serbia. Mean yearly concentrations of $PM_{10}$ and lead were used from reports of the Serbian Enviromental Protection Agency, for selected measuring sites in the cities of Subotica, Smederevo, Bor, Valjevo and Kraljevo. Measuring sites were selected based on air quality (over-polluted air) and being close to places where children spend their time during the day. The US EPA method was used to assess health risk, which classifies risk as acceptable (≤1) or unacceptable (>1) based on hazard quotient (HQ) and hazard index (HI) values (2). HQ for $PM_{10}$ particles was higher than 1 in all critical districts, indicating risk as unacceptable. Values of HI for lead were lower than 1 in all critical districts, indicating risk as acceptable. Results are showing that actions for reduction of air pollution in Serbia should be taken due to obtained results for particulate matter and lead.

## References

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## Acknowledgments

This research was partly funded by the Ministry of Education, Science and Technological Development, Republic of Serbia through Grant Agreement with University of Belgrade-Faculty of Pharmacy No: 451-03-68/2022-14/200161.

# PROCENA IZLOŽENOSTI DECE $PM_{10}$ ČESTICAMA I OLOVU PUTEM ZAGAĐENOG VAZDUHA U KRITIČNIM PODRUČJIMA SRBIJE

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$PM_{10}$ čestice prisutne u prekomernim koncentracijama u zagađenom vazduhu ispoljavaju štetne efekte na respiratorni i kardiovaskularni sistem, dok olovo negativno utiče i na renalni, hematopoetski, endokrini, imunološki, reproduktivni i nervni sistem, naročito kod dece (1). Cilj ovog rada bio je da se proceni izloženost dece $PM_{10}$ česticama i olovu putem zagađenog vazduha u kritičnim područjima Srbije. Vrednosti prosečnih godišnjih koncentracija $PM_{10}$ čestica i olova su preuzete iz godišnjih izveštaja Agencije za zaštitu životne sredine, za odabrane merne stanice u gradovima Subotica, Smederevo, Bor, Valjevo i Kraljevo. Kriterijum za izbor područja, odnosno mernih stanica, bio je kvalitet vazduha (prekomerno zagađen vazduh) i blizina mesta gde deca provode značajan deo vremena. Zdravstveni rizik je procenjen metodologijom koju preporučuje Američka agencija za zaštitu životne sredine. Na osnovu vrednosti količnika hazarda (HQ) i indeksa hazarda (HI) rizik se klasifikuje kao prihvatljiv (≤1) ili neprihvatljiv (>1) (2). HQ za $PM_{10}$ čestice prelazi vrednost 1 u svim razmatranim područjima, ukazujući na neprihvatljiv rizik dok su vrednosti HI za olovo manje od 1 ukazujući na prihvatljiv rizik u svim područjima. Dobijeni rezultati ukazuju na potrebu preduzimanja mera u cilju smanjenja zagađenja vazduha u Republici Srbiji na osnovu izračunatog zdravstvenog rizika od izloženosti suspendovanim česticama i olovu.

**Literatura**

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**Zahvalnica**

Istraživanje je delom finansirano od strane Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije kroz Ugovor sa Univerzitetom u Beogradu – Farmaceutskim fakultetom broj: 451-03-68/2022-14/200161