HOW TO DETECT INVISIBLE SMOKING OF NON-SMOKERS?

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INTRODUCTION: Secondhand smoke (SHS), self-reported by non-smokers, remains a significant public health concern, being associated with cardiovascular, respiratory, metabolic diseases, and cancer. Cotinine, a nicotine metabolite with longer half-life, is a reliable biomarker for assessing SHS exposure, overcoming the limitations of self-reported methods such as questionnaires. OBJECTIVE: To evaluate the benefits of urinary cotinine quantification as a tool for detecting SHS exposure, in comparison with self-reported data. MATERIAL AND METHODS: A PubMed search was conducted using the strategy: “Urinary cotinine AND Passive smok*” with the advanced option (Title/Abstract), restricted to the past five years (2020-2024). Reviews and studies using secondary data were excluded. Two independent reviewers selected articles. RESULTS AND CONCLUSIONS: The search described in the methodology led to 17 articles. After filtering by reading the title and abstracts, 10 articles remained that were read in full. Urinary cotinine quantification showed superiority in detecting SHS exposure, particularly in populations such as children, pregnant women, travelers, and workers. Among all analyzed studies, individuals who self-identified as non-smokers presented detectable cotinine levels, revealing unrecognized exposure. In children, urinary cotinine was associated with worsened respiratory conditions, suggesting a link between higher exposure and increased infection risk. There are reports in the literature of urinary cotinine detection in 89% of pregnant volunteers, raising concerns about fetal health. Urinary cotinine levels are associated with hyperuricemia, metabolic syndrome and behavioral changes, reinforcing the systemic impacts. Urinary cotinine is a robust and accurate tool for detecting invisible exposure to secondhand smoke, providing valuable support for epidemiological surveillance and the formulation of public health policies.

Keywords: urinary cotinine; environmental tobacco exposure; collective health.

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