

Bisphenol A Exposure and Kidney Diseases: Systematic Review, Meta-Analysis, and NHANES 03–16 Study.

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VII Congreso de Señalización Celular, SECUAH 2022.

14 a 18 de marzo, 2022. Universidad de Alcalá. Alcalá de Henares, Madrid. España.

Keywords: Bisphenol A; kidney; systematic review; meta-analysis

Abstract

Bisphenol A (BPA) is a compound that is especially widespread in most commonly used objects due to its multiple uses in the plastic industry. However, several data support the need to restrict its use. In recent years, new implications of BPA on the renal system have been discovered, which denotes the need to expand studies in patients. To this end, a systematic review and a meta-analysis was performed to explore existing literature that examines the BPA-kidney disease paradigm and to determine what and how future studies will need to be carried out. Our systematic review revealed that only few relevant publications have focused on the problem. However, the subsequent meta-analysis revealed that high blood concentrations of BPA could be a factor in developing kidney disease, at least in people with previous pathologies such as diabetes or hypertension. Furthermore, BPA could also represent a risk factor in healthy people whose urinary excretion is higher. Finally, the data analyzed from the NHANES 03-16 cohort provided new evidence on the possible involvement of BPA in kidney disease. Therefore, our results underline the need to carry out a thorough and methodologically homogeneous study, delving into the relationship between urinary and blood BPA, glomerular filtration rate, and urine albumin-to-creatinine ratio, preferably in population groups at risk, and subsequently in the general population, to solve this relevant conundrum with critical potential implications in Public Health.

Citation: Moreno-Gómez-Toledano, Rafael; Arenas, María I.; Vélez-Vélez, Esperanza; Coll, Elisabeth; Bover, Jordi; Bosch, Ricardo J. (2022) Bisphenol A Exposure and Kidney Diseases: Systematic Review, Meta-Analysis, and NHANES 03–16 Study. Proceedings of the VII Congreso de Señalización Celular, SECUAH 2022. 14 a 18 de marzo, 2022. Universidad de Alcalá. Alcalá de Henares, Madrid. España. *dianas* 11 (1): e202203b04. ISSN 1886-8746 (electronic) journal.dianas.e202203b04 <http://www3.uah.es/dianas?e202203b04>. URI <http://hdl.handle.net/10017/15181>

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