

Continuous handling of receipts linked to higher urine BPA levels

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Study participants who handled receipts printed on thermal paper continuously for 2 hours without gloves had an increase in urine bisphenol A (BPA) concentrations compared to when they wore gloves, according to a study in the February 26 issue of *JAMA*.

Human exposure to bisphenol A (BPA) has been associated with adverse health outcomes, including reproductive function in adults and neurodevelopment in children exposed shortly before or after birth. "Exposure to BPA is primarily through dietary ingestion, including consumption of canned foods. A less-studied source of exposure is thermal receipt paper, handled daily by many people at supermarkets, ATM machines, gas stations, and other settings," according to background information in the article. Thermal paper has a coating that is sensitive to heat, which is used in the process of printing on the paper, and has been shown to be transferred to skin with handling.

Shelley Ehrlich, M.D., Sc.D., M.P.H., of Cincinnati Children's Hospital Medical Center, and colleagues conducted a study to examine the effect of handling thermal receipts on urine BPA levels. The authors recruited 24 volunteers who provided [urine samples](#) before and after handling (with or without gloves) of receipts printed on [thermal paper](#) for a continuous two hours. BPA was detected in 83 percent (n = 20) of urine samples at the beginning of the study and in 100 percent of samples after handling receipts without gloves. The researchers observed an increase in urinary BPA concentrations after continuously handling receipts for 2 hours without gloves, but no significant increase when the participants

used gloves.

The clinical implications of the height of the peak level and of chronic exposure are unknown, but may be particularly relevant to populations with occupational exposure such as cashiers, who handle receipts 40 or more hours per week, the authors write. "A larger study is needed to confirm our findings and evaluate the clinical implications."

More information: *JAMA* [DOI: 10.1001/jama.2013.283735](https://doi.org/10.1001/jama.2013.283735)

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