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## Handling of Thermal Receipts as a Source of Exposure to Bisphenol A

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Human exposure to bisphenol A (BPA) has been associated with adverse health outcomes, including reproductive function in adults<sup>1</sup> and neurodevelopment in children exposed perinatally.<sup>2</sup> Exposure to BPA is primarily through dietary ingestion, including consumption of canned foods.<sup>3</sup> A less-studied source of exposure is thermal receipt paper,<sup>4</sup> handled daily by many people at supermarkets, ATM machines, gas stations, and other settings. We hypothesized that handling of thermal receipts significantly increases BPA exposure, but use of gloves during handling minimizes exposure.

### Methods

In 2010–2011, after obtaining written informed consent, we recruited Harvard School of Public Health students and staff (aged >18 years, nonpregnant) via informational fliers and e-mail. No sample size calculation was performed for this pilot study, which was approved by the Harvard University institutional review board.

We used a simulation cross-over study design. At the first simulation, participants printed and handled receipts continuously for 2 hours without gloves. After a washout period of at least 1 week, a second simulation was conducted in which participants repeated handling of

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**Author Contributions:** Dr Ehrlich had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

*Study concept and design:* Ehrlich, Smith, Hauser.

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**Disclaimer:** The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC). The involvement of the CDC was determined not to constitute engagement in human subjects research.