



On The Money

BPA in Dollar Bills and Receipts

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Sponsors

Safer Chemicals, Healthy Families

www.saferchemicals.org

The Safer Chemicals, Healthy Families coalition represents more than 11 million parents, health professionals, advocates for people with learning and developmental disabilities, reproductive health advocates, environmentalists, and businesses from across the nation who are united by our common concern about toxic chemicals in our homes, places of work, and products we use every day.

Washington Toxics Coalition

www.watoxics.org

Washington Toxics Coalition protects public health and the environment by eliminating toxic pollution. WTC promotes alternatives, advocates policies, empowers communities, and educates people to create a healthy environment.

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Editorial Review

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Executive Summary



A hormone-disrupting chemical, linked to serious health problems such as cancer, infertility, and early puberty, has invaded something we use every day. The chemical is bisphenol A (BPA), and that something is money. The Safer Chemicals, Healthy Families Coalition and Washington Toxics Coalition set out to track down the trail of BPA in our bodies and lives by testing cash register receipts (already shown to commonly contain BPA) and the money in our wallets.

We collected receipts and dollar bills from a total of 20 states and Washington, D.C. and tested them for BPA. The results demonstrate that BPA, shown to raise hormonal havoc in both laboratory and human studies, has escaped from other products, most likely receipts, to contaminate our money supply. We also tested whether the BPA that coats receipts transfers to skin.



Findings

- 1. About half of thermal paper receipts are made with large quantities of unbound BPA.** We collected receipts made with thermal paper from 22 retailers in 10 states and Washington, D.C. Laboratory tests found BPA in very large quantities—up to 2.2% of the total weight—in 11 of the 22 receipts. Since BPA used in thermal paper is not chemically bound, it is free and able to come off onto skin, money, and other objects.
- 2. BPA transfers easily from thermal paper receipts to human skin.** In tests mimicking typical handling of receipts, BPA transferred from receipts to fingers. Just ten seconds of holding a receipt transferred up to 2.5 micrograms. Testers transferred much higher amounts, about 15 times as much, by rubbing receipts.
- 3. Unregulated use of hormone-disrupting BPA has contaminated our money supply.** Since the BPA in thermal paper receipts is present in a powdery film, we suspected it could easily travel from those receipts to other objects. We tested 22 dollar bills and found BPA in 21 of 22 dollars tested. Because of its unregulated use, BPA now contaminates something virtually all of us use every day: paper currency. It is very likely that BPA contaminates many other objects we use regularly. To the best of our knowledge, this is the first-ever test conducted to measure how much our paper currency is contaminated with BPA.

Conclusions

The BPA in receipts and on the money in our wallets is a direct result of the absurdly lax controls on chemicals in the United States. Half a century ago, paper makers found that they could make cheap paper that essentially contained its own ink, using a chemical already produced in large amounts. Thermal paper was born, and the chemical was BPA. Today, paper companies produce massive quantities of thermal paper for uses from gas station and grocery store receipts to medical papers and lottery tickets. That this paper contains—and releases—BPA has come as a surprise to most people who use receipts and medical papers. No label states the presence of BPA on thermal paper, and few would anticipate the chemical on paper currency.

Continual surprises regarding where chemicals are used constitute just one of many problems with the federal law regulating chemicals, the Toxic Substances Control Act (TSCA), passed in 1976. TSCA gives the U.S. Environmental Protection Agency (EPA) very limited authority to require safety testing of chemicals, and the agency has required testing of only a few hundred of the approximately 80,000 chemicals in commerce since 1976. Of that large number of chemicals, 62,000 were grandfathered under the law with no requirement for testing or safety assessment. Manufacturers introducing new chemicals after TSCA's passage must notify EPA of the new chemical, but don't have to test it for health and safety. Perhaps most importantly, nothing in the law ensures that chemicals in products are safe or that the safest alternatives are used.

Recommendations

More than thirty years after TSCA's passage, both the U.S. Senate and the U.S. House of Representatives have introduced bills to update this failing policy. With this legislation, we now have an opportunity to make sure that manufacturers use only the safest chemicals, keeping hormone-disruptors and cancer-causers out of our products, homes, and bodies.

The 112th Congress should make reform of TSCA a top legislative priority, ensuring that new federal law contains the following provisions for safer chemicals:

Act fast to eliminate the worst chemicals. Chemicals that can cause cancer, disrupt hormones, cause reproductive harm and infertility, or cause learning disabilities have no place in the products we bring into our homes. New law must reduce or eliminate the use of known toxics on a strict timeline.

Chemical manufacturers must provide robust health and safety information. EPA should have the authority to require companies to provide thorough health and safety information for their chemicals. Such health and safety information would have revealed, for example, that BPA is absorbed through skin.

Consider impacts from multiple exposures and multiple chemicals.

Traditional risk assessment that evaluates risk from single sources of chemical exposure just doesn't work in a world where people are exposed to BPA from food cans, water bottles, receipts, and even money. EPA's assessments must use the best scientific methods and protect the most vulnerable among us, such as pregnant cashiers facing high BPA exposure on the job.

Reward innovation that leads to new, safer chemicals. New law should expedite the approval of new chemicals that are inherently low-hazard and/or would serve as safer alternatives for problematic uses of existing chemicals such as BPA. Innovative companies could use this expedited approval to meet the growing global market for safer chemicals.



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