No, BPA Levels in Humans Have Not Been Dramatically Underestimated

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Well over 100 biomonitoring studies conducted worldwide have consistently demonstrated that human exposure to BPA is extremely low and well within safe exposure limits. Now a new, small-scale study suggests that human exposure to BPA has been "dramatically underestimated." Regrettably, the study has been misinterpreted in the media, turning it into the "scare story" du jour.

This might be news if it was true, but is it, and how do we know? It has been well-known for many years that BPA is efficiently converted in the body after exposure to a biologically inactive metabolite, which is then rapidly eliminated from the body in urine. Biomonitoring studies rely on these physiological processes to measure exposure to BPA using well-established analytical methodology.

More specifically, the metabolite of BPA that is eliminated in urine is converted in the laboratory with the aid of an enzyme back to BPA itself, which is then easily measured with sensitive analytical instruments. Exposure to BPA (i.e., how much BPA goes into the body) is readily determined by how much BPA comes out of the body in urine.

In the new study, the authors were unsuccessful in implementing this well-established methodology in their laboratory. They claim that the enzymatic reaction doesn't actually work that well, with the result that much of the BPA metabolite in urine is overlooked. If this is true, exposure to BPA would be underestimated.

The authors then suggest that the U.S. Food and Drug Administration (FDA) and the U.S. Centers for Disease Control and Prevention (CDC) failed to properly validate the analytical

method. Surprisingly though, after pinning the blame on FDA, the authors make no mention of the extensive research published by FDA and others that conclusively demonstrates the analytical method is, in fact, valid and reliable.

Of particular note are two studies conducted jointly by FDA with the U.S. National Toxicology Program and with the Pacific Northwest National Laboratory. In each study, human volunteers were dosed with a measured amount of BPA. Urine from the volunteers was collected after exposure and analyzed in FDA's laboratory with the well-established analytical method.

In both of these studies, the dose of BPA administered to the volunteers was quantitatively recovered in urine, demonstrating conclusively that the analytical method is valid and does not underestimate BPA. Similar results were published more recently in a study from researchers at the University of Alberta and Stockholm University, and earlier in two studies from researchers at the University of Würzburg and in a study from researchers at the Bavarian Health and Food Safety Authority.

In each of these studies, any discrepancy in the analytical method would have been obvious since the human volunteers were dosed with known amounts of BPA. In each case, the known dose was quantitatively found in urine, which demonstrates that the analytical method accurately measures exposure to BPA. These studies provide strong reassurance that the results of biomonitoring studies that rely on this methodology accurately measure human exposure to BPA.

In spite of the scary headlines generated by the new study, there is no cause for alarm. As demonstrated by more than 100 biomonitoring studies worldwide, using a valid analytical method, human exposure to BPA is extremely low and well within safe limits.