The National Academy of Sciences Comments on BPA

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SAFETY

Last week an expert committee of the National Academy of Sciences (NAS) released a report with the esoteric title “Application of Systematic Review Methods in an Overall Strategy for Evaluating Low-Dose Toxicity from Endocrine Active Chemicals.” I’m guessing that one slipped by under your radar screen. Just reading the title might deter you from reading any further, but keep reading this blog since the report revealed a very important observation about bisphenol A (BPA).

For 20 years or more, scientists have understood that some chemicals, known as endocrine active chemicals (EAC), can interact with our endocrine system and potentially cause health effects. But as a developing area of science, it has been a challenge for regulatory agencies to know what to do with the deluge of new scientific information on EACs, which is why the U.S. Environmental Protection Agency (EPA) asked for guidance from NAS.

One aspect of the challenge is the claim that low levels of EACs – levels that are currently considered to be safe – might cause health effects that are not detected by conventional toxicity testing. Of particular interest are levels that are in the range of actual human exposure.

BPA, which is primarily used to make polycarbonate plastic and epoxy resins, is considered to be an EAC. Because it exhibits weak endocrine activity, scientists worldwide have been fascinated by BPA and have conducted hundreds of studies on laboratory animals.

Many of the studies suggest that low levels of BPA could cause health effects, which has

attracted controversy and considerable media attention. But the relevance of these studies to human health has not been fully resolved.

The NAS committee addressed that question by using BPA to illustrate how new data can help to address uncertainty. The illustration highlighted recent research from the U.S. National Toxicology Program and the U.S. Food and Drug Administration (FDA) that effectively defined actual human exposure levels for BPA.

Knowing actual human exposure levels is very important for understanding the relevance of toxicity studies to human health. Studies that examine levels in the range of actual human exposure are likely to be the most relevant studies for human health.

What the NAS committee observed is worth quoting in its entirety:

"Such concentrations [i.e., actual human exposure levels] are well below those studied in most *in vitro* and *in vivo* experimental studies, so **most studies reporting "low dose" effects of BPA do not directly inform whether BPA can cause effects at current human exposure levels.**" (emphasis added)

In other words, of the hundreds of studies on BPA, most are of limited relevance for human health because actual human exposure levels are well below the levels tested. This observation provides additional strong support for government bodies around the world that have evaluated these studies and concluded that BPA does not pose a risk to human health.

A prime example is FDA, which asks the question "Is BPA safe?" on its website and answers unambiguously – "Yes." Similarly, the European Food Safety Authority recently stated "BPA poses no health risk to consumers of any age group (including unborn children, infants and adolescents) at current exposure levels."