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UN takes no action on BPA

Experts stop short of calling for safety standards, say food is main source of chemical



Image credit: WHO/P. Viro

Regulations to limit exposure to bisphenol A (BPA) are premature in light of current evidence of potential health risks, concluded¹ a panel of international experts convened by the World Health Organization (WHO) and the Food and Agriculture Organization (FAO).

In a **meeting** held last week in Ottawa, Canada, more than 30 scientists discussed whether safety standards for the chemical should be introduced by the Codex Alimentarius Commission. After reviewing the latest human studies linking adverse effects with exposure to BPA at levels lower than current safety limits, they concluded that this evidence is preliminary and should be confirmed with additional research.

The panel also ruled that although the chemical can find its way to the human body through various sources including house dust and toys, BPA leaching from food containers is "by far" the main source of exposure.

"These are important conclusions that will help to direct further research," said Angelika Tritscher, WHO toxicologist, at the meeting. "Several important studies are already in progress that will help to clarify the extent of human health impact of this chemical."

The verdict follows the recent **publication** of data showing for the first time that the chemical can cross human skin cells. The study indicates that touching surfaces leaching BPA may be a source of exposure, and echoes concerns raised by previous **research** suggesting that sources other than food could be adding substantially to the body burden of the chemical.

A separate **study** also published online last month shows that among a sample of pregnant women tested for urinary BPA, a small number working as cashiers had the highest concentrations. The authors say their findings may be explained by the contact cashiers have with carbonless paper receipts, most of which contain BPA.

Pregnancy and early infancy are considered the most vulnerable periods for adverse effects of exposure to the chemical. Recent human studies have linked exposure to BPA *in utero* with a higher risk of **premature birth** and **aggressive behaviour** in children.

This month, the first study² to measure the chemical in the urine of healthy infants detected BPA at levels well below the current tolerable daily intake level (TDI), which stands at 50 µg per kg of body weight. Fewer than half of 91 urine samples collected from 47 infants aged 1–5 months tested positive for the chemical.

The authors, led by Wolfgang Völkel of the Bavarian Health and Food Safety Authority in Oberschleißheim, Germany, found concentrations at a maximum of 17.85 µg per litre of urine. They calculated that this indicates exposure that falls 18 times below the TDI level. The median concentration indicated exposure 1400-fold lower than the TDI, with bottle-fed infants having levels about two times higher on average.

Most of the BPA was detected in a conjugated form, rather than the free form thought capable of affecting the endocrine system. This suggests that infants' ability to metabolise the chemical is more advanced than previously thought, according to the authors.

The findings are consistent with a previous study on premature infants, which showed median BPA levels of 30 µg/l and a low proportion of free chemical circulating in their bodies.

But what remains under debate is whether the current safety limits are protective enough. Evidence of low BPA levels in infants is far from reassuring for scientists and advocates calling for the TDI to be revised downwards in light of research linking adverse health effects to lower concentrations of BPA. A risk of premature birth and aggressive behaviour has been found in studies that measured urinary BPA levels lower than 7 µg/l during pregnancy.

Health authorities differ in their interpretations of the research. In agreement with the judgment by the WHO/FAO expert panel, the European Food Safety Authority ruled against revising safety standards, saying that the human studies don't fulfil quality criteria necessary to inform risk assessment. US health authorities also find the data inconclusive but urge voluntary action to limit exposure. Taking a more precautionary stance, Canada recently added BPA to an official list of chemicals subject to regulation.

References and link

1. Food is major source of exposure to bisphenol A. WHO, 2010. [Press release](#)
2. Völkel W, Kiranoglu M, Fromme H. Determination of free and total bisphenol A in urine of infants. *Environ Res* 2010. doi: [10.1016/j.envres.2010.10.001](#)

[US Food and Drug Administration information](#) on bisphenol A

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