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## BPA linked with premature birth

Preliminary data add to potential risks as health authorities give conflicting verdicts on safety



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A handful of human studies have linked exposure to the controversial chemical bisphenol A (BPA) with miscarriage and other risks to reproductive health. Now, research in Mexico City suggests that women exposed to the chemical may run a higher risk of delivering their baby prematurely.

"Women who delivered [following] less than or equal to 37 weeks of gestation... had higher concentrations of BPA in their urine compared to women delivering after 37 weeks," write David Cantonwine, of the University of Michigan School of Public Health in the USA, and colleagues from the National Institute of Public Health in Cuernavaca, Mexico, and the US Centers for Disease Control and Prevention.

The findings, published in *Environmental Health* this week, are based on limited data. They also contradict earlier studies that found no relationship between the exposure and length of pregnancy.

A long-standing **debate over the risks** posed by exposure to BPA has prompted regulatory authorities to re-evaluate the safety of the endocrine-disrupting chemical, which is used widely in the manufacture of various products including plastic food containers.

The World Health Organization and Food and Agriculture Organization are due to hold an **expert meeting in early November** to discuss whether any safety standards should be introduced by the Codex Alimentarius Commission to limit exposure to the chemical.

About a month ago, on 23 September, Canada **added BPA** to the official list of toxic substances subject to regulation — nearly two years after becoming the first country to **ban** use of the chemical in the manufacture of polycarbonate baby bottles.

On the same day the European Food Safety Authority **ruled against revising BPA safety standards** in place since 2006, saying that an expert review of scientific studies found no new data to justify tightening rules against the chemical.

US health officials are still evaluating research on risks associated with exposure to the chemical. In a **statement issued** in January this year, the Food and Drug Administration said that recent studies "provide reason for some concern". But in light of inconclusive evidence, the agency is urging industry to switch to safer alternatives among other "reasonable steps" to reduce exposure.

Traces of BPA have been detected in the vast majority of the population in the USA and other countries. Concerns over safety were raised after studies found that the chemical leaches from plastic containers, including baby bottles. In addition to evidence that the chemical can harm some of the body's functions including hormone regulation and reproductive development, recent human studies have implicated BPA in chronic disease and hyperactive behaviour in children,

In the first assessment of exposure to the chemical in Mexico, which was based on information available from a national birth cohort, Cantonwine and colleagues took a one-time measure of BPA concentrations in the urine of pregnant women during their last trimester.

"BPA was detected in 80%... of the samples with total concentrations ranging from 0.4 µg/L to 6.7 µg/L," they write.

The concentrations are similar to those detected in pregnant women in the Netherlands and the USA, according to the authors — indicating a potential risk at levels typical of everyday exposure in developed countries.

They then compared how these levels differed between 30 women who delivered their baby prematurely — before 37 weeks of gestation — and 30 women who delivered during the normal term. The analysis took into account other factors that could affect the risk of premature birth, including parity and maternal education.

Women with elevated concentrations of the chemical were more likely to have given birth before or on the 37th week of gestation, but the relationship was not statistically significant. "When cases were further restricted to births occurring prior to the 37th week (n=12), the odds ratio... was larger and statistically significant," write the authors.

For every unit increase in levels of BPA among the women in the study, the length of gestation dropped by about five days. But the authors caution that the findings are based on a small sample size and a single measure of exposure to the

chemical.

#### Reference and link

1. Cantonwine D, Meeker JD, Hu H, Sanchez BN, Lamadrid-Figueroa H, Mercado-Garcia A, *et al*. Bisphenol A exposure in Mexico City and risk of prematurity: a pilot nested case control study. *Environ Health* 2010, **9**:62. doi: [10.1186/1476-069X-9-62](https://doi.org/10.1186/1476-069X-9-62)

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

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