

Details on the methods for modeling the benefits

Information note: This document details the methods used for calculations presented in the Scientists' Coalition's policy brief on Article 3. See the [original policy brief](#) for more information.

We used the following methods to estimate the health benefits and cost savings achieved with the different scenarios for regulating Bisphenol A, using a single health outcome, childhood obesity.

For scenario 1, we assumed a business-as-usual scenario where the current annual burden of disease and associated costs associated with all exposures to Bisphenol A would remain stable because it would not be regulated in the treaty. We used data on the annual cases of childhood obesity associated with all Bisphenol A exposures as well as burden of disease costs from [Attina et al. \(2016\)](#), that is, continued health impact of 75,400 cases of childhood obesity in the US and the EU per year, with an annual cost of 4.4 billion USD. We note that 97.5% of this burden of disease is associated with the use of plastics ([Trasande et al., 2024](#)) but did not correct for this because we considered all Bisphenol A exposures in scenarios 2 and 3.

For scenario 2, we assumed a regulation in line with the Chair's text presented after INC5 that suggests regulating BPA in "Toys and Children's products; Food contact material intended for children under 3 years of age". This regulation is expected to address a minor fraction of plastic food contact materials given that most food contact materials are not used or labeled for specific age groups. We assumed that this would completely remove the BPA exposures from plastic-packaged infant formula, plastic toys and other plastic children's products but not address exposures from background contamination of drinking water, from breast milk, dust and air. We used exposure data from the European Food Safety Authority's [2015 assessment of Bisphenol A](#) to predict reductions of exposure by completely removing the exposure attributed to infant formula, plastic toys and other children's products during the first six months of life, as this was the most granular data provided in EFSA's datasets. It is important to note that the numbers, as reported by EFSA, are based on the assumption that Bisphenol A-containing polycarbonate baby bottles are no longer in use. Accordingly, in countries that still use such bottles, exposure of formula-fed infants would be higher. The

calculations led to a decreased exposure of 20–51% for formula-fed infants and of 1–2% in breastfed infants. Given that children are especially sensitive to Bisphenol A during infancy, a reduction of exposure during their first six months were, in this optimistic scenario, assumed to lead to a corresponding decrease in childhood obesity. Adjusting for the percentage of children **that are formula-fed** and comparing to the annual cases of childhood obesity associated with BPA, this scenario therefore led to potentially 8,500–20,300 cases of childhood obesity being prevented (a 11–17% reduction in cases), which, in turn, reduces the associated health cost by 0.5–1.2 billion USD per year.

It is important to note that EFSA's data show that breastmilk is a major source of exposure to Bisphenol A in young children. This indicates that removing the chemical from plastics intended for children only will not sufficiently protect breastfed children and highlights the need to reduce the exposure of their mothers as well. Accordingly, we expect that a product-specific regulation will have less benefits in countries with high breastfeeding rates.

In scenario 3, we assumed regulation of Bisphenol A in all plastics. Similar to scenario 2, we optimistically removed all exposures from the diet, including that of breastfed infants, assuming that the chemical would not be used in any plastic food contact material and thereby not be present in breastmilk. We only retained exposures from dust and air noting that such exposures would decrease over time once Bisphenol A is no longer released from plastics. Accordingly, we predict a total reduction of childhood obesity cases of 82–88% (61,800–66,400 cases prevented). This would save health costs of 3.6–3.9 billion USD annually.

The predictions presented here represent estimations and could be further refined in the future. For instance, we optimistically assume that the implementation of Scenario 2 or 3 would be completely efficient in removing Bisphenol A exposures from the addressed sources. We also assumed optimistically that childhood obesity can be fully prevented by not exposing infants younger than six months to Bisphenol A, noting that in utero and later exposures will contribute to the disease. Moreover, we assumed that BPA would not be substituted with similar bisphenols associated with similar health concerns since that type of "regrettable substitution" is likely to decrease or eliminate the health benefits.