



BISPHENOL-A OVERVIEW

A brief history

Bisphenol-A (BPA) is one of the most universal chemicals in modern life. It is most commonly used as a building block of polycarbonate plastic and can be found in baby bottles, water bottles and other food containers. It is also used as a coating for metal food cans, dental sealants and countless other products.

More than 2 billion pounds of BPA are produced in United States each year; globally more than 6 billion pounds are produced.

BPA was originally synthesized in 1936 as an estrogen replacement therapy but was discarded in favor of other therapies. By the late 1940s, BPA had been rediscovered by polymer scientists and quickly became a mainstay in the plastics industry.

Exposure to BPA Widespread

BPA is an unstable polymer, meaning that the chemical bonds between molecules can be easily disrupted by heat, acidic conditions or basic conditions. Once these bonds break, BPA leaches out of the plastic and enters into food and ultimately into people. Most people are exposed to BPA every day. In fact, CDC researchers have found BPA in 95 % of samples they tested. It has also been found in blood samples from developing fetuses as well as the surrounding amniotic fluid.

Hormonal system disruption from BPA exposure, even at low doses

Since BPA was originally developed to mimic estrogen, it is no surprise that many studies indicate that BPA is an endocrine disrupting compound or alters normal hormonal function. BPA has been shown to act through the same response pathways as natural estrogen, meaning that once in the body, BPA is treated as if it were natural estrogen and can produce the same effects as natural estrogen.

Even at very low doses, BPA is able to interrupt the chemical conversation that occurs in the body's hormonal system. **More than 130 studies** suggest that BPA exposure at very low doses is linked to a staggering number of health problems, including prostate and breast cancer, obesity, attention deficit and hyperactivity disorder, brain damage, altered immune system, lowered sperm counts, and early puberty. Even minuscule amounts- parts per billion or parts per trillion- have been shown to disrupt normal prenatal development.

Timing of exposure matters: children and pregnant women most at risk

Children's exposures begin at conception, as chemicals, including BPA, cross the placenta in a pregnant woman's body and can affect the embryo or fetus during critical periods of development. Exposure to BPA during infancy, childhood or pregnancy is of particular concern to scientists. Growing infants and children are not just little adults. Their brains and other organ systems are constantly developing, undergoing periods of particular sensitivity to damage. Any disruption to their hormonal system during development can set the stage for later life diseases like breast cancer and prostate cancer.

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