

## **BPA: An Unequal Opportunity Destroyer**

Written by: Stephanie Gross

Researched by Stephanie Gross, Amber Cook and Britta Gutschenritter – Edited by Alex Bryant

When people think of Bisphenol A (BPA) one thing comes to mind: plastic bottles, primarily reusable water bottles and baby bottles. We have all come across the stickers that proudly advertise “BPA Free.” Unfortunately, it seems that this is usually where the knowledge and discussion ends. What is Bisphenol A? BPA is used as a building block for certain types of plastics and metal coatings, found in many more products than the average plastic bottle. It has been shown to alter several hormone signaling pathways<sup>1</sup>. This is a serious problem according to Calafat, since “more than 90% of the U.S. population has detectable levels of urinary BPA”<sup>2</sup>.

Beyond plastic bottles, Bisphenol A can be found in many other frequently-used items, including dental sealants, eyeglasses, food containers, metal cans and medical devices<sup>3</sup>. The chemical can leach into food and beverages inside these containers, especially if the container is heated. When we consume seemingly harmless gulps of water or bites of canned peas, we are also ingesting trace amounts of BPA. Further, ingestion is not the only way that BPA has been found to contaminate our lives. It can also enter our body through our skin and simply when breathing<sup>4</sup>. The body can absorb BPA when in contact with household dusts and the printed side of receipts. In the long term, high dose exposure to Bisphenol A can be harmful to anyone at any age; however, BPA is particularly damaging to fetuses, infants and young children, in smaller amounts<sup>5</sup>. Children are especially susceptible because they are more physiologically, developmentally, and behaviorally sensitive than adults. Children have a higher surface-area-to-body ratio, they eat more food, drink more water, and have a higher rate of respiration per minute ventilation<sup>6</sup>. This means that parents need to be particularly careful not to give harmful plastic products to their children.

The prenatal period is a very important time in a child's life. Many long term health problems have been found as a result of prenatal exposure to BPA. Exposure at all points in life can also be harmful, most of the effects seen in later life are caused by higher doses.

### Effects of BPA

Prenatal	Childhood	Adulthood
Increased levels in Mother's urine linked to: <sup>1</sup> disruptive behaviors aggression anxiety disorder oppositional defiant disorder depression conduct disorder traits	Lowers metabolism <sup>8</sup>  Increases chances of being overweight <sup>8</sup>	Cancer-causing <sup>9</sup>  Researched linked to breast and prostate cancer  Recurrent miscarriages <sup>10</sup>  Increases men's risk for sexual dysfunction <sup>11</sup>
Difficulty fighting infections <sup>7</sup>		Interferes with hormone feedback system <sup>12</sup>
Increased risk for developing allergies <sup>7</sup>		Decreases men's interest in sex <sup>11</sup>

The effects of BPA are life-long, stretching throughout different stages. Breastfeeding mothers must remember that anything put into her body, her baby also ingests, including BPA<sup>16</sup>. Prenatal exposure may not show its effects until childhood or later. Being cautious and aware of exposure is important at any life stage.

Environmental injustice plays a role in the increased vulnerability certain populations have for BPA exposure. A research study from Cincinnati, Ohio shows that higher BPA concentrations are associated with lower income levels. More specifically, this study observed that BPA levels are higher in individuals who work as cashiers, those who consume more canned vegetables, and those with a higher exposure to tobacco smoke. In many cases, individuals who work as cashiers or consume canned foods more often than fresh, live in a situation of lower socioeconomic status<sup>13</sup>. It's not hard to jump to the conclusion that the higher price of glass versus plastic adds to

this situation of injustice. Even within plastics there is a separation of quality and price between various types and when healthier alternatives are not available to lower-income families, higher incidence of disease, any disease, becomes a social and environmental justice issue.

In regards to policy, very little controls the use of BPA. In July 2012, the FDA banned manufacturers from using BPA in baby bottles and sippy cups; however, BPA still can legally be used in all other products<sup>14</sup>. Similar substances, Bisphenol S (BPS) and Bisphenol F (BPF), currently replace BPA in many plastic products. However, BPF and BPS have not proven to be the safer alternative that the general public, researchers, and health professionals were hoping for<sup>4</sup>. “The chemicals have the same function [as BPA], which usually means they’re similar in structure, and therefore have similar health effects,” says Lindsay Dahl, deputy director of the organization Safer Chemicals, Healthy Families<sup>17</sup>.

Now the question is: how to prevent exposure to Bisphenol A? There are several ways to decrease your own and your family’s exposure to BPA:

1. Use glass or non-PC plastic bottles<sup>15</sup>
2. Decrease consumption of canned foods
3. Do not microwave food or drinks in plastic
4. Do not handle paper receipts and have them emailed to you instead
5. Be aware of the products around you

The more you know about the products that you use, the more you are able to make informed decisions and prevent harm from being done to you and your family.

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