pennsylvania
DEPARTMENT OF HEALTH

August 16, 2010

Bisphenol A (BPA) Fact Sheet

What is Bisphenol A?

- Bisphenol A, more commonly known as BPA, is a chemical produced in large quantities used to make polycarbonate plastics and epoxy resins.

Are there commercial uses for this compound?

- Polycarbonate plastics containing BPA are used in food and drink packages. These include many hard plastic food containers such as baby bottles and reusable cups.
- Resins containing BPA are used to coat metal products. These include the lining of metal food and beverage cans, canned liquid infant formula, bottle tops, and certain water supply pipes.
- Some dental sealants and tooth coatings also contain BPA.

Is BPA present in the environment?

- BPA is not a naturally occurring compound. However, it may be present in the environment as a result of emissions from manufacturing facilities during processing and handling or it can be released from the products directly.
- If BPA is released into the atmosphere it is rapidly broken down.
- If present in water, BPA is not likely to be significantly removed through evaporation.
- BPA in surface water is estimated to degrade over a period of 3 to 4 days.
- BPA moderately adsorbs to soils or sediments. Some studies show that BPA rapidly dissipates from soils in as little as 3 days.
- Studies show that BPA is not readily available to be taken up by plants.
- The potential for BPA to accumulate in fish is low.

How are people exposed to BPA?

- Human exposure to BPA occurs commonly according to the National Toxicology Program.

- People are exposed to BPA through food or drink that has been in contact with items containing the chemical, especially if the item has been heated.

- Exposure to BPA may occur from eating canned foods, such as vegetables, foods stored in plastic storage containers or liquids in hard plastic water bottles.

- Exposure to BPA may occur from stretch film used in food packaging that contains the substance.

- Exposure to BPA may occur from the use of medical equipment, including tubes, catheters, and plastic bags containing intravenous fluids, that sometimes contain BPA.

- Exposure to BPA may also occur from the use of polyvinyl chloride (PVC) pipes, cash register receipts, and dental composites and sealants containing the substance.

- BPA in food and beverages and paper receipts account for the majority of daily human exposures.

- Occupational exposure can occur through direct contact with BPA in the workplace.

- Environmental exposure to BPA though air, dust, and surface water is minimal.

What happens to BPA once it enters the body?

- BPA is absorbed into the blood through the gut or skin and goes directly to the liver where it is extensively broken down. The remainder is almost all excreted in the urine within 24 hours.

- A 2008 study reported that almost 93% of individuals age six or older had detectable BPA levels in their urine. BPA urine levels were higher in children than adults.

- BPA is also present and excreted in breast milk.

How harmful is exposure to BPA?

- In humans, BPA may interfere with the production or activity of hormones.

- Human health effects from BPA at low environmental exposures are unknown. However, the National Toxicology Program (NTP) has *"some concern"* for potential effects on the brain, behavior, and prostate gland in fetuses, infants, and children at current levels of human exposure to BPA.

- The NTP has "*minimal concern"* for effects on the breasts and an earlier age for puberty for females, in fetuses, infants, and children at current human exposures to BPA.

- In the workplace, exposure to BPA dust may irritate the eyes, make skin sensitive, and cause dermatitis and eczema. Contact with BPA may burn the eyes, lips, and skin. Inhaling BPA can irritate the nose and throat, and cause coughing and wheezing. Exposure can also cause headache, nausea, abdominal pain, and vomiting.

Can exposure to BPA cause cancer?

- It is not yet known if exposure to BPA causes cancer in humans.

Are some people at greater risk of harm from BPA than others?

- Fetuses, infants, and children may be at greater risk of harm based on effects on the brain, behavior, and prostate gland.

Is there a medical test to show whether I've been exposed to BPA?

- Twenty-four hour urine collection and analysis is an accurate and reliable measure of BPA exposure.

Has the federal government made recommendations to protect public health?

- There are no federal standards or guidelines governing the safe use of BPA in food contact materials and no regulatory limits for occupational exposure to BPA in the US.

- In 2004, the American Industrial Hygiene Association proposed a workplace environmental exposure level of 5 mg/m^3 for BPA. The value is consistent with the exposure limits established in Germany and the Netherlands.

What can I do to prevent exposure to BPA?

- Do not microwave polycarbonate plastic food containers.

- Do not put very hot water, infant formula, or other liquids into BPA containing bottles while preparing them for your child.

- Do not heat cans of infant formula on the stove or in boiling water.

- Avoid plastic products that might contain BPA, such as plastic bottles with the letters PC or with recycling codes of #7 or #3.

- Do not wash polycarbonate plastic containers in the dishwater with harsh detergents.

- Reduce your use of canned foods. Eat fresh or frozen foods.

- When possible, choose glass, porcelain or stainless steel containers.

- Use infant formula bottles that are BPA free and look for toys that are labeled BPA-free.

Where can I get more information?

For more information, contact:

The Pennsylvania Department of Health, Division of Environmental Health Epidemiology, P.O. Box 90, Harrisburg, Pennsylvania, 17108. Telephone number: 717-787-1708 or visit the following websites:

U.S. Department of Health and Human Services: http://www.hhs.gov

U.S. Food and Drug Administration: http://www.fda.gov

Centers for Disease Control and Prevention: http://www.cdc.gov

U.S. Environmental Protection Agency: http://www.epa.gov

Consumer Product Safety Commission: http://www.cpsc.gov

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U.S. Department of Health and Human Services: Bisphenol A (BPA) Information for Parents @ http://www.hhs.gov/safety/bpa/index.html; searched August 5, 2010.

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