



Eco-Healthy Child Care®



Eco-Healthy Child Care® helps early childhood learning environments to be as healthy, safe and green as possible by reducing children's exposure to toxic chemicals.

Plastics & Plastic Toys

Health Concerns

Certain plastics are known to contain toxic chemicals which have negative impacts on human health. Children are particularly vulnerable to these toxic chemicals since their body systems and organs are still developing. Their bodies are small, so what may be a small dose for an adult may be a big dose with big effects for a child. Young children are also at greater risk since they often insert plastic objects into their mouths. Baby bottles, sippy cups, teething rings, and toys are often made with phthalates and Bisphenol A (BPA). These two toxic ingredients in plastics are of particular concern, as research increasingly shows that these chemicals mimic or suppress hormones (e.g., estrogen and testosterone) and disrupt normal development and growth.

Phthalates (pronounced THAL-ates)

Phthalates are a class of chemicals that are used to soften plastics, such as PVC (Polyvinyl Chloride), bind fragrances in products, and act as solvents and fixatives, such as nail polishes. Human exposure occurs through:

Inhalation- breathing in fragrances, or fumes from solvents and fixatives

Ingestion- chewing on a plastic toy creates small openings in the plastic, providing an avenue for leaching of chemicals from the toy into a child's mouth

Skin Absorption- lotion, perfumes, deodorants

Adverse health effects include: hormone disruption, developmental and reproductive problems, asthma, preterm birth, low sperm count, undescended testes, genital malformations, premature puberty, and development of some cancers.

Bisphenol A (BPA)

Bisphenol A is a hormone disrupter that is used to make polycarbonate plastic (hard clear plastic). Bisphenol A can be found in baby bottles, water bottles, sippy cups, regular drinking cups, canned food

liners, and receipts. Human exposure occurs primarily through ingestion - diet and sucking/mouthing plastics - and skin contact.

Adverse health effects include prostate cancer, breast cancer, miscarriages, birth defects, early puberty, low sperm count, hyperactivity and aggressiveness. Traces of BPA can be found in more than 90% of the U.S. population.

Tips for Using Plastics More Safely

Avoid Plastics with Recycling Codes: #3, #6, and #7 (Recycling codes, shown below, are found on bottom of the products- if products are labeled.)

#3 – Polyvinyl Chloride (PVC)



PVC (soft vinyl plastic) often contains lead and phthalates, and the production or destruction of PVC releases cancer-causing dioxins into the environment.

Products that likely contain PVC: Flexible plastic toys (rubber duckies, dolls, beach balls, infant bath books), bibs, rest/ nap mats, inflatable swimming pools, garden hoses, raincoats, wall paneling and flooring, window blinds, cosmetics, shower curtains, crib bumpers, imitation leather, and food packaging.

PVC Health Concerns: Cancer, birth defects, reproductive and developmental disorders, low sperm count, undescended testes, premature puberty, and liver dysfunction.

#6 – Polystyrene (PS) (commonly known as Styrofoam)



Toxic styrene can leach from polystyrene plastic.

Products that likely contain Styrofoam: cups and lids, carry-out containers, packaging "peanuts", food trays, disposable cutlery, toys, coolers and packaging for

meats, cheeses, and fish.

Styrofoam Health Concerns: Suspected carcinogen and neurotoxin.



#7 – Other (usually polycarbonate)

Bisphenol A (BPA) can leach from polycarbonate plastic and act as a hormone disrupter. However, not all #7 plastics contain BPA. More and more #7 plastics are being made with compounds that are BPA-free. Recycling code #7 can be considered the “catch-all” category. Dubbed as “Other,” #7 includes those resins that do not fit into recycling categories 1-6. Common materials include plant-based and bio-based plastics made from corn, potato or sugar derivatives. If so, they will be labeled “BPA-free” or something similar.

Note: BPA has sister compounds (BPS and BPF) that may be used as replacements for BPA; therefore a plastic may be “BPA-free” but may contain sister compounds. Be aware of these chemicals and avoid certain plastics labeled #7. Bisphenol products tend to be very hard and rigid (they cannot be flexed by the hand) and are generally see-through (even when colored and/or tinted).

Products that likely contain BPA: Hard, clear baby bottles, water bottles, sippy cups and regular drinking cups; canned food liners and receipts.

BPA Health Concerns: Prostate cancer, breast cancer, miscarriages, birth defects, premature puberty, low sperm count, hyperactivity, and aggressiveness.

Ten Tips for Safer Use of Plastics:

1. **Avoid plastics with recycling code #3, #6, and #7** (unless the product is made out of plant/ bio-based plastic).
2. **Purchase glass baby bottles with a silicon sleeve** or milky, opaque plastic bottles and sippy cups labeled “BPA free”.
3. **Never heat or microwave food or drink in any plastic containers**, even if the product says “microwavable” or “microwave safe”. Leaching of toxic chemicals from plastic to food or liquid may occur. Use a paper towel instead of plastic wrap to cover food in the microwave.
4. **Never heat plastic baby bottles.** When mixing formula, heat the water before mixing. When warming breast milk, use a glass bottle (remove the plastics cap).
5. **Use PVC-free plastic wrap** (buy plastic wrap and bags made with polyethylene).
6. **Eat fresh or frozen produce** - Minimize the use of canned foods and canned drinks as many are lined with BPA.
7. **Only buy “new” silicone teething toys** for infants and toddlers that are labeled “phthalate-free” or “PVC-free”.
8. **Purchase phthalate-free** and fragrance-free beauty products.
9. **Ask your dentist** for BPA-free sealants and composite fillings.
10. **Discard all worn or scratched plastic food containers**, especially baby bottles, sippy cups and infant feeding plates and cups.

Plastic Resources

- EPA Information for Parents and Providers about Plastics in Child-Care Settings
www2.epa.gov/childcare/information-parents-and-providers-about-plastics-child-care-settings
- Styrene
www.atsdr.cdc.gov/toxfaqs/tf.asp?id=420&tid=74
- Questions and Answers about Bisphenol A
www.niehs.nih.gov/health/topics/agents/sya-bpa/index.cfm
- Smart Plastics Guide for Parents and Children
myplasticfreelife.com/plastics_guide.pdf
- Eco-Healthy FAQs on Plastics
www.cehn.org/ehcc/toxFAQs

FOR MORE INFORMATION

Call: 202-543-4033, ext. 13

Email: ehcc@cehn.org

Visit: www.cehn.org/ehcc

Eco-Healthy Child Care® is a science-based, award-winning national program that seeks to improve the environmental health of children by partnering with child care professionals to eliminate or reduce environmental health hazards found in child care facilities.

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