

Healthy Legacy

Healthy people,
a clean environment
and a thriving economy



Guide to Safer Children's Products

Thousands of children's toys have been recalled recently because of lead paint. But lead is not the only worry. Many other chemicals used in children's products also pose health risks. Two of these are bisphenol A and phthalates. Both chemicals disrupt hormones in the human body.

Children are more vulnerable

Child development is a delicate biological process, guided in part by the body's own hormones acting at exquisitely low levels and affecting every cell, organ and function of the human body. Exposures to chemicals like phthalates and bisphenol A during critical times in development can disrupt this delicate process, resulting in lifelong health impacts.

PHthalates (pronounced thal-ates) are plasticizers used to soften vinyl products like teething rings, toys*, raincoats and bibs. It's also an ingredient in scented baby products and toiletries (soaps, shampoos and lotions). Children can ingest phthalates when they chew on vinyl products or inhale them from personal care products.

Phthalate exposure has been linked to demasculinization,^{1,2} low sperm count,³ adverse genital development in boys,⁴ hypospadias,⁵ premature breast development in girls,⁶ shortened length of pregnancy,⁷ and the development of asthma and rhinitis.⁸ Both human and animal studies support adverse effects from exposure to phthalates.

BISPHENOL A (BPA) is a chemical component of polycarbonate plastic used to make plastic toys, baby bottles and "sippy" cups. It is also used to line metal food cans, including infant formula cans. Children can ingest BPA that leaches out of these products.

Animal studies link early exposure to bisphenol A to breast cancer,⁹ prostate cancer,¹⁰ hyperactivity,¹¹ obesity,¹² low sperm counts,¹³ miscarriage,¹⁴ immune system alterations,¹⁵ insulin resistance,¹⁶ reproductive malformation,¹⁷ and more.

**Note: U.S. law prohibits phthalates in new children's toys, effective January 1, 2009. Phthalates could still be present in used toys.*

Body Burden

Hundreds of unwanted synthetic chemicals are present in the human body. They pass from mother to baby and are found in umbilical cord blood, as well as breast milk. They build up with the potential for long-term health impacts. BPA is found in the bodies of over 95% of Americans (children have the highest levels) and phthalates have been found in 100% of the population tested. These chemicals do not belong in our children's toys and they definitely do not belong in our bodies.



Low Doses Matter

Product manufacturers often claim that exposures to hormone-disrupting chemicals don't matter because the doses are so low. Emerging science shows that low doses do indeed matter. For example, BPA causes adverse effects on mammary cells at levels 2000 times lower than the EPA "safety" level, which is 50.0 parts per billion.¹⁸

To leave a healthy legacy, Minnesota
needs safe products and safe ways to make them.

There are Safer Products.

Chemical manufacturers and government agencies are still arguing that exposures are too small to have any ill effects. They said that about lead 50 years ago. Now we know better. Taking precautions is common sense. Choose products without toxic ingredients to protect the health and development of your children.

Forgo the fragrance.

Phthalates are a common ingredient in cosmetics and personal care products. Read the label and watch for DMP, diethyl phthalate (DEP), DBP and fragrance. Companies can legally list "fragrance" as an ingredient without identifying what exactly is in the fragrance. Since phthalates are often used as a fragrance fixative, play it safe and go fragrance-free. Search for specific products at CosmeticsDatabase.com.

Breast milk is best.

Hands down, breast milk is the healthiest and most cost effective first food. Some plastic baby bottles and breast milk storage units contain BPA and some infant formula cans are lined with plastic resins that leach BPA. Use glass bottles or those made from safer plastic. If you use formula, opt for powdered, which is less likely to absorb BPA from the lining of the can. (See insert for specific products.)



Get to know your plastics.

Plastics are commonplace in modern society, but some types of plastics are safer than others.



Not all #7 plastics are polycarbonate. Since #7 is a catch all category for plastics that don't fit into the #1-6 categories, it is used for polycarbonate, plastic mixtures, polyamide, co-polyester and also the new bio-based PLA plastic. If a #7 product is labeled PC, it's polycarbonate and contains BPA. If it's not labeled, you may have to contact the manufacturer to determine the type of plastic.

BAD:

PVC/vinyl raincoats, backpacks, bibs, boots, toys like teething rings and rubber duckies, polycarbonate bottles, "sippy" cups, baby dishes and utensils.



BETTER:

Melamine dishes, polyethylene, polypropylene or polyamide bottles.



BEST:

Glass bottles, ceramic dishes, toys made of wood or cloth.



Better Safe Than Sorry

We all do our best to prevent harm. We use car seats and child gates to protect young children. Taking steps to reduce exposure to synthetic chemicals is exactly the same. You may have unknowingly used products containing risky chemicals, but you can make safer choices to prevent future exposures by following the tips in this consumer guide.

The Institute for Agriculture and Trade Policy is one of the founding members of Healthy Legacy, a Minnesota-based coalition dedicated to safe products, made safely. For more information, email us at info@healthylegacy.org.

Be a conscious cook.

You can use plastics, but you don't need to eat them. Only use glass or ceramic in the microwave or for serving warm foods. Store foods in glass, ceramic or safer plastics (1, 2, 4, or 5—be sure to let the food cool down). Don't store acidic foods like tomato sauce or fatty foods like gravy in plastic. Discard worn plastic containers and hand wash plastic so it doesn't get worn out so quickly. Purchase fresh or frozen foods since many cans (even some labeled "organic") are lined with a resin that contains BPA.

Shop smart.

Why buy questionable products when safer alternatives are widely available? Purchase products made from safer materials like wooden and cloth toys or glass, stainless steel and ceramic containers. Use the Web sites below to find lists of specific products.

- HealthyLegacy.org: Find out more about safer products and how to make your school, your community and our world a safer place for children.
- HealthyToys.org: This easy-to-use database of over 1,200 toys reveals levels of five contaminants of concern: lead, mercury, cadmium, chlorine and arsenic.
- BPA.zrecs.com: Z Recommends has published two reports on BPA-free children's products and they are continually updating their information.
- Safecosmetics.org: A database for finding safer personal care products.

Contact your elected officials.

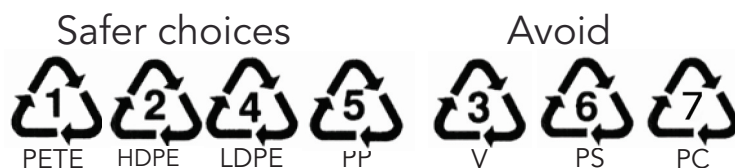
Encourage them to enact policies that protect public health from toxic chemicals in consumer products, especially in products designed for children.



Pocket Guide to Safe Children's Products

Plastics

- Choose safer plastics:



Personal Care Products

- Read the label: Purchase products that don't contain DMP, diethyl phthalate (DEP), DBP, or fragrance.

Unlabeled Products? Make a Call

- Text "zrecs" plus a company name and products category to 69866 to find out if a product contains BPA.
- Text "healthytoys" and toy name, toy manufacturer or retailer to 41411 to find out if a toy contains toxins.
- Look for the 1-800 number on the product box and call the manufacturer.

REFERENCES

- 1 Andrade AJM, Grande SW, Talsness CE, Grote K, Chahoud I. A dose–response study following in utero and lactational exposure to di-(2-ethylhexyl)-phthalate (DEHP): Non-monotonic dose–response and low dose effects on rat brain aromatase activity. *Toxicology*. 2006; 228(1):185-192.
- 2 Main KM, Mortensen GK, Kaleva MM, et al. Human breast milk contamination with phthalates and alterations of endogenous reproductive hormones in infants three months of age. *Environ Health Perspect*. 2006; 114(2):270-276.
- 3 Duty SM, Silva MJ, Barr DB, et al. Phthalate exposure and human semen parameters. *Epidemiology*. 2003; 14 (3):269 –277.
- 4 Swan SH, Main KM, Liu F, et al. Decrease in anogenital distance among male infants with prenatal phthalate exposure. *Environ Health Perspect*. 2005; 113(8):1056-1061.
- 5 Gray LE, Wolf C, Lambright C, et al. Administration of potentially antiandrogenic pesticides (procymidone, linuron, iprodione, chlozolinate, p,p'-DDE, and ketoconazole) and toxic substances (dibutyl- and diethylhexyl phthalate, PCB 169, and ethane dimethane sulphonate) during sexual differentiation produces diverse profiles of reproductive malformations in the male rat. *Toxicology and Industrial Health*. 1999; 15(1-2):94-118.
- 6 Colón I, Caro D, Bourdony CJ, Rosario O. Identification of phthalate esters in the serum of young puertorican girls with premature breast development. *Environ Health Perspect*. 2000; 108 (9): 895-900.
- 7 Latini G, De Felice C, Presta G, et al. In utero exposure to di-(2-ethylhexyl) phthalate and duration of human pregnancy. *Environ Health Perspect*. 2003; 111(14):1783-1785.
- 8 Bornehag C, Sundell J, Weschler CJ, et al. The association between asthma and allergic symptoms in children and phthalates in house dust: A nested case-control study. *Environ Health Perspect*. 2004; 112(14):1393-1397.
- 9 Murray TJ, Maffini MV, Ucci AA, Sonnenschein C, Soto AM. Induction of mammary gland ductal hyperplasias and carcinoma in situ following fetal bisphenol A exposure. *Reprod Toxicol*. 2007; 23(3):383-390.
- 10 Ho SM, Tang WY, Belmonte de Frausto J, Prins GS. Developmental exposure to estradiol and bisphenol A increases susceptibility to prostate carcinogenesis and epigenetically regulates phosphodiesterase type 4 variant 4." *Cancer Res*. 2006; 66(11):5624-5632.
- 11 Ishido M, Masuo Y, Kunimoto M, Oka S, Morita M. Bisphenol A causes hyperactivity in the rat concomitantly with impairment of tyrosine hydroxylase immunoreactivity. *J Neuroscience Res*. 2004; 76(3):423-433.
- 12 Masuno H, Kidani T, Sekiya K, et al. Bisphenol A in combination with insulin can accelerate the conversion of 3T3-L1 fibroblasts to adipocytes. *J Lipid Res*. 2002; 43(5):676-684.
- 13 Sakaue M, Ohsako S, Ishimura R, et al. Bisphenol A affects spermatogenesis in the adult rat even at a low dose." *J Occup Health*. 2001; 43:185-190.
- 14 Sugiura-Ogasawara M, Ozaki Y, Sonta S, Makino T, Suzumori k. Exposure to bisphenol A is associated with recurrent miscarriage. *Human Reprod*. 2005; 20(8):2325-2329.
- 15 Ahmed SA. The immune system as a potential target for environmental estrogens (endocrine disruptors): a new emerging field. *Toxicology*. 2000; 150(1-3):191-206.
- 16 Alonso-Magdalena P, Morimoto S., Ripoll C., Fuentes E., Nadal A. The estrogenic effect of bisphenol A disrupts pancreatic-cell function in vivo and induces insulin resistance. *Environ Health Perspect*. 2006; 114(1):106-112.
- 17 Gupta C. Reproductive malformation of the male offspring following maternal exposure to estrogenic chemicals. *Proceedings of the Society for Experimental Biology and Medicine*. 2000; 224(2):61-68.
- 18 Muñoz-de-Toro M, Markey C, Wadia PR, et al. Perinatal exposure to bisphenol A alters peripubertal mammary gland development in mice. *Endocrinology*. 2005; 146 (9):4138-4147.

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