

The Toxic Takeover of Baby Nurseries:
*Chemicals of Concern Found in Almost Every
Common Product and Furnishing*



Healthy Child Healthy World
January 2013

Introduction: Our Children's Health

We used to think the womb was an impermeable environment and the fetus could grow unharmed in this safe, protected space. Over time, we learned that this wasn't the case. Threats do indeed pass through the umbilical cord making pregnancy an extremely vulnerable time of development for a child. And now, we also know that the first months (and beyond) of an infant's life are also uniquely vulnerable and crucial to healthy development. Consider these facts:

- Pound-for-pound, children breathe more air, drink more water, and eat more food than adults. For example, the air intake of a resting infant is twice that of an adult.(1) The US Agency for Toxic Substances and Disease Registry (ATSDR) reported that "children in the first six months of life drink seven times as much water per pound as average American adults. Children one through five years of age eat three to four (or more) times as much food per pound body weight as average American adults."(2)
- From birth through childhood, children differ from adults in their ability to absorb, metabolize, and excrete contaminants. (3)
- Children's bodies are rapidly growing and developing. The unique developmental stages that are part of childhood make children more vulnerable to the harmful effects from exposures to certain hazards in the environment than adults. (3)
- Children are more likely than adults to come in contact with many of the contaminants around us each day. Children play on the floor where allergens—such as dust, and heavier-than-air chemicals—settle and collect. Also, young children put everything in their mouths, further exposing them in different ways than adults. (3)

Despite these known facts, the typical nursery is fraught with risky chemical exposures that can tremendously impact a child's health for life.

In January 2012, with the help of the Greenguard Environmental Institute, "Good Morning America" set out to investigate exactly what kind of threat indoor air pollution posed to the average baby by setting up a nursery with a new crib, changing table, rocker and decor.

After a week of testing, they discovered the air in their nursery contained 300 different chemicals—compared to just two right outside the window. (4) According to their findings, “the rocker in the nursery contained seven times California’s recommended level of formaldehyde, a chemical known to cause cancer. The crib mattress gave off more than 100 different chemicals, including industrial solvents and alcohols. Meanwhile, the paint used on the nursery’s walls contained chemical gases at five times the recommended limit.”(4)

And, that’s just the air.

Consider the dust, where chemicals cling after they’re released from slowly degrading cushions and textiles. (5) Consider the lotions and rash creams made with dozens of other chemicals that we smear on our babies’ skin day in and day out. Once you start examining all of the products and all of the potential exposures, the picture of risk is shocking.

Chemicals of Concern Commonly Found in the Nursery

- **1,4 –dioxane:** Contaminant found in shampoo and bubble bath. Probable human carcinogen. (6-8)
- **2-bromo-2-nitropropane-1,3-diol (or Bronopol):** Found in wipes. Skin irritant often contaminated with carcinogens. (9,10)
- **4-phenylcyclohexene (4-PCH):** Found in carpet backing. Eye and respiratory tract irritant that may also affect the central nervous system. Reacts with ozone in indoor air to create carcinogenic formaldehyde. (11-13)
- **Antimony Trioxide:** Used in paint pigment, plastics, adhesives, textiles, furniture, draperies, wall coverings and carpets. Respiratory irritant and probable carcinogen, among other things. (14,15)
- **Benzene:** Used in paints, plastics, and rubber. Known human carcinogen. (16)
- **Bisphenol A (BPA):** Used to make plastics. Associated with poor sperm count, early puberty, breast cancer, obesity, and other health disorders. (17-21)
- **Butylated Hydroxyanisole (BHA):** Used in fragrance and personal care products. Suspected human carcinogen, interferes with normal reproductive system development and thyroid hormone levels. (22,23)
- **Ceteareth:** Used in personal care products. Often contaminated with carcinogens. (24)
- **DEA (Diethanolamine), MEA (Monoethanolamine), TEA (Triethanolamine):** Used in shampoos, soaps, and bubble baths. Linked to hormone-disruption, can form carcinogens. (25-27)

- **Diazolidinyl urea & imidazolidinyl urea:** Preservatives used in care products. Release carcinogenic formaldehyde. (28)
- **DMDM hydantoin:** Preservative used in care products. Releases carcinogenic formaldehyde. (29)
- **Flame retardants:** Used in crib mattresses and most foam baby products like changing pads, car seats and cradle cushions. Linked to cancer, neurological impairments like hyperactivity, reproductive problems, thyroid problems, and hormone disruption. (30-34)
- **Formaldehyde:** Used in furniture and building materials made from pressed woods (particle board, chip board, etc), also a contaminant in care products. Known human carcinogen. (35)
- **Lead** – Found in paint in homes and buildings built before 1978, as well as PVC products. Potent neurotoxicant linked to behavioral problems and learning disabilities. (36-38)
- **Parabens** (Ethyl, Propyl, Isopropyl, Butyl, and Isobutylparabens): Found in care products. May disrupt the endocrine system and cause reproductive and developmental disorders. (26,39,40,41)
- **Perfluorinated chemicals (PFCs)** - Used in stain treatments for carpets and upholstery. Linked to cancer and reproductive/developmental effects in animal studies. (42-44)
- **Phthalates (DEHP, DINP, DBP, DEP, DIP):** Used in PVC plastic, personal care products, and wood finishes. Linked to cancer, hormone disruption, and reproductive/developmental effects. (26,45,46)
- **Polyethylene glycols (PEGs):** Used in care products. Often contaminated with carcinogens. (47-51)
- **Quaternium-15:** Preservative used in care products. Can cause allergic reactions and dermatitis, and breaks down into carcinogenic formaldehyde. (8, 52)
- **Sodium borate:** Used in care products. The cosmetics industry’s own safety panel states that sodium borate “should not be used on infant skin or injured skin.”(53)
- **Sodium lauryl sulfate (SLS) and sodium laureth sulfate (SLES):** Used in shampoo, bubble bath, and other care products. SLS irritates the skin and SLES can be contaminated with carcinogenic 1,4-dioxane. (47,52,54,55)
- **Styrene:** Used in plastics, coatings, and paints, insulation, and carpet backing. Can harm brain and central nervous system and may interfere with, mimic, or block hormones. (56)
- **Talc:** Used in baby powder. Linked to respiratory irritation and possibly cancer. (57-58)

- **Toluene:** Used in adhesives and paints. Linked to brain and central nervous system effects and interference with fetal and child development. (59)
- **Trichloroethylene:** Used in adhesives. Eye and respiratory irritant linked to cancer and nervous system, kidney, and liver damage. (8,60)
- **Xylenes:** Used in paints, lacquers, carpet adhesives, rubber, and leather. Eye, nose, throat, and respiratory irritation linked to developmental and nervous system impacts. (61)

Childhood Diseases on the Rise

What are the cumulative impacts of breathing, ingesting, and absorbing all of these chemicals day-in and day-out? We'll likely never know.

What we do know is that more than 30 years of environmental health studies have led to a growing consensus that chemicals are playing a role in the incidence and prevalence of many diseases and disorders in our country, including:

- Childhood leukemia and brain cancer have increased sharply in incidence. Between 1975 and 2004, primary brain cancer increased by nearly 40 percent and leukemia by over 60 percent among children 14 years and younger. Cancer is now the second leading cause of death in childhood in the U.S., exceeded only by deaths from injury. (62)
- Childhood obesity has more than doubled in the past 10 years, and type 2 diabetes, previously unknown among children, has become epidemic. (62)
- Asthma, which has more than doubled in frequency since 1980, is now the leading cause of emergency room visits, hospitalizations, and school absenteeism. (62)
- The birth defect resulting in undescended testes, which increased 200 percent between 1970 and 1993. (63)
- Autism Spectrum Disorders, the diagnosis of which has increased more than 10 times in the last 15 years and now impacts 1 in every 88 children. (64)

Estimates of the proportion of the disease burden that can be attributed to chemicals vary widely, ranging from 1 percent of all disease, to 5 percent of childhood cancer, to 10 percent of diabetes and neuro-developmental deficits, to 30 percent of childhood asthma. (65)

This is a massive failure of our chemical regulatory system.

Unfortunately, comprehensive pre-market safety testing is not required under any federal law for these chemicals. We are especially at risk of exposure to the 2,800 chemicals produced in quantities greater than 1 million pounds per year. Yet, of these high-volume chemicals, 43 percent have no testing data on basic toxicity and only seven percent have a full set of basic test data. (66) Even fewer have been tested for their health effects when they interact with one another, even though that is how we're exposed to them.

We Must Demand Change

The laws created to protect us from chemicals in everyday products are outdated and ineffective. Current personal care product laws in the U.S. date back to 1938 and the Toxic Substances Control Act (TSCA) hasn't been updated since 1976—more than 35 years ago. Our scientific understanding of how chemicals impact health has exploded since then—as has the manufacture and use of chemicals in everyday products. Still, wealthy special interest groups and the chemical industry spend millions of dollars every year (over \$375 million since 2005) lobbying Congress, obstructing the wheels of progress, and fighting regulatory reformation. (67)

Meanwhile, in countries like Canada, the European Union (EU), and Japan, more stringent and protective laws are being passed. Perhaps the best example of comprehensive reform comes from the European Union, which passed groundbreaking legislation called REACH in 2006. According to the European Commission, “[t]he aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. At the same time, REACH aims to enhance innovation and competitiveness of the EU chemicals industry. The benefits of the REACH system will come gradually, as more and more substances are phased into REACH.”(68)

Interestingly, their leadership has impacted manufacturers in the U.S. who export products to these countries. But, despite being required to make safer products for other countries, many companies are not making safer products available to their U.S. customers (until consumers notice the subterfuge and pressure manufacturers to change—as was the case with Johnson & Johnson in 2011). (69) How many other companies are making the same product—with two separate formulations—and giving our children the short end of the stick?

Our children deserve better.

Healthy Child Healthy World recommends parents—and anyone concerned about child health—take the following steps:

- 1. Create healthier environments for children** by choosing safer products and adopting safer practices for reducing exposure to chemicals of concern. Start by using Healthy Child Healthy World's Easy Steps program and Nursery Tool Kit (including our new, free e-book) found at Healthychild.org (www.healthychild.org/resource-center/).
- 2. Contact the manufacturers of the products you buy** to ask what *exactly* is in their products. If any chemicals of concern are on the list, let them know you won't be buying their product until they find safer alternatives.
- 3. Contact your federal and state elected officials** and ask them to support more effective regulations of chemicals. Send a letter with a picture of your family and maybe even a drawing or letter from your child. Visit USA.gov to find out who your representatives are and how to contact them.
- 4. Help spread the word.** Tell your friends, family, and colleagues. Tweet about it. Blog about it. Send a letter-to-the-editor to your local paper. Choose what feels right to you and let your voice be heard.

Children are 30 percent of our population, but 100 percent of our future. They need our protection.

About Healthy Child Healthy World

A trusted resource for parents for more than 20 years, Healthy Child Healthy World is a California non-profit public benefit corporation with a mission to empower parents to take action and protect their children from harmful chemicals. By working with manufacturers and supporting policy initiatives, Healthy Child Healthy World provides access to critical information that encourages smarter lifestyle choices that reduce chemical exposure in homes and communities. Healthy Child Healthy World's vision is a world where every child has the opportunity to grow-up in a healthy and safe environment. To learn more, visit HealthyChild.org

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