Environmental Contaminants and Reproductive Health

Healthy Pregnancies
Healthy Children
Healthy Future Generations

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Canada Bans BPA From Baby Bottles

By Lyndsey Layton and Christopher Lee
Washington Post Staff Writers
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Canada yesterday became the first country to ban a widely found chemical from use in baby bottles, spurring a leading Democrat in the U.S. Senate to call for legislation that would prohibit use of bisphenol...
What’s the concern?
Our Reproductive Capacity Is Under Strain

Scientific indicators of declining reproductive function and increasing rates of reproductive illnesses since the mid-20th century

- Difficulty conceiving & maintaining pregnancy
- Rates of certain birth defects
- Preterm birth

Decline in average birthweight for babies born in the US since 1990

Steady Decline
Change in the average birth weight of babies* born in the U.S. since 1990, in ounces

*Born between 37 and 41 weeks and not including multiple births
Source: Obstetrics and Gynecology
Decreasing Age of Puberty

2008 – expert panel commissioned by US government concluded:

- Earlier breast development and onset of menarche

- “Suggest … endocrine-disrupting chemicals … and body fat are important factors associated” with the change

- African American and Mexican American girls enter puberty earlier than white girls

What’s Changing?
Chemical production has increased **23.5-fold** between 1947 and 2007.
By 2006 …

Vast majority of chemicals in commerce have entered the marketplace without comprehensive and standardized information on their reproductive or other chronic toxicities.
Toxic Environmental Chemicals Are Found Everywhere, Everyday ... In Every Body
Child Development and Windows of Susceptibility

Proper reproductive development orchestrated by hormones

Periconception | Prenatal | Postnatal | Childhood →

Environmental Chemical Exposure

Immediate & Long Term Consequences
Health Impacts of “Everyday” Toxic Environmental Exposures

Studies show the levels of chemicals an average person is exposed to can perturb biological processes:

Interfere with the hormonal regulation critical to healthy reproduction

Endocrine Disrupting Chemicals: Chemicals which can alter or interfere with natural hormone levels in the body


Photo credits: www.jeffwarren.org/radio/epigenetics www.encognitive.com/node/1129
In 2010 ..... 

• Pressure from.....  
  – Science  
  – Concern  
  – Understanding 

• The intersection of research, community advocacy and policy
It is in US

50-97% of the US population have measurable phthalates in their bodies

Levels of Seven Urinary Phthalate Metabolites in a Human Reference Population

Benjamin C. Blount,1 Manori J. Silva,1 Samuel P. Caudill,1 Larry L. Needham,1 Jim L. Pirkle,1 Eric J. Sampson,1 George W. Lucier,2 Richard J. Jackson,1 and John W. Brock1

1National Center for Environmental Health, Centers for Disease Control and Prevention, Atlanta, Georgia, USA; 2National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, USA
Why Do Phthalates matter?

Animal studies show increases deformities in penis and testicles and lower testosterone from PRENATAL exposures
And it’s higher in women

Why?

50% higher

Blount et al. EHP 2000
Who Answered?
Not Too Pretty

Phthalates, Beauty Products & the FDA

Jane Houllihan
Charlotte Brody
Bryony Schwan
July 8, 2002
Toxic chemicals linked to birth defects are being found at alarming levels in women of childbearing age. And according to new laboratory tests (see chart at right), these same chemicals are being added to popular cosmetics and beauty aids from famous perfume to Arm Extra Extra Dry deodorant. Manufacturers use these chemicals, known as phthalates (phylates), to add flexibility and help dissolve other ingredients. They’re also used in industrial adhesives, and in medical and consumer goods made with polystyrene (plastic, PVC). But phthalates have been shown to damage the lungs, liver, and kidneys, and to harm the developing bodies of offspring. These results come from animal tests which, according to government scientists, are relevant to predicting health impacts in humans.

Despite this, the Food and Drug Administration doesn’t regulate phthalates in cosmetics. In most cases, phthalates aren’t even listed on the label. The FDA must act now. All cosmetics – as well as food-related and medical products containing phthalates – must be labeled. And manufacturers should publicly pledge to voluntarily remove phthalates as quickly as possible.

Phthalate-free alternatives are available in every product category. And some companies have already announced phase-out policies.

In the meantime, we believe that every consumer – indeed, anyone who cares about the health of future generations – should demand action from companies and the FDA. Learn more at www.NotTooPretty.org.

After all, eternity is a long time.

Learn more at www.NotTooPretty.org

This Ad Sponsored by Common Sense, the Environmental Working Group and Health Care Without Harm.
Cosmetic companies have changed

- In 2006 – 3 major nail polish brands remove DBP, formaldehyde and toluene
- In 2008 – No tested cosmetic product contained more than one phthalate
  - fragrances, deodorants and hair sprays tested negative for DBP, DMB, DEHP and BBP
  - Still use of DEP
- More than 1,000 companies have signed the Compact for Safe Cosmetics

A Little Prettier

Cosmetic companies deny health problems related to phthalates, but are they secretly reformulating?

A Follow-Up to the 2002 "Not Too Pretty" Report
Phthalates also found in

Dibutyl phthalate, Dethylhexyl phthalate, Dimethyl phthalate, Butyl benzyl phthalate.
Meanwhile over the pond

Europe bans chemical use in toys

The European Parliament has voted to permanently ban the use of a group of chemicals to soften children's toys following health concerns.

Phthalates have been linked to damage to the reproductive system, and an increased risk of asthma and cancer.

They are also used in the manufacture...
Taking it to sacramento

SACRAMENTO
Gov. signs bills to track bullets ban toxic toys
Some bullets must be marked; chemical in toys is banned
Lawmakers Agree to Ban Toxins in Children's Items

By Lyndsey Layton
Washington Post Staff Writer
Tuesday, July 29, 2008

Congressional negotiators agreed yesterday to a ban on a family of toxins found in children's products, handing a major victory to parents and health experts who have been clamoring for the government to remove harmful chemicals from toys.

Bush signs bill banning lead from kids' toys

Law boosts funds for safety panel

By Associated Press | August 15, 2008

WASHINGTON - President Bush yesterday signed consumer-safety legislation that bans lead from children's toys, imposing the toughest standard in the world.
Yet Challenges Remain

- 93% of people have Bisphenol-A (BPA) in their bodies
  - Animal studies show increased risk of infertility in female offspring
- 98% of people have Polyfluoroalkyl Chemicals (PFOS) in their bodies
  - Animal studies show increased risk of premature infant mortality
- 75% of people have triclosan in their bodies
  - Animal studies show can alter thyroid hormones

* Urinary phthalate data from NHANES 2001-2004
Moving forward

• Partnerships = success
• Expand knowledge
• Translate the science
• $

“Knowing is not enough; we must apply. Willing is not enough; we must do.”
Goethe
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Program on Reproductive Health and the Environment

Mission

• To create a healthier environment for human reproduction and development

• Advance scientific inquiry, clinical care, and health policies that prevent exposures to harmful chemicals in our environment


