



# Clean, Green & Healthy

Identifying Potential Environmental  
Health Toxins at Home



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**MOPS | February 28, 2014**

**New York State Pollution Prevention Institute (NYSP2I)  
Rochester Institute of Technology (RIT)**

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# Agenda

- Why should we be concerned about environmental health?
- Product safety regulations
- Chemicals that have been found in products
  - Fragrance
  - Cleaners
  - Personal care products
  - Foam products



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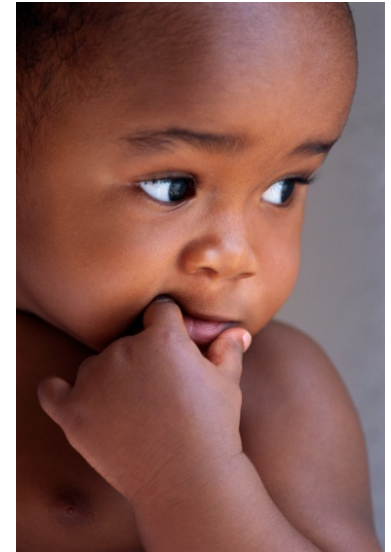
# Why should we be concerned about environmental health?



**We are exposed to hundreds of chemicals every day** – children are exposed to some chemicals more than adults and exposed to chemicals that adults may not be exposed to



**Chemicals enter our body** – breathe them in, they pass through our skin, or we eat them – and many are stored in body fat



**Children are more vulnerable & at higher risk of suffering effects than adults**



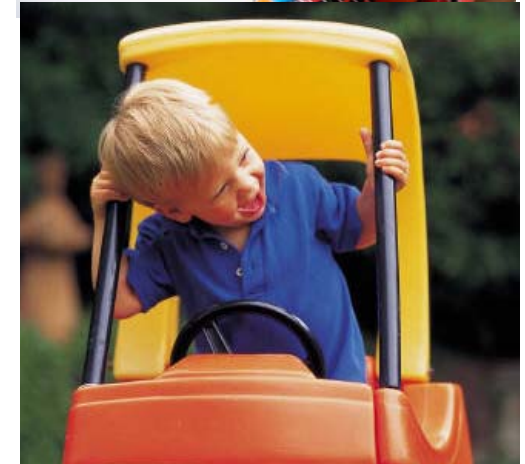


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# Product Safety Regulations

- Companies do not have to disclose to consumers what is in toys and other children's & consumer products
- Consumer Product Safety Commission
  - Protects the public from unreasonable risk from consumer products
  - Protects from products that pose fire, electrical, chemical, or mechanical hazard or can harm children
  - Operates voluntary recall program
- CPSC can't test products before sale to ensure they are safe





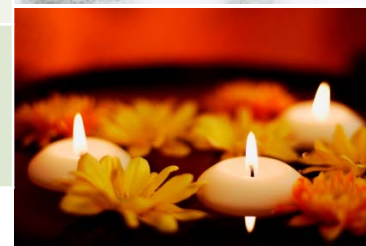
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# Fragrance

## What is the concern?

- We are exposed to a lot of scented products – personal care, cleaners, air fresheners, laundry soap, etc.
- Usually made up of a blend of chemicals
- May be from natural or synthetic sources



### Phthalates

Solvents/carriers for chemicals that create the scent  
**Also in** nail polish & moisturizers

**Look for** *fragrance, -phthalate, parfum* on the product label

**Linked to** diabetes and asthma, potential risks to reproductive system & thyroid

### Musks

Man-made chemicals that replicate musk scents originally obtained from deer & ox

**Look for** *fragrance, synthetic musk, musk* on the product label

**Potential hormone disruptors** that may **break down the body's defenses against other chemicals**

EPA <http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/phthalates.html> ; Campaign for Safe Cosmetics, <http://safecosmetics.org/article.php?id=643>



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# Fragrance

## How are we exposed?

- **Breathe it in** – perfume, cleaners, air freshener, scented candles, other airborne products
- It is **absorbed through the skin** – shampoo, soap, lotion, other personal care products, laundry soap on clothes & bed sheets

Can hide many chemicals as the composition does not have to be disclosed on the label

During use, fragrance can become airborne and is easily inhaled

Nearly 38% of Americans report adverse effects when exposed to some kind of fragranced product<sup>a</sup>



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# Fragrance

## What you can do

- ✗ Avoid products with “-phthalate”, “musk”, “parfum”, or “fragrance” as an ingredient
- ✗ Avoid air fresheners and scented candles
- ✓ Choose **fragrance free products** labeled “free of perfumes and dyes,” “fragrance free”, or “unscented”
- ✓ Use **homemade unscented** cleaners & personal care products
- ✓ Choose **naturally scented products**







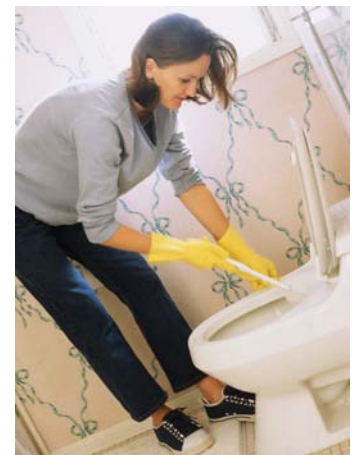
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# Cleaners

## What is the concern?

- Many cleaning product ingredients are linked to health effects
  - Many cause skin, nose, throat, and eye irritation and/or are suspected endocrine disruptors
- Cleaning products are released to the environment through evaporation and rinsing down the drain
  - Many chemicals are not removed from water before it is discharged to the environment
  - Phosphorus can contribute to nutrient-loading in water bodies, affecting water quality
  - May have other negative effects on plants and animals living in water
  - May accumulate in the food chain





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# Cleaners Used Around the House

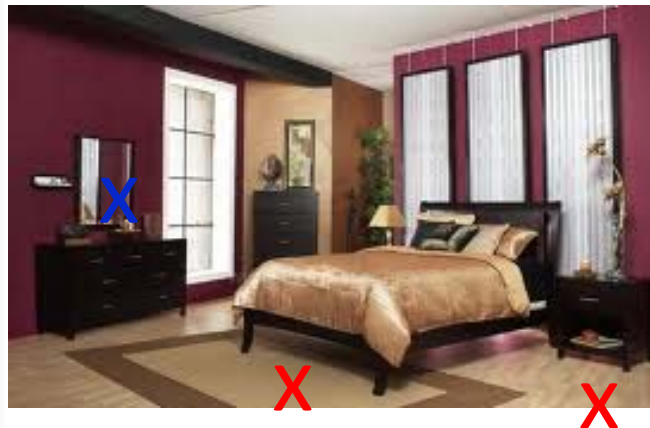


Toilet Bowl Cleaners, Mildew Removers,  
Air Fresheners, Drain Openers



Oven Cleaners, Dishwashing Soap

## Glass & Surface Cleaners    Disinfectants    Floor & Carpet Cleaners



Furniture Polish, Laundry Detergents



Stain Removers

Image source: Discovery Health, <http://health.discovery.com/tools/childproof/childproof.html>



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# Cleaners

## What you can do

- ✓ Choose **cleaners without harmful chemicals**
  - ✗ Avoid cleaners labeled “danger” or “poison”
  - ✗ Avoid air fresheners & choose “fragrance-free”
  - ✓ Choose third-party certified cleaning products
- ✓ Choose cleaners with **environmentally preferable packaging**
- ✓ **Make your own** cleaning products
- ✓ **Use & store cleaners safely**
  - ✓ Use in well ventilated areas away from pregnant women, infants, children, seniors, people with asthma, and others who may be sensitive
  - ✓ Follow the manufacturer’s use, storage, and disposal instructions carefully
- ✓ Use **online tools** to help you choose safer products



EcoLogo®



*example third party  
certifications*





# Household Products Database

Health & Safety Information on Household Products

National Institutes of Health  
National Library of Medicine  
Specialized Information Services

[Home](#)[Products](#)[Manufacturers](#)[Ingredients](#)[Health Effects](#)

## Quick Search

  
Product, Manufacturer etc... [Go](#)[Advanced Search](#) ▶

## Browse by Category

[Auto Products](#)  
[Inside the Home](#)  
[Pesticides](#)  
[Landscape/Yard](#)  
[Personal Care](#)  
[Home Maintenance](#)  
[Arts & Crafts](#)  
[Pet Care](#)  
[Home Office](#)

## Browse A-Z

[Product Names](#)  
[Types of Products](#)  
[Manufacturers](#)  
[Ingredients](#)

## Support

[About the Database](#)  
[FAQ](#)  
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[Help](#)  
[Glossary](#)  
[Contact Us](#)  
[More Resources](#)

What's under your kitchen sink, in your garage, in your bathroom, and on the shelves in your laundry room? Learn more about what's in these products, about potential health effects, and about safety and handling.



### Auto Products

Brake Fluid, De-icer, Lubricant, Sealant, and more...



### Inside the Home

Air Freshener, Bleach, Cleaners, Toilet Bowl Cleaner, and more...



### Pesticides

Animal Repellent, Fungicide, Herbicide, Insecticide, and more...



### Landscape/Yard

Fertilizer, Lawn Care, Swimming Pool Products, and more...



### Personal Care

Antiperspirant, Hair Spray, Makeup, Shampoo, Soap and more...



### Home Maintenance

Caulk, Grout, Insulation, Paint, Putty, Stain, and more...



### Arts & Crafts

Adhesive, Glaze, Glue, Primer, Varnish, and more...



### Pet Care



### Home Office

For advice if someone is poisoned

[Home](#) | [Products](#) | [Manufacturers](#)

## Household Products Database

<http://householdproducts.nlm.nih.gov/>

Search for cleaning products by name

- Info available: Product info, manufacturer, health effects, handling/disposal, ingredients





## EWG's Guide to Healthy Cleaning

Safety ratings for more than 2,000 products.

Search more than 2,000 products

Search



### Top Products

Find greener cleaners for  
household needs



### Label Decoder

Translate technical terms  
and ad hype



### About this Report

EWG looked beyond labels  
to rate products



 Share This

#### Products:

Air Fresheners (2 / 1)

All Purpose (416)

Bathroom (21 / 1)



### EWG's Guide to Healthy Cleaning Update Center

#### Sun & Earth Update

Date posted: 2013-04-03

EWG is updating the Guide to Healthy Cleaning  
information from Sun & Earth.

### Guide to Healthy Cleaning

<http://www.ewg.org/guides/cleaners>

Search for cleaning products by name

Search for cleaning product types

Search for companies

Search for ingredients

Back



See more:

Product Ingredients

What's on the label

Health & Environmental Concerns

Warnings & Directions

Green-Certified?

Animal Testing?

Contact Company

Sign up:

Want email updates about



## Windex Original Glass Cleaner with Ammonia-D

See:

General Purpose Clea...

Brand: Windex

Company: S.C. Jo...

Asthma/Respiratory



Moderate Concern

Skin Allergies & Irritation



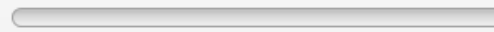
Some Concern

Developmental & Reproductive Toxicity



Low Concern

Cancer



Low Concern

Environment



Moderate Concern

**How does it rate:** Scores for similar cleaners ranged from **A** to **F**. Search for a **better General Purpose Cleaner**

**Top Scoring Factors:** May contain ingredients with potential for acute aquatic toxicity; respiratory effects; skin irritation/allergies/damage



Ingredient Disclosure: poor



Green Certified:

NO



Print



Share on:



### Product ingredients

#### Known Ingredients

Ingredient

Health, Environment, and Disclosure Concerns

Score

AMMONIUM HYDROXIDE

**High Concern:** acute aquatic toxicity; **Moderate Concern:** respiratory effects; **Some Concern:** damage to vision, skin irritation/allergies/damage



HEXAMETHYL...

Moderate Concern: respiratory effects





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# Personal Care Products

## Use in the US

- On average, women use 12 products containing 168 ingredients every day
- Men use 6 products with 85 ingredients
- Children are exposed to an average of 61 ingredients daily



EWG (Environmental Working Group). 2004. Exposures Add Up – Survey Results. <http://www.ewg.org/skindeep/research/exposures.php>.

EWG (Environmental Working Group). 2007. Safety Guide to Children's Personal Care Products. <http://www.ewg.org/skindeep/special/parentsguide/summary.ph>



# What's in Your Products?

## SHAMPOO

Avg number of chemicals: 15  
Possible side effects: irritation, possible eye damage

## HAIRSPRAY

Avg number of chemicals: 11  
Possible side effects: allergies, irritation to eyes, nose, and throat; hormone disruption

## PERFUME

Avg number of chemicals: 250  
Possible side effects: mouth, throat, and eye irritation; nausea; linked to kidney damage

## FAKE TAN

Avg number of chemicals: 22  
Possible side effects: rashes, irritation, hormone disruption

## BODY LOTION

Avg number of chemicals: 32  
Possible side effects: rashes, irritation, hormonal disruption

## NAIL VARNISH

Avg number of chemicals: 31  
Possible side effects: linked to fertility issues and problems in developing babies

## EYESHADOW

Avg number of chemicals: 26  
Possible side effects: linked to cancer, infertility; hormonal disruptions and damage to the body's organs

## BLUSH

Avg number of chemicals: 16  
Possible side effects: rashes, irritation, hormonal disruption

## FOUNDATION

Avg number of chemicals: 24  
Possible side effects: allergies, disrupts immune system, links to cancer

## LIPSTICK

Avg number of chemicals: 33  
Possible side effects: allergies, links to cancer

## DEODORANT

Avg number of chemicals: 15  
Possible side effects: eye, skin, and lung irritation; headache; dizziness; respiratory problems





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# Ingredients in Children's Personal Care Products

2007 survey of 3,300 parents to identify the personal care products their children use



## The survey found

Infants are exposed to **45 chemicals every day** & 40% have not been found safe for kids

82% are exposed to 1+ ingredients linked to **brain and nervous system damage**

69% are exposed to 1+ **endocrine disruptor**

4% are exposed to 1+ ingredients linked to **cancer**

41% of products warn "keep out of reach of children"



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# Case Study: J&J Baby Shampoo

- March 2009: Compact for Safe Cosmetics reports that Johnson's baby shampoo contains **2 cancer causing chemicals that aren't listed on the label**
- October 2011: J&J to phase out the carcinogenic preservatives from baby products
- January 2014: cancer causing preservatives replaced, will start seeing the product on store shelves in first half of 2014





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## Revising a Formula for Baby Shampoo

Responding to pressure from consumers' groups, Johnson & Johnson revised the ingredients in its baby shampoo to remove a formaldehyde-releasing preservative called quaternium-15.

### Johnson's No More Tears Baby Shampoo

#### OLD FORMULATION



Ingredients: Water, Cocamidopropyl Betaine, PEG-80 Sorbitan Laurate, Sodium Trideceth Sulfate, PEG-150 Distearate, Fragrance, Tetrasodium EDTA, Polyquaternium-10, Quaternium-15, Sodium Hydroxide, Citric Acid, Yellow 10, Orange 4.

#### REMOVED:

**Quaternium-15** a formaldehyde-releasing preservative

#### NEW FORMULATION



Ingredients: Water, PEG-80 Sorbitan Laurate, Cocamidopropyl Betaine, Sodium Trideceth Sulfate, PEG-150 Distearate, Phenoxyethanol, Glycerin, Citric Acid, Fragrance, Sodium Benzoate, Tetrasodium EDTA, Polyquaternium-10, Ethylhexylglycerin, Sodium Hydroxide, Potassium Acrylates Copolymer, Yellow 6, Yellow 10.

#### ADDED:

**Potassium Acrylates Copolymer**  
*helps maintain proper shampoo thickness*

**Phenoxyethanol, Sodium Benzoate and Ethylhexylglycerin**  
*components of the new preservative system*

**Glycerin**  
*helps with moisturization*

Graphic source: <http://www.nytimes.com/2014/01/18/business/johnson-johnson-takes-first-step-in-removal-of-questionable-chemicals-from-products.html>





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# Personal Care Products

## What you can do

- Eliminate **unnecessary products**
- Prioritize **high exposure, frequently used products** for replacement
- Choose **organic products**
- Buy from **companies you trust**
- **Make** your own products
- Choose products **without harsh chemicals**
- Consider if the **ingredient is necessary** – ie. Does hand soap have to be antimicrobial? Does face soap have to be pH balanced? Does the scent matter?
- Use **tools like SkinDeep** to help you choose safer products





## Skin Deep is Mobile!

Get critical information  
about your personal care products  
right at your fingertips!



🔍 Search more than 73,000 products...

Search

Smarter Choices, Healthier Living

### Coming This Spring: EWG's 2014 Sunscreen Guide

**Companies:** To have your sunscreen products included in this year's guide, email [skindeep@ewg.org](mailto:skindeep@ewg.org) for submission instructions.

The deadline for submitting your formulations is March 21.

### EWG's Healthy Living Corner



Quick Tips for  
Safer Cosmetics



EWG's Guide to  
Healthy Cleaning

### Featured R



Why Skin Deep®?

## SkinDeep Cosmetics Database

<http://www.ewg.org/skindeep>

Search for personal care products by name

Search for personal care product types

Search for companies

Search for ingredients

Tips & ingredient facts

4 Myths on cosmetic safety

5 User's guide to Skin

Score:



## Johnson's Baby Bedtime Bubble Bath &amp; Wash

See all:

Johnson &amp; Johnson

Johnson &amp; Johnson

baby soap

Data available: ● Limited

Product Summary

Ingredient Concerns

Animal Testing?

Label Information

Where to Purchase

Discuss This Product

Data last updated:

July 2013

## Get The Guide!

Want a free Cosmetics Guide?  
Donate \$5 to EWG today!

Donate Now!

## Sign Up!

Stay informed by signing up to  
receive email tips, action alerts  
and more from EWG.

E-mail Address



## Ingredient Concerns:

low

moderate

high

Overall Hazard



Cancer



Developmental &amp; reproductive toxicity



Allergies &amp; immunotoxicity



Use restrictions



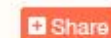
**Other HIGH concerns:** Endocrine disruption, Multiple, additive exposure sources, Contamination concerns, Irritation (skin, eyes, or lungs), Miscellaneous, Occupational hazards; **Other MODERATE concerns:** Biochemical or cellular level changes, Organ system toxicity (non-reproductive); **Other LOW concerns:** Enhanced skin absorption, Data gaps, Ecotoxicology



27



0



4

## Ingredient Concerns

Ingredient

Concerns

Score

PROPYLPARABEN

Developmental/reproductive toxicity, Ecotoxicology,  
Endocrine disruption, Allergies/immunotoxicity,  
Miscellaneous, Use restrictions



Data: Limited



## Sign Up!

Stay informed by signing up to receive email tips, action alerts and more from EWG.

## Ingredient Concerns

Ingredient	Concerns	Score
<a href="#">PROPYLPARABEN</a>	Developmental/reproductive toxicity, Ecotoxicology, Endocrine disruption, Allergies/immunotoxicity, Miscellaneous, Use restrictions	<div><div>S</div><div>10</div><div>Data: Limited</div></div>
<a href="#">FRAGRANCE</a>	Ecotoxicology, Allergies/immunotoxicity, Irritation (skin, eyes, or lungs), Miscellaneous, Organ system toxicity (non-reproductive)	<div><div>S</div><div>8</div><div>Data: Fair</div></div>
<a href="#">PEG-80 SORBITAN LAURATE</a>	Allergies/immunotoxicity, Contamination concerns ( <a href="#">ETHYLENE OXIDE</a> , <a href="#">1,4-DIOXANE</a> , <a href="#">ETHYLENE OXIDE</a> , <a href="#">1,4-DIOXANE</a> ), Organ system toxicity (non-reproductive)	<div><div>S</div><div>5</div><div>Data: Fair</div></div>
<a href="#">COCAMIDOPROPYL BETAINE</a>	Ecotoxicology, Allergies/immunotoxicity, Contamination concerns ( <a href="#">COCAMIDOPROPYL DIMETHYLAMINE</a> , <a href="#">3-DIMETHYLAMINOPROPYLAMINE</a> , <a href="#">NITROSAMINES</a> -in the presence of nitrosating agents), Use restrictions	<div><div>S</div><div>4</div><div>Data: Fair</div></div>
<a href="#">METHYLPARABEN</a>	Biochemical or cellular level changes, Endocrine disruption, Allergies/immunotoxicity, Use restrictions	<div><div>S</div><div>4</div><div>Data: Limited</div></div>
<a href="#">PHENOXYETHANOL</a>	Allergies/immunotoxicity, Irritation (skin, eyes, or lungs), Organ system toxicity (non-reproductive), Occupational hazards, Use restrictions	<div><div>S</div><div>4</div><div>Data: Limited</div></div>
		<div><div>S</div><div></div><div></div></div>



► Advanced Search

 Search

Search



## EWG's Guide to Sunscreens

<http://www.ewg.org/2013sunscreens/>

- Rates the safety and efficacy of 1,800 SPF products
- Products with high ratings provide broad spectrum, long lasting protection, with ingredients that pose low human health concerns
- Anticipate 2014 released mid-May

Pick the best

[See All Products](#)

Beach & Sports  
Sunscreens

Moisturizers  
with SPF

Lip Balms  
with SPF

Make Up with  
SPF

### Coming This Spring: EWG's 2014 Sunscreen Guide

**Companies:** To have your sunscreen products included in this year's guide, email [skindeep@ewg.org](mailto:skindeep@ewg.org) for submission instructions. The deadline for submitting your formulations is March 21.





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# Foam Products

## What is the concern?

- **Chemical flame retardants** are added to products to make them less likely to catch fire and burn
- These chemicals are released from the product they're in, and **we inhale them or ingest dust** that contains them
- **Children's exposure may be greater than adult's**

**Bromine** is toxic to the liver, brain, reproductive system & may affect thyroid function

**High levels of antimony** can cause fertility problems and lung cancer in animals

**Chlorinated compounds** may cause cancer; damage to the liver, kidney, brain, and testes; and reproductive harm





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# Flame Retardants

What children's products typically contain them?

## Foam Products



## Car Seats



## Sleepwear





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# Sleepwear & Flame Retardants

Children's sleepwear 9mo-14yr must be flame resistant

Two ways to do this:

1. Snug fitting cotton or cotton blend
2. Flame resistant materials
  - Polyester or other materials that are naturally flame resistant
  - Chemical flame retardant is applied

*No or negligible cost difference*

## Sleepwear Tips

Sleepwear smaller than 9 months is exempt

Look for yellow tag when purchasing snug-fitting sleepwear

Don't buy oversized snug-fitting sleepwear

Not advised for baby to sleep in loose, non flame resistant, clothes







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# Sleepwear Labels



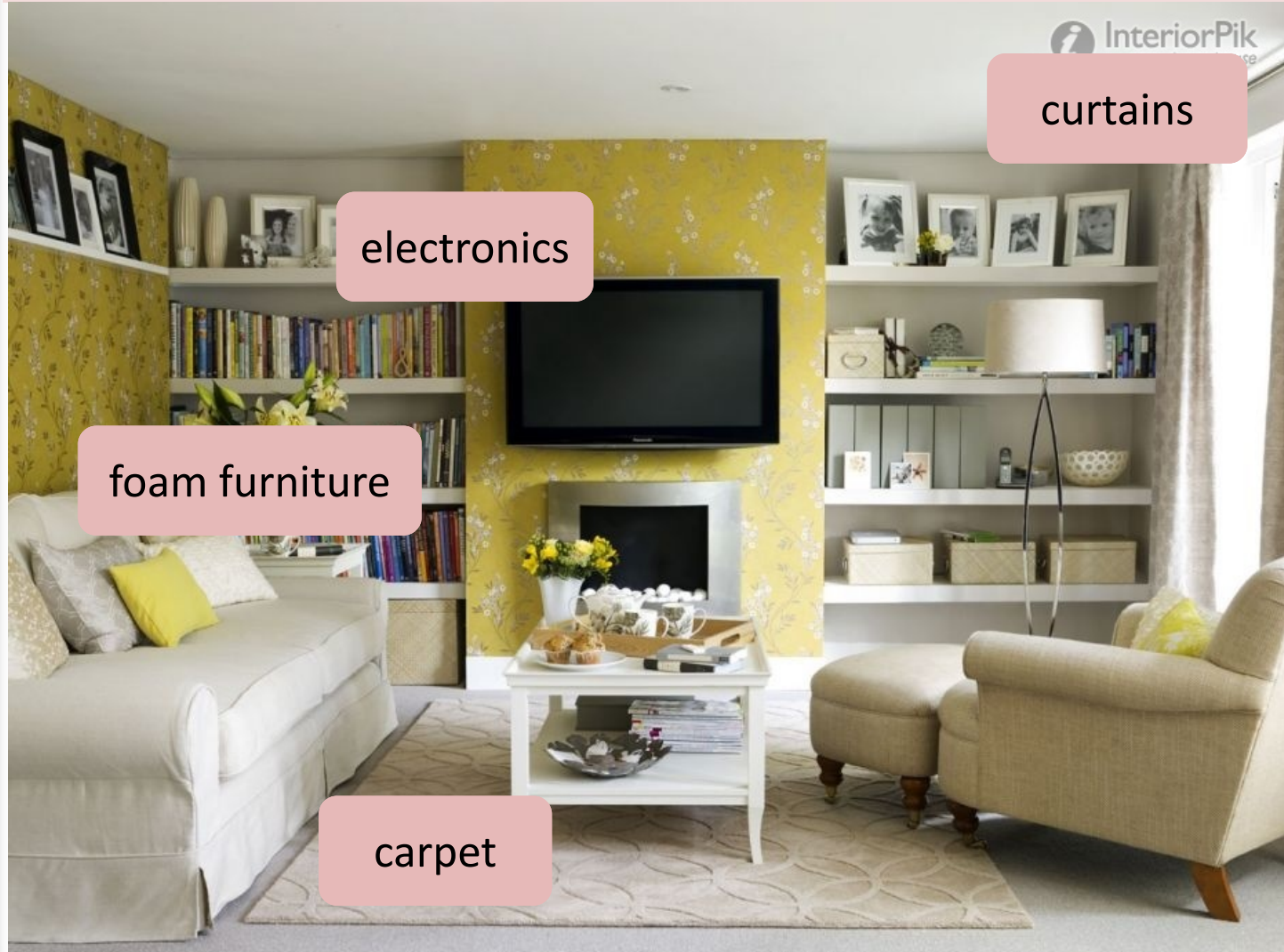


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# Flame Retardants

Many household products typically contain them







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# Flame Retardants

## Actions you can take

- ✓ **Infants and pregnant women should avoid spending significant time** on products treated with flame retardants
- ✓ Choose **safer crib mattresses**
- ✗ Avoid children **chewing on electronic & foam products**, including remote controls
- ✓ **Vacuum** your home regularly with a HEPA filter
- ✓ **Dust** your home regularly
- ✓ **Wash** foam products frequently
- ✓ **Inspect and replace** foam items when they start to rip, tear, or degrade



*choose soft pillows (above)  
instead of hard, shaped  
pillows (below) as soft pillows  
are less likely to contain FRs*







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# Safer Product Tips

- ✓ Use safer versions of **high exposure and frequently used** products
- ✓ Only buy **products you really need and will use**
- ✓ Consider **purchasing gently used toys/products and accept hand me downs** – check recall notices to ensure products meet safety standards
- ✓ Replace toys and products when they start to **show signs of wear**
- ✓ **Read product labels before purchasing** to understand the materials and how to use, clean, and dispose of the product
- ✓ **Find brands you trust** and shop from them
- ✓ **Donate** used/unused toys and products



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# Upcoming Events



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**March 4**



## How Green is Your Clean?

Are the products you use to clean your house affecting your health?

Learn about the household cleaning product choices you have to make your home clean and safe for your family.

**Webinar Series**

*1hr presentation followed by Q&A starting at 2:00 on the dates below*

**March 18 How Green is Your Clean?**

**March 26 Safer Household Products**

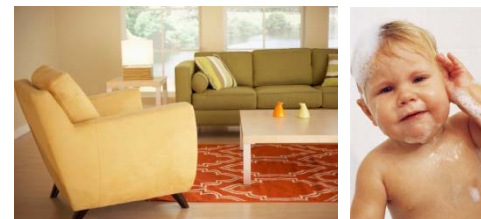
**April 2 Hazardous Waste at Home**

**April 9 Potential Hidden Dangers of Personal Care Products**

Contact NYSP2I at [greenhomes@rit.edu](mailto:greenhomes@rit.edu) to register

**March 26, 7-9pm**

*1hr presentation followed by Q&A*  
**Breast Cancer Coalition of Rochester, University Ave**



## Clean, Green, & Healthy: Choosing Safer Household and Personal Care Products

Learn how to identify and protect yourself and your family from potential health hazards found in products around your home.



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Phone: 585-475-5390

New York State Pollution Prevention Institute

<http://www.nysp2i.rit.edu>







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## Slide Reference(s)

### Why should pregnant women be concerned about environmental health?

Johns Hopkins Women's and Children's Health Policy Center, Environmental Toxicants and Maternal and Child Health: An Emerging Public Health Challenge

<sup>a</sup>Miodovnik, A, et. al., Endocrine Disruptors and Childhood Social Impairment, Neurotoxicity, 2011 March; 32(2): 261-267.

<sup>a</sup>Needham et. al. Partition of Environmental Chemicals between Maternal and Fetal Blood and Tissues, *Environ. Sci. Technol.*, 2011, 45 (3), pp 1121–1126.

<sup>b</sup>Woodruff TJ, Zota AR, Schwartz JM 2011. Environmental Chemicals in Pregnant Women in the US: NHANES 2003-2004. *Environ Health Perspect.* doi:10.1289/ehp.1002727

<sup>c</sup>Schreder, Erika, Earliest Exposures, Washington Toxics Coalition, Commonwealth Biomonitoring Research Center, & Toxic-Free Legacy Coalition, [http://watoxics.org/files/EE\\_Report\\_Embargoed\\_WTC.pdf](http://watoxics.org/files/EE_Report_Embargoed_WTC.pdf), accessed 4/17/11.

### Critical Window

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