

Workshop 2: Avoiding Risk from Personal Care Products

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+Objectives

- After Workshop 2, Breast Cancer Risk and Personal Care Products, participants will be able to:
- Understand why it's difficult to be sure of what's in our personal care products
- Define how chemicals in personal care products get into our bodies
- Define what it means when a label says "organic" or "natural"
- Avoid ingredients in personal care products that are associated with increased breast cancer risk
- Choose safer personal care products
- Take steps to ensure the safety of products we use every day on ourselves and our children

It's on the shelf - is it safe?

- Federal health statutes do not require companies to test products or ingredients for safety before they are sold.
 FDA does not verify that product contents
 - FDA does not verify that product contents are as listed.
 - Trade secrets, byproducts, and contaminants are not on the label

Absence of testing does not mean a product is SAFE

Chemical Safety in the U.S.

80,000+ new chemicals since WWII

- <20% have been tested for toxicity to children
- Toxic Substances Control Act 1976
 - Exempted 62,000 chemicals
- Chemicals banned or restricted in cosmetics
 - E.U.: 1,100
 - **U.S.:** 11

+ What does the "organic" or "natural" label mean?

Beware of meaningless "greenwashing".

- "Natural"
- "Organic"
- "Eco"

Look for:

- USDA Organic label
 - Certified 95-100% organic
 - No synthetic ingredients
- NSF/ANSI 305 Label
 - National Sanitation Foundation certification
 - Verifies at least 70% organic







+Do chemicals from PCPs get into our bodies?

- Number of products used correlates with urinary levels of some chemicals (Romero-Franco 2011, Sathyanarayana 2008)
- Mennonite women who use little or no PCPs have much lower urinary levels of certain chemicals (Martina 2012)





+ Our Chemical Body Burden

- ■200+ chemicals detected in:
 - Urine
 - Blood
 - Cord Blood
 - Breast milk



- Highest exposures in children
- Product use is associated with body burden
- Effects of chronic, low-dose, and cumulative exposures are unknown

+How do chemicals from PCPs get into our bodies?



+ Cumulative exposures

Adult women: 12 products

Teen girls: 17 products











+ Children are Uniquely Vulnerable

- Close to the ground
- Hand-to-mouth behavior
- Greater exposure pound-for-pound
- Lack of variety in diet
- Immature metabolism
- More years of future life
- Continuously developing.

systems:

- Reproductive system
- Nervous system

+ Vulnerability in pregnancy



Perera & Herbstman 2011

- Two categories:
 - Known or suspected carcinogens
 - Endocrine Disrupting Chemicals

Endocrine Disrupting Chemicals

Substances in our environment, food, and consumer products that interfere with hormone biosynthesis, metabolism, or action resulting in a deviation from normal homeostatic control or reproduction.

> -Scientific Statement of the Endocrine Society, 2009

+ EDCs are active at low doses

Hormones are active at parts per billion (ppb)

Lifelong

Low-dose

Cumulative

Mixtures

+ PCPs: What are we talking about?

Suspected breast cancer risk factors in PCPs

- Fragrance/Parfum
- Phthalates
- Triclosan
- Formaldehyde
- Parabens
- l,4-dioxane

Precautionary Principle

Avoid exposure when:
 Risk of harm is suspected
 Existing scientific evidence cannot prove cause and effect

"Better Safe Than Sorry"

COUNTERTHINK

+ A Word About Fragrance

- Mixture of chemicals
- Trade secret, not on the label
- Usually contains phthalates and other EDCs
- **EWG** Not So Sexy Report:
 - 12 EDCs in fragrance
 - Il EDCS were estrogenic

"Secret" ingredients are not on the label

Source: Environmental Working Group analysis of product labels and tests commissioned by the Campaign for Safe Cosmetics. Health risks from secret chemicals depend on the mixture in each product, the chemicals' hazards, that amounts that absorb into the body, and individual vulnerability to health problems.

> Not So Sexy Report Environmental Working Group, May 2010

Insufficient Safety Testing

Not So Sexy Report Environmental Working Group, May 2010

+ Phthalates

AIR O

ons

Chros

PIUGIN

+ Phthalates in infant care products and cosmetics

- Phthalate levels in infant urine associated with:
 - Lotion
 - Powder
 - Shampoo
 - More products used = higher exposure

Sathyanarayana et al Pediatrics 2008

- Phthalate levels in adult urine:
 - Associated with number of products used
 - Very low in Mennonite women

Martina et al Neurotoxicology 2012 + Phthalates and Breast Cancer

Cell-based studies
 Phthalates are estrogenic

Animal studies:

Altered mammary development

- Human studies:
 - **Early puberty** in East Harlem cohort
 - Increased breast cancer risk in a Mexican cohort

Simple Steps to Avoid Phthalates

Choose fragrance-free products
 Avoid "masking fragrance"

- Choose "three-free" nail polish (no phthalates, toluene, or formaldehyde)
- Wet mop and dust
- Avoid microwaving in plastic
- Avoid products made from vinyl
- Avoid # 3 plastic

Antibacterial

Estrogenic in cell and animal

studies

- Found in:
 - Antibacterial soaps
 - Some toothpaste
 - Fabrics and other products

labeled **antibacterial**

Simple Steps to Avoid Triclosan

Choose to wash your hands with regular soap and water

- Choose fragrance-free alcohol based sanitizer when you're on the go
- Choose different cutting boards for meat and produce; wash with hot soap and water
- Avoid products containing antimicrobials (clothing, cutting boards, toothbrushes etc.)

+ Parabens

- Antimicrobial: prolong shelf life
- Found in breast tumor biopsies
- **Estrogenic** in cell-based experiments
- Association with breast cancer is controversial
- Found in: lotions, cosmetics, foods, drugs
- May be labeled as:
 - Ethylparaben
 - Methylparaben
 - Butylparaben
 - Propylparaben

+ Formaldehyde

Known carcinogen (IARC, EPA)

- Byproduct: Not on the label
- also known as methanal, methylene oxide, oxymethyline, methylaldehyde, oxomethane, methylene glycol or formalin
- Gas; can be inhaled, increased release with heat
- In hair smoothing products, shampoo, body wash, nail polish and more

AVOID:

- DMDM hydantoin
- Diazolidinyl Urea
- Imidazolidinyl Urea)
- Quaternium-15
- Sodium hydroxymethylglycinate,
- 2-bromo-2-nitropropane-1,3-diol (bromopol)

+ A Word About Hair Straighteners

Contain carcinogens and EDCs

- May contain more than 10% pure formaldehyde
- Some products have formaldehyde levels
 50 times the safe limit

Don't believe manufacturer's "formaldehyde free" claims

Look for independent testing (EWG, H Canada)

Hair Straightener Alternatives

100% argan oil to manage frizz

Hot combs, flat irons, blow dryers

Wide diameter barrel curling iron held backwards

Natural curls

- Known carcinogen (IARC)
- Not on the label
- Banned in cosmetics in Canada
- Penetrates the skin

Byproduct of:

- Polyethlene glycol (PEG)
- Sodium laureth sulfate (SLS)
- ceteareth compounds
- "oleth" compounds
- "xynol" compounds

+ Summary of ingredients to avoid

Synthetic fragrance, masking fragrance, parfur

- Phthalates
- Triclosan
- Parabens
- Formaldehyde (avoid DMDM Hydantoin, Diazolidinyl Urea and Imidazolidinyl Urea)
- 1,4-dioxane (avoid sodium laureth sulfate, ceteareth, polyethylene glycol/PEG)

The Precautionary Principle

Science was right and you avoid exposure

Science was wrong and you avoid exposure
 SAFE

Science was right and you don't avoid exposure

NOT SAFE

- + Simple steps to improve the safety of your products
 - Use fewer products.
 - Read labels and beware of "greenwashing"
 - Avoid aerosolized sprays and loose powders.
 - Wash hands with plain soap and water
 Ventilate

Simple Steps, Broad Impact

- Support companies that are reducing the use of toxic chemicals in personal care products.
- Support companies that disclose all ingredients
- Support research on the effects of common chemicals – science is needed to inform policy.
- Support the Safe Chemicals Act.
- Utilize your social networks to educate others!