

# Health Matters

Great Smokies Medical Center of Asheville

A small, occasional publication

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## Chemicals in Cosmetics and Personal Care Products

### Facing the Day

Egypt's Queen Cleopatra is said to have taken milk and honey baths to help maintain her legendary beauty. Beauty routines aren't so simple for many modern American women, who use soap, lipstick, lipliner, toothpaste, mouthwash, shampoo, hair conditioner, hair gel or spray, toner, astringent, cleanser, moisturizer, foundation, blush, concealer, eyeliner, eye shadow, mascara, hand lotion, antiperspirant, and a spray of fragrance before they leave the house in the morning. The typical American woman uses 12 personal care products each day, exposing herself to as many as 168 chemical ingredients. A quarter of all women and one of every six men use at least 15 products daily.



### An Absorbing Topic

Commercially manufactured personal care products contain chemicals to help assure a long shelf life and to improve their physical properties, e.g., texture and absorbability. Applying these chemicals directly to the skin, however, assures that they will enter the tissues, bloodstream, and lymphatics unfiltered and intact. In contrast, eating or drinking chemically-laden food results in the chemicals being detoxified by the liver prior to entering the circulation. Applying toxic chemicals directly to skin may be a special concern for people with pre-existing major illnesses, poor nutrition, additional sources of chemical exposures (e.g., occupational or household chemicals), and increased skin cancer risk from previously sun-damaged skin. While few single chemicals in personal care products pose significant health risks, the health impact of applying or inhaling numerous chemicals present in personal care products daily for years has not been researched.

Chemicals in cosmetics and personal care products may not be merely present in tiny amounts as they often are in drinking water (in which contaminants are measured in parts per million), but can be added intentionally and actually comprise the base of many products.

Many otherwise safe ingredients in cosmetics are routinely contaminated. For example, lanolin, derived from sheep's wool, is often contaminated by DDT-like chemicals. Talc dusting powders, derived from crushed rock, may contain asbestos. Talc is a known pulmonary irritant when inhaled and has been shown to have a causative role in lung cancer. Dyes derived from coal tar (used to color hair) may be contaminated with arsenic and lead.

### A Lack of Regulation

The U.S. government does not currently require health or safety studies or pre-market testing for personal care products before they are sold.

The fact that chemical ingredients in cosmetics are not required to be labeled misleads consumers who rely on truth in labeling. Although use of the word "organic" on food labeling is regulated, it is not when it comes to labeling cosmetics and personal care products.

While the United States has outlawed eight cosmetic ingredients, the European Union (E.U.) has already banned more than 1,100. Several (380 at last count) U.S. cosmetic manufacturers voluntarily comply with the stricter E.U. standards to help assure their products' share of a competitive global market.

In its 30-year history, the Cosmetics Ingredient Review (CIR), the industry's self-policing organization, has reviewed the safety of just 13 percent of the 10,500 ingredients used in personal care products.



In the U.S., California has taken the lead in the safe cosmetics campaign by implementing the California Safe Cosmetics Act in 2005. The act requires cosmetic companies to reveal to state authorities whether a product contains any ingredient (including "trade secrets" and "proprietary formulations") that is deemed by private and federal agencies to have adverse health effects.

### Want Chemicals With That?

A sampling of thousands of potentially concerning ingredients in cosmetics and personal care products includes: toluene, ethyl acetate, coal tar, triclosan, lead, P-phenylenediamine, diethanolamine (DEA), 1,4 dioxane, hydroquinone, plasticizers, phthalates, "fragrance," and formaldehyde. Let's take a closer look at four of these ingredients.

### Parabens

Parabens have been added to the list of chemicals that are considered estrogenic. Six different forms of parabens (methyl, ethyl, isobutyl, propyl, butyl, and benzyl) are used to enhance absorption of cosmetics and for their antibacterial and preservative properties.

Statistically, breast tumors would be expected to occur evenly in each of the five regions of the breast. But nearly 60 percent of all breast tumors are found in just one-fifth of the breast, the upper-outer quadrant nearest the underarm.

While investigating this disproportionate cancer occurrence, Edinburgh oncology specialist Philippa Darbre found chemically-intact parabens in breast tumors. Methylparabens were the most prevalent form, being present in 18 out of 20 tumors.

Knowing that aluminum zirconium salts are present in most antiperspirants and, further, that aluminum binds to DNA and is linked to the development of granulomas, Darbre (cont. p 2)

## Chemicals in Cosmetics, cont.

(cont.) hypothesized that aluminum could damage the DNA of breast cells and parabens could then promote the growth (an estrogen effect) of those cells. This finding does not prove causation, but points to the need for further research.

### Phthalates

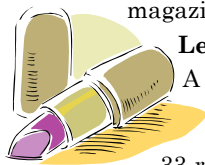
Phthalates (thá-lates), plasticizers which act as endocrine disruptors, are found in many different personal care products (often to add texture or luster), including mascara, hair straighteners, foundation, eye shadow, nail polish, lipstick, perfumes, deodorant, hair spray, and fragrances. Complex terms including *di-n-butyl phthalate* (DBP), commonly found in nail polish, and *di(2-ethylhexyl) phthalate* (DEHP), found in perfumes, indicates the presence of phthalates, as do the abbreviations BBP, DCP, DOP and DINP. A study revealed that men who used the most personal care products had the highest urinary levels of diethyl phthalate (DEP). In men, phthalates have been linked to testicular cancer, lowered testosterone levels, infertility, and birth defects in male genitalia . . . all earning phthalates the descriptive term “gender benders.” In girls and women, phthalates’ effects include early puberty, uterine pathologies, and infertility. Phthalates’ risks also include altered liver and kidney function.

### Fragrance

Gone are the days when fragrances were derived from flowers. Now, fragrance is a pleasant-enough sounding word behind which literally hundreds of unlabeled synthetic chemicals can hide as they silently affect immune, neurological, and reproductive health. Ninety-five percent of chemicals used in fragrances are derived from petroleum, many of them as volatile organic compounds (VOCs). Whether applied topically or inhaled, exposure to VOCs can result in sneezing, nasal congestion, sinusitis, ear pain, limb pain, dizziness, difficulty breathing, asthma, nausea, anxiety, depression, headaches, fatigue, migraines, allergic reactions, loss of coordination, rashes, and impaired concentration.

Daily exposures to fragrances make their relationship to symptoms difficult to discern. Observing the effects of discontinuing all fragrances for two weeks can help determine whether or not symptoms are caused by fragrance.

Adverse reactions to fragrances are on the rise, likely due to fragrance being added to many other products, including trash bags, cleaning products, laundry detergents, fabric softeners, Kleenex, diapers, toilet paper, air fresheners, magazine fragrance ads, etc.



### Lead in Lipstick

A report of independent laboratory testing of commonly available brands of 33 red lipsticks by the Campaign for Safe Cosmetics was released in October 2007. It revealed that 61 percent of lipsticks tested contained lead in levels between 0.03 ppm and 0.65 ppm. None were labeled as containing lead. (*The report can be viewed at: [www.safecosmetics.org](http://www.safecosmetics.org).)* Lead accumulates in the body, disrupting learning, behavior, fertility, and fetal development. Lead is likely in lipstick as a contaminant of raw materials, including petroleum byproducts, titanium, or zinc oxide. The health risks of this level of lead contamination in a product that is used for several months are unknown. Until those risks become known, choosing lipsticks without lead seems prudent.

### What’s The Risk?

When it comes to lifestyle, health risks seldom come from things that are done occasionally, but rather from things that are done frequently. Though the health impact of chronic use of cosmetics and personal care products that contain low-levels of carcinogens, neurotoxins, and reproductive toxins is unknown at this time, they are unlikely to be a health benefit. Hundreds of toxins have already been detected in human tissues, and scientists are concerned that chemicals are accumulating faster than people can adapt to them.

### Follow the Money

Given that the American cosmetic and personal care product industries generate \$29 billion annually, they are not likely to go anywhere. Becoming informed about the health concerns of cosmetics and personal care products and the selection of safer options is left to the consumer. The good news is that making the change to healthier, safer cosmetics need not mean giving up the look you want; rather, doing so can keep you looking *and* feeling good.

### Tips for Healthier Skin Care

Read the ingredient labels and choose less chemically-laden products as safer alternatives.

Simpler is better. A natural, clean look in make-up is currently in vogue and is compatible with a goal of decreasing exposure to chemicals in cosmetics. Use fewer products, and use products with fewer ingredients. Start by switching out the products that you use most often, such as soap, shampoo, toothpaste, and antiperspirant.

You will avoid some of the more serious health risks from personal care products if you minimize or avoid nail polish and bubble baths, and avoid synthetic fragrances.

Feed your face. The purest, safest, and most ecologically-designed cosmetics nourish and support skin health at the same time they enhance appearance.

Learn to handcraft some of your own chemical-free, natural products such as facial masks, bubble baths, and lotions at home. Home-based products may include nourishing ingredients such as lemons, apricots, honey, avocados, yogurt, herbs, aloe, a variety of healthy oils (e.g., almond, olive, coconut), antioxidant vitamins A, C, and E, and natural cancer-fighting substances such as green tea.

Examples of less chemically-laden commercial brands include: Burt’s Bees, Aubrey Organics, Dr. Hauschka, Kiss My Face, Aveda, and Terressentials.

Adverse reactions to topically applied foods are relatively uncommon, but possible. Natural essential oils, used to preserve some organic cosmetics, are relatively safe, though they too can cause adverse reactions in sensitive persons.

### Links/Resources

[www.cosmeticsdatabase.com](http://www.cosmeticsdatabase.com);

[www.preventcancer.com/index](http://www.preventcancer.com/index);

[www.noharm.org/us](http://www.noharm.org/us);

[www.safecosmetics.org](http://www.safecosmetics.org)

### In Conclusion

While scientists continue to research the health effects of chemicals in cosmetics and personal care products, selecting safer products is a wise choice for the savvy, health conscious consumer.



**All content in this newsletter is intended to be informational and is not to be taken as medical advice or to replace medical care.**