

## Exposures add up — Survey results

from the Environmental Working Group's Skin Deep Cosmetic Database

<http://www.cosmeticsdatabase.com/special/whattottobuy/> Please see website for more complete information and products.

**June 2004.** A personal care product use survey of more than 2,300 people, conducted by EWG and a coalition of public interest and environmental health organizations, shows that the average adult uses 9 personal care products each day, with 126 unique chemical ingredients. More than a quarter of all women and one of every 100 men use at least 15 products daily. Among the findings of this survey are the following:

- 12.2 million adults - one of every 13 women and one of every 23 men - are exposed to ingredients that are known or probable human carcinogens every day through their use of personal care products.
- One of every 24 women, 4.3 million women altogether, are exposed daily to personal care product ingredients that are known or probable reproductive and developmental toxins, linked to impaired fertility or developmental harm for a baby in the womb or a child. These statistics do not account for exposures to phthalates that testing shows appear in an estimated three quarters of all personal care products but that, as components of fragrance, are not listed on product ingredient labels (EWG et al. 2002).
- One of every five adults are potentially exposed every day to all of the top seven carcinogenic impurities common to personal care product ingredients — hydroquinone, ethylene dioxide, 1,4-dioxane, formaldehyde, nitrosamines, PAHs, and acrylamide. The top most common impurity ranked by number of people exposed is hydroquinone, which is a potential contaminant in products used daily by 94 percent of all women and 69 percent of all men.
- Women use more products than men, and are exposed to more unique ingredients daily, but men use a surprisingly high number of products as well. The average woman uses 12 products containing 168 unique ingredients every day. Men, on the other hand, use 6 products daily with 85 unique ingredients, on average.

The personal care product industry's self-policing safety panel, the Cosmetic Ingredient Review, approaches each safety assessment as if consumers are exposed to just one chemical at a time, and as if personal care products are the only source of exposure for each chemical considered. The panel is often wrong on both counts.

The results of this survey in combination with other studies show that people are exposed to hundreds of chemicals over the course of a day (CDC 2003, Thornton et al. 2002, EWG 2003), and that people face multiple sources of exposure from multiple consumer products for some of the common industrial chemicals used as cosmetic ingredients. Exposures can add up. The industry's panel does not consider the reality of patterns of human exposures — additive effects of exposures to multiple chemicals linked to common health harms — in declaring chemicals "safe as used" in cosmetics.

By considering the human body to be a "clean slate" free of background contamination, free of related chemicals linked to common health harms, and free of exposures from other kinds of consumer products, the industry's panel will every time underestimate the potential for a particular personal care product ingredient to harm human health.

### Survey methodology.

**Personal care product use survey data collection.** Between January and May 2004, six public interest and environmental health organizations conducted an in-depth survey on personal care product use, compiling information from more than 2,000 survey respondents. The groups involved in this effort included The Breast Cancer Fund, Women's Voices for the Earth, Health Care Without Harm, the Massachusetts Breast Cancer Coalition, Clean Water Action, and the Environmental Working Group.

These groups and some of their affiliated organizations distributed surveys in both paper and electronic form, through membership mailings and organizational newsletters, and by canvassing college campuses, community forums, and high volume retail areas. Surveys were entered electronically; results were stored in a database housed at Environmental Working Group. The vast majority of surveys were collected in hard copy and entered electronically by the groups mentioned above. Some individual respondents chose to complete the survey online instead of on paper, in which case their responses were recorded directly into the database.

**Personal care product use survey data analysis.** Using Monte Carlo modeling techniques, EWG analyzed product use rates and ingredient exposure profiles from 2,335 valid survey responses (those for which all requested information essential to the analysis was completed). The model generated one million usage profiles from sequential, random selections of survey responses from among valid surveys. Using the frequency of use, product type, and brand of product, we selected products from our product database to match the survey response. When our product database did not contain the brand identified by the survey respondent, we randomly assigned the person a product of that type. From the one million generated usage profiles, we generated statistics on the ingredients contained in the products these usage profiles indicated as well as statistics on the toxicity profiles of those ingredients