HEALTH AND SAFETY

A summary of peer-reviewed research on chemicals and our health.

COSMETICS AND PERSONAL-CARE INDUSTRY

Is the beauty industry regulated?

There are only two pages of federal legislation[1] governing the cosmetics industry—a market valued at $89 billion in 2018.[2]

The Food and Drug Administration (FDA) is the federal agency that oversees the cosmetics industry and its authorities. It has not significantly changed since 1938 with the passage of the Federal Food, Drug, and Cosmetic Act. While more and more companies are attempting to follow Beautycounter's lead by providing transparency to consumers, ingredient safety is often practiced on an ad hoc basis with companies regulating their own practices.

Current Cosmetic Ingredient Landscape

There are more than 85,000 chemicals registered for use in the United States,[3] with thousands more hitting the market every year.[4] They are used extensively in our homes, schools, and communities, but less than one-third of these chemicals have publicly available safety data,[5] and less than two percent have been assessed for their effects on children's health and development.[6]

At a Glance:

- The United States has banned or partially restricted approximately 30 ingredients from personal-care products.[7]
- Health Canada has banned or restricted nearly 600 ingredients from personal-care products.[8]
- The European Union has banned or restricted over 1,400 ingredients.[9]

The "Fragrance Loophole"

In addition, more than 3,000 ingredients are used in fragrance compounds found in cosmetics and other consumer products.[10] But since "fragrance" is considered a trade secret, companies do not have to disclose the ingredients used to create their scents, and the consumer is often left in the dark.[11] The blends may include phthalates, synthetic musk, and other ingredients linked to hormone disruption and allergies.[12,13]

Why do we need more oversight of chemicals in beauty products?

Women use an average of 12 personal-care products a day, and men use about six. Teenage girls average 17 products a day.[14] This can mean exposure to hundreds of chemicals just in the course of a morning beauty routine, and the FDA doesn't have the proper authority to order a recall even if there is a safety issue. As a result, Beautycounter believes there needs to be more oversight of the personal-care industry.

- The FDA's authority over cosmetics is different from other products it regulates, such as drugs, food, biologics, and medical devices.[15] Unlike these categories, personal-care products are some of the least regulated consumer products on the market.
- As a result, the FDA does not require that cosmetic ingredients be assessed for safety before they go on the market, and they cannot issue a product recall.[16]
- According to the Office of Cosmetics and Colors at the FDA, "...a cosmetic manufacturer may use almost any raw material as a cosmetic ingredient and market the product without an approval from FDA."[17]

EXPOSURE AND RISK: WHAT SCIENCE TELLS US

What does peer-reviewed research reveal about chemicals and our health?

It is important to note that not all chemicals are harmful and that there is no direct link between using a personal-care product and developing a specific disease. For example, you cannot say that using a certain shampoo with a known carcinogen as an ingredient will give you cancer later in life. However, there is a strong body of science from credible researchers and medical institutions that calls upon us to prevent exposure to harmful chemicals wherever possible.

In order to reduce exposure as much as possible, we do not assume that the absence of data means a chemical or ingredient is safe. In cases where there is not enough scientific evidence proving the safety of a potential ingredient, we will not use it in our products. We take a precautionary approach to our ingredient selection process.

In order to stay ahead of the curve, we created our Science Advisory Council comprised of leading researchers, health professionals, and organizations. This group of experts shares our passion for making informed and precautionary decisions when formulating products. Their research will help guide and inform us about ingredient safety.

Some of the most compelling science at a glance:

- Women who used more personal-care products, particularly those with fragrance, had higher concentrations of several phthalates in their urine.[18]
- More than 200 synthetic chemicals—many of them known to be toxic—were found in the bodies of nearly all Americans, including newborn infants, who are exposed to these chemicals in utero.[19]
- Pregnant women represent a particularly vulnerable population, as exposure to potentially harmful chemicals during fetal development may lead to altered health outcomes for the child later in life.[20] Organochlorine pesticides, phenols, PBDEs, phthalates, polycyclic aromatic hydrocarbons, and perchlorate were detected in 99-100% of pregnant women in the United States. Some of these chemicals were banned more than four decades ago, indicating the persistence of these harmful chemicals in our environment.[21]
- More than 80% of the 163 infants tested had at least seven phthalate metabolites in their urine, some of which correlated with the use of shampoo, lotion, or powder.[22]
- Sixteen different known hormone-disrupting chemicals (including phthalates, triclosan, parabens, and musk) were found in the bodies of 20 teenage girls.[23]
- The use of safer personal-care products (defined as those free of suspected hormone-disrupting chemicals such as phthalates, parabens, and triclosan) significantly reduced the concentration of these hormone-altering chemicals in the urine of teenage girl volunteers in just three days. These results demonstrate that with conscious consumer habits, we can reduce our body burden of harmful chemicals.[24,25]
- Endocrine-disrupting chemicals that impair the thyroid-signaling pathway during pregnancy show impairments in fetal neurological development equating to three to four IQ points.[26]

What medical organizations have weighed in on the topic?

As research increasingly points to a link between environment and health, leading health authorities have warned of the impact of chemicals on cancer risk, endocrine disruption, and reproductive harm. These organizations include:

- President's Cancer Panel[27]
- JAMA Pediatrics[28]
- American College of Obstetricians and Gynecologists[29]
- Endocrine Society[30]
- American Academy of Pediatrics[31]
- National Institute of Environmental Health Sciences[32]
- Tufts University School of Medicine[33]
- New York University School of Medicine[34]

What are the illnesses and disorders associated with exposure to harmful chemicals?

More than 50 years of scientific studies have fueled the growing consensus that exposure to toxic chemicals plays a role in the incidence and prevalence of many diseases and disorders in the United States.[35]

ENDOCRINE DISRUPTION

Endocrine disruptors (EDCs) are toxic ingredients which interfere with proper functioning of the endocrine system.

EDCs have effects on male and female reproduction, breast development and cancer, prostate cancer, neuroendocrinology, thyroid function, metabolism and obesity, and cardiovascular endocrinology. Even low levels of exposure may cause endocrine or reproductive abnormalities, particularly if exposure occurs during a critical developmental window, like puberty. Surprisingly, low doses may exert even more potent effects than higher doses, which points to the importance of avoiding low-level exposures to EDCs wherever possible.[36]

A 2016 study revealed the effects of endocrine disruptors on pregnancy. This study finds that alterations during early pregnancy have the potential to result in adverse pregnancy outcomes. While genetic alterations may cause some of these outcomes, environmental exposure to endocrine-disrupting chemicals have the same potential to interfere with hormone action.[37]

FERTILITY/REPRODUCTIVE ISSUES

Difficulty in conceiving and maintaining a pregnancy affected 40% more women in 2002 than in 1982.

Studies indicate that sperm count and testosterone levels may be declining in U.S. males.[38] Environmental exposure to toxic chemicals, such as BPA and phthalates,[39] may play a role in these issues.[40]

Prenatal exposure to phthalates—chemicals found in personal-care products and other consumer products—can cause the reproductive organs of male infants to develop abnormally.[41]

Today, girls are entering puberty earlier than they were a generation ago—in part due to childhood and, likely, in utero exposures to endocrine disruptors (substances that can alter the body's hormonal responses).[42] Early puberty puts girls at a higher risk for breast cancer later in life,[43] and a shortened childhood undoubtedly has larger implications, including an increased risk of depression.[44]

CANCER

The statistics are alarming: in the United States, one in three women and one in two men will develop cancer in their lifetime.[45]

In 2010, the President's Cancer Panel released its annual report, which for the first time focused on investigating the environmental links to cancer. The panel was particularly concerned to find that the true burden of nongenetic, environmentally induced cancer has been "grossly underestimated."[46]

One in eight women in the United States will be diagnosed with breast cancer in their lifetime; 40 years ago, it was one in ten.[47]

- Only half of these cases can be tied to traditional risk factors like genetic inheritance, diet, and reproductive history.[48] That's hundreds of thousands of women diagnosed with no known risk factors.
- Cancer susceptibility genes are estimated to account for only 5-10% of breast cancers overall.
- Another way of phrasing it: approximately 90% of women diagnosed do not have a mutation in their BRCA genes, which are the genes many people think of when they think of genetic predisposition to the disease.[49]

How does environmental exposure to harmful chemicals adversely affect different populations?

Impact on Children

Children are far more vulnerable than adults to the effects of toxic chemicals and radiation.[50] Biomonitoring studies, which measure specific chemicals found in blood, urine, or tissue, help us to understand our potential body burden of chemicals absorbed from personal-care products. Studies have shown that the effects of endocrine-disruptive ingredients can begin while children are in utero. The cumulative effects of toxic chemical exposure—beginning with pre-birth exposure and continuing with chronic exposure throughout one's lifetime—may result, in adulthood, in a greater likelihood of decreases in sex and thyroid hormone levels, low sperm quality, endometriosis, insulin resistance, obesity, and cancer.[51]

Impact on People of Color

Several studies have shown that people of color (defined as people of Asian/Pacific Islander, Arab/Middle-Eastern, Black/African-American/Caribbean/West Indian, Native/Indigenous, and Hispanic/Latin descent) are exposed to a variety of indoor pollutants, including lead, allergens, and pesticides, at levels greater than in Caucasian populations.[52] In addition, some of the cosmetic products marketed to women of color, such as skin lighteners, dyes, hair relaxers, and nail polish, contain some of the most concerning chemicals used in cosmetics, including known hormone disruptors and carcinogens.[53]

SOCIETAL IMPLICATIONS

Researchers estimate that exposure to toxic chemicals is responsible for nearly $80 billion in annual health care costs, including a loss of productivity in the workforce from lost IQ points. Such studies are far from comprehensive; the real toll of exposure to toxic chemicals is likely far higher.[54]

What can we do to decrease our chemical body burden?

Taking steps to avoid potentially harmful exposures can help reduce the risk of adverse health consequences. These steps can include reducing consumption of processed foods and drinks, minimizing the use of household and personal-care products that contain harmful chemicals, washing food well before eating it, and vacuuming and mopping floors to reduce toxic chemicals in house dust and indoor air.

It is also important to evaluate potential occupational exposures to chemicals of concern. Find ways to prevent exposure by using protective gear and assuring good ventilation, and advocate for safer work environments whenever possible.

The Environmental Working Group's (EWG) Skin Deep Database is a great resource that ranks products on a scale of 1 to 10 for harmful chemicals. Look for products that are EWG VERIFIED, the strictest seal of approval for personal-care products.

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