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**CHILDREN'S ENVIRONMENTAL HEALTH CENTER OF THE HUDSON VALLEY**

**PROTECTING CHILDREN AGAINST ENVIRONMENTAL THREATS**

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**Personal Care Products: Moisturizers, Deodorants and Sunscreens**

**Rationale:** In the age of fear about exposure to the elements, parents use a variety of personal care products (PCPs) to protect their children. PCPs include moisturizers, deodorants and sunscreens. These products are meant to protect, but can carry their own harm. Cosmetic products do not need Food & Drug Administration (FDA) approval and as a result can contain a number of harmful ingredients. Most PCPs are cosmetic and have been linked to a variety of health problems.

**How to read labels:** Cosmetic manufacturers are required to disclose their ingredients, which are found on product packaging and online. In products such as sunscreens, it is important to read both the active and inactive ingredients; these ingredients can then be searched online to check their health risks. The EWG Skin Deep® website contains a database with a toxicity grade for products that is available to consumers.

**Expiration dates:** Most products do not have expiration dates, however they do expire. Some products have a symbol of an open jar, with a number and an "M" inside the jar. This symbol indicates how many months the product can be used for after opening. For example, if the number is 6M, then the product can be used for 6 months after opening. Other products have codes that can be interpreted by using the company's website. It is very important to not use products past the expiration dates because ingredients inside can decay and become harmful.

## **Moisturizers**

A daily routine for the largest organ of the body can help protect us from the outside elements and maintain our protective shield. Whether it is dry, hot, windy or cold a moisturizer can serve to keep your skin soft, smooth and hydrated. However, chemicals such as phthalates, toluene, and formaldehyde negatively affect the body and can be toxic. Because moisturizers are instantly absorbed in the skin, these chemicals in high concentrations can cause significant harm to the body over time.



Phthalates are used in moisturizers to help retain moisture and soften the skin. They have the ability to penetrate the skin and allow the product to infuse and work deeper. Studies have shown up to 90% of humans are exposed to phthalates on a daily basis. This is particularly worrisome because phthalates are primarily endocrine disruptors that cause early puberty and sperm malfunction. Along with the effects on reproduction, phthalates can cause allergies, asthma and eczema. Prolonged exposure to phthalates has been linked to decrease cognitive functioning and decreased social responses, most highlighted in ADHD and autism children.

Toluene is a solvent that can dissolve paint and paint thinner, derived from petroleum. Exposure to toluene in moisturizers can affect the respiratory system, causing irritation to the nose, mouth and skin. Recent studies have shown that toluene can cause fetal damage in pregnant mothers and can weaken the immune system.

Formaldehyde is used in moisturizers and other cosmetics to prevent bacterial growth. It was branded a human carcinogen and has been linked to nasal and nasopharyngeal cancers. Formaldehyde has been shown to cause allergic skin reactions and weaken the immune system.

## **Deodorant/Antiperspirant**

Deodorants and antiperspirants are controversial products in general due to concerns about sweating as a biological process that needs to occur. Common ingredients in deodorants include parabens, triclosan and propylene glycols. An additional concern with deodorants is fragrance. Fragrances are chemical cocktails whose ingredients are not required to be disclosed. As a result, the products can contain any number of chemicals that the brand is not required to disclose.



Parabens are a group of chemicals found very commonly in cosmetic products from shampoo to soap to deodorant. Parabens are easily absorbed into the skin through topical products. They act in a similar fashion to estrogen, a naturally occurring hormone in the body that can cause breast cancer. Parabens are especially worrisome when applied to the underarm area due to its close proximity to the breast. Even products that do not list parabens in the ingredient list can contain them in fragrances.

Propylene glycols are a group of chemicals that are also used in many cosmetic products. There are three main kinds of propylene glycols but the ones found in cosmetics are monopropylene glycol and tripropylene glycol. These chemicals can cause skin reactions when concentrated.

Triclosan is an antibacterial agent present in some personal care products, such as soaps, toothpastes, and sterilizers. Triclosan can be absorbed through the skin or orally, which are how many personal care products are used. Triclosan is a chemical that possesses endocrine disrupting properties, or properties similar to a group of hormones known to interfere with important hormone functions. Detectable levels of triclosan in human fluids and tissues have been a cause for concern, especially considering its link to proliferation of human breast cancer cells.

## Sunscreen

As we prepare for the summer months, a key component to a healthy outing is the use of sunscreen. Sunscreens are predominantly used to prevent sunburn and in some instances reduce the risk of cancer. While it is agreed that sunburn is not good for our long-term health, on our quest to find the most reliable sunscreen we may unintentionally be doing more harm than good to our bodies. The active ingredients in sunscreens come in two forms, chemical and mineral filters. These filters typically contain chemicals such as: oxybenzone, homosalate, and octocrylene.



Oxybenzone is one of the most common chemicals found in sunscreen; it is colorless, soluble and provides UV protection. Although its primary function is to absorb UV light, research has shown some amount gets absorbed in the skin and can stay in the body for an unknown amount of time. Oxybenzone has been linked to disrupting the body's normal hormonal functions, resulting in early puberty in females and a low sperm count in males. It also has the potential to damage our cells, which ironically, may lead to skin cancer.

Homosalate is another prominent chemical in sunscreen that acts as an endocrine disrupter. In a normal person, the endocrine system assigns various jobs to the hormones in our body; homosalate however, disrupts the hormones from doing their jobs. In turn, the body then assigns these jobs to homosalate. Homosalate gets the tasks of estrogen, androgen and progesterone. Furthermore, because homosalate is not good at its assigned tasks our health suffers. This can result in early puberty, premature aging of the skin and in some cases breast cancer.

Octocrylene is used in sunscreen to absorb UVB and short wave UVA rays however, like the previous two chemicals octocrylene is shown to be a strong allergen and a reproductive toxin. Some studies have shown that octocrylene can cause skin irritation coupled with rashes in children and when the chemical is broken down, it can cause damage to DNA resulting in skin cancer.

## Do

**Wear clothes:** hats, shirts and pants will reduce skin exposure to the sun. Infants should be covered in tightly woven but loose fitting clothes.

**Find Shade:** take an umbrella to the beach, picnic under a tree or enjoy a book under a canopy. Use the stroller hood when in transit and avoid the midday sun.

**Use Sunscreen:** follow product warnings for infants; Test small amount of sunscreen on wrist of child. Consult doctor on product recommendation. Apply and reapply sunscreen if child is sweating or playing in water.

## Don't

**Use powder, pump and spray sunscreen:** particles can be inhaled into the lungs and then absorbed into the bloodstream. Health concerns include cancer and tissue damage.

**Be fooled by high SPF:** we tend to apply too little or stay in the sun too long.

**Use eye sunscreen sticks:** as there are no regulations to ensure the product is safe for the eyes.

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