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### What's in your dust?

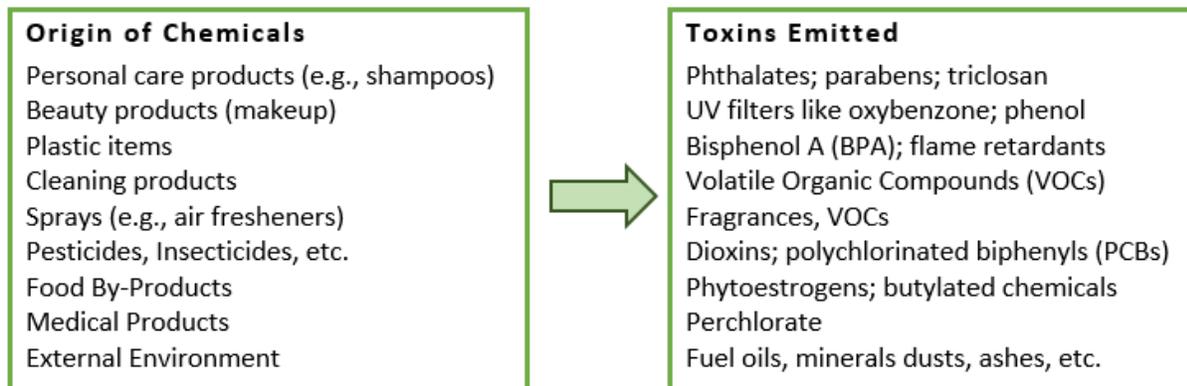


Household dust is made up of tiny particles originating from both the outside and inside environment. Dust is therefore composed of a variety of things, some of which can have negative effects on health. Dust is most likely to accumulate on unused surfaces and the floor. This is of special concern for individuals who have children and young infants. Younger children are most likely to come in contact with the dangerous particles in dust as they spend a lot of time playing on the floor, crawling on the floor, and putting objects in their mouths as part of their development. Dust can also be dangerous for adults as it can easily distribute itself on various surfaces due to its light weight and be inhaled particularly when cleaning. The following article discusses the composition of dust, its health effects, and solutions to create a safer home environment.



## The Composition of Household Dust

Household dust is made of particles like dead skin cells, soil particles, pollen, hair, cloth fibers, dust mites, pathogens, microplastics, and other minuscule debris [1]. Due to the small size of the particles, dust can easily bind toxic chemicals like pesticides, flame retardants, dioxins, perfluorinated chemicals, phthalates, bisphenol A (BPA), parabens, and metals amongst others [2]. These chemicals are released from a variety of products that individuals own and use on a regular basis.



**Source:** Andrews, R. (2020, August 03). All About Endocrine Disruptors. Retrieved from <https://www.precisionnutrition.com/all-about-endocrine-disruptors>

## The Health Effects of Dust

The health effects of dust are completely dependent on what is in the dust. For example, some of the chemicals listed in the table above are known as endocrine disruptors. These toxins primarily affect the endocrine system and can cause a plethora of health problems like reduced fertility, oxidative stress, suppression of testosterone, impaired metabolism, early onset of puberty, and disrupted immune function [2].

Particles coming from the external environment (i.e., air pollution) have been found to damage the respiratory and cardiovascular systems [3]. Amongst the common problems, there are increased risks for developing chronic bronchitis, calcification of arteries, and respiratory infections. Furthermore, studies have found that



individuals who live in places where wildfire are common, dust can contain fine matter than can be especially dangerous for pregnant women. Exposure to even low levels of such dust has been correlated with low birth weight, reduced fetal brain size, slowed brain development during infancy, behavioural problems (e.g., ADHD), high blood pressure in early life, and autism [4, 5]. Generally, in children, dust can create new health problems or worsen pre-existing conditions regardless of where they live in the world. A study from 2009 found that common allergens (e.g., dust mites) in dust increases the severity of asthma [6].

Besides external pollutant, household dust can also contain pathogens like bacteria, parasites, and fungi often derived from pets, soil, food, and water [7]. The presence of pathogens can lead to increased infections and transmission of disease. Pathogens are especially dangerous as they can reproduce if not eliminated.

Dust may also increase the risk of cancer development. Case in point, flame retardants have been linked to elevated odds of papillary thyroid cancer, and the amount of exposure was positively correlated with tumor severity [8]. Similarly, the presence of metals in dust and continuous exposure to them have been found to increase the risk of cancer development significantly [9].

### **Solutions for Combatting Dust**

- ✓ Before anything, wear a mask when cleaning to avoid inhaling dangerous particles.
- ✓ When cleaning, always start from top to bottom.
- ✓ For dust, dampen a microfiber cloth and swipe it along surfaces. Rinse often.
- ✓ Use microfiber dusters to get rid of dust from hard-to-reach areas. Microfiber efficiently traps dust instead of just distributing around [10].



Wear a mask when cleaning.

Use microfiber dusters.

Wash bedding regularly.

Properly insulate/seal your house.

Do NOT use feather dusters.

Do NOT use harsh chemicals.

Do NOT use products that can end up as dust.

Do NOT wear outdoor shoes in the house.

- ✓ Wash bedding items regularly as they are a direct source of contact every day.
- ✓ Avoid using products that end up in dust. For example, microplastics can be found in dust, so limit your use of plastic products or plasticizers like phthalates and parabens found in products.
- ✓ Fill in the cracks and crevices that link the outside environment to the inside. Most particles in your dust come from the external environment, especially if your windows and doors are not properly insulated or sealed.

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