Fragrances and Health

The article “Scents & Sensitivity” [EHP 106:A594–A599 (1998)] provides a good summary of the issues involved in concerns and controversies over fragranced products. However, several points should be addressed.

The health effects of fragrances are a general health issue, an indoor air quality issue, an access issue, and an environmental issue. Unfortunately, the only issue the fragrance industry has addressed is that of skin safety for the user of the products. This leaves many areas of concern.

Allergic disease affects 20% of the population and is the sixth leading cause of chronic disease. There are an estimated 17 million asthmatics, and migraine headaches affect as many as 25 million people in the United States. Individuals with nonallergic rhinitis, chronic respiratory disease, and chemical sensitivities should also be included in these numbers. Fragrances are known to trigger and exacerbate all of these conditions. The impact of fragrances on health is a general health issue.

Fragrance chemicals are volatile by nature. This means some of each fragranced product used ends up in the air. The result is a complex mixture of chemicals that is constantly changing. Fragrance chemicals are often air, heat, and light sensitive. Very often the compounds that result from these reactions and breakdown that occurs in the air are more irritating than the original compounds. In indoor environments where air exchange is poor, the problems are compounded.

Fragrance chemicals are not removed from wastewater by present sewage treatment methods. Synthetic musk compounds are being found in waterways and in aquatic wildlife. The implications are not known because so little research has been done in the area of fragrance chemical safety. These materials are now in the food chain.

The main focus of safety testing in the fragrance industry has been adverse skin effects. Fragrance materials penetrate the skin, are absorbed into the bloodstream, and are distributed to other organs. Other routes of exposure, such as respiratory and neurologic exposure via olfactory pathways, have been ignored. Ingestion is another route of exposure because many of the same materials are used as flavors in foods.

There are legitimate concerns about the scope and effectiveness of safety testing by the fragrance industry. In the late 1970s it was found that acetylcholine tetramethylatralin (AETT) caused the internal organs of laboratory animals to turn blue. This substance was also severely neurotoxic. Testing by the industry had not pinpointed these side effects, which were discovered by accident after the material had been used in products for over 20 years (1,2).

Musk ambrette was also used in fragrances for years. Testing by the Research Institute for Fragrance Materials indicated that it was safe for use. It was later determined that musk ambrette caused photosensitivity reactions and had neurotoxic properties (3). The International Fragrance Association recommended in 1985 that musk ambrette not be used in products with skin contact. In 1991, musk ambrette was still being found in products tested by the Food and Drug Administration (FDA).

More recent concerns are being focused on musk xylol, which was used to replace musk ambrette. Safety testing by the industry indicated that musk xylol was safe for use. Later studies outside the industry found musk xylol to be carcinogenic when fed to mice. Musk xylol has been used since the turn of the century. It accumulates in human tissue and has been found in human adipose tissue and breast milk.

Some fragrance materials are known to act as hormones in the skin. Although there is significant respiratory exposure to these materials, the possibility of respiratory sensitization has not been addressed. In some individuals with asthma, fragrances are primary triggers, whereas other irritants do not initiate a response. This suggests that there may be respiratory sensitization involved. If fragrance materials have the ability to sensitize the respiratory system in the same manner as the skin, the implications are serious and could be one factor in the unexplained increase in asthma rates.

The fragrance industry asserts that adequate safety testing is done, there is adequate monitoring of problems, and no increase in complaints concerning fragranced products has been noted. The present system of monitoring complaints is totally inadequate. The FDA’s system of logging complaints is set up for users of the products, and not for those sold by others’ use. Someone who calls the general fragrance industry complaint line may not be given instructions on whom to contact. Any complaints on “secondhand” fragrance should be addressed specifically to Lark Lambert, HFS-106, Office of Cosmetics and Colors, Cosmetic Adverse Reaction Monitoring Program, 200C Street S.W., Washington, DC 20204 USA. Telephone: (202) 205-4706. Fax: (202) 205-5098.

Even with the limited method of collecting data, there was an increase in records of complaints from 1995 to 1997. These complaints included respiratory and neurologic effects. The FDA suspended the Voluntary Cosmetic Registration Program in March 1998 because of budget cuts; it was reinstated 1 January 1999. This program is totally voluntary, and the industry is not required to participate.

The FDA only addresses the safety of materials in cosmetics. Fragrances in household products come under the jurisdiction of the Consumer Product Safety Commission. Once the products volatilize, air quality falls under U.S. Environmental Protection Agency jurisdiction. The fragrance industry does not have a centralized data collection program in place. This means that there is no method in place for accurately collecting data on the negative impact of fragrances.

The “trade-secret” status of fragrances makes it difficult, if not impossible, to pinpoint substances that cause problems. Present labeling is misleading, as “fragrance-free” and “unscented” products often contain fragrance chemicals. Avoidance is not possible when labeling does not reflect the contents.

It seems to be the industry’s position to discount complaints concerning fragrances as reactionary and psychological responses to odors. Fragrances do enhance our lives, just as music does. But taste in music varies—what is music to one may be noise to another. Also, when there is too much noise or noise is too loud, real health problems occur.

When types of substances used by the fragrance industry are used in other industries, they are heavily regulated because of their known health effects. Whereas these substances are generally used at low levels in fragrance materials, the sheer numbers of fragranced products used and the constant exposure concerns, especially in children. In addition, many of the materials have synergistic effects that cannot be ignored. A much more prudent course of action would be to gather reliable data, do further safety testing, pinpoint the substances causing problems, and eliminate them from use. Further information can be found at the web site of the Fragranced Products Information Network (http://www.amelawww.com/fpin/fpin.htm).

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