

**Breathing Indoors II
Fragrances (Part One)**

by Mary Cougar Brunette

Would it surprise you to know that what goes on your skin goes through your skin into your bloodstream? This is especially true of fragrances, which contain hundreds of lipophilic solvents. When applied to the skin, the bloodstream carries them to the brain, liver and kidneys, and stores them in our fatty tissues. We are bombarded with fragrances in many forms. These include air fresheners, laundry products, scented candles, incense, household cleaners, magazine fragrance strips, and the products we put on our own bodies.

The newest technique in marketing is to scent the air in stores with fragrances which appeal emotionally to the consumer. An odor can trigger a gamut of emotions and physical effects, such as pulse, blood pressure and stimulation of gastric juices. The aim is to trigger certain behaviors. In this case, consuming behavior. Stores, hotels, casinos and even museums use air born fragrances.

Virtually all chemicals used in fragrances, are volatile organic compounds (VOCs). Approximately 95% of VOCs inhaled are absorbed into the body. One effect is to cause circulatory and electrical charges in the brain, which can trigger migraines. These types of chemicals are known respiratory irritants.

VOCs are often unstable chemicals that are air, light and heat sensitive, breaking down in the air, often to more dangerous compounds, or combining with others to form totally new compounds. The safety of fragrance chemicals has not been established individually, let alone the effects of combinations of these chemicals. Mixture of chemicals may form more of a health hazard because certain chemicals have the ability to increase the effects of other chemicals.

Biochemist Richard Conrad, PhD states, "Undoubtedly some degree of neuro toxicity or poisoning is caused by perfume ingredients. Therefore, perfumes, especially modern designer perfumes, should be considered dangerous until proven safe." Conrad recommends that the same rigorous testing applied to skin-patch delivery systems should be required of perfume manufacturers.

A single perfume can contain more than six

hundred chemicals, eighty to ninety per cent of which are synthetic compounds, derived from petroleum. These chemicals include benzene derivatives, aldehydes, phthalates and phenols as well as many other known toxins and sensitizers, capable of causing cancer, reproductive problems, birth defects, central nervous systems (CNS) disorders and allergic reactions. CNS disorders (affecting brain and spine) include Multiple Sclerosis, Parkinson's Disease, Alzheimer's Disease, and Sudden Infant Death Syndrome.

A July 2005 report issued by the Government Accountability Office (GAO) states that the Environmental Protection Agency (EPA) has health data for only 15% of the chemicals introduced over the last thirty years. The chemical companies provide this information from their own testing. The EPA has not banned any existing chemical since 1989, when it banned asbestos.

According to Andy Ingrejas of the National Environmental Trust in Washington, D.C., the EPA must gather enormous evidence to prove a chemical is a health hazard. The EPA is further handicapped because it has no authority under existing law (Toxic Substance Control Act, 1976) to obtain the evidence needed. In the past thirty years, the EPA has requested health information on only two hundred out of approximately eighty thousand chemicals.

A Food and Drug Administration (FDA) study (1968-1972) of 138 chemical compounds used in cosmetic products identified five of the twenty most commonly used as causing frequent adverse reactions. These chemicals are used to this day in fragrances! They are alpha-terpineol, benzyl acetate (linked to pancreatic cancer), benzyl alcohol, limonene and linalool. These five are found in perfume, cologne, shampoo, conditioner, hair spray, after shave, shaving cream, deodorant, hand and body lotion, vaseline lotion, bar soap, nail polish remover, dish washing liquid, detergent, bleach, bleach powders, fabric softener, air freshener and other products. Fragrance ingredients are trade secrets which need not be listed on the label.

The National Institute of Occupational Safety and Health (NIOSH) found 884 toxins in a list of 2,983 chemicals used by the fragrance industry. Fragrances are responsible for 30% of all allergic reactions to chemicals. These reactions include migraines, upper respiratory infections and asthma.

Seventy two percent of asthmatics experience

respiratory distress from exposure to perfume.

A recent study by the Environmental Working Group reported that one third of the 75,000 cosmetic and personal care products they assessed contained chemicals linked to cancer. Diseases linked to synthetic chemicals are on the rise, including breast cancer, testicular cancer and reproductive problems. Some chemicals found in cosmetics, including phthalates, acrylamide, formaldehyde, and ethylene oxide, are listed by both California and the EPA as carcinogens or reproductive toxins.

The cosmetic industry is a \$35 billion industry. It mounts aggressive lobbies to kill laws that would insure safe personal care products; e.g., the recent defeat of a bill banning the use of phthalates in California (2005). On the national level, budgets for consumer safety programs have been cut by as much as 30% due to prioritizing funds for war.

Phthalates are particularly insidious. They are used as plastic softeners and in the case of fragrances, to mix chemicals that will usually not mix. Dimethylphthalates is used in perfumes. All of the phthalates are endocrine symptom (hormone) disruptors.

Living on Earth, on National Public Radio, reported that in the United States, the highest level of phthalates are found in females of reproductive age. Fragranced products were found to be the primary source of exposure, as well as nail polishes, solvents and heated plastics. In test animals exposed to phthalates, abnormalities were found in male offspring.

In Puerto Rico, researchers were puzzled by the high incidence of premature breast development in young children. They hypothesized that this phenomenon was due to the heavy use of pesticides. However, the culprit was found to be high levels of phthalates in the bodies of the women working in plastic factories who had passed the chemical en utero to their children.

Children and the elderly are most at risk from exposure to fragrances. With children, because the systems of their bodies are still developing, their respiratory rate is faster and rate of exposure to body weight, greater. They have frequent exposure to products used on floors, especially carpet, and are held close to adult's hair and clothing. Both children and elders have thinner skin, thus substances are more easily absorbed. Elders often deal with compromised health, and body processes do not work as well.

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