

Allergy to “Natural” Fragrance

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A woman in her late 50s was seen at a dermatology practice for consultation and patch testing. She reported that a rash had been present for more than 2 years. It had initially started on her face and then had spread to involve her neck and sometimes her arms. Although initially the rash had been intermittent, over the 6 months prior to presentation, she reported that the rash had been constant, with extensive red itchy patches.

The patient was a retired schoolteacher, and she had not noted any trigger for the rash. The symptoms had been very severe at times, necessitating multiple intramuscular injections of triamcinolone and several tapers of oral prednisone. She reported having used numerous different topical corticosteroid creams, as well.

Her dermatologist suspected fragrance allergy and advised her to change her skin care products. She switched to Vanicream brand bar soap and moisturizing cream for her daily skin care. However, she continued to use an additional over-the-counter moisturizing cream because it contained “no synthetic fragrances” and was advertised as being “hypoallergenic.” Review of the ingredients list found that it contained numerous essential oils.

On physical examination at the current visit, she had extensive red, scaling, ill-defined patches over her face, neck, and arms (Figure 1).

She underwent the standard North American Contact Dermatitis Group patch test series, an extended preservatives series, and testing for additional acrylate allergens. On 72-hour delayed patch test results, she had multiple positive reactions. These included reactions to multiple fragrance additives including fragrance mix and hydroperoxides of limonene and linalool. She



The patient's left cheek, neck, and shoulder with red, scaling, ill-defined patches.

also reacted to several essential oils including tea tree oil, sandalwood oil, and her essential oil moisturizing cream (Figures 2 and 3).

Given the multiple reactions to fragrance additives as well as lanolin and other skin care ingredients, a product list from the Contact Allergen Management Program was created and given

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Ariadna Perez Sanchez, MD, and Megan Schlichte, MD, report no relevant financial relationships. Rajani Katta, MD, is the author of a book for the general public on dermatology and serves on the advisory board of Vichy Laboratories.

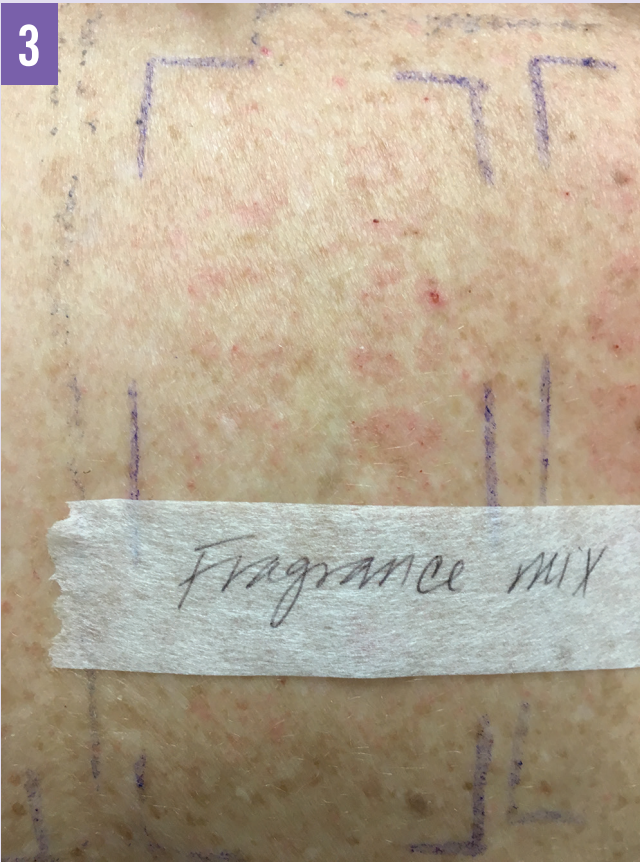
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She used an over-the-counter moisturizing cream because it contained “no synthetic fragrances” and was “hypoallergenic.” Review of the ingredients list found that it contained numerous essential oils.



Results of a 72-hour patch test indicating 3+ reactions to hydroperoxides of limonene and hydroperoxides of linalool.



Results of a 72-hour patch test indicating a 2+ reaction to fragrance mix.

Table. Selected Examples of Covert Fragrance Chemicals
Balsam of Peru
Benzaldehyde
Benzyl alcohol
Citrus oils
Essential oils
Eugenol
Isoeugenol
Limonene
Linalool
Sandalwood oil
Various flower extracts
Various plant extracts

to the patient. She was also asked to stop using the essential oil moisturizer. She was advised to change her hair care products, given the facial involvement. She was counseled on fragrance allergy and educated that products that are labeled “fragrance-free,” “contains no synthetic fragrances,” and “hypoallergenic” could still be problematic.

Treatment was initiated with hydrocortisone ointment, 1%, for the face and triamcinolone ointment, 0.1%, for the neck and arms.

DISCUSSION

Despite a widespread belief among consumers that “natural” products are better or are less likely to trigger allergic reactions, surveillance studies indicate that natural substances do commonly serve as allergens. In fact, allergy to natural fragrances is common and frequently relevant.¹ This includes allergy to natural substances such as balsam of Peru and several essential oils that are included in commonly tested fragrance mixes.

Despite its frequent causative role in allergic contact dermatitis, much consumer confusion exists on the subject of fragrance allergy. It is therefore important to educate patients on the meaning of the labeling terms *fragrance* and *fragrance-free*.

On a label, the words *fragrance*, *perfume*, or *parfum* may actually be considered to indicate a “proprietary mixture of fragrance additives.”² There are hundreds of fragrance additives, encompassing both natural and synthetic substances. In order to create a particular scent for a product, a number of fragrance additives must be combined. Labeling laws in the United States protect this exact formula, and therefore the specific fragrance chemicals used in a particular product do not need to be disclosed on the label. Studies have indicated that the word *fragrance* on the label may in fact indicate the presence of 40 or more individual fragrance additives.

One area of frequent consumer confusion in recent years is the difference between natural and synthetic fragrances. There

There appears to be a perception that synthetic fragrance additives are problematic, while natural fragrance additives are “safe.” But both types are frequent triggers of allergic contact dermatitis.

appears to be a perception that synthetic fragrance additives are problematic, while natural fragrance additives are “safe.” From an allergenic standpoint, however, both types are frequent triggers of allergic contact dermatitis.¹ This is of particular concern given the rise in popularity of essential oils. Many of these, such

as limonene, linalool, sandalwood oil, and ylang ylang oil, are notable allergens.

The words *fragrance-free* can cause significant confusion, as well. This term is regulated by the US Food and Drug Administration (FDA), but its meaning is often misleading. The FDA defines *fragrance* as “any natural or synthetic substance or substances used solely to impart an odor to a cosmetic product.” Therefore, manufacturers may legally use fragrance additives in a “fragrance-free” product if that additive is used for another function.³ For example, rose oil may be used as a moisturizing ingredient, while benzyl alcohol may be used as a preservative. Substances that are considered fragrance additives but that may not be recognized as such by consumers on a product label may be considered “covert fragrance chemicals” (Table). ■

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