

Letter to the Editor

Fragrance testing in the 21st century

Dear Sir,

Now is the time to phase out the use of the fragrance mix (FM) and balsam of Peru (BP) in standard patch testing and instead use specific fragrance materials. BP was used as a marker for fragrance allergy in the 1960s and 1970s. The FM was introduced in the late 1970s to diagnose fragrance sensitivity more accurately (1). The FM has proven useful in detecting fragrance allergy but it has limitations, which include:

- The components are present at inadequate eliciting concentrations.
- The FM is irritant, leading to false-positive interpretations.
- The 8 chemicals in the FM have not changed in over 20 years, during which time many new fragrance materials have been introduced.
- The FM needs sorbitan sesquioleate as an emulsifier.

I propose instead using 8 specific chemicals for fragrance testing (Table 1). These include the 7 most reactive substances from the FM plus Lyr^{al}® (2). These 8 materials will probably detect most cases of fragrance hypersensitivity. However, I would also use a natural fragrance mixture (3) (Table 2) as a 'safety net'.

Table 1. Future fragrance testing (all pet.)

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|--------------------------|
| 1. Cinnamic aldehyde 1% |
| 2. Cinnamic alcohol 5% |
| 3. Eugenol 5% |
| 4. Isoeugenol 5% |
| 5. Hydroxycitronellal 5% |
| 6. Oak moss absolute 5% |
| 7. Geraniol 5% |
| 8. Lyr ^{al} 5% |

Table 2. Natural Fragrance Mixture (all pet.)

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|--------------------------|
| 1. Jasmine absolute 2% |
| 2. Ylang-ylang oil 2% |
| 3. Narcissus absolute 2% |
| 4. Spearmint oil 2% |
| 5. Sandalwood oil 2% |

I think this is justified since it has recently been shown that the FM has the highest rate of relevance in the standard series (4). In the future, these fragrance chemicals will certainly change as the fragrance companies add new chemicals to perfumes. In the 1960s and 1970s, 20 chemicals were used for screening. At present, 30–60 chemicals are commonly used in screening. Testing with up to 80 chemicals is feasible with modern patch testing methods. Increasing the universe of allergens will improve our diagnostic ability.

Recently, there was a report of systemic contact dermatitis due to flavor materials (5). Approximately half of the patients who were sensitive to BP or fragrance reported improvement with a BP or flavor reduction diet. Testing with specific chemicals would be helpful in the dietary direction of patients. For instance, a patient allergic to cinnamic alcohol and/or cinnamic aldehyde would avoid cinnamon.

Testing with separate chemicals would also place dermatologists in a unique position to provide data on allergenic fragrance chemicals to the fragrance industry. If the data collected is compelling, the fragrance industry could eliminate such allergenic chemicals, reduce their use concentrations or substitute nonallergenic fragrance chemicals. The fragrance industry should actively pursue the use of substitutes for allergenic fragrance materials.

Cosmetic labeling of fragrance allergens may occur soon in Europe. Thus it is imperative that we test with the individual chemicals so that we will be in a position to advise our fragrance-sensitive patients on specific allergen avoidance.

Any changes in the diagnostic procedure should only be made after thorough evaluation of the new method in comparison with the FM. Simultaneous testing should be done in a large number of patients and in several countries in order to make a valid comparison.

Now that several chemicals have been established as important fragrance allergens, it is appropriate to test with these specific chemicals in the future. The list will be modified as new fragrance allergens emerge.

Yours sincerely,
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References

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