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The confounding effect of background odors on olfactory sensitivity testing

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Highlights:

- Background odors are common problem in assessment of olfactory function
- Olfactory threshold was experimentally tested with PEA and Linalool target odors
- There was congruent, incongruent or no background odor
- Congruent background odor significantly impaired target odor threshold
- Olfactory assessments should be performed in odor-free environments

Abstract

Background

Human olfactory sensitivity is known to vary significantly across subjects. Furthermore, environmental factors such as background noise and odor are known to affect target odor threshold scores but have not yet been fully delineated. We aimed to determine whether congruent and non-congruent background odor impaired target odor threshold scores.

New Method

We performed odor threshold testing in 103 normosmic adults, using phenylethylalcohol (PEA) or linalool as target odors, under three conditions: (a) congruent target and background odors (e.g., PEA in the test and PEA in the background), (b) non-congruent

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