The Study of Local Odors for Olfactory Function Test in Taiwan

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Purpose: To establish a database for local smell odors in Taiwan, as well as to analyze the characteristics and degree of identification for each selected odors which may serve as a basic information for further development of olfactory function test in Taiwan.

Method: 2259 odors were obtained from 600 interviewee who listed familiar odors form their daily eating, clothing, housing, traffic, learning, and entertainment. After sorting, 140 out of 2259 odors were selected based on high frequency (>10 counts). In the 140 odors, 82 can be extracted in laboratory or obtained in market in a liquid form. 40 odors were finally identified after pre-test and specialist discussion. The 40 selected odors were posted to 40 different unlabelled un-transparent glass bottles. 80 healthy participants with normal smell functions were invited to rank the degree of odors’ intensity, familiarity, irritation, pleasantness and coolness via VAS scale. After these procedures, these 80 participants were further asked to name each odor and then they were asked to choose an answer from four possible answers.

Results: Of the 40 odors, the most intense odor is garlic; the most familiar odor is almond; the most irritant odor is garlic; the most pleasant odor is grapefruit; the coolest odor is chrysanthemum and the warmest one is garlic. Moreover, the odor of almond is the one can be most easily identified without any hint offered. However, the odor of garlic is rated as the most well recognized smell when four possible answers were given. These facts hence proved a strong statistical relationship between the degree of discrimination and odor’s intensity, familiarity, irritation, pleasantness and coolness. In addition, the result also affirmed that the capability of identification on smells and odor’s intensity, familiarity and pleasantness were strongly correlated.

Conclusion: Odors exists cultural and geographic specialties. Olfactory function exam for different ethics may select different odors. Choosing highly recognized odors among all local odors is an elementary step to develop olfactory function exam. This research may be beneficial not only the analysis of local smells but also the development of local olfactory function test in Taiwan. Difference between local olfactory function test and current clinical-used international test will be analyzed in the near future.