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**On the sense of smell, memory, and emotion in the young, the healthy elderly, and the elderly suffering from mild dementia**

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INTRODUCTION:

Olfactory identification disability is particularly common in the elderly suffering from dementia; however, its nature is uncertain. As occupational therapists, we perform intervention using various senses. However, the grounds for the treatment intervention that used the sense of smell are insufficient.

OBJECTIVE:

To establish the nature of olfactory memory of Japanese elderly subjects with mild dementia, the authors compared olfactory memory and odor-emotion in elderly subjects with mild dementia, healthy elderly subjects, and healthy young subjects.

METHOD:

We extracted 21 healthy young subjects, 20 healthy elderly subjects, and 20 elderly subjects with mild dementia (from 11 institutions). They had to undertake an odor-emotion evaluation task (subjective evaluation by the VAS of "intensity," "familiarity," and "hedonics") and an odor-memory task (identification, recognition, re-identification) with 6 out of 12 odors of the Japanese stick-type odor identification test.

RESULTS:

The odor-memory of the elderly subjects with mild dementia deteriorated than that of the other two groups. However, these subjects showed the same improvement in the correct response rate of the re-identification tasks as the healthy elderly subjects. Moreover, the result revealed that the sense of strength and familiarity in the groups with mild dementia was felt at a lower level than that of the other two groups; however, the "hedonic" value was at the same level as the other groups.

CONCLUSIONS:

Thus, the elderly group with mild dementia experienced a lower sense of strength and familiarity than the healthy young or elderly group. However, they felt the same sense of pleasure as the healthy groups. Furthermore, their smell identification ability reduced; however, in a smell identification retest taken after 10 minutes, an improvement in the correct response rate was observed in the healthy elderly group.

CONTRIBUTION TO THE PRACTICE:

By determining the nature of the sense of odor-memory in elderly suffering from mild dementia, we can achieve the basis for occupational therapy for them through intervention using the sense of smell.