1 in 20 people has no sense of smell: Here's how they might get it back

January 26 2024, by Emily Spencer

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During the pandemic, a lost sense of smell was quickly identified as one of the key symptoms of COVID. Nearly four years later, one in five people in the UK is living with a decreased or distorted sense of smell,

and one in twenty have anosmia—the total loss of the ability to perceive any odors at all. Smell training is one of the few treatment options for recovering a lost sense of smell—but can we make it more effective?

Smell training is a therapy that is recommended by experts for recovering a lost sense of smell. It is a simple process that involves sniffing a set of different odors—usually essential oils, or herbs and spices—every day.

The olfactory system has a unique ability to regenerate sensory neurons (nerve cells). So, just like physiotherapy where exercise helps to restore movement and function following an injury, repeated exposure to odors helps to recover the sense of smell following an infection, or other cause of smell loss (for example, traumatic head injury).

Several studies have demonstrated the effectiveness of smell training under laboratory conditions. But recent findings have suggested that the real-world results might be disappointing.

One reason for this is that smell training is a long-term therapy. It can take months before patients detect anything, and some people may not get any benefit at all.

In one study, researchers found that after three months of smell training, participation dropped to 88%, and further declined to 56% after six months. The reason given was that these people did not feel as though they noticed any improvement in their ability to smell.

Cross-modal associations

To remedy this, researchers are now investigating how smell training can be improved. One interesting idea is that information from our other senses, or "cross-modal associations," can be applied to smell training to

promote odor perception and improve the results.

Cross-modal associations are described as the tendency for sensory cues from different sensory systems to be matched. For example, brightness tends to be associated with loudness. Pitch is related to size. Colors are linked to temperature, and softness is matched with round shapes, while spiky shapes feel more rough. In previous studies, these associations have been shown to have a considerable influence on how sensory information is processed. Especially when it comes to olfaction.

Recent research has shown that the sense of smell is influenced by a combination of different sensory inputs—not just odors. Sensory cues such as color, shape, and pitch are believed to play a role in the ability to correctly identify and name odors, and can influence perceptions of odor pleasantness and intensity.

In one study, participants were asked to complete a test that measured their ability to discriminate between different odors while they were presented with the color red or yellow, an outline drawing of a strawberry or a lemon, or a combination of these colors and shapes.

The results suggested that corresponding odor and color associations (for example, the color red and strawberry) were linked to increased olfactory performance compared with odors and colors that were not associated (for example, the color yellow and strawberry).

While projects focusing on harnessing these cross-modal associations to improve treatments for smell loss are underway, research has already started to deliver some promising results.

In a recent study that aimed to investigate whether the effects of smell training could be improved with the addition of cross-modal associations, participants watched a guidance video containing sounds

that matched the odors that they were training with. The results suggest that cross-modal interactions plus smell training improved olfactory function compared to smell training alone.

The results reported in recent studies have been promising and offer new insights into the field of olfactory science. It is hoped that this will soon lead to the development of more effective treatment options for smell recovery.

In the meantime, smell training is one of the best things you can do for a lost sense of smell, so patients are encouraged to stick with it so that they give themselves the best chance at recovery.

Provided by The Conversation