Introduction: As treatments of olfactory dysfunction many trials have been carried out. Recently olfactory training has been reported to be effective for olfactory dysfunction induced by other causes than conductive loss due to rhinosinusitis. It is considered that the underlying mechanism is synaptic plasticity in the olfactory pathway in the central nervous system. Therefore, we applied it for patients with olfactory dysfunction and observed its effects in Kochi Medical School Hospital. All of them complained gradually progressive olfactory loss.

Method: Patients with olfactory dysfunction by unknown causes participated. Before they consulted Kochi Medical School Hospital, conventional treatments had been carried out. None of topical treatment with glucocorticoid solution or medicine like Vitamin B12 or the kampo medicine, Tokishakuyakusan had been able to improve olfactory function. The study protocol was reviewed and approved by Kochi Medical School Hospital (27-121). Using T&T olfactometry, olfaction was assessed. A training kit consists of 4 odor solutions. One of them should be “Peppermint odor”, because chemoreception on the nasal mucosa through the trigeminal nerve is expected to encourage participants to continue the training. The other 3 odors were artificial odorants for cooking or aroma that are familiar for Japanese people.

Results: Perception thresholds as well as identification thresholds were significantly improved in most participants after olfactory training for 9-12 months. None complained worsening. After interruption of training for 3-6 months, however, olfactory dysfunction came up especially in perception thresholds.

Conclusion: Olfactory training is very effective, but reversible treatment for olfactory dysfunction. To keep good olfaction, it is important to continue training. As a method of neurorehabilitation, we should encourage patients to receive abundant olfactory stimuli from everyday life.
Current research efforts focus on understanding olfactory dysfunction, a complex condition that can result from a variety of causes. This dysfunction is often associated with non-CRS, and studies have shown that olfactory disorders can be treated through neuroplasticity and olfactory training methods. These methods aim to restore or regenerate olfactory nerve functions, thereby improving patients' quality of life.

In summary, olfactory disorders are a significant clinical challenge, and ongoing research is essential to develop effective treatment strategies. Further studies are necessary to fully understand the mechanisms involved in olfactory dysfunction and to refine treatment protocols.
Introduction: Head injury is one of the most common etiologies of olfactory loss. This study investigated the effect of olfactory training in patients with traumatic anosmia.

Method: Patients with a clear history of loss of smell after head injury, and whose phenyl ethyl alcohol (PEA) odor detection thresholds remained at –1 after steroid and zinc treatment, were included in this study between July 2016 and July 2018. They were randomly divided into 2 groups, with patients in the 4-odorant group given 4 bottles of PEA, lemon, eucalyptus, and clove oils and those in the PEA group given a bottle of PEA for 6-month olfactory training. After 3-month and 6-month training, the olfactory function was evaluated by both the PEA threshold test and the traditional Chinese version of the University of Pennsylvania Smell Identification Test (UPSIT-TC). Magnetic resonance imaging was performed to measure the volume of olfactory bulbs after training.

Results: There were 45 patients completing 4-odorant training and another 45 completing PEA training. The birhinal PEA threshold decreased significantly in both groups after 6-month training, but the decrease was not significantly different between the 2 groups. The UPSIT-TC score increased significantly in the PEA group but not in the 4-odorant group. The volume of olfactory bulbs was not significantly different between these 2 groups.

Conclusion: Our results show that olfactory training can slightly improve odor threshold levels in patients with traumatic anosmia, but did not improve the odor identification ability. Nevertheless, clinical improvement or benefit in quality of life from olfactory training needs further investigation.