

COVID-19-related anosmia

**Emma Kanaganayagam, Gareth Lloyd,
Liam Travers, James Morris, Andrew Chang**

OLFACTORY DISORDERS are frequent; however, the prevalence of anosmia in the Australian population is currently undocumented. While there are several causes of anosmia – such as sinonasal disorders, as well as traumatic, congenital and other infectious causes – the increasing prevalence of COVID-19 makes it an important cause for the primary physician.^{1,2} On average, 47% of patients with COVID-19 self-report an olfactory disorder, although the inaccuracy of self-reporting means this figure may be higher. Sudden-onset anosmia may be the earliest symptom of COVID-19 in 25% of cases.³ Olfactory disorders comprise anosmia, hyposmia, parosmia, dysgeusia and phantosmia. These often have a profound impact on quality of life because of the experience of unpleasant smell associations.⁴ Prior to COVID-19, upper respiratory tract infections were associated with 40% of cases of anosmia, and symptoms typically resolved within 12 months.²

The pathophysiology of olfactory disorders in COVID-19 is still uncertain, although there is a growing body of evidence. One hypothesis is damage to the angiotensin converting enzyme 2 (ACE2) receptor of the olfactory epithelium, which plays a part in the viral entry of SARS-COV-2. Rhinitis causes localised nasal mucosal oedema, leading to obstruction of the olfactory

cleft and reduced olfactory sensitivity. Inflammatory-mediated injury to the olfactory epithelium has also been identified in post-mortem studies.³ Olfaction provides information to the brain about the environment. This essential function of detecting chemicals in the environment allows us to detect dangerous compounds, maintain nutrition and interact with other people. Medical literature focuses on recommending safety measures to affected patients with a focus on environmental dangers, but the psychosocial impact of olfactory disorders is often overlooked.⁴ People with olfactory disorders describe barriers in social settings such as pursuing intimacy or enjoying meals with family or friends. They may also report difficulty describing symptoms to a medical provider and may be concerned about the impact on their professional lives (eg a chef, sommelier, nurse or firefighter). Olfactory disorders have a significant impact on the enjoyment of food and can lead to malnutrition. A physician may consider dietitian, psychology and allied health referrals for associated malnutrition, mental health concerns and occupational rehabilitation.⁴ Up to 50% of patients with COVID-19-related anosmia experience at least six months of smell and taste alteration.² Research into olfactory neuron regeneration is currently underway,³ and large randomised control studies would be required to support the use of intranasal and systemic corticosteroids, omega 3 supplements, zinc sulphate, alpha-lipoic acid, theophylline, vitamin A, Ginkgo

biloba and sodium citrate as therapies.⁵ ‘Smell training’ has growing evidence and support from international bodies and is a safe and inexpensive treatment that can be initiated in the primary care setting.^{5,6} The British Rhinological Society has been leading research on olfactory disorders in patients with COVID-19 and recommends smell training for patients with symptoms that last longer than two weeks.⁵

Fifth Sense (www.fifthsense.org.uk) and AbScent (<https://abscent.org>) have valuable online tools that may be useful for patients to engage with to create their own smell training kits and log their progress.² Kits can be made at home with scents familiar to the patient such as rose, eucalyptus, clove and lemon (Figure 1). The patient inhales the scent for 30 seconds before pausing for 30 seconds and moving onto another scent, twice daily over a period of months.⁵ A regimen such as this, which incorporates these four scents, has been shown to be effective in post-infectious olfactory disorders when commenced within 12 months of onset.⁶ Otolaryngology referral is warranted for persisting symptoms.⁵

There are many challenges to clinicians managing the symptoms and long-term effects of COVID-19 safely and effectively. Olfactory disorder symptoms may not be of urgency to the clinician; however, the distress of the impact of these symptoms should be treated with as much consideration as a patient presenting with loss of sight or hearing.

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Figure 1. Familiar scents: lemon, eucalyptus, clove and rose

Authors

Emma Kanaganayagam MBBS, PGDipSurgAnat, Otolaryngology Principal House Officer, Queensland Children's Hospital, Qld

Gareth Lloyd BMBS, BMedSci (Hons), FRCS (Eng), Paediatric Otolaryngology Surgeon, Queensland Children's Hospital, Qld

Liam Travers MD, BBiomedSc, Otolaryngology Principal House Officer, Logan Hospital, Qld

James Morris MBBS, Emergency Medicine Registrar, Sunshine Coast University Hospital, Qld

Andrew Chang BENG (HONS), MBBS (HONS), MD, FRACS (OHNS), Paediatric and Adult ENT, Otolaryngology & Cochlear Implant Surgeon, Queensland Children's Hospital, Qld

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Correspondence to:

Emma.Kanaganayagam@health.qld.gov.au

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