### **LETTER TO EDITOR**

# The rate of persistent COVID-19 related chemosensory dysfunctions can be established only after one year

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This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/odi.14298

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Keywords: anosmia; ageusia; COVID-19; coronavirus; smell; taste; taste dysfunction. DISCLOSURE: AC None declared

Keywords: anosmia; ageusia; COVID-19; olfactory function; olfactory dysfunction; SARS-CoV-2;

Study funding: none declared

Conflict of interest: none declared

# ACNOWLEDGEMENTS

Dear Editor,

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We have read with interest the recent article by Reis et al. (Reis et al., 2022) which underlines the high frequency of persistent olfactory and gustatory dysfunctions in subjects infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Persistent olfactory and gustatory dysfunctions have an important social and health impact for at least three reasons. First, as reported by the authors, their prevalence is very high and they are also frequent in reinfections (Lechien et al., 2021), vaccinated subjects (Vaira et al., 2022a) and Omicron variant infections (Boscolo-Rizzo et al., 2022). Second, persistent smell and taste loss have a devastating impact on patients' quality of life (Vaira et al., 2022b). Third, the risk factors for the development of persistent dysfunctions have not yet been identified and it is therefore not possible to identify a population at risk to be subjected to specific therapy early. In this sense, the work of Reis et al. has the merit of trying to investigate some of these risk factors by noting significant correlations between older age and persistent olfactory dysfunctions after 6 months. This is in line with other studies with 6-month follow-up (Petrocelli et al., 2021) but not with robust psychophysical studies with one-year follow-up (Boscolo-Rizzo et al., 2021; Vaira et al., 2021). This is related to the fact that elderly subjects have a lower functional reserve, often have an olfactory function already unconsciously altered and, above all, the regeneration of the olfactory epithelium and of the interconnections with the higher centers occurs much more slowly than in the young (Attems et al., 2015). Moreover, regardless of age, spontaneous recovery of post-viral olfactory loss can occur even one year after infection (Lee et al., 2014). For this reason, the data on recovery at 6 months are to be considered as preliminary and do not allow us to establish the rate of persistent olfactory disorders. It will be very interesting that the authors can continue the evaluation of patients by lengthening the follow-up to establish whether the risk factors detected at 6 months are also confirmed at one year.

#### CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

#### FOUNDING SOURCES

None declared.

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#### AUTHORS' CONTRIBUTION

LAV: literature research, first draft, statistical analysis, final approval. GDR, GS, FM, PP, JRL: literature research, critical revision of the manuscript, final approval.

#### References

Attems J, Walker L, Jellinger KA. (2015). Olfaction and aging: a mini-review. Gerontology. 61: 485-490.

Boscolo-Rizzo P, Hummel T, Hopkins C, Dibattista M, Menini A, Spinato G, et al. (2021) High prevalence of long-term olfactory, gustatory, and chemesthesis dysfunction in post-COVID-19 patients: a matched case-control study with one-year follow-up using a comprehensive psychophysical evaluation. Rhinology 59, 517-527.

Boscolo-Rizzo P, Tirelli G, Meloni P, Hopkins C, Madeddu G, De Vito A et al. (2022) Coronavirus disease 2019 (COVID-19)-related smell and taste impairment with widespread diffusion of severe cute respiratory syndrome-coronavirus-2 (SARS-CoV-2) omicron variant. Int Forum Allergy Rhinol. Doi: 10.1002/alr.22995.

Lechien JR, Chiesa-Estomba CM, Radulesco T, Michel J, Vaira LA, Le Bon SD et al. (2021) Clinical features of patients who had two COVID-19 episodes: a European multicentre case series. J Intern Med. 290: 421-429.

Lee DY, Lee WH, Wee JH, Kim JW. (2014) Prognosis of postviral olfactory loss: follow-up study for longer than one year. Am J Rhinol Allergy. 28: 419-422.

Petrocelli M, Cutrupi S, Salzano G, Maglitto F, Salzano FA, Lechien JR et al. (2021) Six-month smell and taste recovery rates in coronsvirus disease 2019 patients: a prospective psychophysical study. J Laryngol Otol. 135: 436-441.

Reis D, Sartoretto SC, Calasans-Maia MD, Louro RS, Moraschini V. (2022) Long-term prevalence of taste and olfactory dysfunction in COVID-19 patients: a cross-sectional study. Oral Dis. Doi: 10.1111/ODI.14231.

Vaira LA, Salzano G, Le Bon S, Maglio A, Petrocelli M, Steffens Y, et al. (2021) Prevalence of persistent olfactory disorders in patients with COVID-19: a psychophysical case-control study with 1-year follow-up. Otolaryngol Head Neck Surg. Doi: 10.1177/01945998211061511.

Vaira LA, De Vito A, Lechien JR, Chiesa-Estomba CM, Mayo-Yanez M, Calvo-Henriquez C, et al. (2022a) New onset of smell and taste loss are common findings also in patients with symptomatic COVID-19 after complete vaccination. Laryngoscope. 132: 419-421.

Vaira LA, Gessa C, Deiana G, Salzano G, Maglitto F, Lechien JR, et al. (2022b) The effects of persistent olfactory and gustatory dysfunctions on quality of life in long-COVID-19 patients. Life. 12: 141.