Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Widespread smell testing for COVID-19 has limited application

Having campaigned to achieve recognition that anosmia (loss of smell) is a highly prevalent symptom of COVID-19,[1,2] we were delighted that Public Health England changed the case definition on May 18, 2020.[3] We agree with Cristina Menni and colleagues,[4] that the added sensitivity attributed to adding anosmia to the case definition (less than 2%) is very likely to be a gross underestimate. Indeed, even the additional 15·9% of cases who are identified when including anosmia[5] might still fail to capture the full benefit because access to testing in the UK has been so restricted for patients with mild disease. Data from elsewhere suggest that anosmia will have most value as a marker in mild cases that, until recently, were excluded from testing.

However, we urge caution about a call to introduce smell tests as a screening tool in some settings, such as airports and shopping centres, with the intention of denying access to those identified as having lost their sense of smell.[4] Although new-onset and sudden-onset anosmia has a high likelihood of predicting a positive test for COVID-19 when the prevalence of disease is high, population estimates suggest that 19·1% of adults suffer from pre-existing diminished sense of smell, a figure that rises to 80% in patients older than 75·5 years. These data closely reflect the 21·7% of patients who tested negative for COVID-19 in the COVID Symptom Study who reported a loss of sense of smell.[5] Furthermore, in patients who have developed anosmia as a result of COVID-19, chemosensory loss persists for 8 weeks in approximately 10% of cases (unpublished), but this does not reflect how infectious these individuals are to others and when they have viral clearance. The self-reported median recovery rate of 5 days, as reported by Menni and colleagues,[4] will not be matched by the results of psychophysical smell tests. To deny access to airports or retail parks to approximately one fifth of the population on this basis risks introducing a form of discrimination and would be an intervention that goes beyond the public health benefits of reducing transmission.

We strongly advise all people who experience new-onset loss of sense of smell to self-isolate and seek confirmatory testing. However, we must not impose punitive measures on those patients who have lived without a sense of smell for many years. We encourage extreme caution in how this new finding is incorporated into policy and would suggest that clinicians and researchers working in this field be called upon to ensure that such policies are rigorously and appropriately defined.

We declare no competing interests.

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Authors' reply

Since the beginning of the COVID-19 pandemic, there has been much debate worldwide about which of the COVID-19 symptoms should be used for contact tracing to contain the viral spread. In April, 2020, we showed that loss of smell was the strongest single predictor of COVID-19,[1] and anosmia was finally added to Public Health England's COVID-19 case definition on May 18, 2020.[2]

In our previous Correspondence,[3] we also suggested that low-cost so-called smell the difference screening tests could be implemented in some settings to capture a larger number of positives than temperature sensors do. We highlighted the greater potential importance of anosmia, as fever was present only in 42·7% of individuals testing positive, versus anosmia being present in 64·6% (34·7% of those not suffering from fever).[2]

However, we agree with Claire Hopkins and Barry Smith that recommendations for screening should be more cautious as a high percentage of the population, especially older people, have a pre-existing diminished sense of smell[4] and should not be discriminated against. There is also the problem of long duration symptoms, increasingly known as long COVID.

Using the COVID Symptoms Study app, which now has more than 4 million users,[5] we confirm that anosmia is still the single most predictive symptom of a positive swab test across different age groups, with odds ratios ranging from 13·67 (95% CI 11·65–16·02) for the older group to 20·86 (18·62–23·4) for the younger one (appendix).

We have also been able to collect data on symptoms duration. Of the 4182 adult app users who (1) were healthy at the time of sign-up, (2) tested positive for severe acute respiratory syndrome coronavirus 2 after registration on the app, with onset of symptoms occurring between 14 days before and 7 days after PCR test, and (3) logged regularly (ie, no gap in reporting of more than 7 days), we

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For **Public Health England's COVID-19 case definition** see https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases/investigation-and-initial-clinical-management-of-possible-cases-of-wuhan-novel-coronavirus-wn-cov-infection

For the **Covid Symptoms Study app** see https://covid.joinzoe.com/

See Online for appendix