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We suggest that further studies be conducted to focus on pH measurement with different vehicles and agitation methods.

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mentioned in the article require detailed clarification. More than half of the severe acute respiratory syndrome coronavirus 2–positive patients are asymptomatic carriers (ACs), meaning they start shedding live coronavirus from the upper respiratory tract in the presymptomatic stage<sup>2,3</sup>. The diagnosis of ACs is a challenge, and the dental treatment of such ACs puts dentists at higher risk for getting infected. Nevertheless, these ACs show “silent” or “happy” hypoxia in which patients have a low blood oxygen saturation level (<94% at sea level); this can easily be identified using a pulse oximeter<sup>4</sup>. Hence, dentists are advised to use a pulse oximeter as soon as the patient enters the dental clinic. A pulse oximeter is a small, easy-to-learn device placed on a fingertip that shows the patient’s blood oxygen saturation and pulse rate<sup>5</sup>.

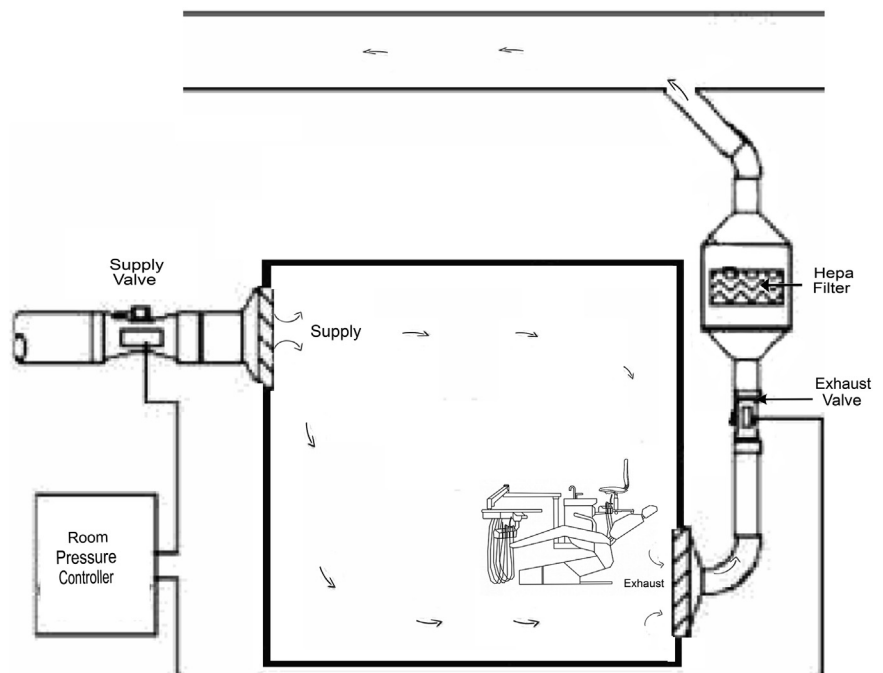
As mentioned in the article, negative-pressure rooms or airborne infection isolation rooms are needed for the management of patients with severe acute respiratory syndrome coronavirus. Hence, dentists should know the factors that modify conventional dental operator into operator with an intended microclimate. It requires simultaneous control of a number of factors such as air changes per hour (ACH), negative-pressure gradient maintenance, appropriate air distribution (AAD), high-quality air filtration, and so on. ACH is a measure of how quickly the operator air is replaced by outside air for eliminating a given proportion of viral load from room air. The recommended ACH is >12; it

## Coronavirus Disease 2019: Implications for Clinical Dental Care



### To the Editor:

We read with great interest the review article published by Ather et al<sup>1</sup> that intended to provide a brief outline of coronavirus disease 2019 (COVID-19) infection along with suggestions for dental patient management. However, certain recommendations



**FIGURE 1** – A schematic representation of dental operator with intended microclimate.

varies according to the size of the operatory and can easily be calculated by dentists using the following simple formula:  $\text{airflow} = \text{ACH} \times \text{volume}/60$ , where airflow is the mechanically exhausted airflow rate in cu ft/min and volume is the room air volume ( $\text{length} \times \text{width} \times \text{height}$ ). The maintenance of negative pressure ensures prevention of the spread of COVID-19 from the operatory to other areas, and it is easily achieved by maintaining exhausted air 10% to 15% more than the supplied air. AAD means that clean air is first passed over the dentist/assistant and then to the patient to reduce the staff's exposure to COVID-19. This is accomplished by introducing the air from ceiling registers and is exhausted through registers located at least 6 inches above the floor (Fig. 1). A high-efficiency particulate air machine can be incorporated in the dental setup to clean contaminated air and to induce negative pressure in the room.

The article mentions the Center for Disease Control and Prevention's guidelines of donning recommending the use of goggles or a face shield. However, face shields should not be used as the primary face/eye protector because of the lack of a peripheral facial seal and the decreased efficacy for small aerosolized particles. Whenever possible, goggles should be used as a primary eye protector along with a face shield to protect the rest of the face.

We hope that the aforementioned points add clinically relevant information to the review article that will benefit the readers working in clinical dental care.

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## Reply to “Coronavirus Disease 19 (COVID-19): Implications for Clinical Dental Care”



### To the Editor:

We would like to thank Drs Jadhav and Mittal for their letter to the editor in which they have put forward their concerns and suggestions regarding the manuscript titled “Coronavirus Disease 19 (COVID-19): Implications for Clinical Dental Care”<sup>1</sup>. We appreciate their insight and would like to take the opportunity to comment on their suggestions.

We strongly agree with the concerns expressed by the authors regarding asymptomatic carriers of COVID-19 and the potential transmission to dental health care professionals. The authors raise an important point about the use of pulse oximetry to detect low blood oxygen saturation levels in asymptomatic carriers. However, it is noteworthy that pulse oximeter detects hypoxemia in contrast to “hypoxia” as mentioned by the authors. The term *hypoxia* denotes reduced tissue-level oxygenation and is not synonymous with hypoxemia (reduced blood oxygen saturation)<sup>2</sup>. In agreement with the authors, oxygen saturation measurements are a vital screening tool to identify potential asymptomatic patients and should be incorporated into routine dental clinical practice. Notably, the potential importance of silent hypoxemia in COVID-19 patients has become evident only more recently<sup>3</sup>. Thus, at the time of manuscript submission, we refrained from making recommendations without proper scientific citable evidence. As more is known about COVID-19, we believe that readers should maintain a pragmatic approach incorporating new peer-reviewed evidence in their practice.

We appreciate the authors for elaborating on the outline and basic design considerations for negative-pressure rooms/airborne infection isolation rooms for dental practices. Given the surge in airborne infections over the past few decades and the fact that only 2%–4% of rooms are equipped with negative pressure in approximately half of urban hospitals<sup>4</sup>, efforts

could be directed toward creating more negative-pressure rooms for health care providers. As mentioned by the authors, negative-pressure rooms should be built following stringent guidelines. In addition, these isolation rooms require continuous monitoring to measure pressure differential and proper training of staff to operate and check these rooms for “leaks.” Failure to do so has led to nosocomial spread of infection in the past<sup>5</sup>. As an alternative, knowledge of health care centers with provision for a negative-pressure room would help dentists to provide emergent dental care to patients with confirmed or suspected COVID-19 infection, as mentioned in our article<sup>1</sup>.

Regarding the Centers for Disease Control and Prevention guidelines on sequence for putting on personal protective equipment, it is important to note that these guidelines have been issued keeping in mind the shortage of personal protective equipment during this pandemic<sup>6</sup>. However, it is in the best interest of the health care providers to use both goggles or loupes and a face shield for added protection if there is an adequate supply.

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