

# The SARS-CoV-2 Virus may Remain Viable on Oral Appliances for up to 3 Days?

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The SARS-CoV-2 virus has created havoc in the world by causing the COVID-19 pandemic.<sup>1</sup> The affected patients exhibit fever, cough, and apnea. Hospitalization is often due to progressive respiratory distress, which, in a proportion of patients, had led to fatalities.<sup>2</sup> The geriatric population is at a higher risk, because of their reduced immunity and the presence of comorbid conditions like diabetes mellitus, hypertension, and cardiovascular diseases. Health authorities have advocated social distancing as a method to contain the spread of this contagious disease. A landmark study has shown that the SARS-CoV-2 virus can remain viable on various surfaces like cardboard, stainless steel, plastic, and copper for a long duration. The research conducted by van Doremalen et al.<sup>3</sup> has created an aerosolized environment using SARS-CoV-2 (105.25 50% tissue-culture infectious dose [TCID<sub>50</sub>] per milliliter) in a Goldberg drum using a 3 jet collision nebulizer and has exposed various materials such as cardboard, paper, stainless steel, plastic, and copper to the virus. The SARS-Cov-2 virus was found to be viable in aerosol for only 3 hours, although its presence on material surfaces lasted significantly longer, especially in stainless steel and plastic surfaces, wherein the virus was detected for up to 72 hours.<sup>3</sup>

The above finding has a large implication for dental fraternity. It is well known that plastic and stainless steel are used to fabricate dentures, crowns, splints, aligners, and retainers. Hence dental clinicians and patients handling these appliances should be extremely cautious as these appliances could have a viable load of SARS-Cov-2 on their surfaces for up to 72 hours. This finding is all the more alarming as the angiotensin-converting enzyme 2 (ACE2) expressed in the oral cavity could be a portal of entry for the SARS-CoV-2 into the host cells.<sup>4</sup>

An additional concern is with removable appliances. A SARS-CoV-2 contaminated removable appliance could be a source of spread to caregivers handling patients' belongings. Vice versa, an atmosphere contaminated with SARS-CoV-2, could, in turn, contaminate the appliance surface and remain viable to infect the wearer. It is hence worthwhile to consider dental prosthesis containing plastic and stainless steel as one of the routes of

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transmission for SARS-CoV-2. Hence clinicians and patients should handle prosthesis with extreme care and disinfect the same upon removal, during storage, and before reinsertion into the mouth.

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