

REFERENCE

Ghoneim A, Proaño D, Kaur H, Singhal S. Aerosol-generating procedures and associated control/mitigation measures: Position paper from the Canadian Dental Hygienists Association and the American Dental Hygienists' Association. *Can J Dent Hyg.* 2024;58(1):48–63.

Supplementary Table S4. Personal protective equipment study characteristics

Author(s), date, country	Study design	Setting	Intervention(s)	Comparator(s)	Type and duration of AGP	Outcome measure(s)	Summary of findings	Remarks
Afzha et al. (2016) ⁸¹ India	Randomized controlled trial	Dental college	Protective eyewear	No protective eyewear	Scaling and root planing for 30 min	Aerosol contamination of contact lenses	Overall, the results of this study indicate low microbial contamination of contact lens in Group A (contact lens with protective eyewear) when compared to Group B (contact lens without protective eyewear) which is statistically significant ($p < 0.01$).	Scaling and root planing were rendered with piezoelectric ultrasonic scalers in combination with HVE.
Bridgman et al. (2021) ⁸² New Zealand	Experimental study	Simulated setting	The air-fed mask under plastic hoods with a low air consumption 20L/min	<ul style="list-style-type: none"> • N95 mask and goggles • Air-fed mask on 150L/min • Air-fed mask on 300L/min • Air-fed mask on 300L/min combined with an N95 mask 	High-speed handpiece for 10 min	Head and neck area contamination	The N95 mask did not prevent nasal and mouth contaminations, but the combination of an air-fed mask with a sealed hood prevented these contaminations. Although goggles worn tightly did prevent contamination, the air-fed mask system was far more comfortable and did not fog up.	–

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Checchi et al. (2021) ⁸³ Italy	Experimental study	Periodontal private clinic	FFP2 used for 8, 16, 24, 32, 40 h	Unused FFP2 mask	Procedures that involved the use of ultrasonic devices and high-speed handpieces for 8 h to 40 h	BFE	Results based on BFE of 5 respirators measured at 8, 16, 24, 32, and 40 h of usage indicate no significant difference when tested. The respirator and control are compared at each time. Moreover, the non-significant effect of time on BFE of the tested respirators is confirmed by multilevel analysis (GLM). In light of these results, it is clear that this type of FFP2 can probably be considered effective for multiple working hours and days.	–
Ionescu et al. (2021) ⁸⁴ Italy	Experimental study	Simulated setting	<ul style="list-style-type: none"> • Surgical mask, no HVE • Surgical mask, HVE • FFP2 respirator, HVE • FFP3 respirator, HVE • Surgical mask and face shield, HVE 	–	High-speed handpiece for 10 sec	Viral load	The combination of mask or respirator and face shield reduced viral loads below the detection limit, thus decreasing the risk of the operator's being contaminated. In the experimental setup of our study, surgical masks and N95 (FFP2) or FFP3 respirators were equally effective in protecting the operator, whereas HVE did not seem to decrease the risk	The PPE were tested adjunctly with HVE

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			<ul style="list-style-type: none"> • FFP2 respirator and face shield, HVE 				of experiencing aerosol contamination.	
Sabra Rita de Assis et al. (2022) ⁸⁵ Brazil	Experimental study	Simulated setting	IBCD	No IBCD	High-speed handpiece for 1 min	CFU	When comparing contamination in 2 clinics with and without the use of the IBCD, the results showed that the barrier was able to reduce air contamination derived by orthodontic procedures during patient consultation by 97% compared to its non-use ($p < 0.05$). The results of this study showed that the use of the biosafety device is an effective means to reduce air contamination by more than 99% of bacterial contamination around the main droplet/aerosol source.	–
Teichert-Filho et al. (2020) ⁸⁶ Brazil	Experimental study	Simulated setting	Rigid protective device	No device	High-speed handpiece for 1 min	The observation of the dye	In the simulated dental procedure without the device, the dye was observed on the face of the mannequin, surgical gloves, apron (chest, legs, fists), and face shield, as well as on the dental chair (backrest, light reflector) and floor. The dye was found on the operator's	–

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							clothes under the apron, revealing the possibility of contamination. In contrast, in the simulated dental procedure using the device, the dye was observed only on the surgical gloves, apron (fists), inside the pipe system and internal walls of the acrylic chamber.	
Villa and Grenon (2021) ⁸⁷ United States	Experimental study	Dental setting	Cupola	Without the cupola With cupola and drape	High-speed handpiece for 1 min	Spread of droplets and aerosols	The mean number of 0.3 μm particles with no cupola was 3777 (SD: ± 556), with the cupola was 2068 (SD: ±1468) and with the cupola and drape was 2031 (SD: ± 1108) (<i>p</i> < 0.015). The mean number of 0.5 μm airborne particles with no cupola was 65 (SD: ± 7), with the cupola was 29 (SD: ± 28), and with the cupola and drape was 28 (SD: ± 23) (<i>p</i> < 0.05). The cupola is effective at decreasing aerosols and droplets generated during simulated dental procedures.	–

BFE: bacterial filtration efficiency; CFU: colony forming unit; FFP: filtering face piece; HVE: high volume evacuator; IBCD: individual biosafety capsule device