

# Infection Control and Prevention in the Dental Office

Dentsply Sirona recognizes the unprecedented and extraordinary circumstances dental professionals face related to COVID-19, and we are here to help.

We created this three-section guide to aid your practice in navigating through rapidly evolving industry standards and guidelines regarding infection control.



Personal protective equipment



Operatory



Instrument reprocessing



This brochure does not offer advice or guidance on how to safely open a practice and is for general, information purposes only. Please refer to CDC, OSHA and ADA for specific guidance and standards.

# Dentsply Sirona offers you, your patients and your practice a wide range of products in each category to help keep you and your practice safe and in compliance.

Now more than ever, it is important to prioritize infection control within your office to prevent transmission of COVID-19 and all other infections. Infection prevention strategies may be found in guidance from the Centers for Disease Control and Prevention (CDC) and standards from the Occupational Safety and Health Administration (OSHA).

Personal protective equipment



These items are designed to provide a protective barrier during dental procedures and through the sterilization process.

Operatory



Appropriate surface cleaning and disinfecting and equipment preparation will minimize the risks of cross-contamination providing a safer working environment for the dental office team and patients.

Instrument reprocessing



Consider the use of single-use disposable items such as air/water syringe tips, surface barriers or prophylaxis angles to reduce the risk of cross-contamination.



**76% of adults would be a little more confident returning to the dental office now if they knew the office was following ADA and CDC protocols.<sup>1</sup>**



# Personal Protective Equipment (PPE)

PPE should be selected based on risk assessment and tasks to be performed and must also be considered for patients as they enter the facility and provided to administrative staff who may be screening them upon arrival.



According to *Business Insider*, these three dental professions are ranked among the top 47 jobs most damaging to your health: (#1) Dental Hygienist, (#2) Dentist, (#5) Dental Assistant<sup>2</sup>



## Choose the perfect level of protection for you!

	ASTM-1	ASTM-2	ASTM-3
<b>FLUID RESISTANCE, mmHg</b>	80	120	160
<b>BFE</b>	≥95%	≥98%	≥98%
<b>PFE, @ 0.1 micron</b>	≥95%	>98%	>98%
<b>DELTA P, mm H<sub>2</sub>O/cm<sup>2</sup></b>	<4.0	<5.0	<5.0
	<b>Procedures:</b> <ul style="list-style-type: none"> <li>• Patient Exams</li> <li>• Operatory Cleaning/Maintenance</li> <li>• Impressions</li> <li>• Lab Trimming, Finishing &amp; Polishing</li> <li>• Orthodontics</li> </ul>	<b>Procedures:</b> <ul style="list-style-type: none"> <li>• Restorative/Composites</li> <li>• Endodontics</li> <li>• Prophylaxis</li> <li>• Sealants</li> <li>• Scaling &amp; Root Planing</li> <li>• Limited Oral Surgery</li> </ul>	<b>Procedures:</b> <ul style="list-style-type: none"> <li>• Crown Preparation</li> <li>• Implant Placement</li> <li>• Use of Ultrasonic Scaler</li> <li>• Use of Piezo Scaler with Water</li> <li>• Periodontal Surgery</li> <li>• Complex Oral Surgery</li> </ul>

**Mask terms, unmasked.**

**Fluid Resistance** is a mask's resistance, under pressure, to penetration by synthetic blood.

**BFE** stands for *bacterial filtration efficiency*. It is the percentage of particles filtered out at a pore size of 1.0 to 5.0 microns.

**PFE** stands for *submicron particle filtration efficiency*. It is the percentage of particles filtered out at a pore size of 0.1 to 1.0 microns.

**Delta P** is the pressure drop across a mask, or resistance to airflow in mm H<sub>2</sub>O/cm<sup>2</sup>. With greater resistance comes better protection, but less breathability.

## Com-Fit™ Plush Natural Fit Face Masks offer optimal protection for all face types.

Participants sprayed with water-soluble red paint were sufficiently covered from ear to ear. Upon removal of the exposed face mask, it was apparent that no red paint had leaked into the area protected by the masks. Here is an example of three of the five face types:

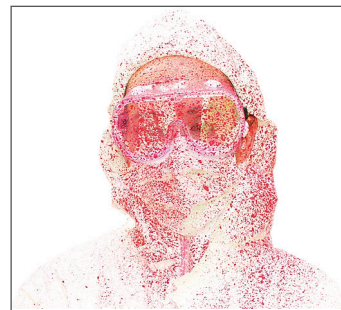
Square Face



Oval Face



Oblong Face



Square Face - Mask Removed



Oval Face - Mask Removed



Oblong Face - Mask Removed





# Com-Fit™ Plush Natural Fit Masks

Filtration, breathability and comfort.



## Advantages

- More breathable than leading competitors<sup>3</sup>
- More comfortable than leading competitor masks<sup>3</sup>



## Safety

- Better fit than leading competitors for improved protection<sup>3</sup>
- Exceeds ASTM performance requirements for bacterial and particle filtration
- Unique patented chin strip



**Surgical Mask**



**N95 Respirator**

<b>Testing and Approval</b>	Cleared by the U.S. Food and Drug Administration (FDA).	Evaluated, tested and approved by NIOSH as per the requirements in 42 CFR Part 84.
<b>Intended Use and Purpose</b>	Fluid resistant and provides the wearer protection against large droplets, splashes or sprays of bodily or other hazardous fluids. Helps protect the patient from the wearer's respiratory emissions.	Reduces wearer's exposure to particles including small particle aerosols and large droplets (only non-oil aerosols).
<b>Face Seal Fit</b>	Loose-fitting	Tight-fitting
<b>Fit Testing Requirement</b>	No	Yes
<b>User Seal Check Requirement</b>	No	Yes. Required each time the respirator is donned (put on).
<b>Filtration</b>	Does NOT provide the wearer with a reliable level of protection from inhaling smaller airborne particles and is not considered respiratory protection.	Filters out at least 95% of airborne particles including large and small particles.
<b>Leakage</b>	Leakage occurs around the edge of the mask when user inhales.	When properly fitted and donned, minimal leakage occurs around edges of the respirator when user inhales.
<b>Use Limitations</b>	Disposable. Discard after each patient encounter.	Ideally should be discarded after each patient encounter and after aerosol-generating procedures. It should also be discarded when it becomes damaged or deformed; no longer forms an effective seal to the face; becomes wet or visibly dirty; breathing becomes difficult; or if it becomes contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.

\*Adapted from the CDC



# Operator

The Centers for Disease Control and Prevention (CDC) recommends dental offices follow an infection prevention protocol. This includes a focus around the safety of both patients and clinicians; the dental operator is at the center of this focus.



Single-Use  
Disposables



Aerosol  
Management



Surface  
Disinfection



# Single-Use Disposables



Single-use disposables, also called single-use devices, are designed for use on one patient and then must be discarded. Examples of single-use devices include saliva ejectors, masks, prophylaxis angles, disposable barriers and air/water syringe tips.

Dentsply Sirona offers a large selection of disposable barriers and sterilization pouches to meet a wide range of needs.

## Disposa-Shield® Disposable Barriers

Individually packed for easy dispensing between patient treatments, Disposa-Shield® Disposable Barriers offer protective coverings for a comprehensive range of high-touch dental equipment and surfaces.

Disposa-Shield® Disposable Barriers are easy on/easy off and are shaped for better fit and to reduce excess material.



### Low-Speed, Long Handpiece covers

Disposable infection control barriers have a custom fit for contra angle and long handpieces.



### Air/water syringe covers

Protection for universal handpiece assemblies.



### Light Handle covers

Protect light and chair hand controls with disposable coverings and change between patients.



The CDC states: using disposable items improves patient safety by eliminating the risk of patient-to-patient contamination because the item is discarded and not used on another patient.<sup>4</sup>



# Disposa-Shield® Disposable Barriers

## Hoses and Tubing covers

Designed to help prevent cross-contamination, hose covers helps protect handpiece hoses and provide patient reassurance and protection.



## Tray covers

Plastic cover sleeves helps protect the entire tray surface.



## Chair and X-ray Head covers

Universal chair back/X-ray head covers in easy to dispense packaging; saves cleanup time between patients.



## Chair Headrest covers

Shaped for better fit and designed to help prevent cross-contamination between treatments.



## Multi-Purpose Use adhesive covers

Perforated 4" x 6" sheets allow for easy dispensing and can be used to help protect expensive equipment in the dental operator.



## Nupro Freedom™ Cordless Prophy System Inner Module covers

Disposable barriers for the Nupro Freedom Cordless Prophy System Inner Module to help protect it from debris and splatter. Also compatible with the Midwest® RDH Freedom® Cordless Prophy System Inner Module.



## Etchant or Sealant type delivery system covers

Ideal for use with Delton Sealant or Etchant Syringes.



The CDC recommends disposable barriers to be used on clinical contact surfaces and equipment that may be difficult to clean.<sup>4</sup>





# FlashTips Disposable Air/Water Syringe Tips

High-quality disposable air/water syringe tips with separate air and water channels designed to help minimize air and water crossover and reduce risk of cross-contamination.



## Advantages

- Causes less damage and wear to O-rings than leading competitors<sup>3</sup>
- Rounded tip design helps prevent O-ring leakage or air/water separation issues<sup>3</sup>
- Air and water channels are secured tightly together to prevent separation



## Safety

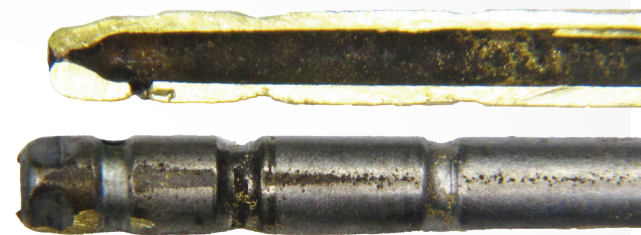
- Locking indicator to help ensure proper tip placement
- Rounded tip design for patient comfort
- Disposable, single-use tips minimize risk of cross-contamination



## Efficiency

- No time spent reprocessing as FlashTips are single-use disposable

Inside of a metal air/water syringe tip shown



The fact that microbial contamination was detected in approximately 10% of the metal AWS tips tested strongly re-enforces the need to clean lumens of reusable tips before heat sterilization... Inability to clean the lumens therefore provides strong support for routine use of disposable AWS tips.<sup>5</sup>



# Aerosol Management



Appropriate work practices, such as the use of rubber dams and high-volume evacuation will help to minimize the dissemination of droplets and aerosols produced.

“In the CDC guidelines for infection control in dental settings, the use of HVEs are considered to be ‘appropriate work practices’ – precautions that always should be followed during dental procedures.”<sup>6</sup>

## Purevac<sup>®</sup> HVE System

The Purevac HVE system enables a one-handed approach to evacuating aerosols, splatter, fluid and debris, while providing visibility and illumination during dental procedures.



### Advantages

- 135% greater removal of fluids than a low-volume saliva ejector<sup>3</sup>



### Safety

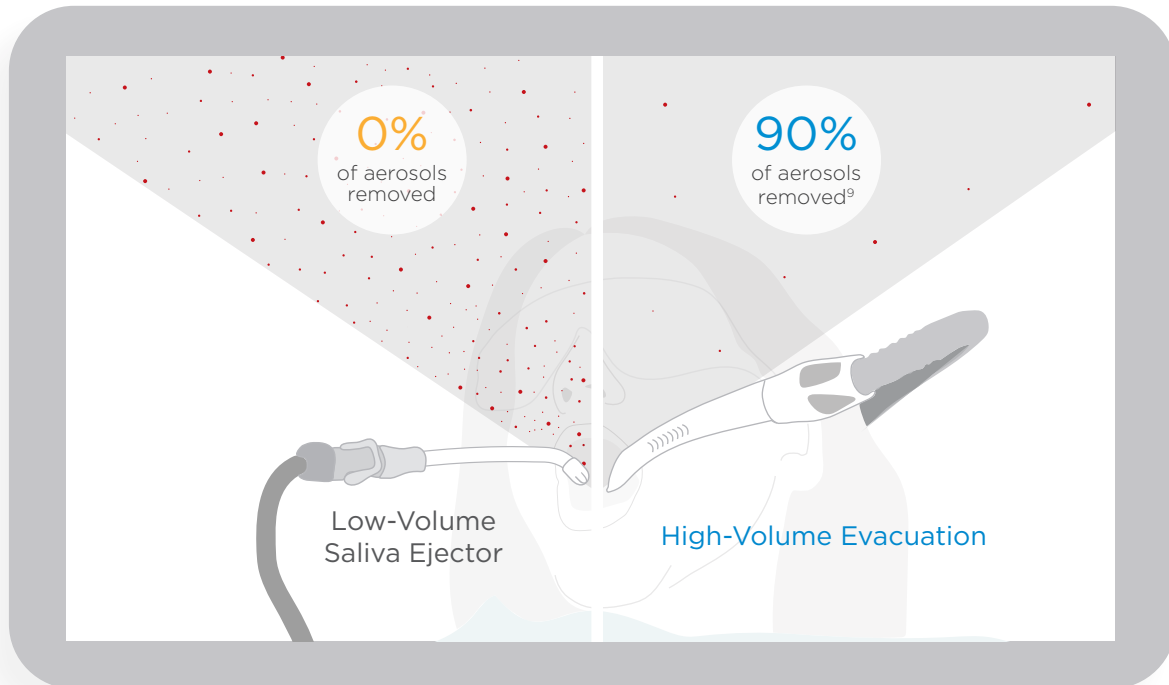
- HVE has been shown to remove up to 90% more aerosols generated during ultrasonic scaling compared to a low volume saliva ejector<sup>9</sup>



### Efficiency

- Increases efficiency according to clinicians in a recent study<sup>3</sup>





The ADA recommends that all blood-contaminated aerosols and splatter should be minimized.<sup>7</sup>

OSHA standards state that “all procedures involving blood or other OPIM shall be performed in such a manner as to minimize splashing, splattering and generation of droplets of these substances.”<sup>8</sup>



Several studies published show that utilizing HVE can reduce the amount of aerosol by 90-98%.<sup>9</sup>

For a suction system to be classified as HVE, it must remove a large volume of air within a short period. The usual HVE used in dentistry has a large opening (usually 8mm or greater) and is attached to an evacuation system that will remove a large volume of air (up to 100 cubic feet of air per minute).<sup>6</sup>



# Surface Disinfection

Because aerosols can travel nearly eight feet in an operatory<sup>10</sup>, cleaning is a necessary step of any disinfection process. All surfaces must be thoroughly cleaned and then disinfected after each patient. Cleaning removes organic matter and visible soils. If a surface is not cleaned first, the success of the disinfection process can be compromised.

## Oxivir® 1 Wipes and Spray

Speed, Efficacy and Safety, all in one Wipe

Trusted by hospitals and now available for dental practices, these wipes feature a one-minute kill time on certain bacteria and viruses, and tuberculosis, and are environmentally friendly.\*



### Advantages

- Approved for EPA List N: Disinfectants for Coronavirus (COVID-19)
- Meets OSHA Bloodborne Pathogen Standards for decontaminating blood and body fluid spills.



### Safety

- The lowest level of hazard (practically non-toxic, not an irritant according to EPA toxicity categories) and requires no safety warnings.



### Efficiency

- One-minute kill time on bacteria, viruses and tuberculosis.



According to the CDC, “an intermediate-level disinfectant with a tuberculocidal claim should be used when the surface is visibly contaminated with blood or other potentially infectious materials.”<sup>4</sup>

\*See product brochure or website for complete list of microorganisms.



# Instrument Reprocessing

“Instrument reprocessing requires a series of steps to assure that contaminated patient-care items are safe for reuse. All procedures must be performed correctly and in the proper sequence every time to make sure items are processed properly.”<sup>11</sup>



“Follow manufacturer’s instructions for reprocessing (ie, cleaning, packaging, disinfecting, sterilizing) reusable dental instruments and equipment. Maintain manufacturer’s instructions in or near the reprocessing area. Use FDA-cleared devices and supplies for cleaning, packaging and heat sterilization.”<sup>11</sup>



# Instrument Cleaning and Sterilization

Proper instrument reprocessing is critical in protecting patients and clinicians from blood-borne pathogens and enveloped viruses. Have confidence by using solutions and equipment to clean your instruments and lower the bio-burden as the first step in instrument reprocessing.

## Resurge® Ultrasonic Cleaning Solution

One solution to clean and protect



### Advantages

- Proven to clean better than the leading ultrasonic cleaning solutions<sup>3</sup>



### Efficiency

- In removing synthetic soil, Resurge Instrument Cleaner performed faster than six competitive products<sup>3</sup>



### Safety

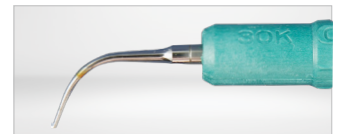
- Unique formula helps protect your instruments' passive layer (outer coating), reducing the potential for stains, spots and even rust
- Neutral pH, biodegradable and environmentally friendly

Immersion Testing (Hard Grip)

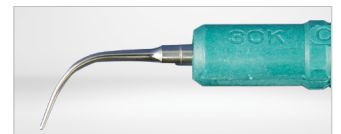
Water



Leading Competitor



Resurge®



The cleaning performance of Resurge was evaluated versus leading competitive products in two different studies. In a 2012 study, in removing synthetic soils, Resurge outperformed all ten competitive products tested, achieving a >98% soil removal from instruments in all areas of the ultrasonic machine during a cleaning cycle.<sup>2</sup>

The CDC states, "using automated equipment can be more efficient and safer than manually cleaning contaminated instruments."<sup>5</sup>



# Sporox® II Sterilizing & Disinfecting Solution

High-level disinfection without irritating glutaraldehydes.



## Advantages

- Disinfects in 30 minutes
- Will not bind infectious proteins to instruments
- Good for up to 21 days



## Safety

- No special ventilation required
- Free from glutaraldehydes



## Efficiency

- Ready to use
- No premixing or activation



## Sporox® II Test Vials

Tests hydrogen peroxide activity to determine when Sporox II solution needs to be changed.

- Contents: 1 bottle indicator solution, 30 test vials, pipettor and tips



## Pre-Soak™ Soaking Tray

Easy, convenient instrument processing.

- Removable tray minimizes instrument handling to help prevent injury
- Made of heavy gauge, high-impact plastic
- 1-gallon capacity



## Assure® Plus Sterilization Pouches

The sterilization pouch with a built-in, peel-off internal indicator.

- Peel-off indicator: no need to purchase secondary indicator strips
- Dual heat sterilization internal and external indicators meet CDC recommendations
- Medical-grade paper allows steams and gas to penetrate
- Aqua-tint film to identify setup and determine if sterility is compromised



The CDC stated “at a minimum, semi-critical instruments must be reprocessed with a high-level disinfectant if they are heat sensitive.”<sup>12</sup>



## Purevac® SC Evacuation System Cleaner

With a neutral pH formula and designed specifically for amalgam separators, the Purevac SC Evacuation Line Cleaner meets the EPA guidelines for evacuation line cleaners.



### Advantages

- The Purevac family has been the market leader for more than five years<sup>3</sup>
- More effective than other leading brands<sup>3</sup>



### Safety

- Neutral pH (7.0 pH when mixed) meets new EPA guidelines for evacuation line cleaners



### Efficiency

- Walkabout Dispenser creates a turbulent mixture of air and solution to clean evacuation system with ease



## Purevac® Auto Walkabout Dispenser

Easily aspirates, using Purevac Evacuation System Cleaner

- Creates a turbulent mixture of air and solution to easily clean your evacuation system
- Holds enough solution to clean three operatories and one cuspidor





Dental evacuation systems can benefit from continuous use of Purevac SC with Walkabout Dispenser to help maintain suction.

Examples of disposable filtering traps after cleaning cycle with working solution of each tested cleaner in simulated dental evacuation line.

Soiled filter



Purevac SC



Leading Brands



“Cleaning the suction lines and changing the solids collectors (traps) must be performed regularly to maintain proper functionality.”<sup>13</sup>



The CDC states that backflow occurs when previously suctioned fluids that are present in the suction tubing flow back into the patient’s mouth.<sup>14</sup>



## Nupro Freedom<sup>®</sup> Cordless Prophy System

### Cordless Prophy Package with SmartMode<sup>®</sup> Technology and Foot Pedal

Freedom of choice: Delivering an unprecedented choice in how you control polishing while providing a better experience for you and your patients.

#### Nupro Freedom is safer:

- Unlike air driven handpieces that require external venting which provides access for cross contamination, Nupro Freedom is electric, protecting your patients from the risk of infection
- The Nupro Freedom<sup>®</sup> Cordless Prophy Package includes three Autoclavable Outer Sheaths that have a fluid seal — providing a secure infection control barrier. Autoclavable Outer Sheaths replace the need to buy multiple handpieces to comply with Infection Prevention Guidelines and reduce equipment cost.
- Sealed coupling shaft which connects to the prophy angle on the outer sheath
- Separate second coupling mechanism inside the sheath which connects to the inner module
- Fluid seal on the outer sheath isolates the inner module from patient fluid and provides a secure infection control barrier



**90% of patients agree that sterilization  
of products is a top concern<sup>1</sup>**



# Nupro Freedom<sup>®</sup> Cordless Prophy System

Cordless Prophy Package  
with SmartMode<sup>®</sup> Technology  
and Foot Pedal



Compliance with CDC Guidelines on Reprocessing of  
Dental Handpieces Can be Simple:

1

Clean and heat sterilize handpieces and other intra-oral instruments that can be removed from the air lines and waterlines of dental units.<sup>16</sup>



### Single-use:

Single-use and disposable.

2

For handpieces that do not attach to air lines and waterlines, use FDA-cleared devices and follow the validated manufacturer's instructions for reprocessing these devices.<sup>16</sup>



### Semi-critical:

Designed to be cleaned and heat sterilized.

3

If a dental handpiece cannot be heat sterilized and does not have FDA clearance with validated instructions for reprocessing, do not use that device.<sup>16</sup>



### Non-critical:

Designed to be cleaned and wipe disinfected.



# Equipment Preparation and Maintenance

## Midwest® Automate™

Automated handpiece maintenance system simplifies handpiece maintenance for effective, long-lasting performance

### Efficient

Reduce maintenance handling time by more than 80% making more time for your patients

### Durable

Rugged design is built for the long haul, with metal casing and locking nuts

### Consistent

Precise lubricating and debris removal for any handpiece by every staff member



CDC guidance on handpieces



**Dental handpieces and associated attachments, including low-speed motors and reusable prophylaxis angles, should always be heat sterilized between patients and not high-level or surface disinfected.<sup>15</sup>**

# Yes, it's great to be back to work!

As dental practices nationwide are now open and routinely treating patients once again, it's more important than ever to adhere to and maintain infection control protocols in the dental office.

With patient and personnel safety as the first priority, be mindful to stay current with evolving changes and updates to recommendations and guidelines.

Resources for guidelines of IP protocols from public health agencies and dental organizations should be referenced and monitored for updates from ADA/CDC/OSHA/OSAP.

## ADA Toolkit

<https://pages.ada.org/return-to-work-toolkit-american-dental-association>

## CDC Guidance

<https://www.cdc.gov/oralhealth/infectioncontrol/statement-COVID.html>

## OSHA

<https://www.osha.gov/SLTC/covid-19/controlprevention.html#healthcare>

## OSAP and DentaQuest: Best Practices for Infection Control in Dental Practices During the COVID-19 Pandemic

[https://cdn.ymaws.com/www.osap.org/resource/resmgr/dentaquest/INC-1353\\_Best\\_Practices\\_for\\_.pdf](https://cdn.ymaws.com/www.osap.org/resource/resmgr/dentaquest/INC-1353_Best_Practices_for_.pdf)

The Organization for Safety Asepsis and Prevention (OSAP), provides many resources for DHCP such as the OSAP COVID-19 toolkit which may be found on their website at [OSAP.org](https://www.osap.org)

1. Marketing research survey conducted online by a third party, May 2020, among N=254 US adult dental patients. Survey was double blind. Data on file.

2. The 47 jobs that most put your overall health at risk. *Business Insider*. March 10, 2020.

3. Data on File.

4. CDC: Guidelines for infection control in dental health-care settings - 2003. *MMWR* 2003; 52(No. RR-17):1-66.

5. Molinari JA, Nelson P: Reusable versus Disposable Air/Water Syringe Tips: *The Dental Advisor*. 2012 June

6. Harrel SK, Molinari J: Aerosols and splatter in dentistry: a brief review of the literature and infection control implications. *J Am Dent Assoc*. 2004, 135, 429-437.

7. Infection Control Recommendations for the Dental Office and the Dental Laboratory. *J Am Dent Assoc*. 1996 May;127(5):672-80

8. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030>

9. Jacks MJ: A laboratory comparison of evacuation devices on aerosol reduction. *J Dent Hyg*. 2002, 76, 202. Harrel SK, Barnes JB, Rivera-Hidalgo F. Reduction of aerosols produced by ultrasonic scalers. *J Periodontol*. 1996;67:28-32. Klyn SL, Cummings DE, Richardson BW, Davis RD. Reduction of bacteria-containing spray produced during ultrasonic scaling. *Gen Dent*. 2001;49(6):648-652

10. Milejczak CB. Optimum Travel Distance of Dental Aerosols in the Dental Hygiene Practice. *J Dent Hyg*. 2005 October;81(4):20-21

11. <https://www.cdc.gov/oralhealth/infectioncontrol/faqs/sterilization-index.html>

12. CDC: Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008

13. <https://www.dentaleconomics.com/macro-op-ed/article/16393577/cleaning-or-disinfection-whats-right-for-the-suction-lines>

14. <https://www.cdc.gov/oralhealth/infectioncontrol/faqs/saliva.html>

15. Centers for Disease Control and Prevention. "Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care." Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health; March 2016.

16. Centers for Disease Control and Prevention. Oral Health: CDC Statement on Reprocessing Dental Handpieces. <https://www.cdc.gov/oralhealth/infectioncontrol/statement-on-reprocessing-dental-handpieces.htm>; April 11, 2018.