Dental Aerosol Control
Extraoral Solutions for COVID-19
Remove Dental Aerosols to Minimize Exposure Risk to Coronavirus

During these uncertain times, it is vital to do everything you can to help protect staff and patients from spreading COVID-19. Many experts have rated dental professionals as a “high-risk job” for contracting COVID-19. In order to prevent the spread, the CDC has recommended taking a layered approach to reducing dental aerosol.

Dental aerosol is created from the use of compressed air and water in dental tools forming a suspension of solid and liquid particles in a gas. Dental aerosol can be composed of water, blood, saliva, plaque, microorganisms (such as bacteria, fungus, viruses, and protozoa), and metabolites. 90% of dental aerosol is smaller than 5 microns. Because dental aerosol can remain airborne for up to 30 minutes and 3 feet away, the coronavirus can be easily transmitted without using reduction methods. Likewise, due to the small microscopic size, airborne dental aerosol can easily be inhaled and become lodged deep inside the lungs leading to a variety of side effects including possible disease transmission.

Dental Aerosol Extraction Systems can help minimize dental aerosol by capturing particulate at the source and remove them from the dental technician’s and patient’s breathing zone. Similarly, room air cleaners can add an additional layer of protection to capture stray particulate, clean exam room air in between patients, and maintain safe breathing air in a waiting room.

Benefits of Reducing Dental Aerosol:
- Minimize staff and patients’ exposure risk of airborne diseases such as the coronavirus.
- Adds a service to make customers feel safe to start returning to the dentist.
- Helps your office safely reopen.
- PPE is not enough protection alone. Transmission can still occur during cleaning and in between patients.
- Adds a clean look to the office.

Using ULPA Filters to Combat the Coronavirus

Coronavirus particles spread by binding to respiratory aerosol droplets from sneezing, coughing, or dental aerosol. In order to capture these microscopic particles, filtration systems should use ULPA filters, the highest quality filtration available. Sentry Air Systems recommends using ULPA filters which provide up to 99.9995% efficiency on particles 0.12 microns and larger. The chart below compares the filtration efficiency between N95 respirators, HEPA filters, and ULPA filters.

![Visible aerosol cloud produced from an air polisher](image)

**Particle Size Comparison Chart**

<table>
<thead>
<tr>
<th>Particle Size</th>
<th>Filtration Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05 - 0.10</td>
<td>N95 Respirators - up to 95% efficiency</td>
</tr>
<tr>
<td>0.15 - 0.20</td>
<td>HEPA Filter - up to 99.97% efficiency</td>
</tr>
<tr>
<td>0.25 - 0.30</td>
<td>ULPA Filter - up to 99.9995% efficiency</td>
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</tbody>
</table>

Coronavirus  
Small Respiratory Aerosol Droplets  
Large Respiratory Aerosol Droplets

21221 FM 529 Rd, Cypress, TX 77433  
1.800.799.4609 • sales@sentryair.com  
www.sentryair.com
**Dental Aerosol Extraction Systems**

As an added layer of protection, ULPA filtered Dental Aerosol Extraction Systems help minimize dental aerosol by capturing particulate at the source, removing them from the dental technician’s and patient’s breathing zone. These systems utilize a 68” long self-supportive arm to position near the patient and a powerful fan to draw in dental aerosol particles into the filtration system. The system releases the filtered air back into the surrounding room therefore improving the indoor air quality of the dental office and reducing the risk of disease transmission. To provide maximum protection against COVID-19, Sentry Air Systems recommends using an ULPA filter that offers up to 99.9995% efficiency on particles 0.12 microns and larger.

The self-supportive flex arm can easily be moved closer to the patient and moved out the way when needed. This small footprint design enables this unit to easily fit in a dental office without getting in the way. The portability handle and heavy-duty casters allow the system to be moved in between appointments and out of the way when not in use. Reduce exposure risk in order to protect staff and patients with this easy-to-install system.

**Benefits of Dental Aerosol Extractors:**

- **Extracts at the Source** – Self-supportive extraction arm allows the capture hood to be moved closer to the source. Helps prevent contamination of surfaces, removes most of airborne particulate, and protects the breathing zone of technicians.
- **Added Layer of Protection** – Provides a layer of protection against airborne bacteria, fungi, and pathogens (including the coronavirus).
- **Ductless Design** – The system creates a recirculating airflow pattern which makes installation easy with no ductwork or makeup air production.
- **Multiple Filter Configuration** – Allows the removal of particulate and fumes (such as mercury and formaldehyde).

**Key Features:**

- 68” long flex arm
- Portability handle and heavy-duty casters
- Includes Variable Speed Controller (115V only)
- Quiet operation
- Reliable, low maintenance operation
- Energy efficient
- Simple, quick “no tool” filter change
- Long filter life
- **Optional:** Magnehelic Gage, hour counter, and foot control pedal

**Model #’s:** SS-300-PFS, SS-300-MED, SS-400-PFS

**Airflow:** Model 300 - up to 350 CFM, Model 400 - up to 750 CFM

**Flex Arm:** 68” L Available with fire-retardant flex hose.

**Limited Warranty:** Two-year warranty from date of shipment on defects due to materials or workmanship.

Dental hygienist using a Model 300 Medical Sentry to remove dental aerosol.

Dentist’s setup of a Model 400 Floor Sentry for dental aerosol extraction.

Closeup of extraoral system removing dental aerosol.

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Room Air Cleaners for Secondary Protection

For secondary protection, dental offices can utilize Portable Room Air Cleaners to catch stray dental aerosol, maintain a clean breathing zone in waiting rooms, and filter air in exam rooms in between patients. These units use a powerful fan to draw in airborne contaminants and filter the air before releasing back into the surrounding room. For dental environments seeking to reduce disease transmission, Sentry Air Systems recommends using an ULPA filter that offers up to 99.9995% efficiency on particles 0.12 microns and larger.

Portable Room Air Cleaners are available in a variety of airflow configurations suited for different size rooms. The Model 300 and 400 feature heavy-duty casters to allow the system to be easily moved to a different area. All three different models have a small footprint that allows even space conscious areas to benefit.

Benefits of Portable Room Air Cleaners:

- **Secondary Layer of Protection** – Provides a secondary layer of protection against airborne bacteria, fungi, and pathogens for exam rooms, waiting rooms, and in between patients.
- **Ductless Design** – The system creates a recirculating airflow pattern which makes installation easy with no ductwork or makeup air production.
- **Portable** – Easy to move to different parts of the office.
- **Small Footprint** – Takes up limited floor space.

Key Features:

- Heavy-duty casters (Model 300 and 400 only)
- Includes Variable Speed Controller (115V only)
- Quiet operation
- Reliable, low maintenance operation
- Energy efficient
- Simple, quick “no tool” filter change
- Long filter life
- **Optional**: Magnehelic Gage, and hour counter

**Model #'s:** SS-200-PRAC, SS-300-PRAC, SS-400-PRAC

**Airflow:**
- **Model 200** - up to 100 CFM
- **Model 300** - up to 350 CFM
- **Model 400** - up to 750 CFM

**Limited Warranty:** Two-year warranty from date of shipment on defects due to materials or workmanship.