Professional Air Cleaning for Dental Environments

- Helps to protect dentists, dental staff and patients from airborne infections
- Helps to implement infection control measures by controlling airborne bacteria, viruses and drill aerosols
- Removes unpleasant odours
- Filters toxic mercury vapour
- Reduces exposure to disinfectant compounds
- Controls airborne allergens
Microbiological Air Contaminants

The air in a dental surgery acts as a carrier of a variety of microbiological particles. The generation of these contaminants within a dental practice occurs mainly during dental procedures. The use of high-speed drills and ultrasonic scaling equipment generates fine aerosols which consist of moisture droplets that contain blood, saliva and filling particles. These droplets are usually between 0.5 and 5 micrometers (µm) in diameter, and are light enough to stay airborne for hours. Bacteria and viruses which are contained in these micro-droplets are easily inhaled and constitute a potential source of infection to the dentist, staff and patients.

Mercury (Hg)

Numerous studies show that dentists and their staff have higher than average levels of inorganic mercury (Hg) in their blood and urine. According to the WHO* there is no evidence that there is a safe level of mercury in the body that does not kill cells and harm body processes. Since mercury is odourless and transforms from solid to gas at room temperature, the dangers of chronic exposure to mercury can easily remain undetected. Mercury vapour is not only released and potentially inhaled when dental amalgam is placed, but also when these fillings are removed.

The dental practice itself can become a secondary source of mercury vapour exposure to dentists and staff. Over the years, mercury may have gotten into floors, cracks of chairs or sinks and may now continuously release mercury vapour to the room.

Latex Allergens

The use of protective latex gloves can cause allergic reactions due to body contact or inhalation of latex allergens. These allergens adhere to the talcum powder particles of the glove and can thus become airborne.

Disinfectants

Chemical disinfectants are being used in the dental practice to decontaminate hands, instruments and surfaces. Disinfectants that kill germs, viruses, and fungal spores often contain aldehydes (especially formaldehyde and glutaraldehyde) or phenol. Aldehydes are well-known for their sensitising potential and their inhalation toxicity. Exposure to aldehyde at low doses on a continuous basis may lead to chronic toxic effects, the symptoms of which are mostly unspecific (nausea, impairment of the memory, motivation, reactivity or dexterity).

Even less toxic alcoholic compounds, such as ethanol, isopropanol, and n-propanol, can cause irritation of the respiratory tracts and the mucous membranes. An unpleasant disinfectant odour is often the only indication that unhealthy air pollutants are present.

The IQAir® Dental Hg™ with FlexVac™ captures mercury vapour and drill aerosols right at the source. A flexible suction duct can be positioned close to the procedure area to remove harmful aerosols and vapours before they can be inhaled or disperse in the ambient air. The system’s outstanding ability to reduce room levels of mercury has been documented in a research report by the renowned Institute of Hygiene at the University of Heidelberg, Germany.

The IQAir® Dental Pro™ is a multi-purpose air cleaning system that has been developed specifically to remove dental pollutants from ambient air by recirculation.

This is how the air is filtered
First, the polluted air is drawn in through a high-efficiency pre-filter where it is stripped of bacteria, viruses, allergens and larger aerosols.

Next, the air enters the four filter cartridges where a wide variety of gaseous contaminants are removed by several types of gas control media. These gas filter stages remove VOCs, mercury vapour, formaldehyde, glutaraldehyde, odours and many other gaseous and odourous contaminants.

The final filter stage consists of an electrostatically charged post-filter which traps even the smallest of particulate pollutants and microorganisms.

Advanced Air Cleaning Technology

- 320° Air Outlet
  • Returns low turbulence filtered air

- High-Performance Centrifugal Fan
  • With an air handling capacity of 1200 m³/h (700 cfm)

- Air Intake
  • Draws in polluted air from both sides

- Post-Filter Sleeves
  • Electrostatically charged
  • Provide final particle filtration

- Gas Phase Filter Cartridges
  • IQAir® Dental Hg™ with FlexVac™ contains special mercury binding media
  • IQAir® Dental Pro™ contains wide-spectrum media to help remove VOCs, mercury vapour, formaldehyde, glutaraldehyde and many other gaseous chemicals and odours

- High-Efficiency Pre-Filter
  • HEPA-type 99% efficiency at 0.3 µm
  • Holds back viruses, bacteria etc.
The advanced nature of the IQAir® product line is documented in numerous patents which have been granted or are pending in the United States, Europe and Asia. These patents cover the revolutionary modular housing design, filter design and the sophisticated control panel which allows the detailed programming of the IQAir® to suit individual requirements.

Contact your IQAir® Authorised Dealer for more information:

Visit www.iqair.com

The indoor air quality (IAQ) improvements that can be achieved with IQAir® systems depend not only on the system performance, but also on factors which are specific to that particular indoor environment, such as room size, type and concentration of contaminants and source intensity. Consult a qualified IAQ specialist to determine an effective and comprehensive IAQ strategy. Source control and ventilation should be considered first in solving any IAQ problem.

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