

DENTAL

Design a Safer Practice





Design a Safer Practice

Safety is a critical factor in patient and teammate care. Maintaining team confidence and building patient trust is as important as ever.

Ensuring safe workflow and the highest standards of infection control within your practice can help sustain your business. How do your processes measure up? When patients ask for reassurance that a visit to your office is safe and won't expose them to undue risk, is it enough to tell them that everything is safe, or can you differentiate yourself by showing them?

Here, we'll examine how practice design, the right equipment and right processes can support your goals to improve workflow and help prevent infection every day.

WHAT'S INSIDE

Sterilization Center	3-11
Treatment Rooms	12-19
Cabinetry and Surfaces	20-21
Mechanical Room	22-23
Imaging	24-25
Staying Informed	26



You can find opportunities to ensure safer workflows throughout your practice.

Two important, usually high-traffic, environments are the sterilization center and operatories. Start in these spaces as you design a safer practice.



Start with Workflow

5-STEP INSTRUMENT PROCESSING WORKFLOW



Follow a dirty-to-clean instrument processing workflow as recommended by the [CDC](#) to help contain contamination and maximize the efficiency of your instrument cleaning and sterilizing process.



STEP 1 Receiving + Cleaning

Reusable instruments, supplies and equipment should be received, cleaned and disinfected in one section of the processing environment. Remember to clean handpieces on both the outside and inside.



STEP 2 Preparation + Packaging

Cleaned, dried instruments and other supplies should be inspected for residual debris and damage, assembled into sets or trays, and wrapped or packaged for sterilization.



STEP 3 Sterilization

The sterilization area should include the sterilizer and related supplies with adequate space for loading and unloading the sterilizer. Follow the instructions for use (IFU) on cleaning and sterilizing for each instrument.



STEP 4 Monitoring/Sterility Assurance

Mechanical, chemical and biological monitoring should be used to ensure the efficacy of the sterilization process. Results of sterilization need to be recorded.



STEP 5 Storage

The storage area should be adequately sized, closed or covered, and located apart from contaminated instruments in an area protected from moisture. Supplies and instruments should not be stored under the sink.

Design a Safe and Efficient Workflow

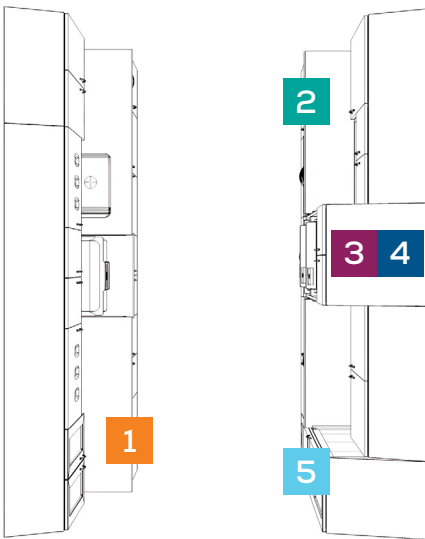
Did you know that based on average dental practices, your team may go in and out of the sterilization area **as many as 80-120 times**, or more, each day? Efficiency and risk reduction are essential. There are multiple ways to lay out an effective sterilization center and follow the [CDC's recommended dirty-to-clean workflow](#).

The layout and location you choose will depend on the size of space you have, which should be adequate for the size of your practice. The layout itself can be flexible, but straight-line and galley-style layouts are the most common. A good rule of thumb is to have 10–12 feet of linear space, at a minimum, for a single-doctor practice with up to

5 treatment rooms, adding 2 feet per additional doctor or 2–3 treatment rooms. To maximize efficiency, your sterilization center is recommended to be centrally located so it is no farther to access than 3 operatories away.

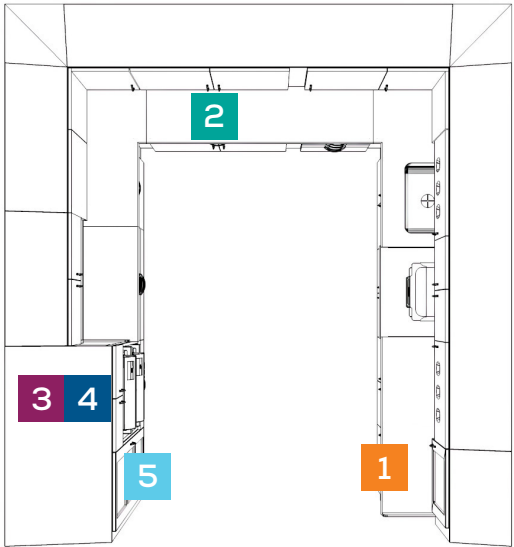


GALLEY



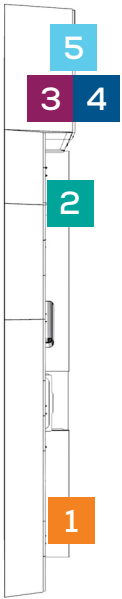
The galley layout consists of workspaces on two opposing walls with a single traffic lane between. This arrangement allows for easy access and efficient workflow, helping your team keep the process moving using a linear flow while keeping everything within reach.

U-SHAPED



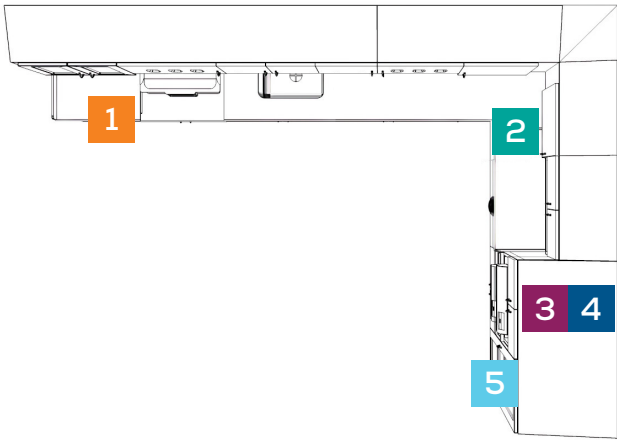
Multiple cleaners and sterilizers demand space—a U-shaped workspace design provides that and more. Ample surface areas allow more of your team in the room to multitask and maintain a bustling workflow.

STRAIGHT-LINE



Perfectly suited to a 5-step instrument processing workflow, a straight-line workspace design can help maximize efficiency for effective infection prevention.

L-SHAPED



An L-shaped counter arrangement maximizes use of available space where elbow room is limited. The space you have can be all you need to process instruments effectively and safely.

Build Patient Confidence with a Safety Showpiece

A well-designed sterilization center is not just an engine of productivity for your practice, it can be a valuable marketing tool to reassure your patients that you care about their safety. Use of clear windows can set the room apart and allow patients to observe from a safe position.

Krystal Gillis, DDS, created a [carefully designed sterilization area](#) she's proud to show her patients. "Our speed of workflow has really increased," [Dr. Gillis explains](#). "We're able to turn over instruments faster. We're able to get patients into rooms faster. We're able to see more patients and treat them better with our new design."



“Safety is our best marketing tool.”

"When we designed our office, we put a large window in our sterilizing room. People asked why we wanted patients to see dirty instruments. Easy—we want them to see how effectively we practice and trust that everything is completely sterile for their safety. And because it's unique and cool, their word-of-mouth becomes our best marketing tool."

Ileana T. Toro, DMD
Village Park Advanced Cosmetic and Family Dental



Treatment Room Safety

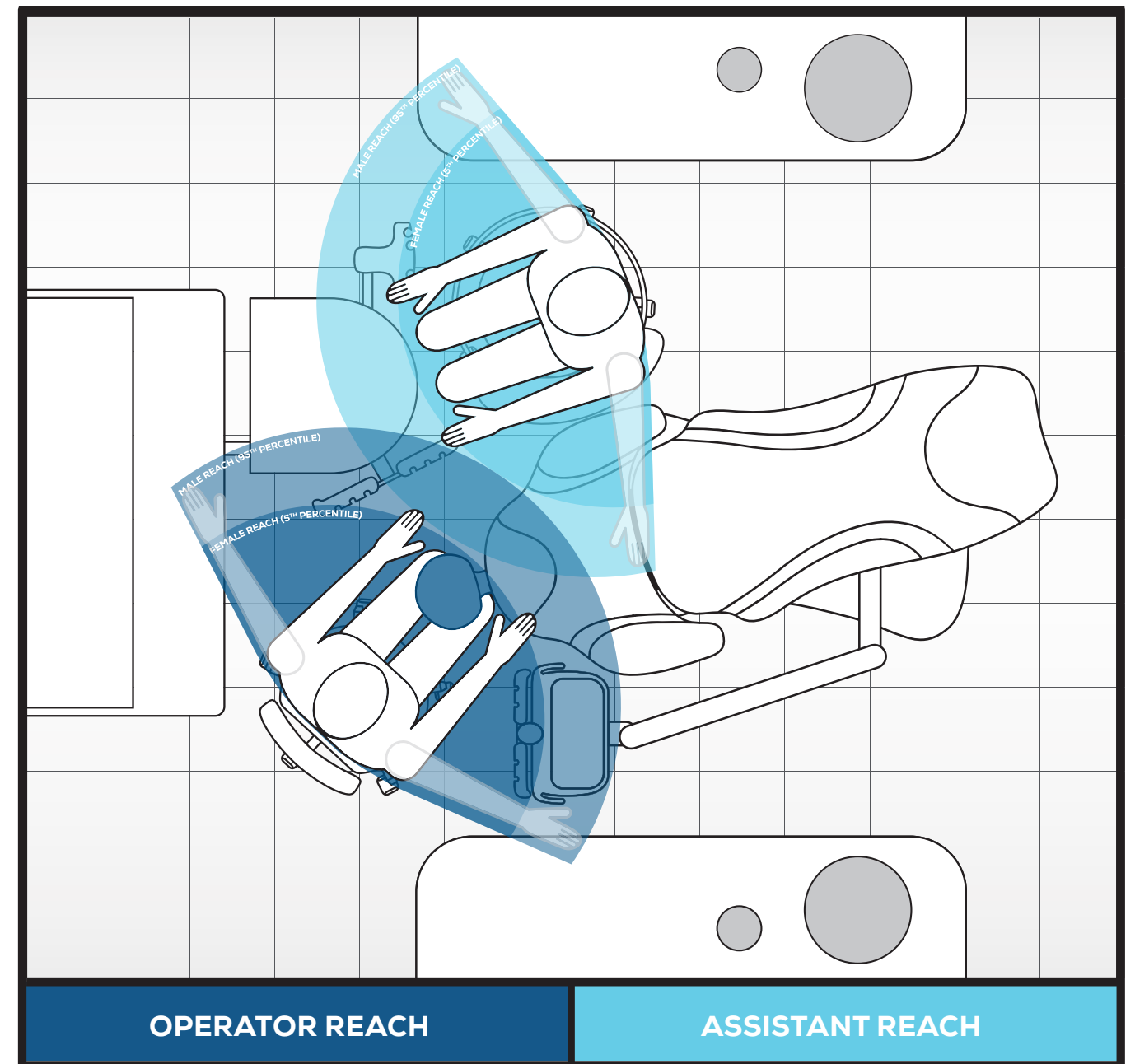
While patient safety is vital to your practice, so is your health and your team's health. Did you know that a significant **78% of dental professionals** from Western countries have been found to suffer from neck, shoulder, and/or lower back pain?? And that 34% of lost workdays are due to work-related musculoskeletal injuries? How much is that costing you?

\$64K

OSHA estimates the average cost per incident for injuries like sprains, strains, inflammation and carpal tunnel syndrome is \$64,000.

78%

Did you know that a significant **78%** of dental professionals from Western countries have been found to suffer from neck, shoulder, and/or lower back pain?



Designing your treatment room for better ergonomics and workflow can help your health and efficiency.

What does that look like? According to Dr. Jeff Carter of Practice Design Group, a dental design studio of Plunkett Raysich Architects, a treatment room measuring 10 feet, 4 inches wide by 12 feet deep will provide the correct amount of space for most ideal configurations.

Together, these dimensions and layout help support ideal workflow and ergonomics by including maneuverable space around the chair and placing delivery units, work surfaces and the oral cavity all within your reach.

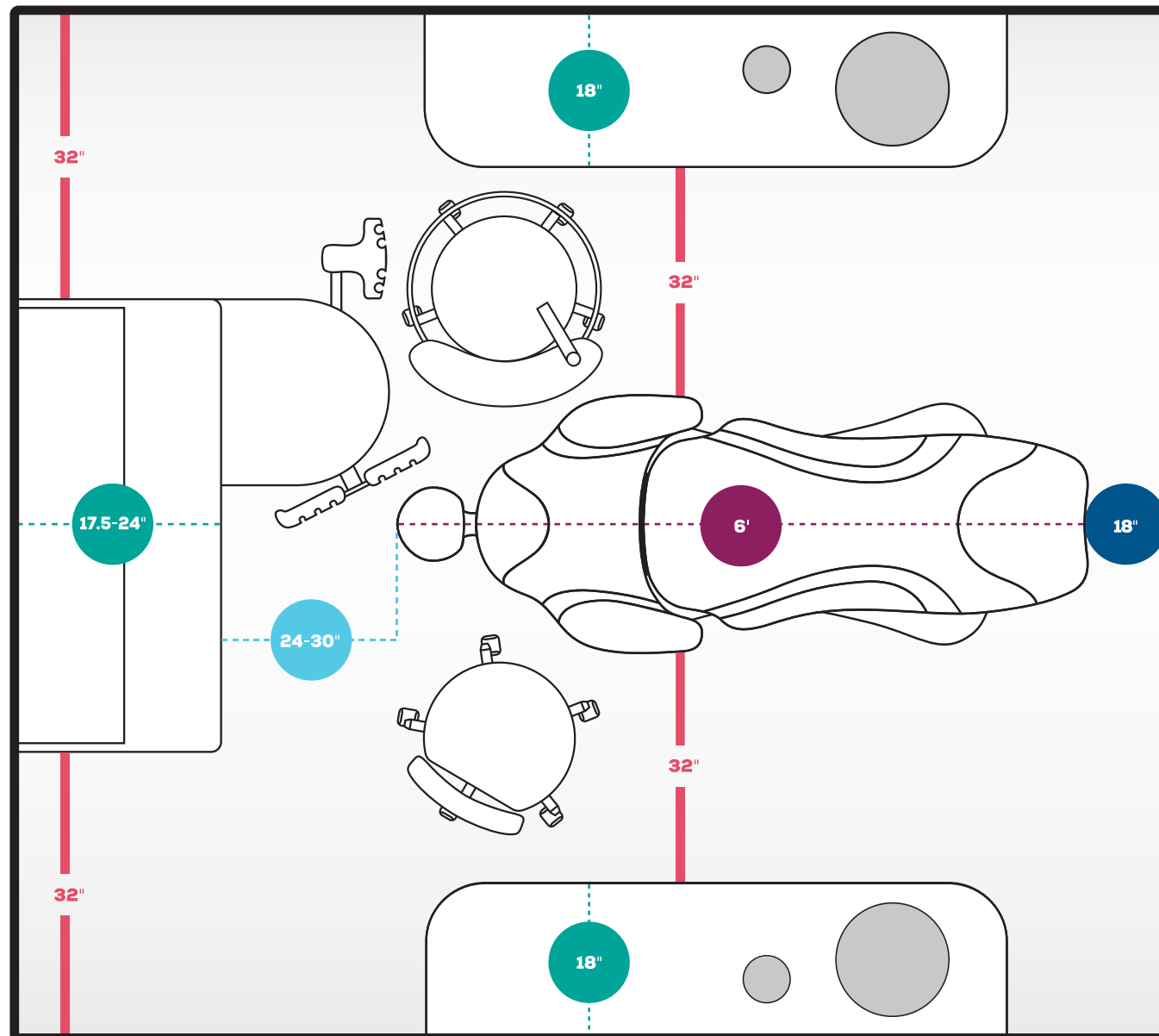
Start with the dental chair, which is typically 6 feet long, then add ideal spacing and equipment around it, including a back cabinet about 17.5 to 24 inches deep, a space of 24 to 30 inches between the back cabinet and head of the chair, a space of 18 inches at the foot of the chair, side cabinets 18 inches deep and ADA clearances of 32 inches on either side of the dental chair for accessibility.

We invite you to take a deeper dive into understanding the risks to your health in our white paper, "4 Reasons to Take Ergonomics Seriously." Learn the risks, then ask your Midmark representative how to plan your treatment rooms and use equipment properly to support your health.

Design for Clinical Workflow

Select your cabinetry placement and design to support proper ergonomics. Best practices recommend planning around 120 square feet per operator to accommodate your equipment, work surfaces, ADA clearances, maneuverability and ergonomic positioning. Smaller rooms can limit your cabinetry and work surfaces, impeding your workflow by putting essential components out of reach.

DUAL ENTRY OPERATORY



Start with the dental chair, typically 6' long, as the center of your operatory.



Keep 32" of space in at least one doorway per ADA recommendations. Consider 32" of space between the chair and side cabinet on at least one side of the dental chair for entry and exit.



Add side cabinets, typically 18" deep, and a treatment station, between 17.5" to 24" deep, for adequate storage and instruments within reach.



Add 24" to 30" between the treatment station and fully reclined head of the chair, depending on the unit configuration, to work comfortably from the 10 o'clock to 2 o'clock positions.



Add 18" at the toe of the chair to maintain clearance for staff, equipment and horizontal travel when raising the chair.



LET US HELP YOU VISUALIZE YOUR OPERATORY

Midmark design experts are ready to help you create a beautiful and functional space optimized for the way you work. From proper equipment sizing and layout to upholstery colors and cabinetry finishes, we'll work with you to design the best environment for your practice.

Protect Patients from the Moment They Sit Down

Welcoming patients into a clean environment sets a good first impression.

Have you been somewhere recently where you've had to sit in a cloth-covered seat? And did you cringe a little wondering how clean that was? Don't overlook using the same, asepsis-friendly upholstery on your [waiting room chairs](#) as you use on your [dental treatment chairs](#).

Midmark offers Ultraleather® upholstery for both patient seating and dental treatment chairs to help meet your infection prevention and design goals. [Ultraleather](#) is made of high-performance polyurethane materials engineered utilizing proprietary technology that includes premium-quality polycarbonate resins in the manufacturing process. This process ensures that Ultraleather materials stay ahead of the cleaning and disinfecting challenges faced by lesser-quality polyurethane constructions and withstand the various cleaners and disinfectants essential for keeping high-traffic environments clean.

But keep in mind, all disinfectants and cleaning agents contain chemicals that degrade your upholstery to some extent. To promote a long product life, we recommend you adhere to your upholstery and equipment's IFU.

Infection prevention is only part of the safety picture. If you are concerned with reducing all kinds of unnecessary risk, consider the way the dental treatment chair functions. Dental chairs move multiple ways, rotating, raising and lowering to allow the best access to the patient. What makes a chair most functional to a clinician can also make it dangerous for a child who wants to touch all

the buttons. The Elevance® Dental Chair has a Child Lockout System that allows you to disable the chair's electronic controls to prevent unintentional use. [Buttons and brake release pedals](#) will not work while the chair is locked, preventing possible injury to children.

Elevance Dental Chairs are also equipped with [collision protection](#) to prevent damage to personnel or equipment. If any of its six safety switches bump into an obstacle, the chair will stop moving and raise slightly to allow the obstacle to be removed.

Safe environment design also ensures sharps safety. Ideally, a sharps container should be in every operator so you can place used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers located as close as possible to the area where the items are used.





Keep the Dental Delivery Unit Safe



Waterline maintenance is necessary to keep the count of heterotrophic bacteria from rising higher than desired levels. Local or regional guidelines determine the desired level for a specific location.

Delivery unit waterline treatments come in many forms. The most popular methods currently on the market are tablets and a straw/cartridge-based system. Straw/cartridge-based systems may do the best job keeping the bacteria levels in check and perform better with Midmark equipment based on their ability to more thoroughly dissolve, preventing waterline clogs.

Regularly monitor lines to ensure that heterotrophic bacteria are not exceeding the desired limit. If the level is higher than desired, perform a shock treatment of the waterlines. Experts recommend monitoring monthly, making adjustments to the frequency based on test results.

Per the [CDC](#), routine flushing of the waterlines should be performed between every patient. Extra flushing may be needed when tablets are used. Undissolved tablet particles can gather over time in places within the waterlines, obstructing the line and causing water flow to slow. Flushing the waterlines maximizes water flow and should push any undissolved particles through the line. Learn more about [waterline maintenance](#).



Regular handwashing is one of the best ways to remove germs, avoid getting sick and prevent the spread of germs to others. Minimize the spread of contaminants by having an adequate number of sinks available.

Control Contaminants Hiding in Plain Sight

The risk of contamination from surfaces is with us every day. Your cabinetry and countertops could be home to dangerous pathogens, which is why choosing the right materials for your demanding environment is so important. Durable, aseptic cabinetry and surfaces should stand up to the water, steam and heavy use of the sterilization area and be easily disinfected there and in your treatment rooms.



For effective infection control, Midmark recommends:

- Aseptic, non-porous counter materials such as solid surface and quartz
- Heat-and-moisture-resistant cabinet surfaces and materials
- Easy-to-clean, bactericidal cabinet and drawer handles
- Seamless polystyrene drawers and seamless panels

[Compare Cabinetry](#)

Compare Quality: Midmark Clinical-Grade Cabinetry vs. Generic Consumer-Grade Cabinetry

	MIDMARK SYNTHESIS® CABINETRY	MIDMARK ARTIZAN® EXPRESSIONS CABINETRY	CONSUMER-GRADE CABINETRY
Cabinetry	<p>A steel foundation provides optimal strength and durability.</p> <ul style="list-style-type: none"> • 18-gauge cold rolled steel • Modular design 	<p>Industrial-grade strength prolongs durability.</p> <ul style="list-style-type: none"> • 3/4" industrial-grade particle board • Customizable design that can be configured to specific design requirements 	<p>Millwork options are not specifically designed to endure the clinical dental environment.</p> <ul style="list-style-type: none"> • 1/2" to 5/8" low-density particle board or plywood (typically) • Basic or limited designs
Panel Substrates	<ul style="list-style-type: none"> • Medium-density fiberboard • 3/4" panels 	<ul style="list-style-type: none"> • Industrial-grade particle board • 3/4" panels 	<ul style="list-style-type: none"> • Low-density particle board • Various types of plywood
Edge Treatments	<ul style="list-style-type: none"> • Membrane-pressed thermofoil 	<ul style="list-style-type: none"> • 3 mm PVC edgebanding 	<ul style="list-style-type: none"> • Square edge strips • 2 mm edgebanding
Drawers	<ul style="list-style-type: none"> • Seamless, polystyrene drawers 	<ul style="list-style-type: none"> • Wood bottom and backs with factory, pre-applied thermally fused melamine • Metal sides with front panel adjustment and removal feature 	<ul style="list-style-type: none"> • Inside often varnished, painted or left unfinished

Our [steel-constructed Synthesis cabinetry](#) with solid-surface or quartz countertops are resistant to delamination or chipping over time and feature durable aseptic polystyrene drawer liners. Consider adding hands-free dirty storage and foot pedals for waste disposal, built right into your cabinetry. Touchless faucets and anti-microbial cabinet handles offer additional infection control support.

By comparison, standard consumer-grade locally sourced millwork uses square-edged laminate stripping, which can create sharp, dangerous corners and even delaminate over time. The door edges and corners can become unsealed and susceptible to moisture and bacteria.

Seamless drawers made from lightweight moisture-resistant material like polystyrene work best for proper cleanup. When the substrate, which is the core material of the cabinet's paneling, is an industrial-grade particle board or medium-density fiberboard, minimal shrinkage and expansion occur, making them more stable and less prone to warping. Veneered plywood and lower density boards don't perform well in humidity, and once the core separates from the finish, contaminants are likely to find their way to those compromised areas.

Reduce Airborne Risks



0.01-Micron

coalescent filter designed to capture 99.9997% of compressed air contaminants

500X

Did you know Midmark PowerAir Oil-Less Air Compressors filtration is 500-times greater than the industry standard

Dental air compressors and vacuums are familiar and necessary components of your practice. They are the heart and lungs that breathe life into your handpieces and ensure saliva and other liquids are comfortably and safely evacuated from your patient's mouth. While safety protocols are important for all forms of pathogens, there is a new focus on airborne pathogens, especially since the pandemic.

Listed on the [CDC page](#) about the spread of Coronavirus is the recommendation to "ensure indoor spaces are properly ventilated." A space with good ventilation reduces the risk of exposure to infectious respiratory droplets.

You can take this recommendation a step further by filtering the air used during treatments to reduce the risk of

viral spread. Midmark PowerAir Oil-Less Air Compressors have a 0.01-micron coalescent filter designed to provide the ultimate in clean air, generating the capacity to capture 99.9997% of compressed air contaminants. This **filtration is 500-times greater than the industry standard** and can trap many bacteria, most dust and even some viruses.

The Ultimate in Clean Air

Types of Contaminant						
Visible with an Electron Microscope		Visible with a Microscope			Visible with the naked eye	
Particle size in microns						
0.001	0.001	0.01	0.1	1	10	100
		Smog				
	Fumes			Dusts		
		Tobacco Smoke			Spores	
				Bacteria		
	Viruses				Human Hair	
Molecules						Pollen

Contaminants that pass through an industry-standard 5-micron filter

Midmark PowerAir Oil-Less Air Compressors filter air to 0.01 microns.

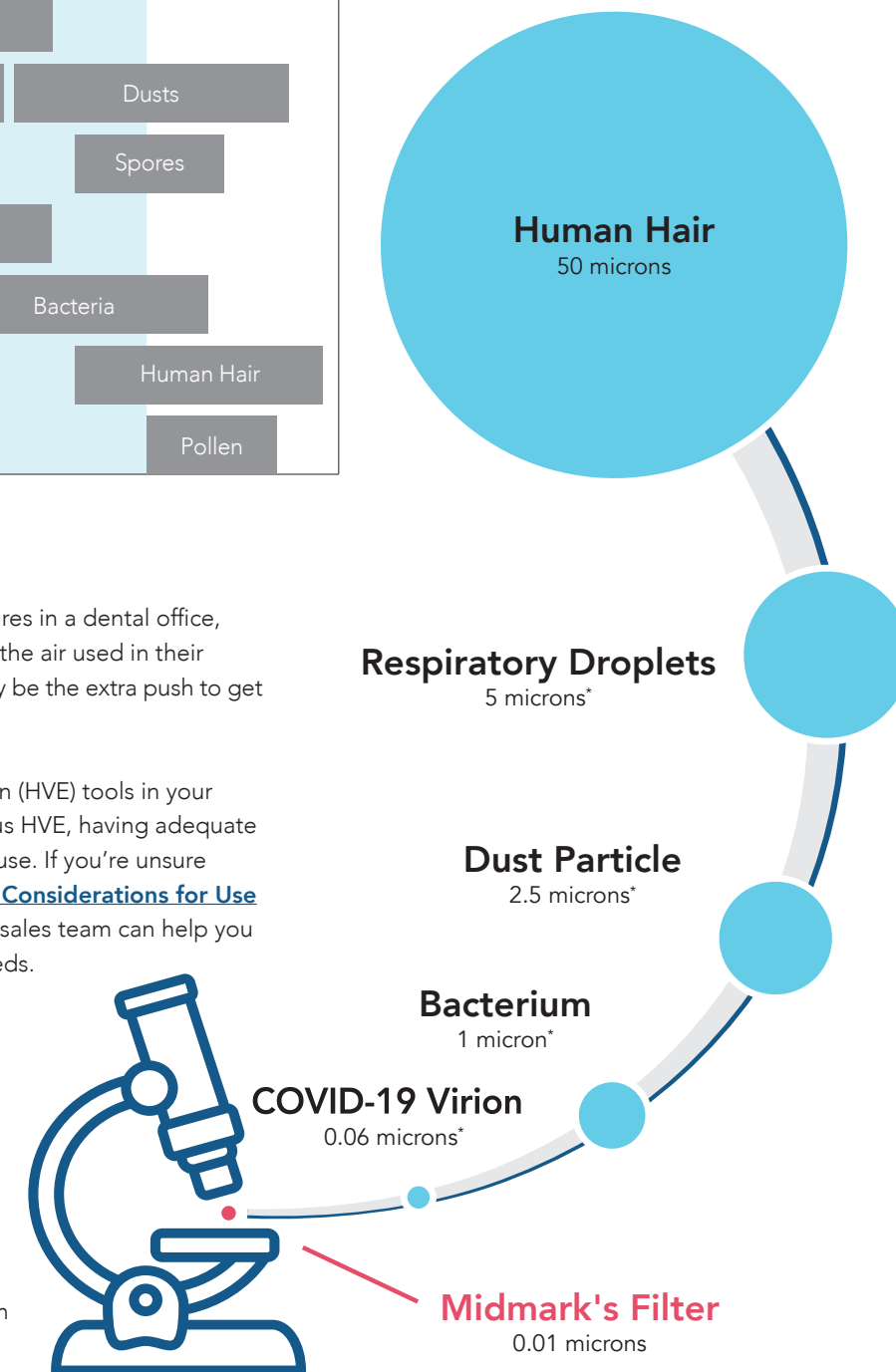
Adapted from: https://emilms.fema.gov/is_0156/groups/292.html

For patients unsure of the safety of indoor procedures in a dental office, knowing the air they breathe is well ventilated and the air used in their treatment is cleaned through a filtration system may be the extra push to get them into your dental chair.

Likewise, as you are adding high-volume evacuation (HVE) tools in your treatment rooms to reduce aerosols with continuous HVE, having adequate vacuum pump speed is necessary to support their use. If you're unsure whether your vacuum has the power, see our ["Key Considerations for Use of Continuous HVE in a Dental Practice."](#) or your sales team can help you determine the best equipment to support your needs.

HOW BIG IS A MICRON? When imagining the size of a micron, picture it like this: The largest circle in the graphic to the right represents the outside diameter of a single human hair at 50 microns. Many dental compressors filter air to the industry standard of 5 microns, represented by the second largest circle.

Midmark PowerAir compressors use 500x greater filtration with a 0.01-micron coalescent filter, shown here as the size of the smallest, red circle.

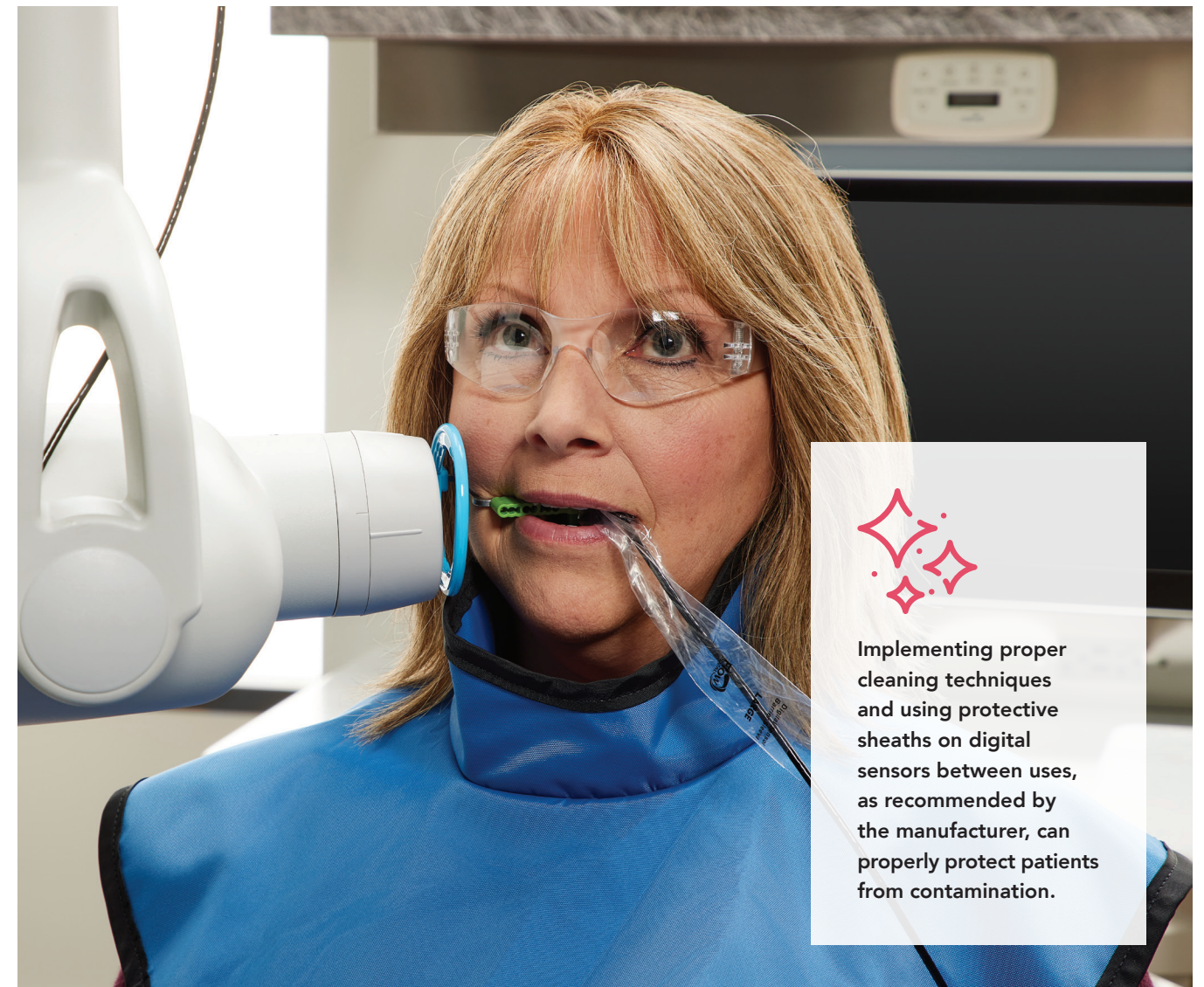


*Sizes provided are within the typical size ranges for each particle listed

Safely Gain Treatment Insight

Treatment plans to deliver beautiful smiles start with regular preventative oral care. Safety must be considered, especially when radiation is introduced with these types of exams.

X-ray safety is centered around radiation exposure. While radiation from dental imaging is fairly low compared to everyday environmental exposures, the effects of radiation are well-documented and cumulative. What you do to limit exposure makes a difference to your patients. Following FDA and ADA guidelines at the point of care during imaging procedures can help ensure the lowest dose of radiation is given to the patient for their specific exam needs and help improve outcomes through more accurate diagnoses.



Implementing proper cleaning techniques and using protective sheaths on digital sensors between uses, as recommended by the manufacturer, can properly protect patients from contamination.

You can minimize the patient's exposure with the ALARA (as low as reasonably achievable) Principle. Using ADA guidelines for prescribing dental radiographs can help reduce overutilization of imaging and excessive radiation, while minimizing underutilization of imaging to avoid a potentially inadequate diagnosis.

USING THESE GUIDELINES, PATIENTS ARE CATEGORIZED BY:

- 1 Type of visit (new or recall)
- 2 Dental status (child with primary or transitional dentition, adolescent, or adult dentulous or edentulous)
- 3 Risk category for caries, periodontal disease or growth, and development assessment

From there, you can determine the right dose for the patient's situation, balancing patient safety and comfort. You can utilize direct digital sensors for lowest dose or install easy-to-use intraoral X-rays (IOs) with preset technique factors that are also adjustable to ensure the right dose. Use IOs with the smallest focal spot, such as 0.4 mm, for lowest dose and to provide the sharpest images.

Stay Informed and Have a Plan

It's important to understand safety implications for your practice and appoint someone on your team to regularly review local, state and federal standards.

Remember, the American Dental Association, the US Food and Drug Administration and the Centers for Disease Control and Prevention are the key agencies that create standards for your dental practice. The Occupational Safety and Health Administration, the Joint Commission and local authorities enforce them.

For assistance navigating these standards, check out the [Association for Dental Safety](#) (ADS) The mission of ADS is to be the leading provider of infection prevention and control education, training and credentialing that supports safe dental visits.

At Midmark, we believe that understanding the safety guidelines you need to follow helps us serve you. That's why our sales and marketing teams have each earned a certificate of course completion from the OSAP-DALE Foundation in Dental Infection Prevention and Control.



We look forward to designing better, safer care with you.





Designing better care.®

Ultraleather is a registered trademark of Ultrafabrics, LLC

© 2024 Midmark Corporation, Versailles, Ohio USA.

Products subject to improvement changes without notice. Litho in USA.

MKT-00463 Rev E1 (11/24)