



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 in our changing economy.

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.



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.

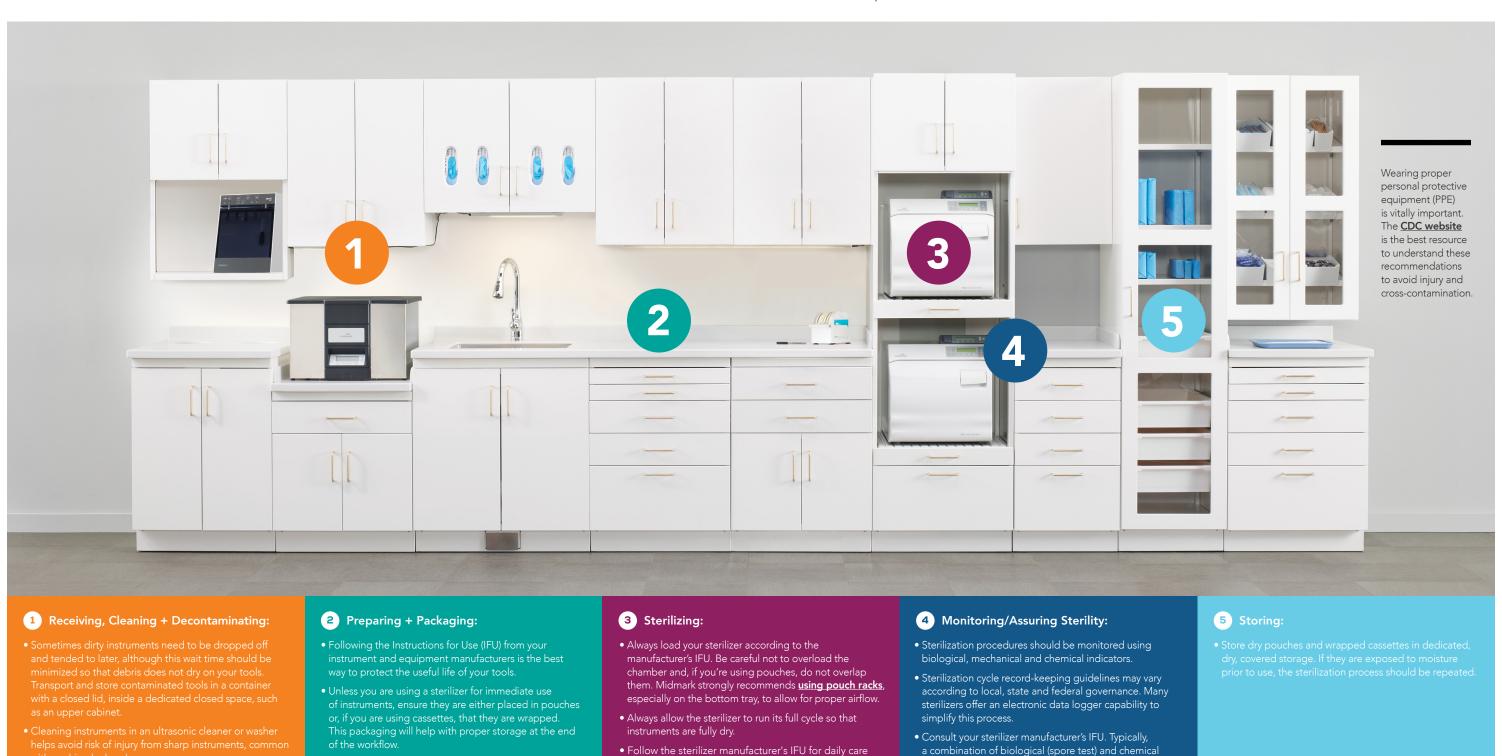


Sterilization Center Safety

To make a safer sterilization center environment, let's explore your workflow, processes and equipment.

(load specific) indicators are recommended.

Safety within your sterilization center starts with recommended guidelines from the Centers for Disease Control and Prevention (CDC). These guidelines promote a dirty-instrument-to-clean-instrument workflow that is represented here with a <u>five-step process</u>. Instrument processing should be managed in a dedicated space, free of other equipment, food, beverages and personal items such as mobile phones.



6 Safety Now More Than Ever

and routine maintenance so that sterilization cycles

aren't compromised.

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 80–100 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 treatment rooms away.



1. Receiving, Cleaning and Decontaminating



4. Monitoring/
Assuring Sterility



2. Preparing and Packaging

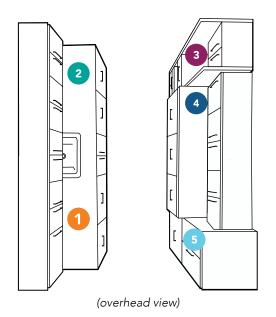


5. Storing

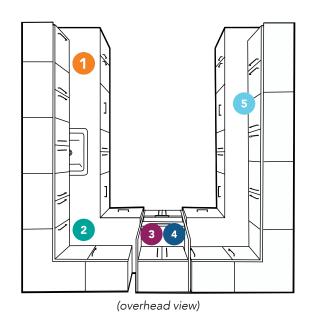


3. Sterilizing

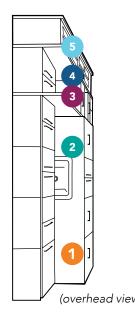
GALLEY U-SHAPED STRAIGHT-LINE L-SHAPED



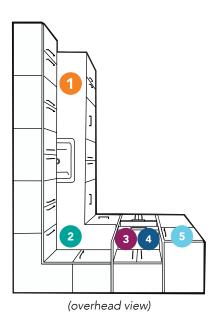
The galley layout consists of workspaces on two opposing walls with a single traffic lane between. This arrangement allows for easy access and efficient workflow, helping your staff keep it all moving with a linear flow while keeping everything within reach.



Multiple cleaners and sterilizers demand space, and a U-shaped workspace design provides that and more. Ample surface areas allow more staff in the room to multi-task and maintain a bustling workflow.



Perfectly suited to the 5-step flow that is instrument processing, a straight-line workspace design is the picture of efficiency. Use it to streamline workflow, and let it create an open and impressive visual for patients passing by.



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 do instrument processing effectively.

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 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 more than 80% of dentists in the US have reported suffering from neck, shoulder and lower back pain? And that 34% of lost workdays are due to work-related musculoskeletal injuries? How much is that costing you?

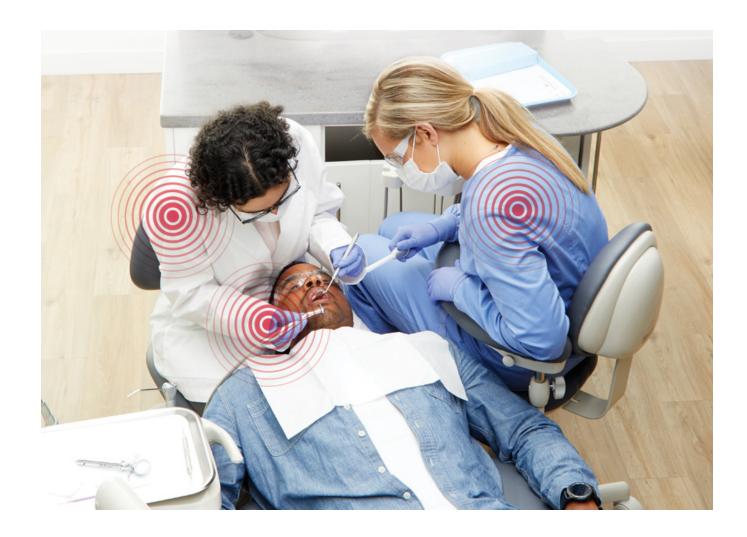
\$64K

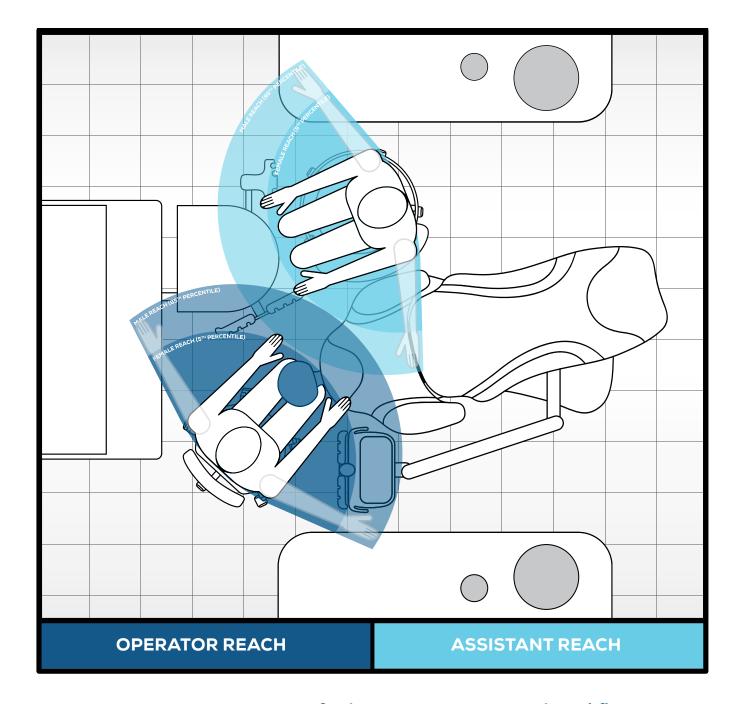
OSHA estimates the

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

80%

Did you know that more than 80% of dentists in the US have reported suffering from neck, shoulder and 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 treatment room measuring 10 feet, 4 inches wide by 12 feet deep will provide the correct amount of space for most ideal configurations.

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.

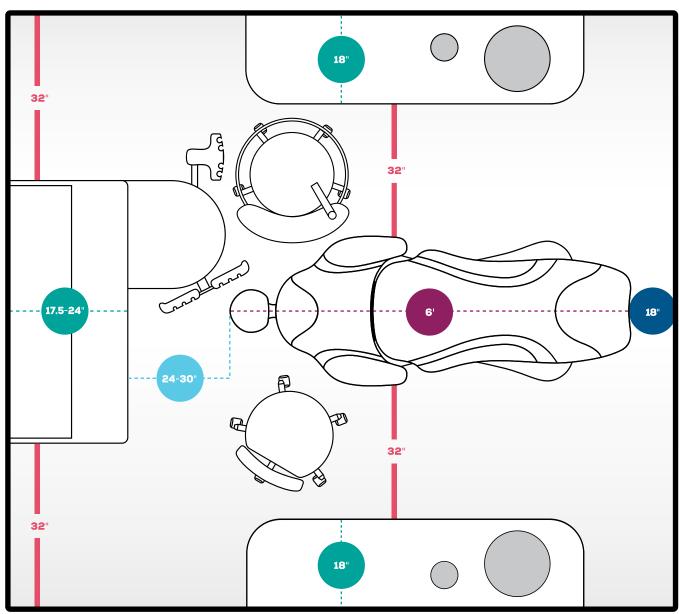
Together, these dimensions and layout help support ideal workflow and ergonomics by including maneuverable space around the chair and placing delivery units, work surfaces and the oral cavity all within your reach.

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 operatory 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.



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 <u>waiting room chairs</u> as you use on your <u>dental treatment chairs</u>.

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 premiumquality 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 Midmark's Upholstery Care and Maintenance Guidelines.

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 operatory 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.





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.

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 from OSAP's Dental Unit Water Quality white paper.

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
- 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**

A steel foundation Industrial-grade provides optimal strength strength prolongs and durability.



- 18-gauge cold rolled steel
- Modular design



- particle board
- Customizable design that can be configured to specific design requirements



• Industrial-grade

particle board

• 3/4" panels

- Medium-density fiberboard
- 3/4" panels



• Membrane-pressed



polystyrene drawers



• 3 mm PVC edgebanding



- Wood bottom and backs with factory, pre-applied thermally fused melamine
- Metal sides with front panel adjustment and removal feature

CONSUMER-GRADE **CABINETRY**

Millwork options are not specifically designed to endure the clinical dental environment.



- density particle board or plywood (typically)
- Basic or limited designs



- Low-density particle board • Various types of plywood



- Square edge strips
- 2 mm edgebanding



 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 controlsupport.

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

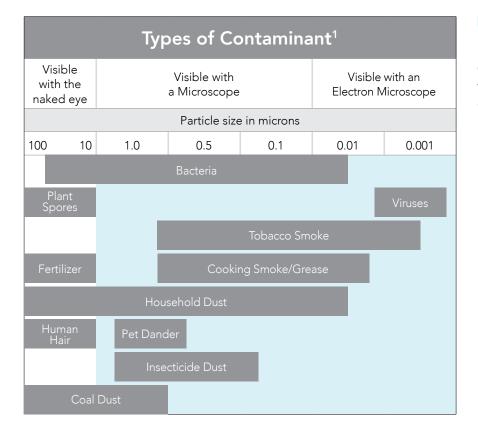
Dental air compressors and vacuums are familiar and necessary components of your practice. They are the heart and lungs that breathe life into your handpieces and ensure saliva and other liquids are comfortably and safely evacuated from your patient's mouth. While your safety protocols may be focused on controlling the spread of bloodborne and waterborne pathogens, a new focus is on the spread of airborne pathogens.

Listed on the CDC "How Coronavirus **Spreads**" guidance page 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



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

Competitive compressor brands filter air to 5 micron. Midmark PowerAir oil-less compressors filter air to 0.01 micron.

> **Human Hair** 50 microns²

Respiratory Droplets

5 microns²

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.

Bacterium 1 micron² **COVID-19 Virion** 0.06 microns² Midmark's Filter 0.01 microns 1, 2 See back page for details and sources

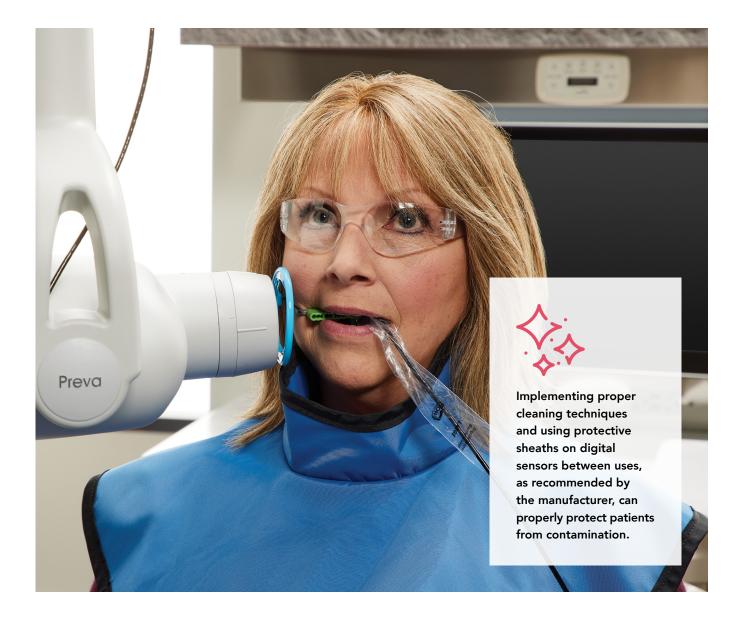
Dust Particle 2.5 microns²

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.





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:

Type of visit (new or recall)

Dental status (child with primary or transitional dentition, adolescent, or adult dentulous or edentulous)

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.

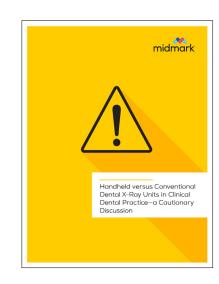
Consider the Safety of Your Equipment



When equipping your treatment rooms with an intraoral X-ray, you have a fundamental choice between wall-mounted and handheld systems.

Handheld dental X-ray units were originally developed for situations where fixed units could not be used, like in field hospitals and emergency triage facilities. Are these units a safe choice for regular use within a practice? To help you make an informed decision, read our "Top Five Things To Consider Before You Invest in a Handheld X-Ray Unit" on the next page.

To learn more, read our <u>white paper</u> "Handheld versus Conventional X-Ray Units in Clinical Dental Practice—a Cautionary Discussion."



Top Five Things to Consider Before You Invest in a Handheld X-Ray Unit



1. SAFETY

When using a wall-mounted X-ray unit, the operator leaves the room, eliminating the potential for exposure to both leakage and scatter radiation. Exposure to radiation is a significant safety concern for the operator of any handheld device. Since the operator is holding the X-ray source assembly, the principle of "distance" as a safety factor against leakage radiation cannot be applied. The patient's radiation dose also increases as the battery charge decreases and the exposure time must increase to compensate

2. IMAGE QUALITY + TIME

Images taken as handheld unit batteries discharge are likely to result in variable image quality. Exposures longer than one second run a greater risk of blur artifacts caused by patient or operator movement, resulting in unusable images and more retakes. Consider the time it takes to capture a series of quality images. A one-second exposure time for a typical handheld dental X-ray unit requires a 60-second cooling down period before the next exposure. The cooling down period, or duty cycle, for a conventional wall-mounted dental X-ray unit is half that time. Those extra 30 seconds saved per exposure become the difference between performing a full-mouth series of twenty images in 5 minutes versus 10 minutes.

3. REGULATIONS

Not all handheld intraoral dental X-ray units available in the US are FDA-cleared, and not all FDA-cleared machines have been cleared for use by every state. Some states provide cart blanche approval for the use of handheld unit while others give approval on a case-by-case basis, usually by an exemption

4. WORKFLOW + ERGONOMICS

While it may seem staying in the room between exposures would improve workflow, it does not. Placing a receptor in the patient's mouth is a two-handed operation and if both hands are being used, the handheld generator would end up cradled in the operator's arm or placed on a work surface. This placement makes them highly susceptible to being dropped and damaged. It also causes arm and hand fatigue for the operator who has to hold the heavy device, which can weigh as much as 5-8 pounds, in awkward positions for longer exposures to get the best image. Plus, constant repositioning of the sensor between acquisitions, such as in a full-mouth or bitewing series, can take longer and requires repeated handling of the device, leading to cross-contamination on top of ergonomic issues and damage risk. If the battery needs to be charged or multiple operators need the unit at the same time, clinical workflow can grind to a halt.

5. COST + LIFESPAN

Not only does one handheld unit cost almost the same as two wall-mounted units, the general life expectancy of a wall-mounted unit is 10 years with little to no maintenance. The estimated 5-year cost for a popular handheld X-ray unit is over \$5,700 more than its wall-mounted counterpart, the Midmark Preva, when necessary batteries, chargers and characteristic damage waiver warranties are factored in. Handhelds also add risk to patient flow. If dropped, handheld units must be sent to the manufacturer for evaluation before being used again so a backup unit becomes essential.

Resources

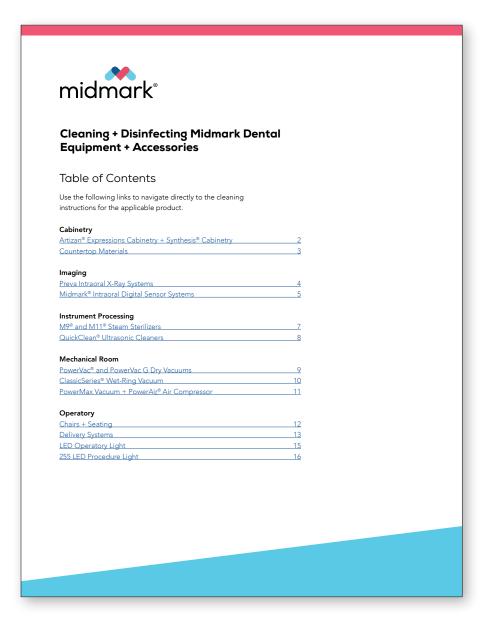
Protecting your patients and team from harm goes beyond infection prevention. Practicing better ergonomics protects your health. Better workflow can help you avoid safety risks and align to regulatory guidelines. And maintaining your equipment properly protects not only your patients and team, but also your investment. Please refer to our recommendations.

- Obtaining Quality Water
- Maintaining a Sterilizer
- Maintaining Mechanical Room Equipment
- Maintaining Operatory Equipment
- Maintaining Imaging X-Ray Equipment

Sometimes you may need to close your practice for an extended period—for example, if you close to take an extended vacation—resulting in your equipment sitting idle. Be sure to follow the proper equipment shutdown and start-up procedures to protect equipment while you are closed.

- Mechanical Room Shutdown Procedures
- Operatory Shutdown Procedures
- Sterilizer and QuickClean™ Shutdown Procedures
- Mechanical Room Start-Up Procedures
- Operatory Start-Up Procedures
- Sterilizer Start-Up Procedures
- Preva Intraoral X-ray Start-Up Procedures

Clean and Disinfect Confidently





These resources and links to regulatory and professional organizations can be found at midmark.com/dental/health-and-safety-information.



The best cleaning and disinfecting instructions for your equipment come from the manufacturer. Midmark has an easy-to-follow, conolidated guide for your convenience.

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 through these standards, the mission of the <u>Organization for Safety Asepsis</u> <u>and Prevention</u> (OSAP) 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.

midmark.com/dental

Ultraleather is a registered trademark of Ultrafabrics, LLC

Sources



 $^{1\} Adapted\ from:\ http://www.cleanaire.co.nz/design_your_HRV/Air+Filters+Explained.html$

² Sizes provided are within the typical size ranges for each particle listed.