The Importance of Isolation to Patient Safety and Predictable Outcomes

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The Importance of Isolation to Patient Safety and Predictable Outcomes

Isolation in dentistry is critically important for a variety of reasons. The main objectives of isolation are to provide clinicians easy access to and total visibility of the operative site; keep the operative field free of fluids and debris; and provide the patient a comfortable experience while protecting the intraoral tissue from injury, protecting the airway, and preventing dental instruments and materials from being aspirated or ingested.

The Benefits of Isolation

- Dry, clean field
- Improved visibility
- Improved access
- Improved clinical outcomes
- Patient safety
- Patient comfort
- Increased work flow efficiency
- Protecting practitioners

Protecting the patient's airway is perhaps the primary concern for everyone providing treatment in the dental practice, considering the life-threatening consequences of not doing so. But there appear to be no hard and fast rules or official guidelines, other than using rubber dams being the standard in endodontic procedures and for moisture control in some direct restoration protocols.

Types of Objects Aspirated/Ingested

- Extracted and broken teeth
- Dental handpieces
- Scalpel blades
- Dental implant screwdrivers
- Endodontic files
- Pins and posts
- Rubber dam clamps
- Amalgam
- Dental implants
- Dental crowns
- Dental burs
- Partial dentures
- Orthodontic appliances, wire, and coil springs
- Mouth mirrors
- Class II sectional matrixes
- Nickel titanium rings

Patients have been known to accidentally swallow or inhale dental instruments and objects both during and after procedures in every type of dental specialty. It may be that most practitioners have experienced either a patient going through this, or have been lucky enough to prevent it during appointments without patients even realizing it. However, if a dental instrument or object does go down a patient's throat, the result can range from discomfort to perforations, abscesses, fistulas, obstructions, and—worst case—death.[1] Aspirated objects can become lodged in the respiratory tract, closing off the larynx or trachea, causing pulmonary atelectasis, emphysema, or death.[2] Swallowed objects can travel through or get stuck anywhere in the gastrointestinal (GI) tract. Surgery may be required to remove these objects, which can result in other complications. And considering the fact that the situation is avoidable with some simple protective measures, an incident may also result in malpractice litigation.

Aspirating or ingesting dental items may be more prevalent in certain populations. The majority of cases may occur in the pediatric dental population, but it happens in adults, too, especially those with psychiatric disorders,[1] intellectual and developmental disabilities, and other special needs and conditions. According to Abusamaan and colleagues, as of 2014 there were more than 100 cases in the dental literature of patients ingesting or aspirating foreign bodies, with 80% of them being swallowed and 20% being inhaled.[1]

Methods for preventing inhalation and ingestion*

- Wear textured gloves to improve grip.
- Use situation-appropriate isolation techniques and products.
- Use high-volume suction.
- Tie or loop floss around items that tend to be easy to lose a grip on or that will remain in the mouth for any length of time, especially if the patient has a cough or trouble breathing.
- Alert patients, parents of patients, or caretakers of patients about the danger of swallowing or inhaling dental instruments, tooth particles, and restorative materials both in the dental office and at home.
- Tell patients not to swallow if they feel something drop on the tongue and instruct them to turn their head to the side if it happens.
- Have protocols in place for ingestion and aspiration events, as well as for medical emergencies, and review procedures with staff periodically.
- Tell patients and parents and caregivers what to do if an ingestion or aspiration event occurs outside of the office; for example, coughing, sharp blows to the back, and calling 911.
- Inspect all orthodontic and prosthetic components for signs of debonding, fracture, or wear at each appointment.

*Adapted from Bilder L, Hazan-Molina H, Aizenbud D. Medical emergencies in a dental office: inhalation and ingestion of orthodontic objects. *JADA.* 2011;142(1):45-52; and Umesan UK, Chua KL, Balakrishnan P. Prevention and management of accidental foreign body ingestion and aspiration in orthodontic practice (published online May 23,2012). *Ther Clin Risk Manag.* 2012;8:245–252.

The Impact of Patient Positioning

There are different theories about whether patient positioning is the cause of aspirating or ingesting dental debris and instruments. Dental objects are often wet and slippery, and being combined with saliva and other fluids present in the mouth makes them easier to swallow. It might be assumed that the risk of foreign objects getting into the oropharynx is increased by patients being in the supine position, but it has also been suggested that patients in that position are actually unable to swallow or inhale objects.[2] A 1975 article noted that foreign objects that get past the tongue are more likely, at a ratio of 12:1, to reach the GI tract than go into the airway.[3] It has, however, been documented that patients can both ingest and aspirate objects from the supine position, and that rubber dams and gauze throat packs have likely reduced occurrences since their use became fairly standard for certain procedures.[2]

Intervention

Using forceps, high-volume suction, or both to retrieve objects in the back of the mouth or upper throat is often effective. It has been reported that the majority of ingested objects do pass through the body naturally.[2] However, when patients fully aspirate or ingest objects, there can be long-term complications that can impact both the patient's physical and psychological health.

The Stats

5 Million	Number of implants placed in the U.S. annually,[1] increasing by 500,000 each year[2]
15 Million	Number of people wearing crown and bridge tooth replacements in the U.S.[2]
22.3 Million	Number of endodontic procedures performed annually (2005-2006)[3]
52	Percent of general dentists who report that they provide orthodontic treatment.[4]

1. American Dental Association. ADA Patient Smart: dental implants. Available at: www.ada.org/~/media/ADA/Publications/Files/ADA_PatientSmart_Implants.ashx.entistry. Accessed October 23, 2018.
2. American Academy of Implant Dentistry. Dental implants facts and figures: facts and figures on dental implants. Available at: https://www.aaid.com/about/Press_Room/Dental_Implants_FAQ.html. Accessed October 23, 2018.
3. American Association of Endodontists. Endodontic treatment statistics. Available at: https://www.aae.org/specialty/about-aae/news-room/endodontic-treatment-statistics/. Accessed October 23, 2018.
4. Levin RP. Data Bite: here's how many GPs are offering clear aligners. Dentistry iQ. May 21, 2018. Available at: https://www.dentistryiq.com/articles/apex360/2018/05/data-bite-here-is-how-many-gps-are-offering-clear-aligners.html. Accessed October 23, 2018.

In their 2014 article, Abusamaan and colleagues reported 5 cases of patients, ranging in age from 47 through 85, swallowing or aspirating dental instruments or materials.[1] One swallowed a dental implant screwdriver that was not secured with a dental floss tie. The dentist assured her it would pass through her system, but it became impacted at her ileocecal valve and had to be removed by colonoscopy. In another case, a patient swallowed an endodontic file, which had to be removed by esophagogastroduodenoscopy. When another patient complained to his physician of coughing and wheezing over a 4-month period, it was discovered that he was aware he had swallowed a dental crown, which was then removed from his middle bronchus by a pulmonologist. In a case in which a dentist referred a patient to a pulmonologist after aspirating a crown during a procedure, it was removed from his right distal lobe airway by bronchoscopy. In the fifth case, an endodontic file had to be removed from a patient's gastric antrum by a gastroenterologist. [1]

Reported perforation rates are less than 1% until the object passes the ligament of Treitz. If it reaches the ileocecal valve, perforation rates increase to about 35%. It has been reported that ingested foreign objects have been located in the pleura, heart, kidney, and liver.[1]

If a patient swallows an object, factors such as the type of object, where it ends up, and the patient's health and physical condition have an impact on intervention. If the object is small, and not sharp or irregularly shaped, it may be advisable to monitor the patient, which means radiographically documenting its passage for up to 7 days in the event it continues to move through the patient's system.[1] Once it is determined that an object is not coming out on its own and the exact location of the object is identified, endoscopy is preferable to surgery if possible.[1]

It is safe to say that dental professionals do not want their patients to go through either an aspiration or ingestion event. Dental appointments can be stressful enough, and even a choking event could result in distress and perhaps life-long fear for the patient. Nor do dental professionals themselves want to go through the stress of a patient choking on or ingesting anything. Which begs the question, why is protecting the airway not more routine in dental practices?

The Reference Standard

The reference standard of airway and operatory field protection is the rubber dam, which has been in use for many decades. Considered the standard of care in endodontic practices, it is critical to protecting the exposed root canal from contaminants such as bacteria, fluids, and foreign objects. As general dentists have begun performing more root canal treatments (RCT), their use of rubber dams has increased but is not consistent. An article published in 2013 by The Dental Practice-Based Research Network reported a study that revealed "11 percent of general dentists never used rubber dams during RTC and only 58 percent used one during every RCT."[4] It is well documented that using rubber dams during RCT decreases the incidence of aspiration and ingestion of instruments, tooth particles, and the old restorations being removed during the procedure.

Rubber dam use by the general practitioner has increased somewhat since the advent of adhesive dentistry. It helps maintain a dry field as well as protect the tongue and oral mucosa from the chemicals used during treatment. "Contamination is the enemy in adhesive dentistry because so much of what we do today is really dependent on having a very clean, isolated, and accessible work field," says Lori Trost, DMD, a general dentist who practices in Columbia, Illinois. "Without isolation, we can't maximize the properties of the materials we are using. So isolation and lack of contamination are key to doing exceptionally good dentistry and for long-term restoration success."

However, the use of a rubber dam is not always practical in protecting the oral cavity and airway. Its use depends on the procedure, the patient, and the location. "You're not going to use a rubber dam for a crown seat," Dr. Trost says. "But you may for bonding other direct restorations, such as inlays and onlays. With adhesion dentistry, you must have multiple options for isolation depending on where you're working in the mouth and the type of restorative procedure you're doing—whether it's a prep, a try-in, a seating, direct or indirect. So we need a variety of isolation tools and techniques."

Additionally, rubber dams may be contraindicated in certain young or special needs patients, claustrophobic patients, or if there is nothing to which to anchor it in the area where isolation is needed. "The gold standard is, after all, a tooth-anchored feature," Dr. Trost explains. "That's why we need other ways to create that dry field and airway protection."

Consequently, other types of devices have recently been introduced. One company, Zirc, is offering a variety of isolation alternatives in a pack called "Isolation 360." Isolation 360 includes Airway Armor, Mr. Thirsty One-Step, Pink Petal, Insti-Dam, Lingua-Fix, and the SE Cushion. The goal of this combination of devices being packaged together is to give clinicians the opportunity to quickly choose which type of isolation they need for individual patients and procedures. Having this wide variety of solutions to select from will help dental practitioners set up and work through procedures more efficiently while maintaining patient comfort and airway protection.

Lori Trost, DMD, is an accomplished dental educator who received her dental degree from the School of Dental Medicine, Southern Illinois University. Dr. Trost offers post-graduate courses to dentists and their team members drawing from her extensive private practice experience. She has authored numerous professional articles, is a clinical evaluator, and has been recognized with several national leadership awards. You can contact her through www.loritrost.com.

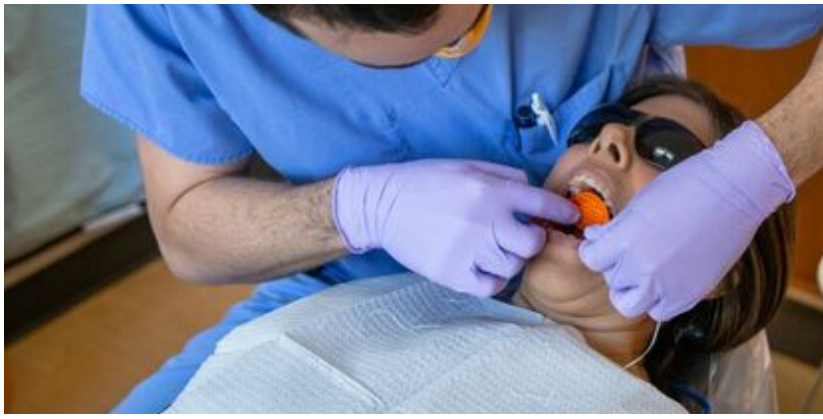
Airway Armor

Benefits of Airway Armor

- Prevents aspiration or ingestion of dental instruments and debris during procedures
- Easy to place and retrieve
- Comfortable for patients
- Allows air passage
- Tear resistant
- Full-mouth accessibility
- Can be used with high-volume evacuation
- Available in 3 sizes
- Disposable
- Ideal for extractions, implants, direct and indirect restorations, crown and bridge, orthodontics, pediatric patients

According to Ralph A. Cooley, DDS, the assistant dean of Admissions & Student Services and an associate professor in the School of Dentistry at the University of Texas Health Science Center at Houston, rubber dams can be used for only certain procedures, and 5 to 10 percent of the population cannot handle having a rubber dam in their mouths. Throat packs or slings made from 2x2 or 4x4 gauze also have long been used to protect the back of the throat during dental procedures. However, if not properly secured, gauze can be aspirated or ingested, and it has its drawbacks. "Gauze becomes wet during procedures, which some patients do not tolerate well. It easily moves around, and it gets sucked up by the high-speed suction," Dr. Cooley explains. "There have been cases where patients have actually swallowed gauze during procedures."

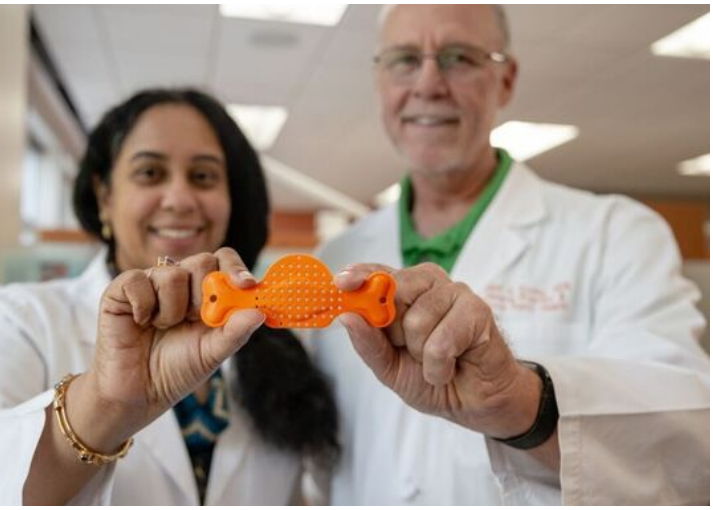
Several instances of patients inhaling 2x2 gauze and not surviving the ordeal have been reported in the mainstream media.[5] Two other products that can protect the back of the throat, Isolite (Isolite Systems) and Mr. Thirsty One-Step (Zirc), are alternatives to gauze throat packs but also cannot be used in certain dental procedures.



Ralph Cooley, DDS, is an associate professor at the University of Texas School of Dentistry in Houston after 34 years in private practice. He serves as the admissions director and teaches at the clinical level. Dr. Cooley is involved with organized dentistry in many capacities with both the American Dental Association and the Academy of General Dentistry. He and Dr. Gargi Mukherji developed the Airway Armor device.

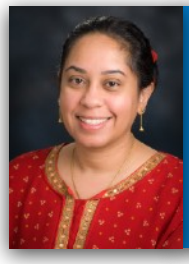
"If you're taking out a tooth or cementing a crown, a rubber dam cannot be used," says Gargi Mukherji, DDS, an associate professor in the School of Dentistry at the University of Texas Health Science Center at Houston. "But in situations like that, the back of the throat still needs to be protected. That's why Dr. Cooley and I came up with a product that could safeguard the back of the throat from anything being accidentally swallowed or ingested."

Airway Armor is made of firm yet flexible material that is easy to place and retrieve, and it provides a safety net during certain dental procedures. It is designed for a length of floss to be attached to the tabs on each side that can be used to quickly remove the device at the end of treatment, if the patient becomes uncomfortable or panicky, or in case of emergency.



Dr. Trost uses Airway Armor in her practice and notes that "It fits very comfortably, rounds nicely in the mouth, and it doesn't compete with the tongue." Dr. Trost says patients inhaling and swallowing things is more common than many think, and that in her 32 years of practice, a patient did swallow a crown. "I've heard of patients swallowing just about everything."

According to Dr. Trost, Airway Armor is ideal for edentulous patients. "If you're planning an implant-supported denture in an edentulous patient, the tongue is going to be very broad and probably also very strong. Their arch forms will have changed dynamically over time, and their bone level is different. Therefore the chance of the tongue fighting you will be greater. If you're placing a four-on-four implant system, you have to protect the airway." Dr. Trost notes that ensuring the retrieval of a dropped restoration is a practical consideration as well. "If you've had something custom made by a dental lab, these components are very expensive. It could really sink a case if 1 component got aspirated or swallowed. You could be ready to seat a whole case that goes awry specifically because you didn't provide airway protection for the patient."



Gargi Mukherji, DDS, is an associate professor in the School of Dentistry at the University of Texas in Houston. She was in private practice for 10 years before joining the dental school. She enjoys teaching dental students in the general practice clinic. Dr. Mukherji also provides dental care to patients from the Health Science Center and the community in the faculty practice. She and Dr. Ralph Cooley developed the Airway Armor device.

Dr. Trost practices in the Midwest where, she says, people have a lot of allergies. "There are months were we are on high alert because people are having sinus issues, coughing from bronchitis, or having to swallow frequently," Dr. Trost explains. "If you're working with an implant, implant screw, or hex wrench; trying to place a crown; or extracting a tooth in someone who is sneezing or coughing, there's another good reason using something like Airway Armor is ideal for airway protection." In addition, the device lets air pass through easily, further contributing to patient comfort.

Airway Armor also is flexible enough for patients to close and swallow if necessary. "Patients can close down on it a little bit," says Dr. Mukherji. Airway Armor is safe to use with high-volume evacuation, which will not suck it out of the mouth. And while it is still being studied, Airway Armor seems to be more tolerable than some devices for patients with a gag reflex problem.

"The goal of this device is patient safety," Dr. Mukherji says. "The research shows that items that have been ingested and aspirated during dental procedures have led to some serious complications. So, whatever we can do to better protect our patients during dental procedures is what led to this whole idea."

Introduced in July 2018, the Airway Armor device is a 1-time use, tear resistant, disposable product available in 3 sizes—small, medium, and large adult. It is indicated for extractions, implants, direct and indirect restorations, crown and bridge, orthodontics, and pediatric procedures.

Mr. Thirsty One-Step

Mr. Thirsty One-Step is a hands-free isolation and evacuation device that has a built-in bite block. It attaches directly to the high-volume evacuation valve with no other components. An optional "Comfort Kit" is available that includes lightweight tubing which can be used to replace users' heavier operatory tubing. Brian P. Black, DDS, a general dentist who practices in Rancho Mirage, California, started working on the concept while teaching students in dental school who had to work without an assistant. "I thought it would be beneficial to have a product that props the patient's mouth open while it suctions away debris and blocks and protects the tongue and cheek," Dr. Black recalls. "It doesn't have a lot of components, it can be used anywhere, and it's disposable."

Available in 2 sizes, pediatric/small and medium/large, Mr. Thirsty One-Step is designed to be completely customizable. "It can be trimmed to accommodate varying intraoral anatomies. You can cut off the cheek retractor portion and it's just a tongue blocker. You can make the V-notches bigger. You can totally change it," Dr. Black explains. The channels are leaf-shaped so the device can be trimmed down quite a lot without losing suction efficacy. It is also completely symmetrical so it can be rotated to either side of the mouth for quadrant dentistry.

Benefits of Mr. Thirsty One-Step

- Hands-free isolation and continuous evacuation
- Direct high-volume evacuation valve attachment
- Can be adapted to high-volume evacuation with light-weight, flexible tubing
- Built-in bite block
- Blocks tongue, retracts and protects cheeks
- Customizable, can be trimmed
- Disposable

For Hygienists:

- Reduces chair time by as much as 20%
- Saves 6 minutes (11%) on prophylaxis time
- Saves 18 minutes (19%) on quadrant scaling and root planing
- Patient satisfaction increased 50% on scaling and root planing, 25% on prophylaxis

For Dentists:

- Allows for prepping without an assistant present
- Decreases time across all procedures by 29% and 38% for dental assistants
- Decreases chair time for patients by 29%

For Dental Assistants:

- Work hands-free
- Decreases time across all procedures by 38%
- Frees up time to work on other patients and other tasks
- Dental assistants can do more treatments alone
- Increases efficiency

Data on file. Zirc, 2018.

Mr. Thirsty One-Step is an ideal isolation option for crown preparation procedures, according to Dr. Trost. It provides good access and visualization, evacuation, and a bite block the patient can comfortably rest on during the procedure. "This allows patients to keep still and not struggle to

Brian P. Black, DDS, graduated from the School of Dentistry at Loma Linda University in 2000. He has had a broad experience within the dental industry. Dr. Black served in the US Air Force Dental Corps and completed an Advanced Education in General Dentistry program while in service. He then served as an associate professor and predoctoral student clinic director at the School of Dentistry at Loma Linda University while practicing part-time in the Faculty Dental Offices and in the Center for Special Care Dentistry (a general anesthesia residency clinic serving special needs patients and at-risk pediatric populations). Dr. Black has lectured internationally on various clinical and academic topics and has published several articles related to clinical dentistry. He now maintains a full-time dental practice in Rancho Mirage, California. Dr. Black developed the Mr. Thirsty One-Step.

keep their mouths open. They can relax those mastication muscles," Dr. Trost says. In addition, it helps the dental assistant by freeing up a hand. "That really increases your efficiency," says Dr. Trost. "With the average dental office performing 20-25 crowns a month, anything to increase productivity and comfort is a winner."

During crown procedures, 1 clinician documented experiencing a 26% decrease in chair time, finishing an average of 16 minutes earlier than expected using the Mr. Thirsty One-Step device.[6] He also found that when using Mr. Thirsty One-Step with CEREC (Dentsply Sirona), there was a 16% decrease in chair time during CEREC procedures. When performing Class II restorations, the time savings was 24% (for an additional 8 minutes on average) and both he and his assistants found they were able to work without a second pair of hands when doing Class II restorations in mandibular teeth. Additionally, he was able to decrease chair time by 35% during quadrant dentistry.

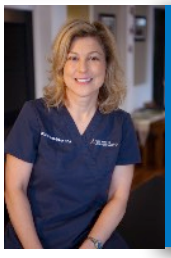
Mr. Thirsty One-Step is indicated for any type of tooth preparation procedure, placing restorations, applying sealants, and hygiene appointments.

Assistance for Dental Assistants

The dental assistant's primary role, according to Shannon Pace, Brinker, CDA, an expanded function dental assistant who practices with Robert Korman, DDS, in Virginia Beach, Virginia, and the owner of the Academy of Chairside Assisting, is monitoring isolation by keeping the operating field clean and the patient comfortable. "Mr. Thirsty allows us to be more focused on the dentistry," Ms. Brinker says.

Ms. Brinker explains that it is hard trying to control the tongue, saliva, and rinse all at the same time, while asking patients to keep their mouths open the whole time during procedures. "Isolation devices like Mr. Thirsty make dental assistants' lives easier," she says. Ms. Brinker finds Mr. Thirsty One-Step to be beneficial for a variety of dental procedures, especially restorative preparation and delivery of direct bonding.

Other advantages to using Mr. Thirsty One-Step in the dental office are being easy to set the device up in any operatory and that they are disposable. "In our practice, everything is 1-time use, and this allows everything to be disposed of properly," says Ms. Brinker.



Shannon Pace Brinker, CDA, is a national and international speaker and published author. Ms. Brinker is the owner of the Academy of Chairside Assisting. Ms. Brinker is the first auxiliary to sit on the American Academy of Cosmetic Dentistry Board of Directors and was awarded the Rising Star Award. Ms. Brinker was selected one of Dentistry Today's Top 100 Clinicians. She was also selected as Dental Products Report 25 most influential women in dentistry and Dr. Bicuspid's Dental Assistant Educator of the year.

Pink Petal

Benefits of Pink Petal

- Comfortable, hands-free, low-volume suction
- Slides on to any type of saliva ejector
- Easy placement
- Holds saliva ejector in place in buccal fold
- Retracts and protects cheeks
- Ideal for ultrasonic scaling and placing sealants

Dental hygienists rarely have the benefit of an assistant to help with isolation and evacuation. Karrie Velky, RDH, who practices with Joe Lenz, DDS, in Marion, Iowa, and is an adjunct clinical instructor at Kirkwood Community College's dental hygiene program in the College of Dentistry at the University of Iowa, struggled for years with ultrasonic scaling appointments. "I could never get the hang of holding 3 things with 2 hands—the mirror, suction, and the ultrasonic scaler." She says she started running behind from fumbling with devices that seemed to take twice as long to maneuver, so she began looking for something that would comfortably hold the saliva ejector for her, protect the patient's cheeks from the suction, and provide some retraction at the same time. She also wanted patients to be able to close their mouths if they felt claustrophobic or like they were drowning. Not finding anything that met all her criteria or that did not have to be constantly moved out of the way, she started trying to fashion something herself. When she eventually started using a prototype on patients, they began commenting that they thought their appointments were easier. "They asked me "What is that little thing?'" Ms. Velky recalls. "Elderly patients, especially, said they didn't feel like they were drowning, coughing, or choking on the water as much."

Other hygienists in the office noticed that Ms. Velky was completing appointments more quickly. "I didn't realize how much time it took to stop and pull your hands out to readjust the suction. If you're doing that 30-40 times during a cleaning, it doubles the time it takes you to complete ultrasonic scaling," Ms. Velky says. "Pink Petal literally cuts scaling time in half. And I have less stress and anxiety." Pink Petal is also indicated for use during regular prophylaxis and applying sealants for older children who are compliant enough not to close their mouths during application.

Karrie Velky, RDH, has been a dental hygienist in the Cedar Rapids, Iowa, area for more than 17 years. She graduated from Hawkeye Community College in 2001 and spent 11 years practicing in a general dentistry practice. After working in a periodontal practice for 3 years, she is back in a general dentistry practice in Marion, Iowa. She is also an adjunct clinical instructor for Kirkwood Community College's dental hygiene program in the College of Dentistry at the University of Iowa. Ms. Velky invented the Pink Petal.

Launched in June 2018, Pink Petal is made from a soft and flexible latex-free material. It is designed to easily slip over any brand of saliva ejector to provide continuous, comfortable, hands-free suction with no additional attachments required. Ms. Velky slides Pink Petal toward the bottom of the saliva ejector so that she can use regular suction if she needs it. The suction tip should be bent in a U shape before sliding Pink Petal into place. Bending the suction tip is important, Ms. Velky explains, because this provides some retraction while holding Pink Petal against the cheek. Pink Petal also prevents the suction from causing trauma to the cheek.

Another situation in which Ms. Velky finds Pink Petal useful is dealing with patients who refuse to swallow their own saliva during treatment. "Some patients are constantly motioning to you that they want the suction, or they want to hold the suction themselves through the entire appointment," Ms. Velky explains. "For them, I leave it in their mouths for the entire appointment. It provides a comfort level because they have the suction in their control."

"My hope with inventing Pink Petal and bringing it to the market was to help hygienists who have the same problems I was having," Ms. Velky says. "This helps their day go easier and their appointments to be quicker and less stressful."

Insti-Dam

Insti-Dam is so called because it has a flexible built-in frame and a prepunched hole for instant application. The prepunched hole helps with visualization during positioning as well as easy positioning. It also allows the patient's eyes and nose to be open and comfortable during placement. Insti-Dam is available in 3 versions—latex-free or latex original fit (ideal for anterior isolation) and relaxed fit.

"I like the relaxed fit because it gives us a little more depth," says Dr. Trost. "There's more room, especially if we're working on a posterior tooth. With the framework already built in, you don't have to worry about sterilizing something. It's very efficiency driven and really expedites the procedure."

Benefits of Insti-Dam

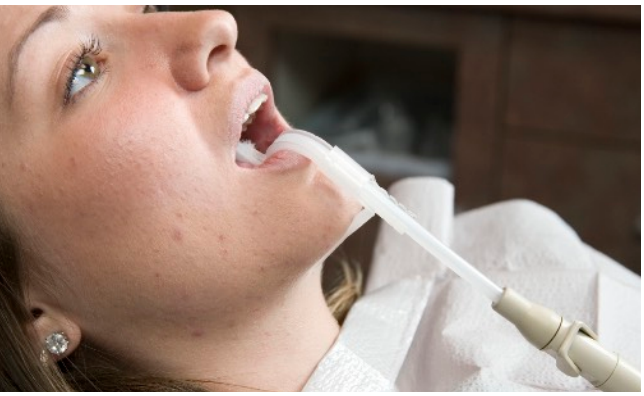
- Ideal for isolation
- Built-in flexible frame
- Comes preassembled
- Available in latex or latex-free
- Prepunched hole; additional holes can be added
- Easy positioning, allows eyes and nose to be open
- Helps eliminate tearing
- Compact design, 4-1/4" diameter rests outside patient's lips
- Nonthreatening, comfortable for patients
- Radiographs can be obtained without removing the dam
- Medium gauge
- Single use
- Relaxed fit has extra material that can be adjusted on or around frame after placement

This is an important time-saving feature in a practice that uses rubber dams for every procedure. "Not many practices use rubber dams—only about 6%-10% in the United States do," Ms. Brinker says. "In our practice, we use rubber dams for all restorative procedures, and I am the one placing them." Contamination and aspiration are the major concerns in her practice. Another concern is the bad taste of the chemicals being used. "If a drop hits the tongue or the patient tastes it, they start moving around, asking for a rinse," Ms. Brinker says. "It's a very critical time in the bonding process, and if the tooth or materials become contaminated we have to start over. We want patients to be still and calm to relieve stress for the clinicians involved as well as the patient."

Nonclinical photo for demonstration purposes only.

Lingua-Fix

The Lingua-Fix device is another isolation device that maintains a dry work area while comfortably holding the tongue still and protecting it from injury. A built-in chin lock gently fixes the Lingua-Fix in place. Its filter traps amalgam particles and other high-risk waste materials. The Lingua-Fix is preassembled and easy to place and remove. The suction surface is large enough to prevent blockage and helps reduce sedimentation of drilling by-products in pipes and tubing. It can be used during scaling and root planing, ultrasonic scaling, for digital imaging, and while placing sealants.



Nonclinical photo for demonstration purposes only.

Benefits of Lingua-Fix

- Dry field isolation
- Holds tongue in steady position
- Protects tongue from injuries
- Easy to place and remove
- Chin lock fixes device in place
- Comfortable, no sharp edges or corners
- Large suction surface to avoid blockage
- Fits directly into saliva ejector valve
- Filters and reduces high-risk waste such as amalgam particles
- Reduces sedimentation of drilling by-products in pipes and tubing
- Preassembled
- Disposable

SE Cushion

The SE Cushion is designed to be used in conjunction with the saliva ejector and in combination with a rubber dam during certain procedures. In cases where the saliva ejector must stay in the mouth for an extended time, it is more comfortable for the patient, reduces the noise of the suction, and prevents the saliva ejector from grabbing or irritating oral tissues. It also reduces splatter. The SE Cushion is made of open-cell foam, is latex-free, and easily fits all standard saliva ejectors. SE Cushions are single use only and disposable.

Benefits of SE Cushion

- Fits all standard ejectors
- Comfortable
- Protects cheeks and tongue from suction
- Reduces suction noise
- Ideal for use with rubber dams
- Reduces splatter
- Latex-free, open-cell foam
- Disposable

Conclusion

Isolation is a many-faceted thing. "Isolation is extremely important in dentistry," Dr. Black says. "It's a broader concept than most people would think." As has been discussed, it encompasses isolating an area of the oral cavity, maintaining a dry field and a clear view, preventing objects from being aspirated or ingested, protecting the oral tissues from injury, and providing dental treatment more efficiently and productively while also addressing patient comfort.

"Dentistry is 1 of the top 10 fears patients have," Ms. Brinker says. "We never want patients to have a bad experience. By using isolation devices that aid various dental procedures, patients will be comfortable that they chose the right practice and team to take care of their needs."

Patients are the wild card of the dental treatment appointment. The unpredictability of their reactions to a situation—whether it is feeling something strange or painful in their mouths, having a coughing or sneezing episode, or reacting to a practitioner losing his or her grasp on a dental object because of patient movement or distraction—creates an unnecessary risk that could have a significant impact on patients' health and safety. Having a variety of isolation devices that take only moments to place at the beginning of an appointment and will protect the airway during a procedure could save someone's life. It is probably worth the peace of mind.

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