

Efficient, Quality Impressions with Consistent Results: The Power of the Impressioning Workflow

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No one likes to retake an impression. Whether it's due to contamination around the preparation, voids or tearing at the margin, or poor adaptation of the impression material, retaking an impression is highly frustrating for both professionals and patients. Worse yet, it wastes precious time and materials – time that can be spent managing any number of more profitable tasks around a dental practice.

Speaking of profit, the cost of retaking an impression should not be overlooked. Dental Economics' editor Chris Salierno, DDS, estimates that the product costs associated with preparation and impressioning for a posterior crown totals nearly \$15 in his practice.¹ Adding a dentist's time into the equation, Ronald Perry, DMD and professor at Tufts University, calculates the total cost of an impression to be around \$100.² When factoring in a retake, suddenly the cost of a single impression can skyrocket to \$200 or more.

While not entirely preventable, retakes can be consistently avoided when skill is paired with a best practice workflow. While skill is the most important factor in high-quality dentistry, if a rushed workflow or poor materials are used, results may suffer regardless of skill level.

Workflow

Establishing a consistent workflow has been critical to my impression-taking success. While simple, the use of the Retract, Syringe, Impress process detailed below helps to ensure my team and I have done everything possible to secure an excellent final result for the lab.

Retract

Retraction is extremely important for any procedure where a well-defined margin needs to be captured. Whenever possible, I use a retraction paste (3M™ Retraction Capsule) to achieve a clean, dry sulcus and effectively control bleeding, thanks to the paste's hemostatic characteristics. Retraction paste also creates an ideal space around the preparation, allowing for a crisp margin to be captured in the impression for routine cases usually involving 1 or 2 teeth. Additionally, it is estimated that retraction paste is up to 50 percent faster to use as compared to retraction cords.

Retraction paste is ideal in routine cases that require shallow margins, but when I have a case that needs sub-gingival margins, I use a retraction cord pre-impregnated with epinephrine to help with bleeding control and tissue shrinkage. When using retraction cord, I also consider the addition of retraction paste if I need enhanced bleeding control. Retraction cord and paste will generally provide ample marginal retraction, but when a restoration needs to be placed well below the gum line, I rely on a soft-tissue laser to remove tissue, not simply displace it.

Workflow Benefits at a Glance

- Exceptional accuracy and long-term stability of 3M™ Imprint™ 4 Preliminary material allows for accurate temporaries
- Create a clean and dry sulcus with enhanced bleeding control for crisp margins when using Retraction Capsule
- With the Intra-Oral Syringe, use 67% less material when dispensing compared to the original Garant dispensing system mixing tips and have excellent access to the marginal area due to the syringe's small tip
- The Pentamix Automatic Mixing Unit provides consistent and void-free application of impression material
- The Retract, Syringe, Impress workflow creates efficient and consistent impressions time after time for highly esthetic and accurate restorations
- Moisture tolerant
- Ideal for everyday use such as PFMs, zirconia, metal and pediatric crowns

1. Salierno, C. *The Curious Dentist*. "How Much a Crown Actually Costs." April 2012.

2. Perry, R. *Dental Economics*. "Time is Money in Impressioning." August 2013.

Syringe

When placing light body material for an impression, it is common to dispense the material from a traditional impressing gun. While this works, I've experienced easier handling with less waste when using a disposable intra-oral syringe (3M™ Intra-Oral Syringe) to place the light body material. The small syringe makes it easier to place material in the marginal area and completely surround the preparation, and its small tip allows for placement into the cervical area and soft tissues. Where cost is concerned, I've also found it provides significant savings on material waste – because I have observed less material waste with the syringe versus a standard mix tip.

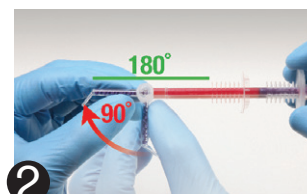
Impress

My go-to impression material is 3M™ Imprint™ 4 VPS Impression Material. Having used this material since it was first introduced, I have experienced first-hand the benefits of its long working time and short intra-oral setting time. My team has had best results dispensing the heavy body material from an automatic mixing unit (3M™ Pentamix™ Automatic Mixing Unit) to make certain the material has a consistent mix and that the final impression will be free of voids. This entire process is accomplished in less than two minutes.

How to Use the Intra-Oral Syringe



1 Fill



2 Flip



3 Syringe



Figure 1



Figure 2

Case Study

This case demonstrates the results achievable when using the Retract, Syringe, Impress workflow. A female patient presented with a fractured composite filling in tooth no. 7 at the incisal edge (Fig. 1). Teeth nos. 8 and 9 had all-ceramic crowns from previous work and the patient requested a more aesthetic restoration to match. It was decided a full coverage ceramic crown would provide the strength and esthetics the patient desired.

Step 1 – Prior to the removal of the existing restoration, flowable composite was placed on the tooth to create the desired final shape for the restoration. An impression was taken using 3M™ Imprint 4 VPS Preliminary Material (Fig. 2) in order to capture the tooth shape for the fabrication of a temporary crown and as a basis for the fabrication of the final crown by the lab. After the impression, the existing restoration was removed.

Step 2 - After the preparation was completed, a hemostatic retraction paste (3M Retraction Capsule) was placed directly into the sulcus and allowed to sit for 2 minutes (Fig. 3). The area was then thoroughly rinsed and dried. The margins created are free of any fluids or soft tissue and are well defined (Fig. 4).



Figure 3



Figure 4

Step 3 - A light body impression material was placed around the margin of the preparation and then the entire axial surface using a disposable intra-oral syringe (Fig. 5).



Figure 5

Step 4 - A heavy body impression material was dispensed into the tray using an automatic mixing unit (Fig. 6) and an impression was taken (Fig. 7). As shown, a very readable and defect free final impression was captured.



Figure 6



Figure 7

Step 5 – A temporary restoration was created using 3M™ Protemp™ Plus temporization material in shade A2 from the pre-op preliminary impression, which the patient wore for two weeks (Fig. 8). Upon receipt of the final restoration, the fit and occlusion were verified and the ceramic crown was cemented using 3M™ RelyX™ Unicem 2 TR Self-Adhesive Resin Cement (Fig. 9). The restoration had an exceptional and intimate fit to the preparation thanks to the extremely accurate impression and great retraction. The patient was very pleased with the highly aesthetic, natural look of the final restoration.



Figure 8



Figure 9

Discussion

Eliminating the anxiety and guesswork around the result of an impression builds confidence, saves time and ultimately improves patient outcomes. The benefits from establishing and employing a consistent impressing workflow are numerous. Ensuring the team does everything possible to lead to a successful final outcome by utilizing the Retract, Syringe, Impress workflow can greatly reduce the potential for retakes. Increased chairtime, frustrated patients – and perhaps above all, greatly increased cost – all encourage exploration of a process that helps alleviate these potential issues.

To discover more about the Retract, Syringe, Impress workflow, visit [3M.com/GreatImpressions](https://www.3m.com/GreatImpressions)



Dr. Braun pursued the D.D.S. program at the University of Michigan and after graduation he earned a Masters degree in Prosthodontics from the same institution. Upon returning to his hometown of Saginaw Michigan, he established a full-time private practice specializing in Prosthodontics, which has been in continuation for over 25 years. Staff appointments have included the University of Michigan School of Dentistry and hospitals in Ann Arbor and Saginaw, Michigan.

For over 10 years, Dr. Braun has offered seminars at a great number of national and international meetings. Presentations have been made to over twenty A.D.A. affiliated state dental associations and have also included the A.D.A. Annual Session, Greater New York Meeting, and the Chicago Mid-Winter Meeting. Besides his lecture series, he has conducted numerous hands-on workshops, webinars and published a variety of articles on esthetic restorative dentistry for journals and magazines. Dr. Braun continues to be selected by *Dentistry Today* as one of the top clinicians in dental continuing education.