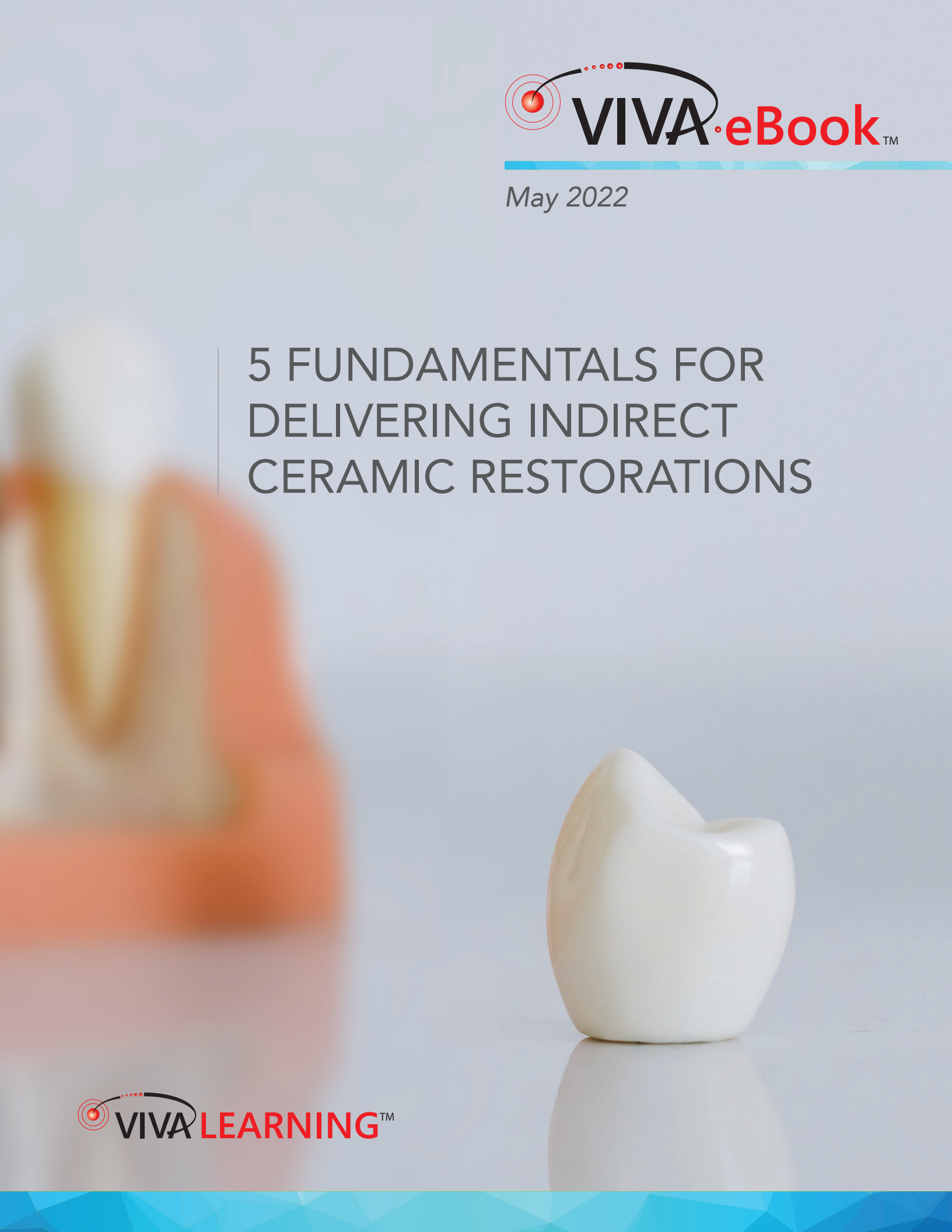
VIVA eBook™

May 2022

5 FUNDAMENTALS FOR DELIVERING INDIRECT CERAMIC RESTORATIONS



VIVA LEARNING™

INTRODUCTION

Change a Smile, Change a Life

How many patients do you have in your database that have worn down or damaged teeth? How often are you speaking to these patients about how changing their smile and appearance can make them look better, feel better and maybe even change their ability to succeed in life? Because if you're not asking, you're missing opportunities to make a significant difference in your patients' lives.

Indirect ceramic restorations can take your patients from the smile that you see here on the left to the smile you see on the right. Depending on the details of the case, they can help provide a better bite, greater stability and better muscle tone.

This eBook presents the five fundamentals that you need to master in order to make this happen.

> You need to speak to your patients about the difference that indirect restorations can make for them.

#1: PRACTICE AND DO MORE CASES

Practice Makes Perfect

The best way to get good at something is to practice. With practice comes confidence and greater skill. This means that after working on models you're going to have to practice on patients. Continuing education courses alone will not get you there. Yes, in the beginning you'll make some mistakes. But you'll learn from those and get better.

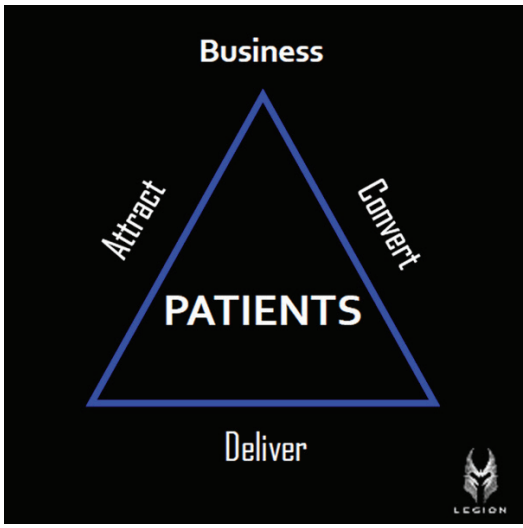
Think in Terms of Problem Solving

In talking to your patients, always ask good questions and then listen carefully to their answers. Most of the time they'll tell you what limitations they currently have and what they want you to achieve for them. Then, whether it's one tooth or many teeth, start by writing down what the problem is—from both the patient's standpoint and the dental standpoint.

Starting the process in this way ensures that you clearly see what you are trying to solve. Then, if you don't know the solution, you can research it or reach out to a colleague for advice before you begin.

Market for the Type of Cases You Want

In dentistry we tend to focus most of our attention on delivery. However, you don't get to do delivery unless you're attracting patients who need this type of work and then motivating them to move forward.



Instead of marketing to everyone for everything, try creating postcards, social media posts, in-office signage and other marketing materials advertising the fact that you can transform smiles and lives with indirect ceramic restorations.

Then, once you start attracting people who can truly benefit from this work, you most "close the sale." To do this, ask simple questions, listen to their answers and help them to understand the many ways that the proposed treatment will make a positive difference for them...both immediately and over time.

> You don't get to do delivery unless you're attracting people who need this type of work and converting them into patients.

Behold the power of the UNIVERSE.

BONDING POWER AT YOUR FINGERTIPS.

Rx Only. MC-101882B

ALL-BOND UNIVERSAL®

A single bottle adhesive system that is 100% compatible with all light-, self-, and dual-cured materials, and is indicated for all direct and indirect procedures.

DUO-LINK UNIVERSAL™

An adhesive resin cement that is specially formulated for cementation of ALL* indirect restorations. Available in two aesthetic shades: universal and milky white.

* It is recommended to use CHOICE™ 2 for veneer cementation.

Z-PRIME™ plus

A single-component priming agent used to enhance adhesion between indirect restorative materials, resin cements, and significantly enhances bond strengths to zirconia, alumina and metal substrates.

Browse the BISCO Product Catalog.

Let's bond! We're here to help: **1-800-247-3368 • www.bisco.com**

BISCO

#2: PREPARATION DESIGN

Begin with the End in Mind

Before you get started on any case, whether it's one tooth or many teeth, you need to think about preparation design. What are you doing? Where are you going? You need to answer these questions:

- **What is the final appearance you are trying to achieve? What color will it be?** To achieve this, do you need to use a veneer, inlay, onlay or crown?
- **Where in the mouth is the restoration?** This will help determine the necessary strength characteristics and therefore the type of ceramic material you will use.
- **How will you cement?** Does the patient have a gag reflex that will make the use of resin adhesion impossible? Is their tongue in the way? Do they have a lot of saliva? Are the margins under the gum line, where you cannot control things?

Understand Material Science

When choosing the material for an indirect restoration, it is important to understand that different ceramic materials have different strength and color properties and therefore different ideal uses.

You need to understand the differences between the available materials:

- Feldspathic porcelains
- Lithium disilicates
- Zirconia

- **Feldspathic porcelains** are very esthetic, but the weakest option in terms of flexural strength. Even so, they are still an excellent choice for simple veneers or small inlays or onlays.
- **Lithium disilicates** are esthetic and have very good flexural strength. They can be cemented or bonded.
- **Zirconia**, the strongest material, can be cemented or bonded. While in the past zirconia was extremely opaque, the newer options are translucent and lifelike.

Design the Preparation

Once you understand what you're trying to achieve and have chosen a material to make this happen, it's time to do your design work.

- **Ensure adequate reduction.** The amount of tooth structure to remove is dictated by the thickness of the material you will use. For example, for lithium disilicates you typically want about 1.5 mm on the occlusal table, and about 1 mm on the axial walls.

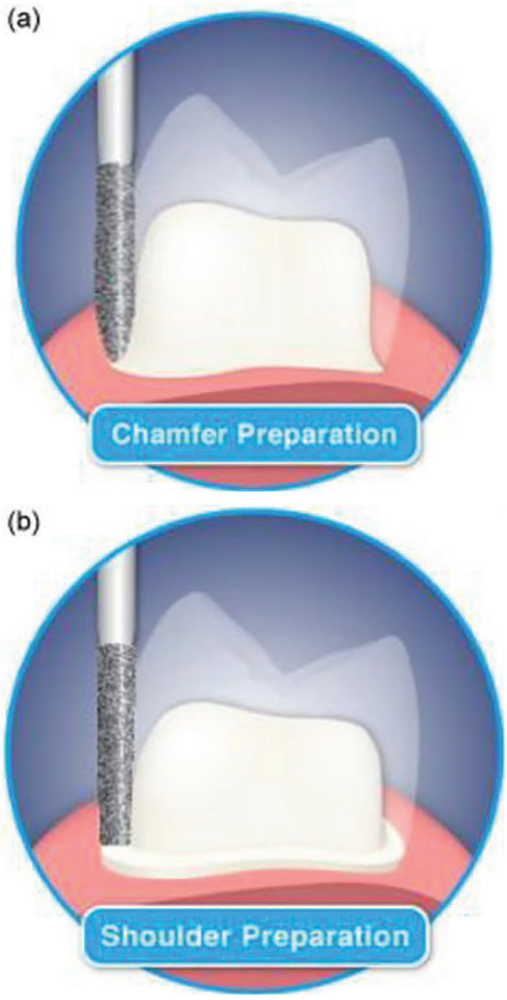
  In contrast, zirconia is substantially thinner. With zirconia you can get away with 1 mm on the occlusal and 0.7 mm on the axial walls—which can be extremely helpful if you're working in a tight environment.

- **Create an ideal taper.** Studies have shown that the more you taper the preparation design, the more failures you will have. To best support retention over time, aim for an axial wall taper of 5 to 8 degrees on each wall, and an axial wall height of 4 mm or more.

- **Choose your margin design.** Chamfer preparation or shoulder preparation? Keep in mind that your preparation can help with retention and overcome the problems associated with relying solely on "glue", which generally fatigues and fails over time.

Think through the three key aspects of design preparation:

1. Reduction amount
2. Taper angle
3. Margin design



#3: FLUID AND TISSUE MANAGEMENT

You Need a Dry, Clean Environment

As with anything you do in dentistry, the fluids and tissues need to be properly managed. Whether you're taking an impression or placing the restoration, you must manage saliva, crevicular fluid and bleeding.

If you have problems with fluid and tissue management on the day you take the impression, you may want to use this information to modify your preparation design. For example, you can switch to a material that can be cemented instead of using an adhesive resin restoration. This change gives you the luxury of knowing that a little bit of moisture contamination will not be a disaster. Likewise, if it's under the gum line and hard to clean, you may want to plan to use a bioactive cement that will help the tooth in this area.

Use the Right Fluid and Tissue Management Technology

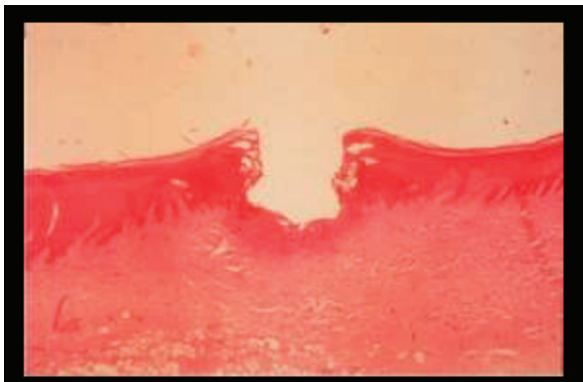
From the technology standpoint you have three main options:

1. **Moisture control products** – This category includes Superoxol, Epinephrine, Ferric Sulfate, Aluminum Chloride and Aluminum Sulfate. Sometimes you can get good results with these products, other times you cannot. It's never 100% guaranteed that this approach will work.

2. **Cords** – Cords with hemostatic agents can be useful for pushing tissue out of the way. However, even if you use the smallest cord possible, there's still the potential for bleeding. If you do use cords, be sure to avoid iron-based hemostatics, as these will turn black and mar the appearance of your restoration.

3. **Diode lasers** – Diode lasers are often the best choice. With a soft tissue diode laser you can quickly vaporize tiny amounts of extra tissue out of the way without damaging the adjacent tissues. You can stop the bleeding, get rid of crevicular fluids and create a clear, dry field.

Using laser results in better healing. You can take an impression the same day, and it will be healthy and happy when you see the patient again after they've been in provisionals. Lasers also produce a better appearance. This is important, because if you make a gorgeous crown but the frame looks lousy, that crown will still look unaesthetic.



A SOFT TISSUE LASER INCISION AT 1000X MAGNIFICATION

> Diode lasers are often the best choice for fluid and tissue management.

#4: CERAMIC MANAGEMENT

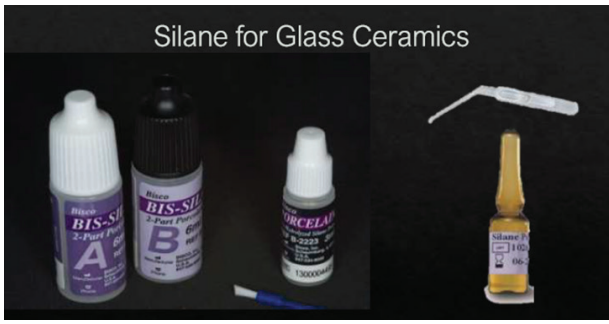
Adjust the Outside Surface

Regardless of which brand and type of ceramic you're using, you'll need to adjust the occlusion, polish its outside, and manage its inside. Why is polishing so important? Because polishing ensures the restoration isn't abrasive to the opposing dentition, prevents the accumulation of stains and plaque, and reduces the chances that cracks will form.

Manage the Inside Surface

Different materials need to be managed differently:

- **Feldspathic Porcelains & Lithium Disilicates** – These usually come back from the lab etched. If that etch was not done properly you can use a porcelain etchant as necessary. Clean the restoration using an ultrasonic alcohol bath or steam cleaner. Finally, apply a coating of silane, which is a coupling agent.



- **Zirconia** – These usually come back from the lab with the internal surface sandblasted. If not, you need to sandblast it yourself; do not etch. Instead of silane, apply a coating of a MDP containing ceramic primer, such as BISCO's Z-Prime Plus.

> How you manage the inside surface of the restoration depends on the restoration material.

Do a Ceramic Try-In

Once the restoration has been prepared, remove the provisionals and do a ceramic try-in:

- **Clean the tooth or teeth** – Options include using flour pumice (either mix your own with water or buy a pre-made product); a micro etcher, being very careful not to hit the gums; or rubberized points on your slow-speed handpiece, with the water going.

- **Try in with a water-soluble paste** – This will hold the restoration in place long enough for you and the patient to evaluate the fit and the color, and will then easily rinse away. No need to clean up resins!

- **Clean and decontaminate the restoration** – If it's not zirconia, repeat the steam cleaning or ultrasonic alcohol bath process. If you're working with zirconia you need to clean it with a potassium hydroxide or sodium hydroxide phosphate-scavenging product, such as BISCO's Zirclean. This is important because if you do not strip out the phosphate contaminant that is caused by the patient's saliva, the restoration will not bond properly. Then, treat again the intaglio of the zirconia with a MDP containing primer.

- **Isolate the tooth or teeth** – In preparation for cementation, place rubber dams, retractors, mylar strips, Teflon tape, cotton rolls, saliva ejectors or whatever combination of products makes the most sense for the situation.

Once the restoration is prepared, you need to try it in:

1. Clean the tooth
2. Try the restoration
3. Clean the restoration
4. Isolate the tooth

#5: CEMENTATION

Choose Your Cement

When it comes to indirect restorations, cementation is probably the biggest concern on most dentists' minds. Get the cementation step wrong and the restoration will surely fail.

There are three types of cements to choose from:

Choose from 3 types of cement:

1. Light-cured resins
2. Dual-cured resins
3. Bioactive cements

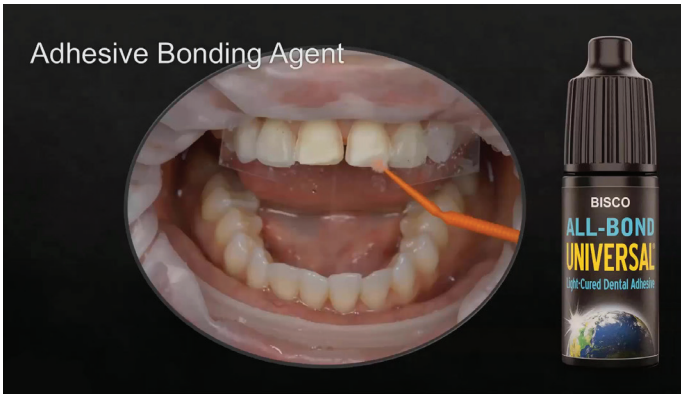
- **Light-cured resins** – Use for thin or translucent ceramics, and any time you need more color stability.
- **Dual-cured resins** – Use for thick or opaque ceramics, such as BISCO's Zirconia, that light might not fully penetrate.
- **Bioactive cements** – Use for situations with a slightly moist environment, and for patients (such as geriatric patients) who would particularly benefit from the calcium and fluoride release. If you have good retention, you can also choose the bioactive material.

Etch the Tooth

Since you're on enamel you can total etch, self-etch or selective etch—just be sure to keep the etchant off the dentin. BISCO's Uni-Etch, Etch-37, & Select HV Etch are all available with benzalkonium chloride, so you can etch and clean the tooth at the same time. BISCO recommends Select HV Etch specifically, for the selective etch technique.

Apply the Bonding Agent to the Tooth

Excellent universal bonding agents are now available that give you thin film thickness, high strength and the ability to work with your preferred etching technique. A key to success is to avoid just applying one layer of adhesive bonding agents. For BISCO's All-Bond Universal, apply two coats and use microbrush to scrub it in for 10-15 seconds per coat.



Next, air dry for 10 to 30 seconds (depending on the product) to evaporate off all the volatile solvents. BISCO's All-Bond Universal must be air-dried thoroughly for at least 10 seconds. Take your time with this step. You should see the liquid move off and leave a shiny kind of appearance.

Finally, light cure to ensure the bonding agent is seated in place.

Apply the Resin Cement & Place the Restoration

Load up your restoration with the appropriate resin cement for the type of cure you will do, and place the restoration. Leave some of the excess on at this point to avoid openings at the margins that can result in microleakage or bleeding.

Cure and Clean Up

Finally, cure the cement as per the manufacturer's instructions, then remove any excess, remove your isolation materials and congratulate your patient on their new smile.

> Follow manufacturer's application and drying instructions for optimal bonding.

Related Webinar
5 Fundamentals to Delivering Indirect Ceramic Restorations

Related Podcast
Management of Zirconia Restorations