



5 Things You Need to Know About the New Cements

SELF-ADHESIVE RESINS CAN ACCOMPLISH MANY JOBS

Cements have long been an important component of dentistry, allowing practitioners to bond to tooth structures — and new advances promise even more. The new generation of self-adhesive resin cements — like BISCO's TheraCem® — can be used to cement crowns (including metal, ceramic, porcelain and zirconia), bridges, implant-supported restorations, inlays and onlays, metal and nonmetal endodontic posts, and orthodontic bands and brackets.

USES

Which type of cement a practitioner uses for an individual procedure comes down, largely, to the doctor's preference.

"That kind of differs, based on the practitioner, depending on what they need," Dr. Adamo Notarantonio, DDS, a general dentist in Huntington, New York says. "For me, I mainly use it when it comes to crowns. I think they're great for full-coverage, because it minimizes the need for a complete isolation, and they work pretty well on their own."

Dr. John Rowe, DDS, a cosmetic dentist in Jonesboro, Ark., notes that self-adhesive resin cements are particularly useful for zirconia restorations.

"I do quite a bit of CEREC in my office, so I'm milling crowns on-site," Dr. Rowe says. "So I'm looking for ease of use and long-term predictability. TheraCem® seems to fit that benefit for me. It's easier and I don't have to re- numb the patient after the milling time. I can go back in with the self-adhesive cement and avoid traumatizing that tooth any further or give a second injection when using a self-adhesive resin cement."

Self-adhesive resins enhance the capabilities of earlier formulations

CEMENTS ARE GENERALLY USED IN TWO WAYS — A CONVENTIONAL CEMENTATION OR AN ADHESIVE CEMENTATION APPROACH. HOWEVER, WITH THE NEW GENERATION OF SELF-ADHESIVE RESIN CEMENTS, THE PROCESS IS EASIER AND MORE EFFECTIVE FOR THE DOCTOR. SELF-ADHESIVE RESIN CEMENTS REQUIRE NO ETCHING, PRIMING, OR BONDING OF PREPARED SURFACES, MAKING ITS APPLICATION MUCH EASIER AND PREDICTABLE.

IMPROVEMENTS OF SELF-ADHESIVE RESIN CEMENTS

"When you're dealing with an older cement, you're basically looking at mechanical retention being the way that things are held onto the prepped tooth," Dr. Rowe observes. "With

the newer resin-based cements, you actually have a bond that helps enhance the retention of the restoration to the tooth. You also have the option of just going straight with a bonding resin where you would etch, prime and bond and use a dual-curing cement, but that would be separate steps to etch, prime and bond, versus something like TheraCem® where it's a self-adhesive cement, that's all self-contained within the process."

Because of their capabilities, self-adhesive resin cements have completely replaced conventional cementation in Dr. Notarantonio's armamentarium.

"With the technology out now, especially with a product like TheraCem®, I don't use conventional cementing anymore," Dr. Notarantonio says. "I use adhesive cement for many different reasons that conventional cement doesn't give you. I know some people still do, but I don't use conventional cement anymore, because with the technology, you can bond to things like zirconia, you can bond to metals. That's pretty much where the conventional cements came in, because back in the day we couldn't bond to metals, we couldn't bond to zirconia. But now, with the new technologies out in certain segments, I'm strictly an adhesive guy. I don't use conventional at all anymore."

As an added bonus, resin-based adhesive cements feature calcium- and fluoride-releasing properties.

How to use self-adhesive resin cements

THE MAIN ADVANTAGE OF SELF-ADHESIVE RESIN CEMENTS IS THEIR FUNCTIONALITY — THEY ARE SOLID PERFORMERS AND DELIVER PREDICTABLE RESULTS. AS A BONUS, PRACTITIONERS FIND THEM LESS FUSSY TO APPLY THAN PREVIOUS GENERATIONS OF CEMENT.

TECHNIQUE IMPROVEMENTS

The technique involved with the new cements is not drastically different from previous generations — it's just easier.

"You want to make sure you have a clean surface to bond to," Dr. Rowe says. "You want to make sure it's free of debris and the tooth has been cleaned, but it doesn't require any extra acid etching to the prepped tooth, itself. Basically, the bulk of the preparation is going to go with the restoration to be placed. If you need to place a separate zirconia primer to the restoration, which is advisable in a lot of situations, go ahead and do that. Using the dual-barrel delivery with the mixing tip, placing it directly into the restoration and then seating the restoration on the tooth, making sure that your hemostasis and the salivary contamination is all controlled, then it's all pretty easy, pretty simple."

Using self-adhesive resin cement is a much more straightforward affair for the clinician. Rather than having to etch and prime the tooth, the cements are formulated to handle those jobs on their own.

"There is a transition in pH," Dr. Notarantonio says. "When you first put TheraCem® in, it has an acidic pH, which is good for anything self-etch, self-adhesive. The more acidic, the more it will etch the tooth and the better bond you're going to get. After about 30 minutes, the pH converts from acidic to alkaline. Alkaline is basic, which is protective to the dentin and the pulp, and is better for sensitivity. That transition tells me I'm going to get the acidity that I need to bond the tooth in and then after

about 30 minutes, once the bond is strong enough, the pH becomes alkaline."

New cements mean good things for doctors, patients

NEW CEMENTS MEAN BETTER RETENTION AND EASIER APPLICATION. AT FIRST BLUSH, THESE SEEM LIKE ADVANTAGES FOR THE DOCTOR. HOWEVER, THEY ALSO MEAN A GREATER BENEFIT FOR THE PATIENT, WHO WILL EXPERIENCE AN EASIER TIME IN THE CHAIR AND CAN LOOK FORWARD TO STRONGER, LONGER LASTING RESTORATIONS.

BETTER FOR THE PATIENT

"TheraCem has a very strong bond to zirconia, so that's a benefit to my patient, because, as opposed to a conventional cement, it will last a lot longer than if I used conventional," Dr. Notarantonio says. "Obviously, that's a benefit to the patient because the longer it stays in the mouth, the better for them."

And adopting a new cement is not a change most doctors do lightly.

"Anything that I incorporate into my practice has to have that benefit," Dr. Rowe says. "It has to be a greater benefit for the patient or it's easier to use for me or a better end result. As far as a benefit to the patient, long term, I'm expecting to see that our restorations are going to be lasting longer and with good, solid retention down the road."

Also, TheraCem® is engineered to release calcium and fluoride ions continuously.¹

"I think the added calcium and fluoride release is a good idea for the tooth and the restoration. Dr. Rowe says.

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– Dr. John Rowe, DDS, cosmetic dentist

BETTER FOR THE CLINICIAN

"TheraCem is one syringe, so it's self-mixing, which is great," Dr. Notarantonio observes. "Others, you have to dispense it and then mix it by hand. I prefer the syringe and the way TheraCem is packaged, because it leaves less error to my assistant in terms of how she mixes it."

Bonding to zirconia is improved, because no additional steps are necessary.

"I've noted continued improvement in newer cements," Dr. Rowe says. "I'm really pleased with what TheraCem has added. With a zirconia primer, if I were milling zirconia, then that would be great. With bridges, I am using zirconia, so that's a real benefit. We all know that bonding to zirconia is a difficulty, so the special attention to adding that into it is a benefit as well."

While speed is improved, Dr. Notarantonio says he'd rather take his time and enjoy a stronger restoration than save a few seconds.

"You could cure it a little bit quicker, according to the directions," Dr. Notarantonio says. "I'm a creature of habit, and I kind of think chemistry takes time, so I leave a little bit longer. My cement protocol hasn't changed. I do leave this a little longer so the self-etches and bonds can work on its own before I cure it. It hasn't really given me more speed, but I'm not the type of clinician who looks for speed. I

would prefer quality and take a little bit longer time than to get something that's fast."

Consistency and predictability are also improved with the new generation of cements.

"I started using it as an evaluator and key opinion leader, and from then to now, I don't notice any difference," Dr. Notarantonio says. "It does the same thing every single time, no matter what room I'm in, what light I cure

with for the same amount of time, it's still easy to clean up and does what I ask it to do."

Clinicians can enjoy an easier clean-up with self-adhesive resin cements.

"What I've noticed is the ease of cleanup," Dr. Notarantonio says. "It's much easier than other stuff I've used. When using another cement and tack curing it for 2 seconds with a light, it was really hard and difficult to remove.

TheraCem peels off like jelly and it's a gelatinous thing that is so easy to clean up, it makes my life a lot easier. I don't have to stab my patient with an explorer trying to break stuff off that got too hard, too fast."

Self-adhesive resin cements make everyone's lives better — for the doctor, they offer reliability, ease-of-use, and predictability. For patients, the improved bonding means that they can count on a long lasting restoration.

REFERENCES

1. Gleave CM, Chen L, Suh BI. Calcium & fluoride recharge of resin cements. *Dent Mater.* 2016 (32S):e26.

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