One shade fits all

Why OMNICHROMA will be a game changer in the dental industry.

by Dr. John Flucke

I love progress. I mean, I really love progress. There are so many things for us to be grateful for when it comes to the continuing progress we see in dentistry. Every year we’re seeing products that make procedures faster, easier, more predictable and increasing in longevity.

These are probably the most exciting times in our profession, and from what I’m seeing on the immediate horizon, things will continue to improve as more progress is made in a wide variety of dental procedures.

One of these areas that has seen tremendous progress is the field of materials science. Over the last 10 to 15 years, we’ve seen some truly incredible advances come through the pipeline. Let’s consider that for a moment. In the early 2000s we were hoping for a composite that could hold up without excessive wear and that wouldn’t quickly pick up stain. The concept of posterior composites was still “dicey” at best, anterior composites didn’t match that well (although, at least they were tooth colored) and we were using curing lights that required at least one minute of curing exposure per increment.

Polishability? That was something that sometimes worked, but many of the materials were like trying to polish a driveway. Not to mention that the only real composite polishing instruments we had were flexible discs that weren’t always easy to use far into the posterior area. The idea of an amalgam free practice was laughable.

Then the scientists began to make progress. Bond strengths increased. Composites became stronger with incredible polishability. Different fillers allowed the restorations to wear like enamel. LED curing lights were developed with incredible depth of cure.

One of the big advancements I can remember was the creation of composites with a wide range of shades. Suddenly shade matching an anterior case really was possible. Gone was the time of “place and pray” that things looked acceptable. Now there was a composite shade for every tooth in the VITA classical shade guide.

Sales reps were coming into offices with DentaForm teeth in a variety of shades and demonstrating to the doctor that no matter how dark or how light the tooth, they had a shade to match it. It was a brilliant concept, but unfortunately there was a drawback. These materials were only available in a “kit.” If you wanted these materials, you couldn’t pick and choose in an “a la carte” manner. You had to purchase a “suitcase” style kit that contained every shade you could imagine.

Of course, just because a color could be imagined didn’t mean that nature had imagined it. Doctors soon realized that they had paid a significant price for the suitcase but that lots of the shades expired before they were ever used. Instead, there were a handful of shades that were frequently used and refilled while many other shades languished in “inventory purgatory” until being tossed as they expired.

This concept lasted for a few years, but then manufacturers started to see pushback from doctors who didn’t want to pay for materials that would never be used. This started a move toward fewer shades in an office inventory while manufacturers began to work toward more simplified shading systems. Dentin shading composites were introduced that allowed doctors to create a dentin base and then layer enamel shades over it, creating a restorative approach that greatly mimicked natural tooth structure.

However, doctors and patients are always searching for better and more efficient treatment. This led, in 2007, to Tokuyama Dental America’s creation and launch of the composite Estelite Sigma Quick. “Estelite,” as it quickly became known, demonstrated a very well received “chameleon effect” where the composite seemed to pick up the shade of surrounding tooth structure. While not a perfect match in every clinical situation, the material became well known in the industry as an efficient material due to fact that often only a single shade was needed in cases where other materials might require layering.

Let’s fast forward to 2018 and discuss an evolution that may very well create a tectonic shift in restorative dentistry. In October 2018, I was approached by Tokuyama and asked to help with a super-secret project. The company told me it had created a composite that did a remarkable thing – it matched every tooth color in the VITA classical shade guide with a single shade. It’s called OMNICHROMA.
OMNICHROMA is available in Pre-Loaded Tip and Syringe refills.

Honestly, I was skeptical. I feel my responsibility to you, the reader, and those who attend my lectures is to be a sceptic. When I’m approached by a company, I always listen with an open mind, but as former U.S. President Ronald Reagan used to say, “trust but verify.” So I listened, I studied the cases, I reviewed the science, and it all seemed solid.

Then I began placing restorations in my practice on patients that entrust me with their care. The results in my hands were everything they had promised. One shade for every restoration. I was blown away. I get to test a lot of different composite materials every year and, honestly, they’re all pretty nice. Some might polish a bit better than others or perhaps, the handling of one or two are better in my hands than others, but there truly isn’t a bad composite out there. I feel it boils down to personal preference for a lot of cases. But OMNICHROMA stands in a totally different category. It’s truly a game changer.

There are a lot of advantages to only needing one shade, which I’ll get to in a bit. First though, I’d like to give you some science.

The science behind the product

All composites are a mixture of organic resins containing catalysts and glass/ceramic filler particles. The filler particles can be either all the same size or a mixture of different sized particles (hybrid). The basic rule has always been that smaller particles polish better and larger particles provide more flexural strength with less polymerization shrinkage. These particles are normally created by crushing and grinding materials until they roughly reach the size needed. This grinding does introduce some problems for esthetics though. When viewed under an electron microscope, the particles have the appearance of tiny pieces of gravel. Since they’re glass/ceramic, they reflect light, but their non-uniform surface texture means that photons are bounced willy-nilly, which can create problems with the shade and luminescence of the composite.

To neutralize this effect, Tokuyama creates its filler particles in a much different manner. Using what’s known as the SOL-GEL Method, the filler particles are tiny spherical cores placed in organic solvent. This allows the filler to grow gradually from the cores. The result is spherical particles that are 260nm in diameter.

OMNICHROMA’s 260nm fillers are uniform in shape and size, and they can generate the precise red-to-yellow color range of teeth through the use of structural color technology. Structural color occurs when the microscopic structure of a material interacts with light in a way that generates a particular color. With no added dyes or pigments, OMNICHROMA can match the shade of every tooth.

The 260nm spherical particle has other advantages as well. Tokuyama’s scientists have determined that any particle 500nm or smaller creates a similar high gloss polish. Combine that with the fact that the highest value for surface hardness is for particles between 200-300nm. So by using a 260nm sphere, OMNICHROMA can be polished to a high gloss while also having a high surface hardness. This creates a material that’s not only highly esthetic but strong as well.

The experience

Of course all the science in the world doesn’t matter if the material doesn’t work. I’m here to tell you it works — and it works well. I currently have somewhere around 60 restorations completed using OMNICHROMA and the esthetics are incredible. The one thing I’ve learned is that a bevel on the margins really helps the material pick up the shade from the surrounding tooth structure.

I prefer to work with warm composite and I’ve checked with Tokuyama to make sure that OMNICHROMA isn’t affected by warming. The company has assured me that warming causes no adverse effects.

I do most of my dentistry under 5.5x magnification and I’ve been very pleased with the results I’ve seen. OMNICHROMA is easy to place, easy to work with and easy to polish.

Patients have been thrilled with the shade matching, and I’ve used it in a variety of clinical situations, including some very challenging esthetic cases.

The benefits

There are some obvious benefits to OMNICHROMA other than the tremendous esthetics. The greatest is inventory control. I’ll probably always have some shaded material in my office because I’m a heavy Type A “belt and suspenders” type. However, not having to keep track of a large shaded composite inventory is going to be a time saver and a money saver for many practices. We’ve all had those times when you tell the assistant to get a certain shade only to be told “we’re out of that.” Those are never good days, but I can see a lot fewer of them in your future thanks to OMNICHROMA.

Obviously this type of progress makes things better for all of us. Women genetically have better color vision than men, but we all know that one of the most difficult things we do is to match one anterior tooth. Often in those cases I bring in multiple staff to offer their opinions during shade determination, and even then they don’t always agree. Utilizing a “one shade fits all” material is going to take a lot of stress out of difficult shade matches.

Patients never want dentistry to take longer, but as a dentist you want to be as efficient as possible too. The less time we spend in the clinical posture, the better our long-term health will be. Being able to just reach for the same shade time and again will speed up procedures, decrease stress and keep you out of the position we spend way too much time in.

Wrapping up

Every once in a while, a product comes along that fits into my definition of a “maximum disrupter.” These are homerun products that truly shake up the industry and lead us down a path we really hadn’t expected. OMNICHROMA is one of those products. It has the potential to truly change our practices while providing patients with clinical outcomes they’ll be thrilled with. Assistants will love the ease of inventory and doctors are going to love the efficiency of treatment as well as the cost savings of ordering fewer shades.

OMNICHROMA is available now. Give it a try. I’m confident you’ll be impressed.