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My journey with anterior composite procedures — A clinician's perspective

From the 3M™ Filtek™ Matrix to the all new Solventum™ Filtek™ Matrix

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Innovation is a critical part of any medical field, and dentistry is no exception. That's why, as a general dentist and lifelong learner, I've always liked trying new treatments, techniques, and materials to find the best — and most cost-effective — solutions for my patients and my practice. As such, I've been involved in a lot of continuing education, including several cosmetic continuums. I consider dentistry both my hobby and my profession, and I enjoy finding new ways to improve outcomes.

However, innovation doesn't always equal simplicity. The challenge of developing new solutions starts with the oral environment. It's an incredibly variable, complex area to work, and the effectiveness and longevity of any solution are dependent on each patient's unique circumstances. The best solution for Patient A is not necessarily the best for Patient B — the risks just aren't the same. Often, when a solution attempts to be one-size-fits-all, it requires more materials to address more variables. Yet, the more materials you work with, the more you have to educate yourself on, and the more opportunities for things to go wrong. That's why, when I evaluate a new solution, I'm not looking for promises of universality. Instead, I want to know how it can help me be more *effective* and more *efficient*.

Even with this exploratory mindset, for most of my career I've shied away from doing composite veneers because they have been unpredictable, time intensive, and stressful. I liked to tell myself that it was because I saw porcelain veneers as a superior solution to composite, but really it was because I wasn't confident in the results I'd achieve. Working freehand, I felt like I couldn't achieve what I pictured in my head, and was anxious that the patient wouldn't like the results after 4 hours of sculpting. So, I avoided these procedures, saying that it was because of the limits of the material, while the limits were really my own. When people have trouble with materials, it isn't always the material's fault, but that can be hard to acknowledge. Over the first 16 years of my practice, I really had only done a handful of composite veneer cases, because I didn't want to do them. Now, I've not only overcome those biases but also have a go-to solution for these procedures: the Filtek™ Matrix from Solventum (formerly 3M Health Care).

Before I get into the details of *how* the Filtek Matrix makes anterior composite procedures more predictable and efficient, I want to emphasize that it still takes practice to master. When you attend a lecture and see a dentist present amazing results, it's easy to come away with the impression that a new technique should come easily. But what you don't see is all the time that dentist dedicates to achieving those results. You're not going to become a great golfer by going to one lesson with a PGA Tour Professional. Mastery takes time and practice. Most of the patients I've treated with the Filtek Matrix were patients of mine whom I had previously offered other solutions because I didn't want to pursue composite veneers out of reluctance.

Every time I lecture, the first question I ask is, "how many of you do composite veneers on a regular basis?" Usually out of 30, I'll get one reluctant hand raise. In dental school, we accumulate a lot of knowledge about what teeth are *supposed* to look like. But you're sculpting art in the mouth, not on a typodont. The mouth is not only a wet, challenging environment: it's a very visible place where patient expectations are high. Add in a patient who can't sit still, and things get even more difficult.

For dentists, conservative dentistry is a no-brainer, but they may still hesitate if they aren't confident in the technique. Once they see how easy the Filtek Matrix is to work with, it's also easy to see the value. It opens doors to a procedure they might have otherwise avoided. In this article, we'll explore my experience using the Filtek Matrix, how it evolved and how the newest version has changed the game.

The first step to simplification: The original 3M™ Filtek™ Matrix

When I was first asked to test and provide feedback on the original Filtek Matrix, I immediately recognized its potential. Composite veneers were a pain point for my practice. I not only saw the value of conservative, non-reductive dentistry, but also the value of a solution to streamline the procedure.

As with any new system, it wasn't always the smoothest process, but the benefits were clear from the very first test, during which I was able to **cut treatment time down to a third of my usual timeframe** — and with a lot more confidence. The procedure was much easier than completing a composite veneer procedure by hand. It effectively delivered the basic symmetry of the teeth, which can be challenging to achieve freehand, and provided consistent results. Many other matrix solutions on the market use flowable composite exclusively, which is a little harder to control and wears quickly. We've always known that paste composite, with its high filler content, typically wears less. With the Filtek Matrix, you could use flowable and paste composite — achieving both esthetic results and longevity.

The Filtek Matrix allowed me to predictably perform these anterior composite procedures and be confident in both the results I'd achieve and the time it would take. That gave me an efficiency and a level of security that wasn't possible with freehand techniques. As the Matrix evolved, I was able to take a 4.5-hour procedure and shorten it to 1.5 hours. Chair time went from about one hour per tooth to treating 4–6 teeth in 1.5 hours — all with great results.

Unexpected benefits: Patient acceptance of minimal invasive procedures

An unexpected benefit of this new solution was its appeal to patients. I always understood the financial benefits of composite (as a less expensive alternative to porcelain), but I underestimated how important minimizing or avoiding tooth structure removal would be to my patients.

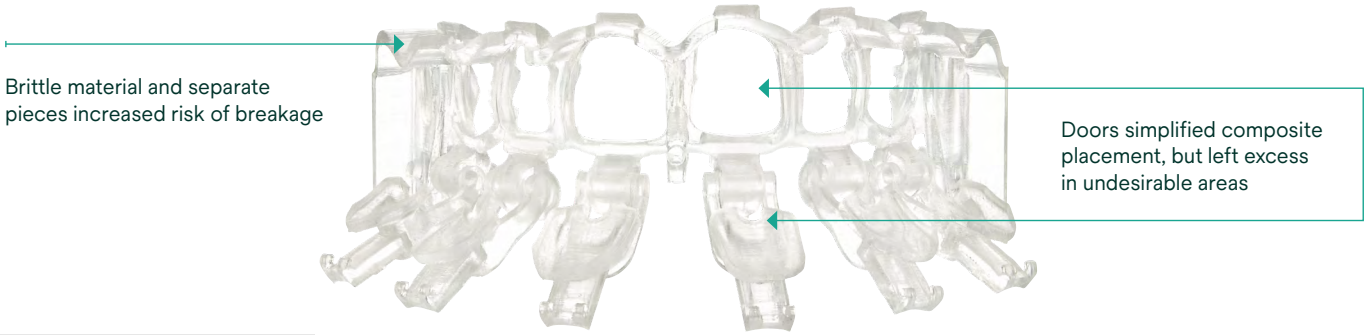
We all have perceptions about why people do or don't do things, but they don't always align with what they're really thinking. When I'm trying to help patients understand the value of a proposed treatment, I try to see things from their perspective, but in this case, I had the wrong idea. I thought patients who declined porcelain veneer treatment did so solely for financial reasons. But when I gave them an option that retained their natural teeth, price seemed to matter less. For myself, it's very logical; I don't want to remove tooth structure because it's irreversible, but I didn't expect patients to share that same reluctance. While younger patients may not recognize that certain procedures have a lifelong effect, conservative dentistry has always been valued by experienced patients who understand the permanence of irreversible procedures. That appreciation is growing — and worth taking seriously.

Improving an innovation: The pain points of the original Filtek™ Matrix

Part of why I enjoy trying new products is that it not only allows me to be on the cusp of innovation, but it also gives me the opportunity to work out the pain points. One of my strengths is critical analysis, and I enjoy breaking something down and pinpointing areas for improvement.

While the original Filtek Matrix dramatically improved my process, it still had issues that took time to figure out. The matrix itself was quite brittle and there was a risk of breakage during removal, and sometimes even before use. The doors for loading the material left excess and flash in areas that are tough to contour — such as the transitional angles from the facial and mesial/distal surfaces, which cover critical primary anatomy and require significant time to finish.

Although these finishing and polishing steps still had room for improvement, the first-generation Filtek Matrix was proof that there was an easier way to make composite veneers. It brought us *that much closer* to the desired results. I was very happy with it and was able to get up to speed — and speed up my own procedure — very quickly.



Clinical case:

The desire to smile again

In this case, a 67-year-old woman longed for a smile she could be proud of. She wanted to improve the color of her teeth and show more tooth structure when smiling, but she didn't want to go through lengthy orthodontic treatment. However, tooth wear and lack of ideal tooth inclination can make esthetic restoration difficult. When approaching a case like this, you have to decide if you can accomplish your esthetic goals and meet the patient's expectation with the teeth in their current position. Thankfully, while she had tooth wear and axial inclination issues on the central incisors (fig 1), our mockup showed us that we could accomplish her goals without orthodontics (even if that approach would complement the case better).

Figure 1: Initial, preoperative situation, including tooth wear and inclination of the central incisors.

Figure 2: Filtek™ Matrix placement, showing the difference between tooth condition and smile design.

Figure 3: Situation after matrix removal, showing excess flash.

Figure 4: Results at one year recall.

When the original Filtek Matrix was in place, the difference between the current tooth condition and digital design was obvious (fig 2). While visualization was good, the junction between the door and frame left excess in a less-than-ideal position at the line angles. After composite placement, curing and matrix removal, the symmetry and design are evident, but the amount and locations of the flash took extra time to refine (fig 3). In addition, the fragility of the matrix itself created issues with breakage.

However, the Filtek Matrix did revolutionize how I approached these cases, even if there was still room for improvement. We were able to achieve excellent, esthetic results that the patient loved. The ability to inject composite into a custom matrix helped create a result with fewer voids and, as with any composite, polishing well created long-lasting durability and stain resistance. At the one-year mark, the patient could not be happier with her new smile (fig 4).

The newly improved Solventum™ Filtek™ Matrix

The main feedback clinicians had about the original Filtek Matrix had to do with establishing the final appearance. While that first iteration advanced us a lot in the process and brought us closer to symmetry, there was still room for improvement. Thankfully, the next evolution rises to the challenge.

The new Filtek Matrix is a tough, flexible material that's more durable — and it's all one piece. It has never broken for me before, during, or after use, either when using it clinically or when I've been practicing on a model. It has injection ports on the incisal edge rather than doors on the facial surface, leading to significantly less flash. This not only provides a less technique-sensitive procedure, but it helps produce a more ideal result immediately after taking off the matrix.

Once you remove the matrix, the results are so much closer to the final product. I'd say **it's 50% closer to the finished design**, if not more. It eliminated even more of the final finishing and polishing needed. Keep in mind that, though the facial surface is very shiny right after taking off the matrix, it is still important to finish and polish, such as with a medium grit 3M™ Sof-Lex™ Contouring and Polishing Disc, to remove any oxygen inhibition layer that may be present, to maximize the longevity of the restorations.

In terms of efficiency, the new Filtek Matrix reduces chair time even further. Now, I can restore 4–6 teeth in about 1 hour, **cutting another half hour off treatment** compared to the previous iteration. This is now my go-to system for *all* large anterior composite cases.

Making smiles: Patient acceptance and reactions to treatment

As dentists, we often spend our entire day hearing patients tell us how much they don't like being in our office. This constant bombardment of negativity can be very depressing. But patients *want* esthetic procedures. While they don't enjoy sitting in the chair, in the end they get what they want: a better smile. They'll never go back to the way they were because they see themselves differently.

Who doesn't want to look their best, especially if you can preserve tooth structure? I always tell patients if they don't like their new smile, it's fully reversible — but I have never been asked to take it off. Never. There might be refinements, but the approval is unanimous.

Almost every adult of a certain age could probably benefit from this treatment to some degree. A lifetime of brushing your teeth causes wear. People's teeth get chipped and worn. However, it's important to be tactful in starting the conversation. Our job is not to point out flaws, but to help patients achieve their goals. I like to start by asking if there's anything about the patient's smile *they* don't like. If something doesn't bother them, I don't want to bring it to their attention.

It helps when my assistants begin the conversation and become ambassadors for the procedure. Several of my assistants have actually been treated with the Filtek Matrix, so they can use themselves as examples. "You want a solution?" they might ask. "Look at my mouth, I used to have undersized teeth." Then patients can see the results live.

Adding it all up: The profitability of the Filtek Matrix

One of the big variables we have to account for in dentistry is profitability. Implementing a new treatment can be risky, and you want a good idea of the return on your investment: for a given amount of chair time, what are my lab results and costs, what is my return? The beautiful thing about this treatment is that, compared to 3D printed techniques or doing our own cases freehand, this solves so many pain points.

When I ran the numbers, it was truly a dramatic change. For the most part, it takes 20 minutes of chair time to complete the digital workflow. Once we receive the design and give our approval, Solventum creates and delivers the Filtek Matrix. The procedure itself typically takes an hour to 90 minutes. Even if I'm charging a third of the cost of a porcelain veneer, the economics are still more profitable, because the most valuable part is my chair time.

Solventum bridges that efficiency gap, so I was able to take composite veneers from one of my least profitable procedures to one of my most profitable — more profitable than a single crown. Although single crown procedures may be the bread-and-butter of a dental office, I have found composite veneers with the Filtek matrix to now be more profitable. Plus, they offer a superior patient experience.

Clinical case:

Conservative, youthful smile makeover with Solventum Filtek Matrix

A longtime patient of mine, a 51-year-old woman, was concerned with the color of her teeth and white hypomineralization from orthodontic treatment she'd had as a teenager (fig 5). She'd wanted to improve her smile for years but didn't want any tooth reduction.

Shifting the color of teeth with minimal material thickness can be a challenge unless you use a more opaque material. Our goal in this case was to design a smile that allowed for the addition of resin to change the color of her teeth, without any preparation. Thanks to its flexibility, the new Filtek Matrix was able to adapt the digital design onto her teeth precisely (fig 6). The easy-fill access ports on the incisal edges allowed for composite placement (Filtek™ Supreme Ultra Universal Restorative, shade B1B) while maintaining the esthetic design of the facial surface. After the matrix was removed, the design was replicated with a high shine, with little excess to remove, leaving only a few steps between removal and results (fig 7).

Leveraging digital design and the Filtek Matrix, I was able to perform this 8-unit case in just one hour, as well as convert a dentistry pain point into an enjoyable routine treatment. Not only was the treatment enjoyable, but the patient was so excited about her new smile that she requested the same treatment on her lower anterior teeth. Using this new technology, I was able to satisfy all of this patient's esthetic goals quickly while preserving her natural tooth structure.

Figure 5: Initial, preoperative situation, showing incisal edge wear, hypomineralization and color change.

Figure 6: Placement of the new Filtek Matrix.

Figure 7: Situation immediately after Matrix removal, showing little excess material and high shine on the facial surface.

Figure 8: Postoperative results.

Learning new solutions: The simplicity of the new Filtek Matrix

Every new technology comes with a learning curve. But in this case, the barrier to entry is even lower than it was before. It's very simple and intuitive. Once clinicians try it, they get hooked. This treatment is truly revolutionary for what we do because it gives us an easier way to achieve predictable results.

If you're unsure about trying it, or incorporating it into your practice, start by treating a staff member — they can become a great ambassador for the procedure. Dentists might think they don't have patients who need this treatment, but in every training session, I can always see multiple people who could benefit. For those who hesitate, I suggest reframing the situation and reexamining solutions you may have avoided in the past.

Conclusion

For many dentists, including myself, doing anterior composite cases by hand is incredibly difficult, time-consuming, and unpredictable. The original Filtek Matrix went a long way in making these procedures more accessible. It made me confident in the results I'd achieve while reducing chair time, and it quickly became one of my most profitable procedures.

There were some drawbacks to the original design, but these have been well addressed in the all-new Filtek Matrix. The new matrix is a simple, efficient and conservative way to solve problems. It's tough and flexible, so it's less likely to break. And there's significantly less finishing and polishing required, making it even faster and more predictable. This is my go-to system for all large anterior composite cases, and I recommend trying it. I think you — and your patients — will be pleased with what you can achieve.

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