For many years, alginate impression material has been a staple of most dental practices. Thankfully, that does not include the Nash Institute, which today uses strictly vinyl polysiloxane (VPS) materials. When I was first hired by Dr. (Ross) Nash, I loved not having to use alginate anymore. Alginate may be inexpensive but, for us, the nuisance factor far outweighs any perceived benefits, like lower material costs.

It wasn’t all that long ago that alginate was the first option for dental impressions. We’ve all used it at one time or another. Despite its shortcomings, it did have some good qualities like quick set times, mild flavors, and low cost. But there is a considerable downside, including poor dimensional stability, messy, hazardous dust, repetitive hand mixing, and, above all, a lot of wasted time. Who has to bear the brunt of the extra time that’s spent taking impressions— the dental assistant, of course.

Recently, several alginate-equivalent materials have come on the scene. Why? Because they are simple to use and save the dental assistant a practically incalculable amount of time—thereby relieving stress and giving us the opportunity to see more patients. We have found these equivalents to have the desirable characteristics of more expensive VPS materials at a favorable price point.

**Saving Time**

Alginate alternatives offer many advantages over basic alginate, but the biggest advantage is time savings. The time saved using reliable VPS material vs all the mixing, cleanup, and retakes inherent in using alginate is huge.

We do not typically use these materials for final impressions, but they are well equipped to handle most of our impression needs:

- Preliminary impressions
- Provisional crown-and-bridge impressions
- Study models
- Registration/opposing dentition impressions
- Impressions for orthodontic models, sports mouthguards, and bleaching trays; and more.

**Solving the Mixing Nightmare**

The most important time-saving factor that these materials bring to the table is their elimination of tedious, inexact mixing. Very few people can make alginate impressions just right the first time. When you’re in a hurry, the quality of your impressions can really suffer. With alginate alternatives, it’s just a single cartridge or volume dispenser. You get the correct ratio every time.

I often refer to alginate mixing as the salt-and-pepper technique—you add a little of this and a little of that; and the next thing you know, the measuring cup is gone. Someone should do a survey to find out how many offices actually have both the scoop and the mixing vial handy. I guarantee that the percentage would be minimal.

With alginate, there is a tendency to cheat and “eyeball” the mixture; you guess at the ratios. If there is too much water, you add more alginate. If you put in too much alginate, you have to add more water, and so on. If the mixture is too thin, it will run down the patient’s palate and cause gagging, and it takes too long to set up. If the mixture is too thick, it sets too quickly and does not allow enough working time. That’s why the correct ratio is so important.

Another thing that people seldom consider is the water temperature. How many of us can really control that? We never know what temperature we are using. And the water temperature can definitely affect the set-timing of the alginate material.

Last but not least, there’s the mess. Alginate is so soft and powdery that as soon as you open the can, the dust flies everywhere. I’m sure most of you can think of...
Close enough isn't good enough.

With the Denar® Slidematic Facebow, it’s easier than ever to get precise results and satisfied patients.

Without accurate facebow records, precise patient occlusion can become a guessing game. You can come close, but may end up with additional adjustments, excessive wear on restored teeth, headaches, and other long-term dental problems.

The Denar Slidematic Facebow lets you achieve more predictable, functional and aesthetically pleasing results, every time. It’s so easy to use that you, or your dental assistant can take this vital record in less than two minutes. Plus, it’s compatible with most leading articulator brands. No wonder it’s the Townie Award Winner for both facebows and articulators.

Call 1-800-201-7286 now for a free instructional video. You’ll discover that nothing else even comes close.
better ways to spend your time than cleaning alginate from the counter and the floor.

Wrap It Up

Unless they are able to pour up immediately, which is difficult to do at a busy practice, most dental assistants have to wrap alginate impressions in wet towels until they are poured up or sent to the laboratory for models.

Impressions must be able to hold their dimensional stability so that they can be sent to the laboratory. Because alginate shrinks, you have to send the impression to the laboratory right away or it will be the cause of inaccurate models. Expecting the laboratory to get accurate models from alginate impressions that are soaked in water, thrown into plastic bags, and shipped to the laboratory is asking a lot, especially because alginate impressions can absorb the water and become distorted.

Need Multiple Pours?

Trying to get multiple pours from an alginate impression is not something I would recommend. If you don’t get a good pour the first time, you have to take the impression again. Obviously, you need to have good impressions for quality results.

Much of the lack of confidence in doing multiple pours with alginate is caused by its lack of dimensional stability. Because VPS materials are dimensionally stable, you don’t have to pour up the model right away. Impressions retain their stability for months, allowing numerous accurate, detailed stone pours weeks after you’ve taken the impression. This dimensional stability ensures the accuracy of opposing dentition impressions, saving appreciable dentist time because far fewer adjustments are necessary.

The Laboratory’s View

In the laboratory, we prefer receiving a silicone impression over traditional alginate. It is substantially more accurate and durable for manufacturing of many of our products and services. On receipt of the silicone impression, the laboratory fabricates the model by pouring the desired stone type into the impression following the stone manufacturer’s specifications. The laboratory can fabricate any number of models by simply repouring the impression. This is an advantage over traditional alginate-type impressions, which cannot be poured multiple times. To produce multiple models with traditional alginate-type impressions, the laboratory has to duplicate the model with some form of duplicating material, including possibly even another alginate material. Silicone impressions save the laboratory time and materials when producing multiple models. This is especially helpful in diagnostic cases.

The laboratory uses two complete sets of maxillary and mandibular models when doing diagnostics. The first set remains unprepared while the second set is prepared for the type of restoration appropriate for the case. The case is waxed up to full contour and can be duplicated with the silicone impression material for preparation stints as well as provisional stints. All of these pours are made more predictable with these silicone-based impression materials. The faster setting time is greatly appreciated in the deadline-based laboratory world. Although these materials were designed for the dental operatory, they also have intriguing possibilities for the laboratory. When fabricating cosmetic makeover cases, the laboratory manufactures matrices for incisal edge positioning. Silicone impression materials work well for producing these matrices. Using the model of the provisional, we simply inject this impression material using the gun delivery option. Because the setting time is quick, the laboratory has a working matrix in just moments. These impression materials can also be used for taking transfer bite registrations off of the working models. This is often necessary on full-mouth reconstruction cases. The laboratory can fabricate die positioning stints using this silicone-based impression material by making a matrix from a solid model and transferring it to the die model to ensure pinning accuracy.
may even be more possibilities with such a versatile material; you just may need to try them in the laboratory.

**Delivery Systems**

Whether you use a cartridge or the volume mixer, the accuracy of polyvinyl delivery systems is a big advantage. Because alginate alternatives are premixed, the ratio is automatically correct, and all the variables and the mess are eliminated. I appreciate having options. Both options are efficient, accurate, dependable, and powder-free. I prefer the cartridges and use them more frequently, but I occasionally use volume delivery. It depends on how much room you have.

**Tolerance to Disinfecting**

The ability to disinfect impressions is extremely important because of Occupational Safety and Health Administration regulations. It’s a high priority for our practice.

Disinfectant sprays can cause bubbles in alginate. When alginate is dipped and soaked, it can take on water and expand and distort, ruining dimensional stability, which in turn can leave voids in the impression. Polyvinyl impressions can be either dipped or sprayed and they will not lose their shape or detail.

**What About Gagging?**

When runny impression material causes patients to start gagging, the dental experience can become a nightmare for us all. There is a significant difference between polyvinyl and alginate. If alginate is mixed too thin, you have a real problem because it can run down into the patient’s throat. And that, of course, is not good. With polyvinyl, patient gagging is not a problem. Its thixotropic property gives it an ideal consistency that prevents patients from gagging. And with its quick set times, it stays in your patient’s mouth for a shorter period of time.

It’s preferable for impression material to have no taste, because that way it won’t activate the salivary glands. Most alginate alternatives are very neutral, with no flavor at all. They have a subtle peppermint scent but no discernable taste. Alginate, on the other hand, has a pleasant taste but it can be too strong, and the flavor often causes patients to salivate.

**Storage**

With alginate, the mixing and the mess are not the only issues. Some dentists like to purchase alginate in barrels, and then storage can be a problem. There’s not enough room for these barrels in the operatory, so they have to be stored in a closet or a back room. With polyvinyl, you just have the cartridges or volume dispenser, which you can leave on the counter or store in any cabinet.

**Selling the Dentist on Alginate Alternatives**

How do you communicate to the dentist that this product should be added to the practice? I would start with time savings. That’s the most obvious, but there are a number of other factors. When you get right down to it, the slight increase in the material cost of VPS impressions vs those obtained with traditional alginate is far outweighed by the time savings and efficiency that these materials deliver.

At the Nash Institute, we always use VPS materials. Some dentists think it’s too expensive. But with VPS, you always get an accurate model. It actually saves us money. They deliver excellent performance, yet it has a much lower price than the high-end VPS materials.

**Time Savings Must Be Equated With Dollars**

It’s easy to ignore the soft dollar costs of having assistants mix and clean up alginate. Material costs run under 5% of a practice’s total overhead. You can work awfully hard to squeeze out another 1% from that. Staff costs, on the other hand, run more in the neighborhood of 25%. Picking up 10 to 15 minutes each time you do an impression means true costeffectiveness, and the savings really add up.

Who doesn’t value their own time? Materials are a minor consideration; time is what’s costly. Dentists should really analyze the time it takes. With polyvinyl, there are a lot fewer retakes, which alone saves a lot of money. Your patients are happier, too.

**Conclusion**

I felt like I’d hit the jackpot when I started with Dr. Nash, because I knew I would never have to take another alginate impression. When I demonstrate polyvinyl, I ask the assistants to visualize mixing alginate compared to just pointing the gun and dispensing. After I show them how to use it, they often tell me, “I refuse to use alginate when I go back to work on Monday.”