

Why Is Bleaching So Gosh-Darn

FRUSTRATING?!!

(except for Deep Bleaching™ of course)

By Dr. Rod Kurthy

Yes, I know you're frustrated. Your staff's frustrated too – not to mention your patients!

Many docs tell me that they can't even get their staff to mention bleaching to patients, because they're so tired of being embarrassed when the patients see little to no results.

You find a new technique – or maybe a new product. The first patient you use it on has a nice result. **FINALLY!! YOU FOUND SOMETHING THAT ACTUALLY WORKS!!** But then, on the very next patient...nothing – nada – zip. Grrrrrr!

Let me ask you – have you ever bleached the teeth of a youngster, maybe age 14? If you have, you've seen the teeth get super-white very quickly. And let me ask you – have you ever bleached the teeth of a 75 year-old? If you have, you know it's like beating your head against a wall.

Bottom line – teeth become harder to bleach as the patient gets older. Now mix all the other individual differences from patient to patient, and you've a lot of variability.

It's all about permeability of the enamel to those itsy-bitsy oxygen radicals. I don't care HOW strong the bleach is, if it's hydrogen peroxide or carbamide peroxide, or what brand you use. If that tooth structure is NOT permeable to the oxygen, nothing's gonna happen. Period! But there are ways to fix that – so keep reading.

Next question – Let's say you bleach a patient with at-home bleaching. He wears his trays for two weeks, and his teeth slowly get whiter. Then the patient gets lost and you don't see him for a year. When you do finally see him, he complains that his teeth have gotten darker over the previous year. So what do you do? Do you have him wear the trays for two weeks at home again? No – you simply tell him to wear the trays a couple times and BAM!, they're right back to where they were.

Why is that? Why did the teeth whiten so much more quickly this time? The answer is that the teeth became “conditioned” during the first bleaching you did some time ago. You've heard that term, but probably never really knew what it meant. “Conditioned” just means “permeable”. Since the tooth structure is permeable to oxygen (because of the bleaching you did a year ago) this time the bleach permeated the tooth structure much more easily, rapidly and thoroughly.

Though nobody has figured out a way to shrink down to molecular size and actually WATCH what's going on, this is what my years of research and testing strongly leads me to believe: Just like in that cute TV toilet bowl cleanser commercial, I believe the answer is the “scrubbing bubbles” from the bleaching gel. As we get older, debris is packed more and more firmly within the enamel rods. So the older you get, the more difficult it is for oxygen to get through that debris.

But bleaching, day after day, cleans out the debris, allowing deeper and deeper penetration of those oxygen radicals. This just can't happen with some one-hour, one-visit bleaching.

Now, if you've got your thinking cap on, you're probably saying, “Rod, this just doesn't make sense. You're telling me that the oxygen can't get deeply into the tooth, and this is why teeth often don't get white. Are you kidding? If that were true, WHY do patients get sensitive?? SOMETHING sure as heck is getting deeply into that tooth to irritate the pulp.”

Well, there's more to it than that. Think about how teeth are formed and how they function. Enamel is very hard – to resist abrasion and last a lifetime. But since enamel isn't all that flexible if the entire tooth was made of enamel, it would be so brittle that it would quickly break.



“Banded tetracycline”. Deep Bleaching before and after of a 45 year-old banded tetracycline stain case.

“Deep Bleaching Tray” – note the fit and cervical seal of the Deep Bleaching Tray, sealing in bleach and sealing out saliva and sulcular fluid – note the obvious comfort of the tray.



“89 year-old patient”. Deep Bleaching before and after of an 89 year-old patient. Can your system do this?



On the other hand, dentin is quite flexible, so it's much less apt to break. But it doesn't do a great job of resisting abrasion. If the entire tooth was made of dentin, it would soon wear down to nothing. So as every body knows, the core of the tooth is flexible dentin, to resist fracture – and the outer layer of enamel is fused to the underlying dentin. Quite ingenious.

Knowing how dentin will deform under stress, and knowing how inflexible (brittle) enamel is, you realize that millions and millions of tiny separations of enamel rods happen during function. Enamel separates MUCH more easily straight down the long axis of the enamel rods – in other words, entire groups of rods separating from each other without fracturing through the length of the rods themselves.

So you've got millions and millions of tiny separations between groups of enamel rods on all teeth. Bleach certainly does run right down these areas of separation – millions of 'em – to cause sensitivity. But that does NOT mean that the bleach is getting within the clusters of rods themselves to whiten.

You already know that if you want to do in-office bleaching, it will typically take a few sessions to have much of a long-term result. You also know that at-home bleaching will slowly whiten teeth. It takes time for bleach to scrub out the debris within the enamel microstructure.

The longer bleach is in contact with teeth, and the stronger the bleach is, the faster it will not only bleach where it can reach, but the faster it will scrub out the debris within the matrix of the enamel rods to allow deeper and deeper bleaching, which means whiter teeth and a longer lasting result (thus the term Deep Bleaching).

The realization of these factors is what lead to my development of Deep Bleaching. After years of clinical study, we were able to uncover these things and a lot more. We took the physics of what is going on and worked them around to our advantage.

Remember, the longer bleach is continuously in contact with tooth structure, and the more concentrated it is, the better and deeper it will whiten and “condition”. BUT...if we're going to have bleach in contact with tooth structure for long periods of time continuously, if the concentration is too high, we end up sending our patients through the roof and frying their gums. (sensitivity will be discussed in the next issue of *The Profitable Dentist*)

In Deep Bleaching, the cornerstone that allows all the other steps in Deep Bleaching to be so effective is the Deep Bleaching Trays themselves. If our goal is to have HOURS of continuous release of oxygen (to not only create permeability, but permeability DEEP within the enamel rod complexes), we need to accomplish several things.

- 1) Seal in the bleach (don't let it leak out of the tray)
- 2) Seal OUT saliva (saliva DESTROYS bleach)
- 3) Seal OUT the sulcular fluid (sulcular fluid DESTROYS bleach)
- 4) Nighttime tray wear (the only time patients have extended time and minimal salivation/swallowing – when a tray is so comfortable that they can't feel it, and when it seals in bleach so patients don't constantly swallow it – all of a sudden your patients don't mind wearing these trays during sleep)
- 5) Bleaching Tray Reservoirs (you were told they're not needed – but that isn't true! Regular bleaching trays do NOT seal out saliva, and I don't care how large your reservoir is, if saliva contaminates it, it is of no benefit – BUT when you CAN seal out saliva, an extra reservoir of bleach works incredibly well)
- 6) Proper viscosity (if bleaching gel is TOO viscous, the oxygen can't get out of the gel as easily)
- 7) Proper solubility (if bleaching gel is TOO insoluble, the oxygen can't get out of the gel as easily)
- 8) Proper rate of oxygen release (we want it to last for hours)

Don't just listen to others who say that bleach is only good for a few minutes. Don't believe this on blind faith. Ask yourself WHY! What is it that makes bleach go bad in the mouth so quickly? Is it the body temperature? Heck no. If you took a syringe of 15% carbamide peroxide and put the syringe into an incubator set at 98.6°F, do you suppose that the bleach would give off all of its oxygen in 35 minutes or so? Heck no. It would give off some, but not even close to 10%.

So why do THEY tell us that bleach goes bad so quickly, and reservoirs are of no benefit? Does anybody ever think to question this and ask WHY?

The answer is quite simply saliva. Yes, we need saliva to stimulate the degradation of bleach (giving off it's oxygen radicals). But if you have a constant ingress of saliva, bleach is ruined very quickly, including bleach in reservoirs.

But ask yourself what would happen if you could fulfill all of features I listed above. Read the list again. Does it all make sense now?

We'll continue in the next issue of *The Profitable Dentist*. In the meantime, you can learn more at www.DeepBleaching.com – just be sure to look on the “dental professionals” side of the site. Or you can always call Sharon at Evolve (866) 763-7753 – she ran my practice for over 26 years, so she can answer just about any question you have.



“Courtesy of Dr. Walter Mick”. Deep Bleaching before and after of a horrendous tetracycline case.



“NY Lawyer banded tetracycline”. No, Deep Bleaching is NOT just for tetracycline, but if it can do this for tetracycline cases, just imagine the results of all the other cases you do!



“Rod's own teeth”. Rod's teeth, after having tried to bleach them twice, were still darker than a C-4. In 2002 Deep Bleaching then took them past a B-1 and are a bleaching shade 025 today.