



# In Practice



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### TOOTH WHITENING IN YOUR PRACTICE: TREATMENT TIME AND FEE SCHEDULES

One area about which I often receive questions is the relationship between whitening time and fee schedules. Answering this question also involves single arch treatment and whitening tetracycline-stained teeth.

#### TREATMENT TIME

There is a misconception that all teeth will whiten to their maximum in 2 weeks or they will not respond at all. This error discourages private practitioners from treating stubborn discoloration that will respond well to whitening but require a longer treatment time. The Haywood and Heymann initial 1989 paper on nightguard vital bleaching (at-home bleaching using a 10% carbamide peroxide in a custom-fitted tray) prescribed treatment times of 2 to 6 weeks as the expected time frame, and that still is the case.<sup>1</sup> Average tooth discoloration will lighten in 2 weeks or less, but some discoloration requires more time. For these patients, 2 weeks is an unrealistic expectation, while 6 weeks may produce a great outcome.

This is even more true of stubborn stains such as those from nicotine, which may require 1 to 3 months to eliminate. The most difficult stains, such as tetracycline stains, generally require 2 to 6 months of nightly treatment to reduce or eliminate the discoloration. Patients with tetracycline discoloration should be willing to commit to a minimum of 2 months of nightly treatment to determine if their teeth have a chance of success. However, once the teeth begin to change color, it is obvious to the patient and dentist that progress is being made. The goal is to "bleach until they are white," irrespective of the time frame.

#### FEES

This nonspecific treatment time presents a dilemma to the dentist when determining fees. If a fixed fee is given that estimates the maximum possible treatment time (which has been reported to be as much as 12 months of nightly treatment for some tetracycline-stained teeth), then the patient is discouraged from beginning treatment. If the fixed fee is minimal, then the dentist is discouraged from recommending treatment for fear of financial loss or a dissatisfied patient. The best approach is to structure a fee schedule that is fair to both patient and dentist. Which typically is, "pay as you go."

For typical tetracycline-stained teeth, I use the normal initial fee as a starting point. The national average for one arch of at-home whitening is about \$200. A complete whitening kit from most companies is designed for 2 weeks for both arches, so 1 kit will treat 1 arch for about 4 weeks. During this time, the patient should record the amount of treatment time and the number of syringes or tubes of material used. I supply a form for the patient to use to record this information and for clinical observations.

At the recall examination, the dentist and patient determine the amount of material needed for another month of treatment. This amount varies depending on the arch size of the patient, the tray design (with or without reservoirs, scalloped or nonscalloped), and the patient's application technique. (More details on tray design options and material selection can be found in a lecture I have posted at [DENTREK.COM](http://DENTREK.COM).) Because patients know that conservative material usage will result in a less expensive procedure, they become quite adept at using only what is needed to cover the teeth.

The fee for the recall visit is

the normal office visit plus the amount of material for another month of treatment. For this approach to be successful, the dentist should use a product that offers the option of purchasing additional material without purchasing a complete kit. A typical monthly recall fee might be \$45. Now the patient is able to see the cost per month and determine if further whitening is worth the investment. Conversely, the dentist does not lose money if the treatment is longer than anticipated or if patient demands are high.

At each recall appointment, the dentist and patient decide if they are still seeing a change in color. If so, an additional month of treatment is continued; if not, then the whitening process is initiated on the mandibular arch.

#### SINGLE ARCH TREATMENT

I usually whiten only one arch at a time, so I recommend that most practices offer a single arch fee. In my whitening research projects, I have been surprised that after completing the maxillary arch treatment and obtaining a significant improvement, many patients elect *not* to whiten the mandibular arch, even when it is free.

If your practice has only one fee for both arches, you may be creating an obstacle for patients who want to whiten their teeth, but the total cost is too high. A one arch fee allows them to experience whitening, and if they have a dramatic change, they can complete the other arch later, depending on their finances. If the change is not dramatic or they do not care about the mandibular teeth, they have less invested and may choose not to lighten the lower arch.

#### Advantages of Single Arch Treatment

Wearing a tray on only one arch has several other advantages.

*A 1974 alumni of the Medical College of Georgia, Dr. Haywood was in private practice for 7 years in Augusta, Georgia and taught at the University of North Carolina School of Dentistry before joining the Georgia faculty. In 1989, Dr. Haywood co-authored the first publication on nightguard vital bleaching with Dr. Harald Heymann. In 1997, he co-authored the first article on extended treatment of tetracycline-stained teeth using this technique. He has completed further research and over 65 publications on nightguard vital bleaching and the topic of whitening and esthetics.*

First, this approach minimizes the impact of occlusion on the teeth because there is only one thickness of material between the teeth. This can reduce mechanical tooth sensitivity and eliminate joint problems.

For patients with existing temporomandibular disorder, Robinson and Haywood have published a technique using a tray design that covers only the facial of the teeth.<sup>2</sup> For bruxers, you may have to use a thicker material or make several trays.

Single arch treatment also reduces the incidence of chemical tooth sensitivity because there are fewer teeth being treated at one time. The smaller teeth (maxillary lateral and mandibular central incisors) seem to have more sensitivity, so one arch treatment reduces the sensitivity potential.

Probably the biggest reason for one arch treatment is that it improves compliance. Most patients can see the change in one arch compared to the other arch, and they are encouraged to continue. In long-term treatment situations, such as with tetracycline staining, patients often forget how dark the teeth were after several months of treatment and become discouraged. Single arch treatment provides them with continuous comparison between the two arches.

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### IN-OFFICE POWER WHITENING

Despite claims that “jump starting” the at-home procedure with a higher concentration of material or using in-office power bleaching will shorten treatment time, I have not found this to be the case with tetracycline-stained teeth. I have applied 35% hydrogen peroxide, in-office, light-activated power bleaching on one half

of the arch and then treated both sides with 10% carbamide peroxide in a custom tray. In a matter of days of treatment using 10% carbamide peroxide, there is no distinguishable difference between the pretreated and untreated sides to me or the patient. I have also isolated six teeth but only whitened four. The dehydration of the unwhitened teeth in an hour of

treatment time matched the effects of the in-office whitening.

Because the treatment time for tetracycline-stained teeth is long, there is no justification for the additional cost and risk of in-office whitening when there is no final gain. If your office offers in-office whitening as a jump-start treatment, the patient should be presented with the option to take

it or leave it, rather than have to spend the extra money when there is no additional benefit other than a few days of slightly lighter teeth. The outcome will be no better than at-home whitening alone. If your office offers only in-office whitening, then you should learn and offer at-home whitening, or present patients with the option of a referral for the at-home treatment. The lesser fee of at-home whitening, even though treatment time may be longer, makes whitening more attractive to more patients and always has the same or better outcome than in-office treatment.

### PATIENT COMPLIANCE

Some dentists wonder how compliant a patient will be for 2 to 6 months of treatment. The answer lies in how the treatment is presented. Difficult discoloration treatment is like a weight-loss or exercise program. If the patient understands the benefit, and there is a reasonable cost-to-benefit ratio, with reasonable treatment instructions, then the conservative health-oriented person has no problem adjusting to a routine of wearing the tray for months. Long-term wear for whitening is no different than wearing a bruxism splint or an anti-snoring device.

I find that long-term treatment is best rendered by nightly wear of the loaded tray. Compliance is better and the patient gets the best benefit per application with nightly wear, which reduces cost.

Research has shown that while approximately 50% of the peroxide material is used in the first 1 to 2 hours, the remaining material is still releasing peroxide for another 2 to 6 hours.<sup>3</sup> Therefore, if the patient removes the tray after only 2 hours of wear, he or she is discarding half of the active ingredient and lengthening the treatment time (and increasing cost).

### WHITENING VS VENEERS

Several factors should be considered when using extended treatment times for whitening tetracycline-stained teeth. First, the location of the stained area has a great impact on the prognosis for success. Teeth generally lighten from

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the incisal to the gingival area. The tooth also gets progressively thicker from incisal to gingival, with more discolored dentin and less enamel. Teeth that are heavily stained in the gingival area, especially dark blue-gray discoloration, have the poorest prognosis for complete lightening. Conversely, the further away from the cemento-enamel junction the stain resides, the better the prognosis for lightening.

In any situation, there is no way to predict whether the patient will experience success. The patient must be willing to undertake the extended treatment time, recognizing that investing a reasonable amount of time and money is the only way to see if whitening will work. Patients must be prepared that they may not see results in the first few months, although each discoloration responds very differently.

Teeth severely stained at the gingival third may be better candidates for porcelain veneers than nightguard vital bleaching if the patient's esthetic demands are high. However, it is generally best to try whitening first because it may have an excellent to satisfactory effect and eliminate the need for veneers. Even if the result is not as esthetic as veneers, it may be sufficient for the patient. Whitening also may only have a small lightening effect, but that lightening can reduce the amount of opaque necessary in the veneer for masking, which produces a more esthetic effect.

Some dentists have been warned that they must make a choice between whitening or veneers. However, Haywood and Parker have shown that teeth covered by veneers can be whitened from the lingual to remove tetracycline staining and change the apparent color of the veneers by changing the tooth color.<sup>4</sup> Hence, if there is any regression in whitening after esthetic translucent veneers are placed, the teeth can be relightened from the lingual.

Even if there is no dramatic change with whitening, the patient is confident that the most conservative avenues have been attempted first, and that porcelain veneers

are the best option they now have for an esthetic smile. The minor cost of whitening compared to the extensive cost of many veneers makes whitening the first choice for virtually any discoloration.

### CONCLUSION

At-home whitening with 10% carbamide peroxide applied in a custom-fitted tray provides the

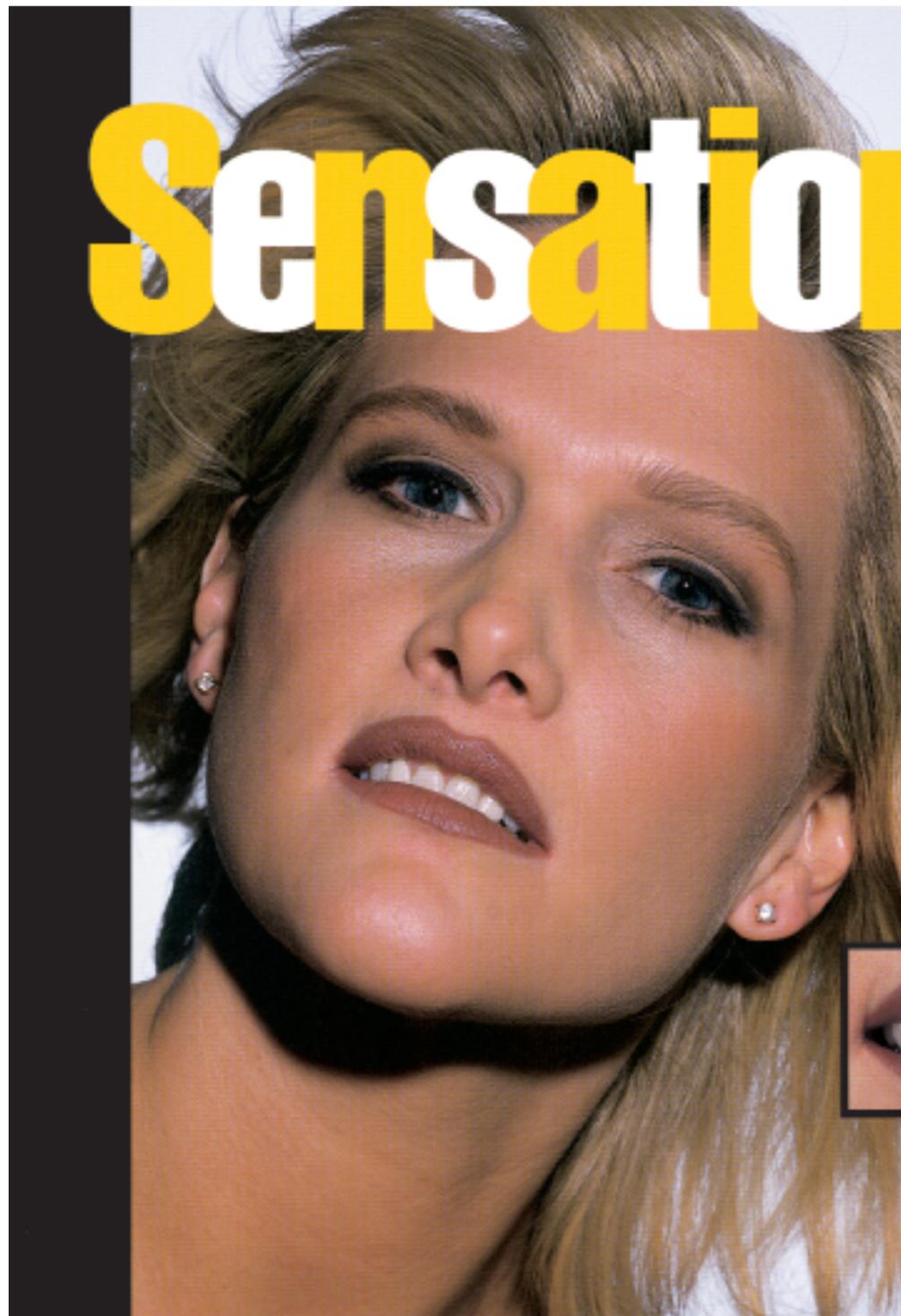
best outcome, and is the most cost-efficient and safest whitening technique available today to lighten tooth color. Private practitioners should have a variety of treatment options, times, and fees to meet the various needs of their patients. ■

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<sup>1</sup> Shohar, I DDS, *Dental Product Report*, 1997

<sup>2</sup> Jantzev, N., Nathanson, D., Giordano, R., *A Research Report on Captek*

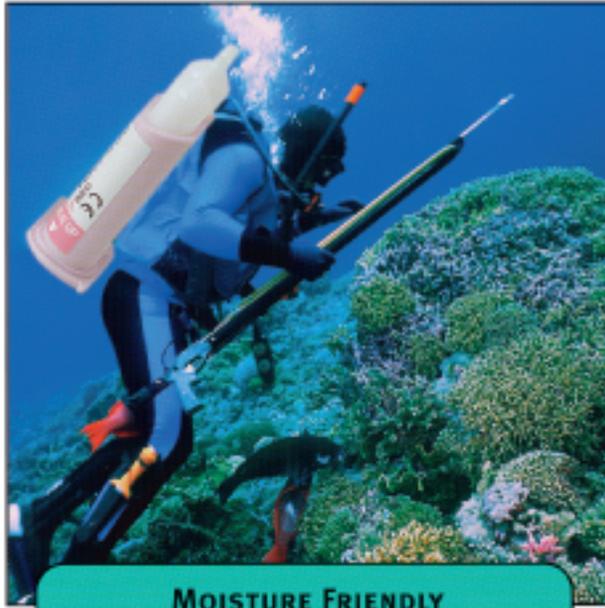
<sup>3</sup> Goodson, M.L., et al., *J. Dent Res* 1999; 78 (special issue) Ab. 138.

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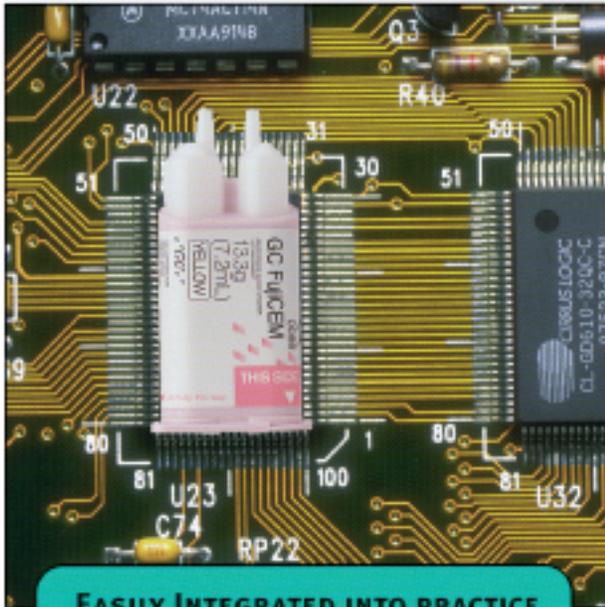
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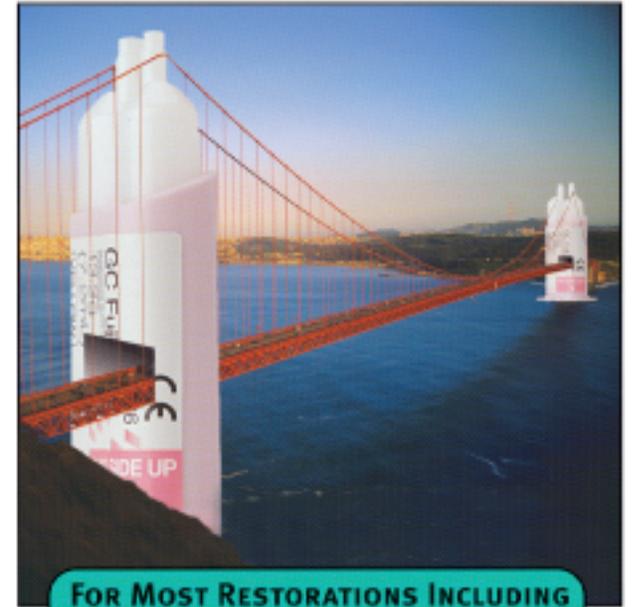
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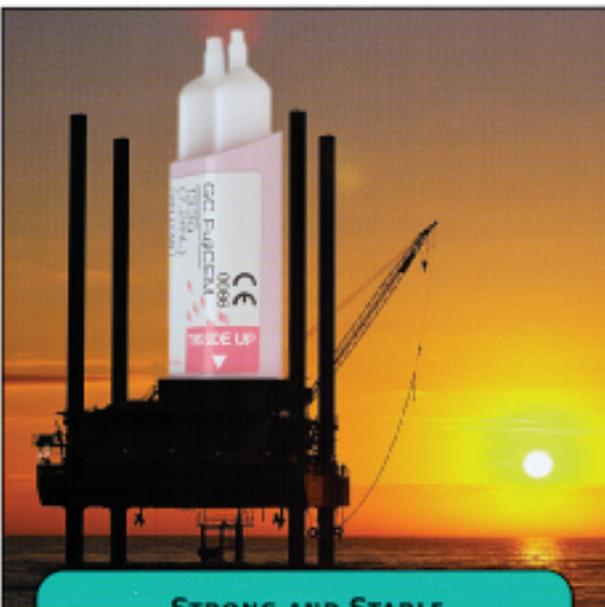
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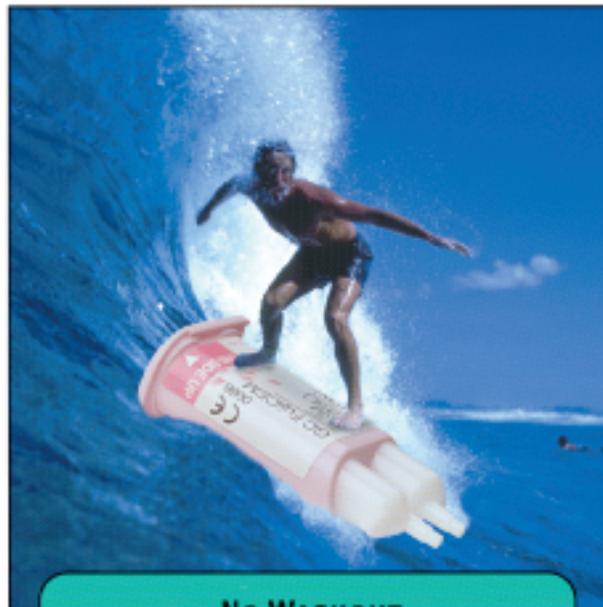
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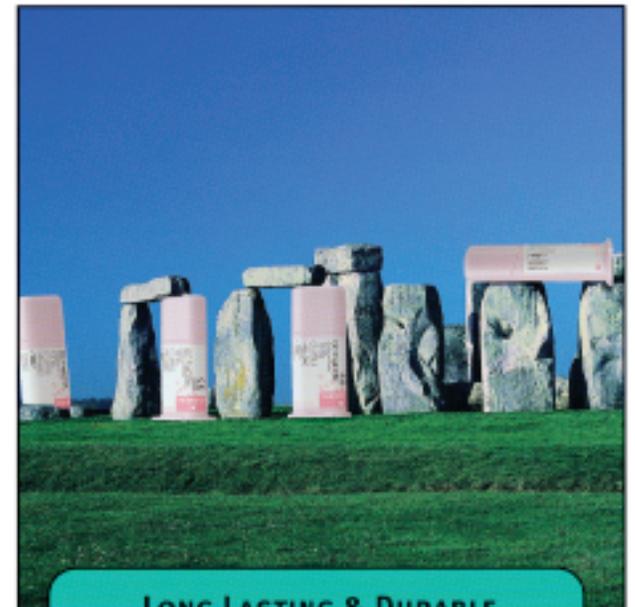
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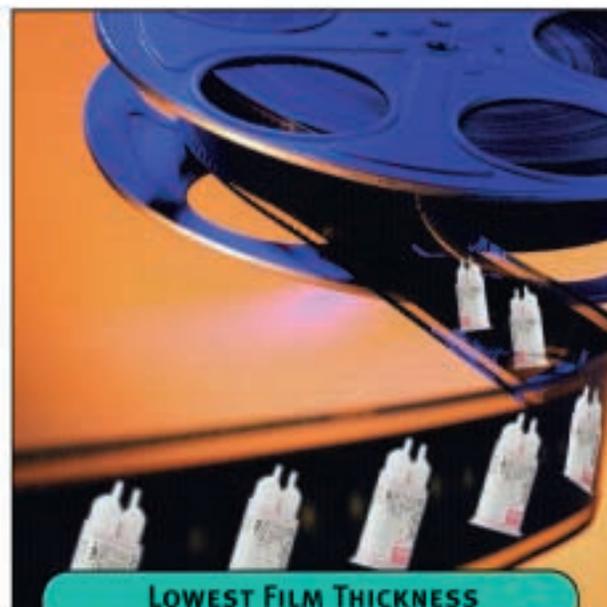
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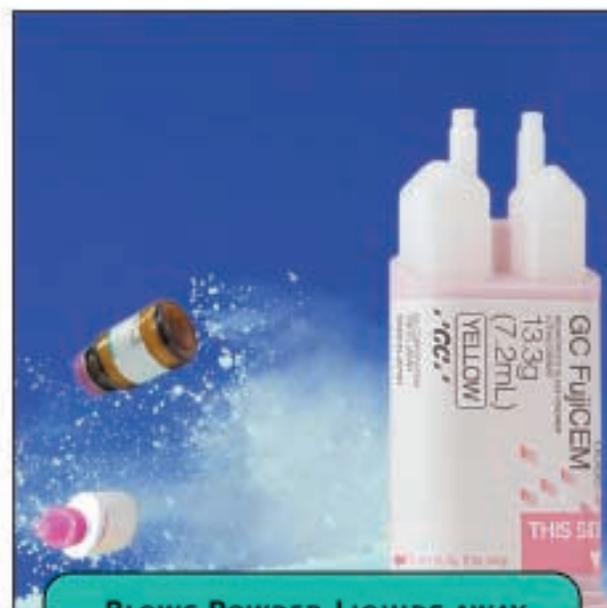
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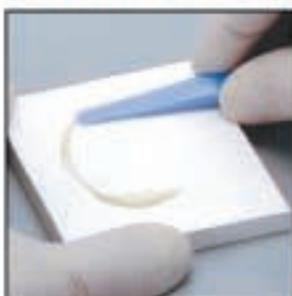
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