



# The sensitivity complaint

AN ESTABLISHED PROTOCOL, ESPECIALLY FOR WHITENING TREATMENTS CAN LEAD TO A PAIN-FREE EXPERIENCE

BY **TRICIA OSUNA**, RDH, BS, FAADH

The age-old question that arises as we strive to find a response (as well as a cure for) is: What causes sensitivity? Patients enter the office with complaints of sensitivity in various areas of their mouths, often caused by a variety of reasons. They want it to be treated without incurring additional pain. Until we can establish the cause, we are not able to make recommendations for a remedy.

Sensitivity can be caused by a number of occurrences in a person's daily life. Most often, we are aware of a patient's sensitivity by their personal description of when and how often it occurs, as well as the magnitude of these sensations. Many patients claim it "always happens when I do ..." So they tend to steer clear of anything that "always" makes it happen. There is also the concern that "it caused sensitivity to my friend, so it will do the same for me," which is not necessarily true. Thermal

changes, tactile sensation, and cosmetic and chemical alterations are all culprits in causing the effect of sensitivity.

Several possible etiologic and predisposing factors are noted for dentin hypersensitivity. Dentin tubules may become exposed as a result of enamel loss from attrition, abrasion, erosion, or abfraction.<sup>1</sup> We know that sensitivity occurs on natural teeth when drinking or eating acidic foods; with extremely hot or cold temperatures; and during the teeth whitening process.

A chemical reaction occurs during teeth whitening, and it is thought that, during this process, the dentinal plugs within the tubules are released. These plugs have been formed in the dentinal tubules to decrease sensitivity. When released, there is fluid flow internally, which excites the pulpal tissue and causes sensitivity. If this truly is how the process

occurs, then replacing these plugs as we whiten, or before and after treatment, we will be able to alter the pain sensations while accomplishing the goal of whitening.

Conversations with colleagues indicate that many want to recommend whitening to their patients, even though they know it may cause sensitivity. Others do not recommend whitening because it may cause sensitivity. Options and protocol can guide us to work with patients, satisfying and meeting their needs.

A patient can simply search on the Internet and find a multitude of remedies to alter their sensitivity issues when whitening, or at any time. As clinicians, we can guide them to the solutions that are right for their personal situation and cover all bases — not just the pain. I did the normal patient internet search and found a variety of solutions on sites such as [www.](http://www.)

ehow.com; www.sheknows.com and www.wikipedia.com. The sites address the tooth whitening process and offer suggestions on how to combat any sensitivity. The suggestions include soft toothbrushes, lukewarm water, anti-inflammatory drugs, and fluoride. Most sites also advise discussing options with a dental professional — a good thing!

Internet searches, as well as dental professional journals, provide a multitude of articles about sensitivity. Applying this information as well as sound recommendations on what to use with whitening agents makes more sense. A large variety of products are used for teeth whitening both in office as well as for home application. When recommending the majority of these products, dental professionals also discuss possible sensitivity with patients. The discussion of possible outcomes includes not only the cosmetic results but also the sensitivity that might occur in the process. During this discussion, products for combatting the potential issues should be explained.

If a patient is sensitive, there is less likelihood that they will complete the whitening process. In addition, if they get to that point, it is less likely that they will move on to complete the remainder of the treatment plan. One treatment feeds into the other, so a happy, pain-free patient is the patient who is more inclined to complete a recommended treatment plan.

Additionally, we know that when patients are not comfortable their oral hygiene care often lacks effort. Their toothbrushing efforts are diminished, which allows for plaque and bacteria buildup, leading to demineralization and the potential for an increase in caries. The right products recommended by the dental team can address pain, lack of good oral hygiene, increased plaque, increased risk of caries, and the recommendations become a priority to consider before, during, and/or after the whitening process. We are familiar with the remineralization products available, so put that knowledge into action.

### EXAMPLE PROTOCOL FOR TREATING SENSITIVITY FOR IN-OFFICE WHITENING TREATMENT

#### Pre-procedure

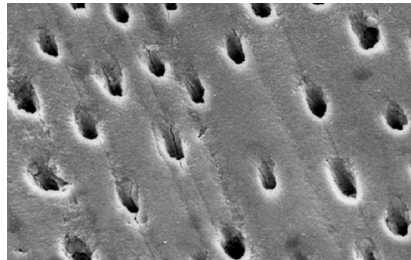
- Deliver Fluoridex Daily Defense (5000 ppm) neutral sodium fluoride sensitivity relief with 5% potassium nitrate twice daily for 10 to 14 days
- 10 to 30 minutes prior, instruct the patient to wear the Relief ACP Oral Care Gel in take-home trays that have been prepared for them, or a fluoride tray
- One hour prior, many offices administer ibuprofen

#### During the procedure

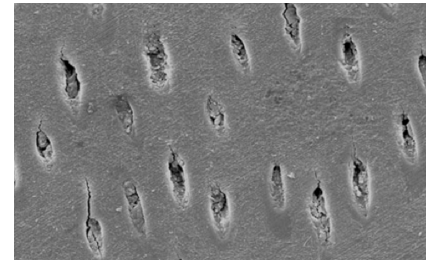
- Protect exposed dentin due to recession with LiquiDAM

#### Post-procedure

- Before handing the patient the post-care maintenance instructions, advise them on the use of the Relief ACP as well as the maintenance whitening product. Immediately following the in-office whitening, use the Relief ACP in the trays for 10 to 30 minutes. The longer the gel is on the teeth the more impact it will have on sensitivity relief.
- If additional ibuprofen is needed, review dosage instructions with patient.



before



after

The most basic description of the objective is to alter sensitivity by plugging the dentinal tubules to halt the fluid flow internally. Dentinal tubules that are not plugged are “ripe” for causing painful sensations. What we use to halt the fluid flow can also provide huge benefits to the patient. The benefits include halting the sensitivity, remineralization, decreasing the caries incidences, and increasing the enamel luster.

Do our patients understand how to use the products? Treating patients who have sensitivity in their daily lives is very common for dental professionals, and we do this by applying varnishes, recommending at-home fluoride toothpastes, and other agents containing CPP-ACP, ACP, CSP, etc. When whitening is the cause

of the sensitivity and a patient wishes to take the next step to the “look good/feel good” gift to them, we need to set up an office protocol for all types of whitening in our office. Selecting the appropriate type of whitening for them — take home or in-office — is also to be discussed.

Considerations when setting up any protocol should include, in addition to sensitivity, addressing the tooth structure itself following any whitening procedure. After whitening, has there been any issue caused by the whitening process? What should we recommend to the patient to increase the luster of the tooth surfaces? Research is demonstrating that the use of remineralization agents after whitening can reverse the decreased enamel hardness caused during the whitening process

after three applications.<sup>2</sup> It is believed that after the use of ACP products along with fluoride, the precipitated ACPs convert into hydroxyapatite, filling micropores and microscopic surface defects.<sup>3</sup> The ability to deliver ACP materials in the form of topical gels, toothpastes, and mouth rinses may provide a broad range of products that can be used to enhance the surface of the teeth<sup>4</sup> (see related sidebar).

Two take home products that work well because they have a desensitizing agent already in the whitening gel are DayWhite ACP (hydrogen peroxide with potassium nitrate and ACP) and NiteWhite (carbamide peroxide with potassium nitrate and ACP). Both of these have the ACP that block the dentinal tubules. So it remineralizes the tooth structure, and potassium nitrate inhibits the pain receptors while also laying down a hydroxyapatite layer, also increasing the enamel luster.

For years, we have suggested products to lessen the sensitivity and hoped that the patients would follow the protocols established for their use. Most of the products on the market work quite well to relieve sensitivity, if it is not disease related.

However a protocol needs to not only be established but also followed for any success. Research has stated, "It would seem possible that someday clinicians will prescribe not only fluoride therapies that will more effectively prevent the formation of new lesions but also cosmetic treatments to enhance the esthetics of tooth enamel."<sup>5</sup> It looks like that time has arrived, what a great win for our patients!

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