

# Endodontic Solutions Online

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The following protocol was submitted by Dr. Ilan Rotstein, Associate Professor and Director of Graduate Endodontics at the Department of Endodontics in the Hebrew University, Hadassah Hospital School of Dental Medicine to the ROOTS forum (roots@ls.canaden.com - www.rxroots.com). The triad of esthetics is bleaching, whitening and ceramic augmentation; this updates the endoesthetic component of that triad.

The walking bleach technique should be used in all situations requiring internal bleaching. Not only is walking bleach effective, it also is the safest and requires the least chair time.

## STEPS IN BLEACHING

1. Familiarize the patient with the probable causes of the discoloration, the procedure to be followed, the expected outcome, and the possibility of future reoccurrence of discoloration. Patient's expectations should not be raised to such a degree that disappointment may result. Effective communication between the dentist and patient before, during, and after treatment will avoid misunderstanding.
2. Record the shade of the discolored tooth with a shade guide and take pictures. From this point the progress of the bleach can be followed. Memory of both the patient and dentist is often unreliable.
3. Take radiographs to assess the status of the periapical tissues and quality of root canal treatment. Treatment failure or questionable obturation requires retreatment prior to bleaching.
4. The quality and shade of any restoration present are assessed; if defective, the restoration must be replaced. Frequently, tooth discoloration results from leaking or discolored restorations.
5. Isolate the tooth with a rubber dam. Interproximal wedges may also be used for better isolation. If Superoxol is used (**not recommended for most cases!**), protective creams (such as petroleum jelly, Orabase or cocoa butter), OraSeal or OraDam from Ultradent Products must be applied on the gingival prior to dam placement.
6. Remove the restorative material from the access cavity. Refinement of access and removal of all old obturation materials from the chamber comprised a most important stage in the bleaching process. Pulp horns or other "hidden" areas should be properly exposed and cleaned.
7. All materials should be removed to a level just below the gingival margin. Appropriate solvents are used to dissolve remnants of the common sealers.

- 8.** A sufficient layer of cement base (such as polycarboxylate, zinc phosphate, glass ionomer or cavit at least 2 mm thick) is applied on the root canal obturating material. This is essential to minimize leakage of bleaching agents. The height of the base over the obturating material should protect the dentin tubules and conform to the outline of the external epithelial attachment.
- 9.** It has been suggested that acid etching of dentin internally by placement of phosphoric (or other) acid in the chamber to remove smear layer and open the tubules will allow better penetration of the oxidizer. It seems that this procedure is not very effective. The use of any caustic chemical in the chamber is unwarranted, because periodontal ligament irritation may result.
- 10.** The walking bleach paste is prepared by mixing sodium perborate powder and an inert liquid such as water, saline, or anesthetic solution to a consistency of wet sand (approx. ratio: 2 g/ml). With a plastic instrument, the pulp chamber is packed with the paste. Although sodium perborate mixed with 30% hydrogen peroxide will bleach faster, in most cases the long-term results are similar to those of sodium perborate mixed with water, and therefore the former mixture should not be used routinely.
- 11.** Excess of paste is removed from undercuts in the pulp horns and gingival area. A cotton pellet is not used but a thick mix of zinc oxide-eugenol (preferably IRM) is applied directly against the paste and into the undercuts. The temporary filling is packed carefully to a thickness of at least 3 mm to ensure a good seal.
- 12.** The rubber dam is removed. The patient is informed that the bleaching agent works slowly and that significant lightening may not be evident for 2 or more weeks. It is common to see no change initially, but dramatic results occur in successive days or after a future appointment and reapplication.
- 13.** The patient is rescheduled approximately 3-4 weeks later and the procedure is repeated if necessary.
- 14.** If at any future appointment (third or fourth) progressive lightening is not evident, further walking bleach treatments with a sodium perborate and water solution may not prove beneficial. In such cases, additional procedures may be attempted; 1) a thin layer of stained facial dentin is removed with a small round bar, 2) the walking bleach paste is strengthened by mixing the sodium perborate with increasing concentrations of hydrogen peroxide (3 to 30%) instead of water. The more potent oxidizer may enhance the bleaching effect. This stronger combination is not used routinely because of the possibility that the more caustic agents may permeate the tubules and damage the cervical periodontium, leading to possible root resorption.

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