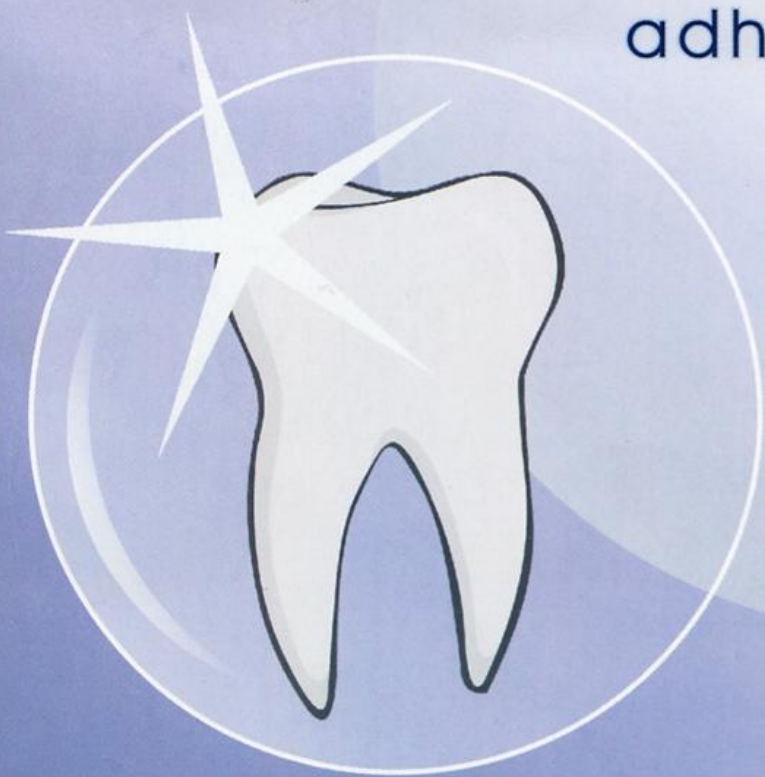


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Mastering Adhesive Dentistry - Tools, Techniques and Materials for Routine Excellence



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About the Author: Dr. Bruce J LeBlanc Following his graduation from LSU School of Dentistry in 1977, Dr. LeBlanc completed the core curriculums of the LD Pankey Institute, along with curriculums by Dr. Peter Dawson and Alvin Filastre. He is a graduate of the initial class of the LSU School of Dentistry Cosmetic Continuum.

Since the early 1980's, his interest in the adhesive bonding revolution has influenced the development of his practice. He presently practices in Baton Rouge, Louisiana, USA, offering adhesive and cosmetic solutions that minimize tooth removal.

Dr. LeBlanc is a product consultant to dental manufacturers, has published on his adhesive technique, and facilitates adhesive dental seminars nationally. Dr. LeBlanc is course director and presenter for "Mastering Posterior Esthetics" at LSU School of Dentistry as well as presenter for the LSU Cosmetic Continuum. Dr. LeBlanc can be reached by email at bjleb@cox.net

Since my earliest years in practice in the late 1970's, I have witnessed a true revolution in dental materials fueled by advances in adhesive products that have totally changed the practice of dentistry. Gone are the days when preparation design was driven by creating mechanical retention to retain restorations or the need to surround teeth with crowns to strengthen them. It is no longer necessary to place porcelain on metal for strength considerations. The effects of these innovations in dentistry are dramatic, giving us the ability today to practice what I refer to as minimal invasive dentistry. Now it is possible to simply remove decay and any surrounding defective tooth and replace what is missing with a wide array of adhesive materials that both strengthens what remains and returns the tooth to its natural appearance. Now it is possible to make adhesive restorations for anterior teeth without preparation that no longer have unsightly metal exposed in the event the gum should recede.

To be part of the adhesive revolution, *it is imperative that a dentist becomes a student of dental materials, choosing materials that best fit the restorative need as well as following meticulous protocol in applying those materials to the teeth.* Although the ability of adhesive materials to solve restorative needs in dentistry is

extensive, improper use and application of materials can result in greatly diminished results and thereby disappointments. In this article, I am exploring the use of direct bonding techniques (one appointment composite dentistry) as one of the tools available for solving cosmetic and restorative issues. I will also detail what I think is a meticulous protocol for correct application of adhesive dental materials.

Protocol for placing direct bonded adhesive restorations.

Essentials: Air used must clean and dry from an oilless compressor to avoid contamination. Curing light should have appropriate output with the correct lightwave range to properly activate initiators of materials used. The light should be routinely checked with a radiometer to ensure it is functioning properly.

Etch and rinse technique using 2 bottle alcohol water based bonding agent:

1) Isolate the teeth to be restored with a rubber dam. Proper isolation of the teeth prevents moisture contamination as well as ingestion by swallowing of materials and debris being removed and is the foundation of excellence in adhesive techniques. I have found no better tool to accomplish this than the rubber dam.

2) Prepare tooth to remove restoration and defective tooth material. Rinse well with water to clean then air dry. (Alcohol can be used to further clean the prepared tooth but tooth should be rinsed well with water).

3) Total etch the preparation and surrounding area of the tooth with phosphoric acid for 30 seconds and then rinse. With a water/alcohol based primer, which I use, dry moderately leaving very slightly moist, almost dry.

4) Shake primer in bottle 1 before dispensing to ensure solvent is in suspension. Apply primer in bottle 1 and massage into dentin and enamel allowing to dry for at least 30 seconds. It is critical with all primers that the solvent is completely evaporated from the applied primer so that full curing of the resin layer will occur. Lightly dry with clean air for about 10 more seconds.

5) Apply bonding resin in bottle 2 to dentin and enamel and cure for 10 seconds.

6) Apply restorative resin in increments of less than 2mm thickness and cure each increment. (About four to 6 for a molar). Ramp curing is preferable to reduce shrinkage of the composite during initial curing. This can be accomplished by

holding the light farther away during initial curing then closer for final curing.

7) After completion of the composite buildup, apply unfilled resin sealer and light cure. This fills in any voids or defects for a smooth final surface.

8) Place deox glycerine over resin for final light cure that results in a fully cured outer layer.

9) Remove rubber dam. Adjust contours and occlusion with finishing burs and bring to a high shine with polishing points and brushes.

Optional - re-etch, seal, and reapply deox glycerine and final cure to ensure that margins are properly sealed.

Below are examples of restorations that utilized the above detailed minimally invasive direct bonding composite technique. Minimal tooth removal and replacement with adhesive composites restored these teeth to the original natural appearance. Under isolation with a rubber dam, the defective materials and decay were removed and the proper protocol was then followed to complete the restorations.



1a



1b



2a



2b



2c



3a



3b