


SUBSCRIBE: e-newsletter magazines

[About Us](#) | [Site Map](#)
[advanced](#)
RDH

**Volume 99 Issue 6
June, 2009**

- ✦ [Current Issue](#)
- ✦ [Issue Archive](#)

Resource Center

- ✦ [Oral Cancer Prevention Center](#)
- ✦ [Dental Continuing Education](#)
- ✦ [Dental Practice Management](#)
- ✦ [Under One Roof Blog](#)
- ✦ [From The Editors Blog](#)
- ✦ [Download Center](#)
- ✦ [Buyers Guides](#)
- ✦ [Media Kit](#)
- ✦ [White Papers](#)
- ✦ [MSDS Sheets](#)
- ✦ [Application / Technique Guides](#)
- ✦ [Classified Ads](#)

[Home](#) > [Issue Archive](#) > [RDH](#) > Article Display

 Sponsored by
[ineedce.com](#)

[Print this article](#)

[Email this article](#)

Text Size


[BOOKMARK](#)

[Add RSS Feed](#)

Caring for Composites: A Prophy Paste's Story

Trish Jones

June 3, 2005



Consumer excitement and demand for esthetic and reconstructive dentistry is on the rise. Thanks in part to media attention, dental consumers are becoming more savvy about dental techniques and materials. Every day, articles and advertisements in magazines, newspapers, mail, and electronic media are written pertaining to smile makeovers. Many dental offices are now offering "spa dentistry." Television shows are capitalizing on how a smile can bring about positive changes in a person's life. As the demand for tooth-colored dentistry increases, so does the responsibility for maintenance and special care. Part of that care deals with polishing. It is extremely important that the dentist and hygienist contribute to the longevity and integrity of esthetic restorations. Smooth restorative surfaces must be maintained through utilization of the appropriate polishing agents, since a smooth surface decreases the potential for stains and plaque retention, and minimizes surface deterioration.

Statistics

Television makeover shows, such as "Extreme Makeover," have been sparking an interest in the esthetic aspect of dentistry. The Las Vegas Institute for Advanced Dental Studies (LVI), a postgraduate teaching facility for dentists, has been airing television commercials during "Extreme Makeover." In addition, LVI advertises in both In-Style Magazine and O, The Oprah Magazine. Successful results of these advertisements have been tracked and documented. During a one-month period, from February 2004 to March 2004, 3,533 calls were taken by a call center. Since August 2003, there have been a total of 9,730 calls. LVI's Web site (www.lvidocs.com) has received 57,546 unique visitors since its creation at that time. February and March 2004 totaled 36,595 unique hits alone. Of course, the question arises as to how many of these interested people are following through with dental appointments for esthetic dentistry. At this point, \$2.2 million of completed care has been recorded for dentists in the United States and Canada who are participating in the advertising campaign. The awareness for esthetic dentistry is ubiquitous, and apparently consumers are following through with restorative care.

The longevity of esthetic dental materials today is dependent on several factors. One key factor is employing the correct


RDH

 Looking for more news and information? Search our archives. [Click here!](#)
RECENTLY ARCHIVED ARTICLES

[Noise-Induced Hearing Loss in Dental Offices](#)
[Biofilm Removal](#)
[Dentsply speakers](#)
[Expected, not experimental](#)
[Industry News](#)

 Interested in a subscription to RDH Magazine?
[Click Here to subscribe!](#)
[Click Here to subscribe to the RDH Feed.](#)

Increase Your Knowledge

[Click here](#)
 for more information

maintenance care protocol for the appropriate restorative material. It is imperative for the dentist and hygienist to distinguish between the different restorative materials present in a patient's mouth. Another factor to consider is the achievement of the end result, which is removing external stain, smoothing a rough surface, and/or polishing to restore luster.

Restorative options

Restorations consist of either direct or indirect fabrication. Direct systems are comprised of composite resins classified according to the filler particle size, such as microfill composites, hybrid composites, glass or resin modified ionomers, compomers, and nanomers. Indirect or laboratory-fabricated restorations include composite resin and porcelain. These materials have different polishing factors that should be taken into consideration during a maintenance or smile care appointment.

Direct

Microfill composites polish to a high shine due to their small particle size (0.04 to 1 micron). With proper polishing, surface luster can be recaptured easily with minimal effort. Microfills are often utilized in Class III and Class V restorations and for veneers. Hybrid composites are composed of particles of various sizes of minifill and microfill (0.04 to 1 micron), which makes it difficult to attain and preserve a high luster, as compared to a microfill composite. Hybrids are often used in posterior teeth for Class I or Class II restorations, and for Class IV anterior restorations, as they have strength and can be polished to a smooth surface. Glass or resin-modified ionomers tend to have a moderately rough surface that picks up stains easier than composites, which have a smoother surface. When these materials are polished, a smooth surface is much more achievable than the high shine found with microfills. Compomers are a combination of glass ionomers and composite materials. Smooth surfaces are not as attainable as that of composite resins. Nanomers, or nanocomposites, are comprised of nanoparticles and nanoclusters, which are 0.001 of a micron. The particles polish well and have polish retention similar to a microfill, but have the strength and wear properties of a hybrid.

Indirect

Porcelain and ceramic are the foundation for indirect esthetic options and are the longest lasting materials in dentistry today. All-ceramic materials offer the advantages of delivering the most natural, predictable esthetic results. Pressed ceramics, which are fabricated according to the lost wax technique, offer marginal integrity, strength, and wear consistent with enamel. They consist of leucite-reinforced, low to medium fusing, fine grain glass particles. Pressed porcelain restorations are bonded to the tooth structure, as are traditional, built-up, porcelain (stackable) restorations. As long as these restorations are properly maintained, they have the ability to last 10 years or more. The glaze on ceramic restorations will retain its gloss for many years, unless it is removed during insertion and finishing, and/or adjusting. If the glaze is compromised, more aggressive techniques may be used to restore luster. This may include using a finishing diamond, intraoral rubber finishers, and polishers or discs, followed with a diamond paste.

Resin cements used to bond the restorations may abrade more easily than composites, since they do not have as much filler loading. Also, they may have a tendency to stain, as some products have a high water sorption compared to restorative composite. The porcelain-resin cement interface may also present roughness, which may accumulate stain and plaque. Give consideration to stain identification and roughened porcelain when polishing margins of ceramic restorations. The maintenance protocol for lab-fabricated composite restorations should follow the same practice as that of direct composite restorations. Most manufacturers use microhybrid composites for their indirect material due to the increased polymerization of the resin matrix, which produces more strength, more wear resistance, and increased surface hardness.

Indirect restorations are laboratory fabricated, with the exception of CAD/CAM (computer-aided design/computer-aided manufacturing), which can be a chairside option for the dental



office. CAD/CAM restorations should follow the same maintenance regimen as porcelain.

Exceptional smile care

Dental practices that include postoperative smile care are committed to the long-term success of the patient's investment. Inappropriate polishing agents can compromise many characteristics of esthetic restorations. They can abrade, scratch, dull the glaze, or alter the shade, color and texture, as well as compromise the marginal integrity of the restorations. For the patient, this can diminish the longevity and appearance of the newly rejuvenated smile. It is a valuable asset to the dentist, the dental hygienist, and the rest of the dental team to offer superior smile care service in addition to routine hygiene care.

RDH responsibility

The hygienist's responsibility in maintaining esthetic dentistry is enhanced when the stability and longevity of the restorations is considered. The hygienist should be able to recognize the different dental materials present and identify any roughness that may contribute to stain and plaque retention.

The goals for the hygienist are to provide smooth surfaces, which can retard bacteria and stain retention, preserve marginal integrity by controlling stain, and inform the patient of habits that can contribute to the deterioration of the restored smile. These habits may include tea, coffee, and alcohol consumption; tobacco usage; and other habits that may interfere with the longevity of the restoration.

The goal of polishing involves creating the smoothest surface possible while retaining a glossy or lustrous shine, whether on the restoration or the natural tooth surface. Selective polishing involves polishing only selected tooth surfaces or not polishing at all. Studies have shown that inappropriate abrasive agents can remove significant amounts of enamel and/or dentin and also roughen the surface of restorative materials. The criteria for selective polishing includes whether or not the smoothness of the surface can be increased, and/or if stain needs to be removed. If polishing is required, selection of an appropriate abrasive paste is critical. The polishing factor of the dental material also should be reviewed. For example, if polishing a hybrid, a smooth surface is attainable, but achieving a shiny surface like a microfill is challenging.

Abrasives

Polishing pastes are abrasives that differ in particle size and particle hardness. The finer the abrasive, the smaller the scratches created on the tooth surface. When the scratches are smaller than the wavelength of light (0.5 μm), the surface appears smooth and shiny. When the particle hardness exceeds the hardness of the surface, the material can be polished most effectively. If the material being polished exceeds the hardness of the abrasive, the abrasive wears down and the surface does not polish as desired. A few abrasive agents utilized for polishing include aluminum oxide, pumice, tin oxide, calcium carbonate, diamond particles, and zirconium silicate. Variable factors affecting the outcome of polishing agents include the speed, shape, pressure, and rate of polishing. Taking this into consideration, one polishing paste may not be appropriate for all tooth and esthetic restorations. Although one agent may be better than another, it is dependent on the final goal: smoothing a surface, removing stain, or creating luster. Originally, polishing pastes were not developed for polishing esthetic restorations. In the last few years, however, several companies have recognized the need for esthetic polishing agents.

Unique abrasive particle

Clinpro™ Prophylaxis Paste by 3M ESPE utilizes a unique abrasive particle called perlite. Perlite is a volcanic crystal material with sheet-like geometry. As a one-of-a-kind prophylaxis paste, it starts out coarse but quickly breaks down to a fine paste for quick stain removal that offers high luster polishing with minimal abrasion. It converts from a coarse particle to a fine particle within seconds of being applied to a tooth. During clinical use, the fragile crystal platelets are crushed and rounded in the rubber cup or brush by pressure, thereby transforming them from a cleaning paste to a

polishing paste.

Clinpro is indicated for stain removal on esthetic restorations that possess extrinsic stain, and for smoothing roughened tooth and restorative surfaces. It has the capability of removing stain and soft bacteria, while simultaneously maintaining the integrity of the restorations with minimal abrasion. Some advantages of this product are a neutral pH value, significantly less abrasion than other leading brand pastes, and comparable stain removal. According to a research study by the University of Minnesota, School of Dentistry, using Clinpro prophy paste results in significantly less gloss reduction on a microfill surface than using a regular coarse paste. Therefore, the patient's smile is less compromised when polishing with Clinpro. The paste comes in two patient-pleasing flavors - mint and bubble gum - and is available in individual unit-dose cups with fluoride.

Slight modifications of current polishing techniques are required when using Clinpro prophy paste. Handpieces should be operated below 3,000 rpm. Adaptation of a soft cup is preferred so that the lip of the cup can be flared slightly into the sulcus area. The cup should be adequately filled with the paste and held at a 90-degree angle against the tooth. Applying intermittent pressure strokes on the tooth and keeping sufficient paste in the cup will help avoid any frictional heat. A limited number of teeth (two to three) should be treated at a time. Fresh paste should be used on the enamel surface or lingual surface first, since initially the paste is more abrasive. Following the manufacturer's complete recommendations will ensure proper results and success of the product.

Most pastes are either for stain removal or for polishing. The advantage of utilizing Clinpro prophy paste over other polishing pastes is that it's designed to accomplish both purposes. Clinpro is a universal paste for composite or porcelain restorations. When used properly, it can be an outstanding option for the hygienist maintaining esthetic dentistry.

Other innovative prophy pastes are discussed in the "Update on Marketplace" article in this issue.

With the increased awareness and demand for esthetic dentistry, it is advantageous to stay current with dental materials and maintenance care options. Esthetic excellence must include superior maintenance of restorations in order to preserve the patient's smile. It is critical for the dentist and dental hygienist to be aware of the different types of restorations used, so that the proper maintenance protocol can be employed. Patients perceive special smile care as an additional benefit of your care, because it demonstrates your commitment to their oral health.

Today, dentistry can create beautiful smiles, but it is vital to use superior polishing materials to maintain them. The materials greatly enhance the success of esthetic dentistry for both the dental professional and consumer.

Trish Jones, RDH, BS, is a technical advisor for Aurum Ceramic Dental Laboratories and serves as a company representative at various dental conventions. She has an associate's degree in dental hygiene and a bachelor's degree in health-care management from Southern Illinois University.

References

- 1 Barnes C, Covey D, Walker M, Johnson W. Essential selective polishing: the maintenance of aesthetic restorations. *J Pract Hyg* 2003; 5:18-24.
- 2 Hodsdon KA. Postoperative care for aesthetic restorations: a challenge to dental hygienists. *J Pract Hyg* 1998; 7:19-24.
- 3 Jones LA. Comparative indications for esthetic indirect restorations: a dentist's guide. *Contemp Esthet and Restor Pract* 2004; 2:56-61.
- 4 Lu H, Roeder LB, Powers JM. Effect of polishing systems on the surface roughness of microhybrid composites. *J Esthet Restor Dent*. 2003; 15:297-303.
- 5 Miller M. 2003 Reality. Houston, Texas. Reality Publishing Company; 2003.
- 6 Okuda W. Aesthetic maintenance protocol in cosmetic dentistry. *J Pract Hyg* 2002; 5:31-34.
- 7 Radz G. Conservative treatment planning in the posterior quadrant: the use of traditional and modern restorative materials. *Practical Procedures & Aesthetic Dentistry*, 2004; 1:17-22.
- 8 3M. Clinpro Prophy Paste and Disposable Prophy Angle. Technical Product Profile. 1999.
- 9 Wilkins EM. Clinical practice of the dental hygienist, 8th ed. Philadelphia, Pa. Lippincott, Williams & Wilkins 1999; 625.

Maintaining Your Good Looks

By Michael Miyasaki, DDS

More than ever before, esthetics has moved to the forefront of our lives. Not only is reality-based television demonstrating how lives can be changed by improving a person's self-esteem through esthetic enhancement, but it also is finally giving the public a palatable education on what dentistry can offer in regard to these cosmetic makeovers. Our desire to do what's best for our patients has given us cause to learn how to best provide esthetic restorations, but we also must be aware that the care of these restorations is different than that required by the traditional gold or amalgam restorations.

Esthetic restorations may be fabricated of resin or porcelain materials and more often than not have many margins, which are supragingival. We no longer have to bury the gingival margins below the gum to hide ugly, dark-metal copings. And, since we are often taking advantage of the properties of adhesive dentistry, we are doing fewer full-coverage crowns and more conservative inlays and onlays, much to the advantage of our patients. Periodontally, we're providing healthier restorations, while restoratively strengthening and preserving more tooth structure.

Even if you are not currently providing these types of conservative esthetic restorations in your practice, you will have patients who require maintenance of their esthetic restorations. We need to care for these esthetic restorations in the proper manner to prevent decay, marginal breakdown, and maintain the esthetic appearance incorporated in their color and polish.

It is, therefore, increasingly important for both the patients and dental team to have knowledge of the different restorative materials, how to identify them, and how best to care for them. Resin restorations, being fabricated of a relatively soft material, need to be cared for differently than porcelain restorations.

Hygienists provide the preventive treatments, including prophylaxis, in most dental offices. Thus, it is imperative that they identify the type of restorations present and understand the proper way to care for them. Using a pumice abrasive or, worse yet, an abrasive prophylaxis jet could remove the characterization built into the restorations by the skilled and artistic laboratory technician or dentist. And of clinical importance, the margin or margins could be ditched or compromised, accelerating the demise of the dentistry.

We are fortunate 3M ESPE has developed a quality product, such as Clinpro prophylaxis paste, to make our jobs more effective and easier, while increasing the longevity and esthetics of our trusting patients' dental work with a product that also tastes good. I hope you take the time to share the important information in hygienist Trish Jones' article with your entire dental team to ensure that proper care is given to your patients to preserve their teeth, restorations, and smiles.

|  [Add RSS Feed](#)

[More May, 2005 Articles >](#)

[Search Archives >](#)

Pennwell Dental Group Article Categories:

[Dental News](#)

[Dental Headlines](#)

[Video News](#)

[Dental Products](#)

[Industry News](#)

[Current Issue Table of Contents](#)

[Search Products Buyer's Guide >](#)

[Magazine & E-Newsletter Subscriptions >](#)



