# Are you treating planned cases or treating teeth to stay busy?

Brian Lesage

## Introduction

Historically, dentistry has been a "fix-it-to-relieve-pain" profession. Patients present when they have pain, lose a filling or crown, or chip or fracture a tooth, or have swollen gums, among other acute occurrences that bring them to the dental office.[1] Within the last 2 to 3 decades, however, individuals have become more conscientious about their appearance, more astute about dentistry's capabilities, and more cognizant of the value of an attractive and healthy smile.[1,2] As a result, dentists may encounter a mix of patients: those who just want to prevent and relieve pain, those who want the dramatic cosmetic effects that today's dentistry can provide, and those who want long-lasting treatments that satisfy both requirements. So, the question is, are you busy treating planned cases, or treating teeth to stay busy?

Both in mainstream media and by dentists themselves, prevention in dentistry has been traditionally thought to encompass brushing, flossing, regular cleanings, and semi-annual visits. Regular and established patients present every 6 months (or more frequently) for check-ups and scheduled hygiene procedures. In the "prevent it" or "find-it-and-fix-it" model, dental treatments focus on fillings when pain ensues; restorations when teeth chip, fracture or crack; or endodontic therapy when infection and trauma dictate. Periodontal treatment may be required when gingivitis has progressed to periodontal disease, and extractions may be required to resolve space issues or relieve patients from the pain of severely decayed teeth. For pediatric patients, sealants and fluoride treatments are part of recommended preventive protocol, and orthodontics are advised when teeth require straightening or bite issues are discovered.

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Such procedures and necessary treatments do keep dentists and their treatment team busy. Dental insurance coverage, as well as how diagnostic services and restorative treatments are reimbursed, contribute to the "prevent it" or "find-it-and-fix-it" mindset. Yet, even with routine prevention and skilled and timely treatment of acute symptoms, patients still may not be receiving the comprehensive oral care they need to ensure their natural oral structures – or any restorations they receive – will function predictably for the long term. As a result, dentists keeping busy by providing technically accurate single-tooth restorations and treatments to resolve patients immediate problems may only be maintaining their busyness, rather than the longevity of their dentistry.

On the other hand, the public's awareness of, and increasing desire for, cosmetic dental procedures to enhance their appearance also have kept some practices busy. According to the American Academy of Cosmetic Dentistry (AACD), member dentists surveyed in 2007 about the procedures performed in their practices indicated that cosmetic dentistry-related revenue increased to an average of $495,000 per practice. This suggests an estimated $2.75 billion (a 15% increase during 2005) across the 5,500 practices represented by the survey sample.[2]

However, the long-term function of any dental treatment, whether completed to correct structural problems or achieve cosmetic goals, depends upon the stability and health of the oral environment and the foundation on and in which restorations are placed. Not surprisingly, dentistry has been experiencing a paradigm shift during the last 10 to 15 years toward a risk assessment and management model. This model emphasizes a systematic case planning approach for delivering continuous care and treatments with predictable outcomes.[3] Simultaneously, the profession is embracing minimally invasive (MI) techniques that preserve natural

tooth structure, as well as redefining what constitutes aesthetic dentistry. Perfect imperfections are no longer considered as unaesthetic as they once were.[4-6]

## Combining minimally invasive and risk assessment philosophies

MI and minimal intervention dentistry result in less destruction of tooth structure than conventional techniques and help to curtail the restoration/re-restoration cycle.[7] When feasible and appropriate, MI techniques (such as tooth whitening, orthodontics, and/or direct composite restorations) can produce the dramatic and aesthetic results patients want and the professional satisfaction that dentists crave.[4]

Paramount to sustaining a MI approach to treatment is ensuring that the least amount of intervention, or further removal of natural tooth structure, will be necessary. This can only occur based on a thorough screening and examination of patients at the time they present (or soon thereafter when new patients present with a dental emergency) to determine the presence or absence of risk factors that could negatively impact their oral health prognosis and the longevity of proposed restorations or treatments.[3,8] Comprehensively assessing a patient's dental condition therefore requires a systematic approach for evaluating orofacial aesthetic, functional, structural, and biological/periodontal factors that impact oral health.[8-11]

Systematically undertaking a patient examination enables dentists to address oral/dental problems and decrease the likelihood that they will occur in the future. Simultaneously, it forms a blueprint for planning responsible aesthetic treatments to meet the patient's objectives.[10,11] Once a thorough understanding of the overall oral condition is established, dentists then can elaborate their findings to the patient and explain the consequences (ie, risks, disadvantages, and prognosis) and benefits of the desired treatments or no treatment.[12]

Of course, patients who present with a true dental emergency that is causing acute pain should be treated quickly and palliatively.[13]

Dental emergencies today include aesthetic issues such as fractured or chipped teeth in the smile zone or breakdown of prior composite or ceramic restorations. Emergency patients – particularly if they are new to the practice – represent opportunities to provide a high level of dental care to individuals who may need and/or want further treatment.[14] However, the emergency dental visit is not the appropriate time to conduct a comprehensive examination or to present an entire treatment plan.[13,14]

Unfortunately, a perceived shift from service toward profit has given dentistry a bad reputation in some patients' eyes.[15] Emergency patients are not initially interested in long-range and potentially expensive treatment plans, but rather want relief, and to know or better listen and understand what their immediate needs are.[13] Alternatively, patients who present with no pain might not feel that they need any treatments other than what they request. In both instances, the thorough examination, patient-focused treatment plan, and exceptional communication skills will enable patients to understand their dental needs and the benefits and value of the proposed treatment.[16]

## Get busy planning predictable treatments

To get busy treating planned cases, consider how you handle new patients and emergency patients that enter your practice. Do you have a system or triage that takes place to ensure they stay part of your practice and integrate into your practice philosophy?

When new emergency patients present to the practice, treat them promptly but avoid discussing a comprehensive treatment plan, which could put pressure on them and discourage them from returning for follow-up care.[13] Instead, emphasize that the emergency visit was to relieve pain and/or fix an immediate problem, but that to ensure similar problems don't occur with other teeth, a follow-up examination would be advisable.[13] The follow-up new patient exam in my practice is a one-hour appointment that the doctor conducts.

Because new patients need and want guidance to understand what's in their best interest, they should have a complete examination and risk assessment.[10,11,13] Once the findings are reviewed with them and explained in terms they understand, a treatment plan can be developed and presented, along with a written estimate.[13] In my practice, this follow-up appointment occurs after I have studied all the collected data.

Exactly how this takes place depends upon your practice philosophy. Is the practice insurance based, fee-for-service, or a combination of both? Are your treatment plans based on the patient's insurance coverage, yearly maximum, or on comprehensive aesthetics? Do you know how to convert your average insurance-minded individual into a patient who sees, understands, and values his or her comprehensive dental needs?

The process begins with screening and examining patients as soon as possible after they present for the first time, either for consultation about a specific aesthetic request or for treatment of an acute problem. Understandably, part of evaluation and screening involves oral cancer screening, the hard tooth structure (ie, enamel and dentin remaining that

would dictate restoration and preparation type), soft-tissue probings and architecture, caries, tooth color and alignment, and occlusal/functional factors, including a temporomandibular joint disorder and muscles of mastication palpation.[3,10,11] It is only by understanding the patient's condition and any risk factors that could impact treatment outcomes that an appropriate treatment plan can be comprehensively developed.

Then, it is incumbent upon dentists to ask patients what is important to them: reparative dentistry or comprehensive long-term dentistry, treating the immediate acute condition versus managing the underlying risks for and causes of the problem. Patients also should be prompted to consider how important conserving natural tooth structure is to them, or how much priority they place on preventing the need for more aggressive, expensive, or complex procedures (eg, endodontic therapy, periodontal treatments).[12]

Combined, the examination and answers to these questions can help dentists build patients' understanding of what is needed to provide them with what they want and the prognosis of that desire.[10-12] Patients must comprehend the risks associated with different treatments or no treatments, as well as the implications for the future of the decisions they make.

Of course, just because dentists have conducted technically competent and thorough examinations does not guarantee that patients will accept the treatments that will establish and help maintain their oral health. Dentists also must be competent in communicating their recommendations and facilitating codiagnosis with patients.[17] This ability is predicated on interpersonal skills and theories of motivation that enable dentists to convey to patients how integrated treatments are in their best interest, not just procedures that are needed.[16]

Using intraoral photography, computer imaging, face-bow mounted study models in centric relation on a semi-adjustable articulator, and other communication tools can help patients visualize and comprehend the conditions affecting them immediately and that will have an impact on dental treatments in the future.

Ultimately, it is the dentist's experience and clinical knowledge that will determine the appropriate treatment plan based on an individual patient's situation and demands. Ideally, responsible aesthetic dentistry can occur when total dental care that addresses all health-related issues is combined with the patient's aesthetic concerns to deliver MI treatments. Patients' needs, combined with their wants, as reflected in a comprehensively planned treatment with preservation of tooth structure in mind, is the simplest way to define responsible aesthetic dentistry.[6,12]

Comprehensively treating patients to satisfy their aesthetic needs while considering functional, structural, and biological requirements and risk factors helps to ensure happier and healthier patients and a fulfilling dental practice. The following case illustrates how a comprehensive approach to dental health prevented ongoing reparative (ie, patch) dentistry that originally failed with this patient. Rather, conducting a comprehensive examination and work-up allowed all areas of dental health to be addressed.

## Case report

A 30-year-old female presented to our office for the repair of her fractured right central incisor (Figure 1). At the time of presentation, the patient displayed a Class IV fracture on tooth No. 8, stating that it had been broken several times during the past couple of years (Figures 2 and 3).aesthetic and functional issues of

What to do in this type of situation leads to several questions. Should the tooth be fixed quickly or definitively in the middle of a full schedule of patients? Should the

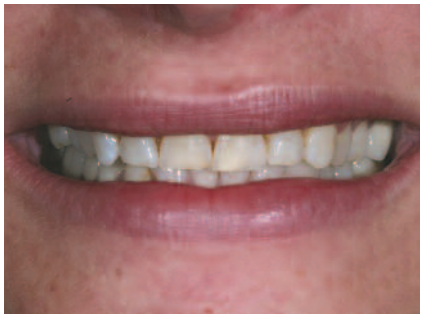


*Figure 1: Smile view showing the patient's Class IV fracture on tooth No. 8.*

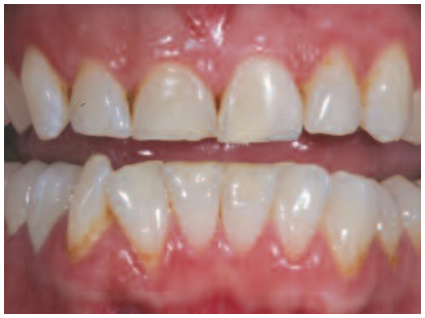


*Figure 2: Retracted view, highlighting the fracture on tooth No. 8. Additional aesthetic issues for future comprehensive discussion include damage to all incisal edges, reverse smile-line, rotated and crowded teeth, tooth size discrepancies, incorrect zeniths, and stained/discolored teeth.*

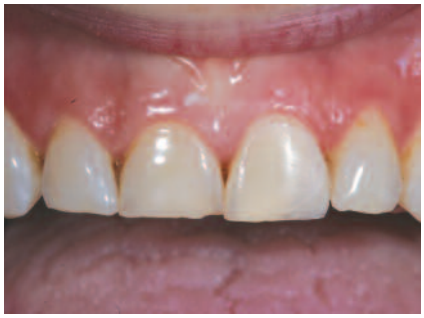
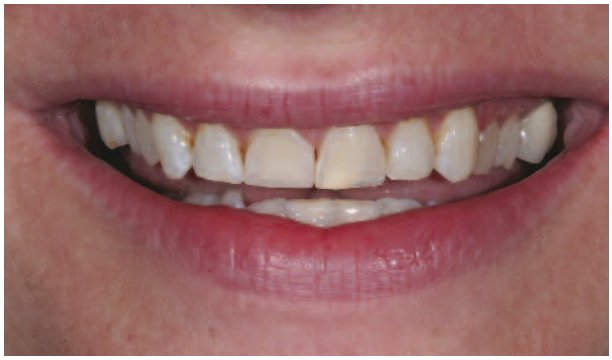
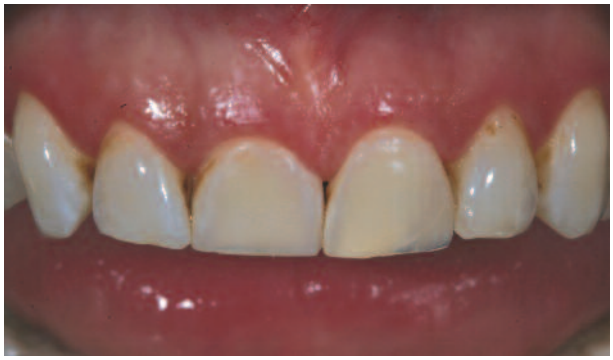


*Figure 3: Close-up view emphasizing aesthetic and functional issues of upper central incisors.*





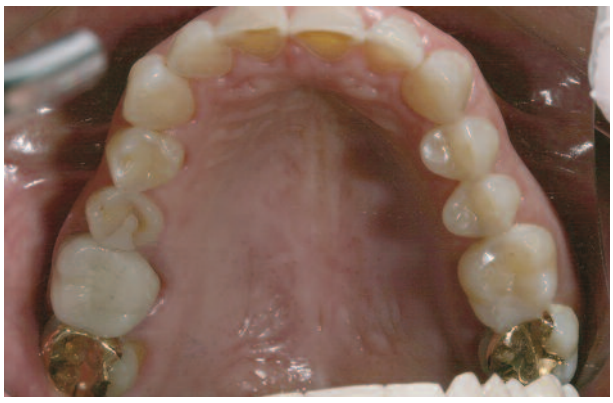
***Figures 4 and 5: The incisal edge was repaired using 2 shades of composite, creating a seamless restoration. Note the severe discoloration and enamel breakdown of all 6 anterior teeth interproximally. Does the patient desire any other enhancements?***

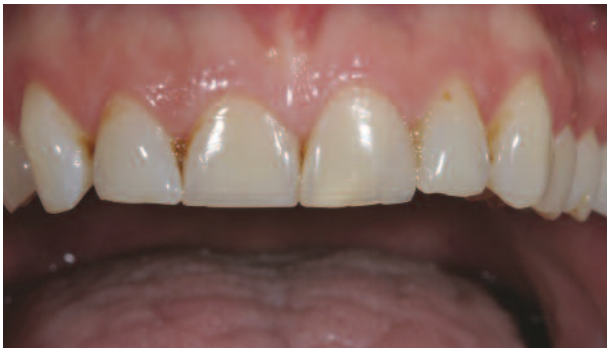
patient be rescheduled for the repair when there is sufficient time? Or should the causes of this emergency/dental pathology be determined in order to address long-term dental health issues? In this case, a quick aesthetic fix of the incisal edges was completed using 2 shades of composite (Figures 4 and 5).

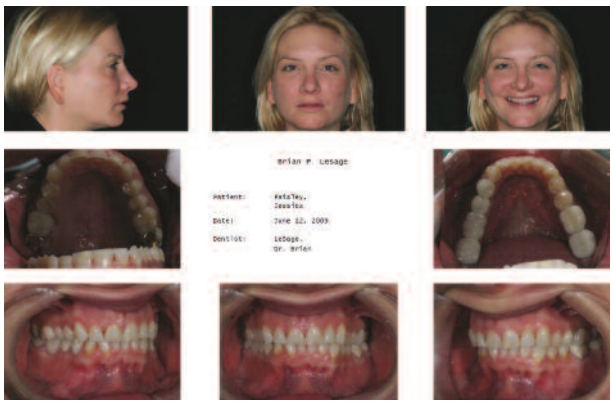
## Beginning risk assessment

The return visit then consisted of a one-hour comprehensive new patient examination, during which probing questions were asked to determine why tooth No. 8 was continually breaking. Occasionally biting her fingernails and occlusion were discovered to be the primary factors limiting composite bonding.[18,19] Additionally, the examination and intraoral images, combined with inquiries to the patient, led to a diagnosis of eating disorder when she was in her late teens that related to the consistent finding of significant exposed dentin on the lingual of the maxillary incisors.

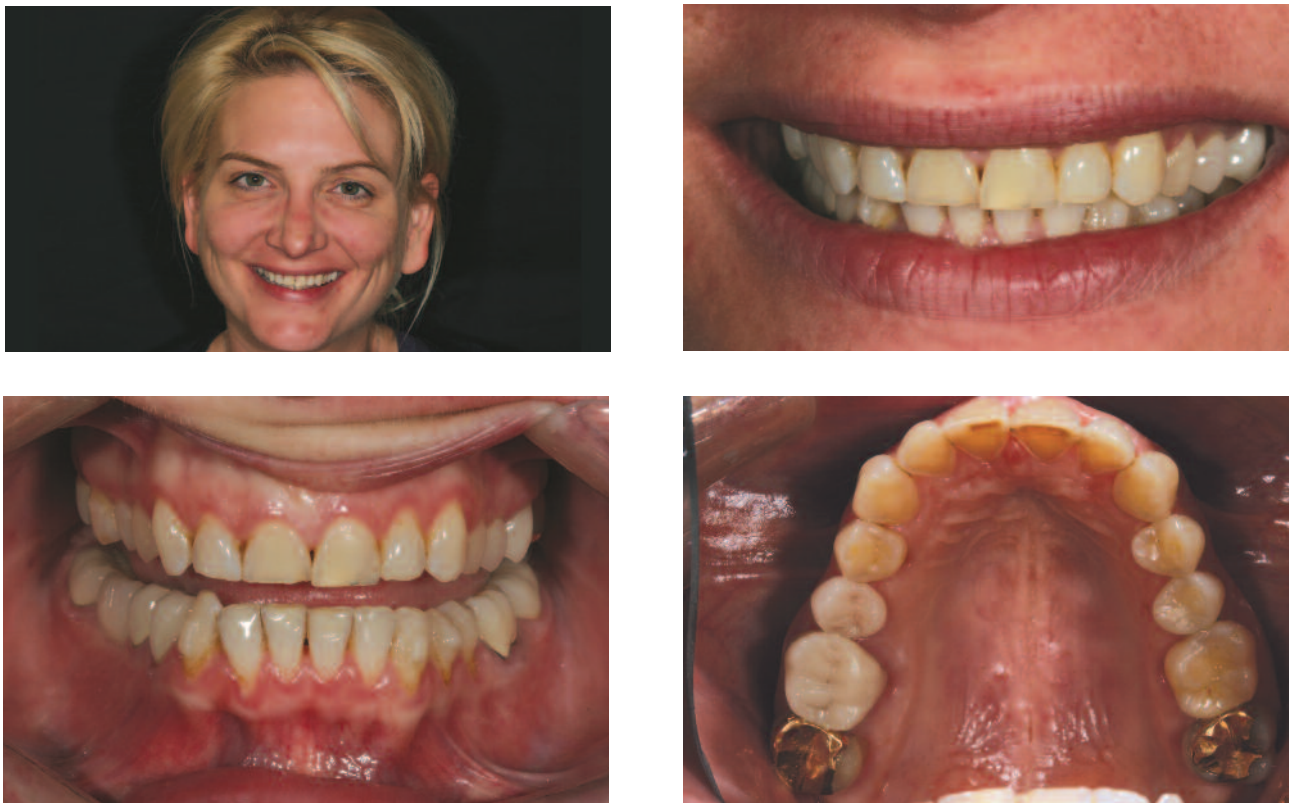
It was during this time that the patient was asked how she felt about her teeth, and if there was anything about the appearance of her teeth that she would like to see improved. She also was asked if she would like to know the options available today to enhance her smile. Her answers included: "Not so good," "Not thrilled with teeth color and size," and







***Figures 6 to 9: Based on photographic evidence as seen in the full-face, occlusal, close-up, and Invisalign landscape views, orthodontics was determined to be beneficial for long-term health.***



*Figures 10 to 13: Full-face, smile, and retracted 1:3 and occlusal views after Invisalign. Note the perfect imperfections in the lower arrangement and a chip that returned on tooth No. 8. The patient desired a nice smile, but not a "Hollywood-type" smile.*

that she wanted them "Whiter, bigger, more straight across." She indicated that she wanted a nice smile, but not something that would appear unnatural, as she perceived a "Hollywood-type" smile to be.

After studying the findings of the new patient exam, the patient was seen for a consultation. The intraoral photographs were shown to the patient on a large monitor in plain view, as well as on an iPad that she could handle and enlarge (Figures 6 to 8). This was performed in a private office, away from the clinical treatment operatory. The patient was able to view her teeth during the consultation about the examination. Routine dental care was needed and accepted.

## Minimally invasive enhancement

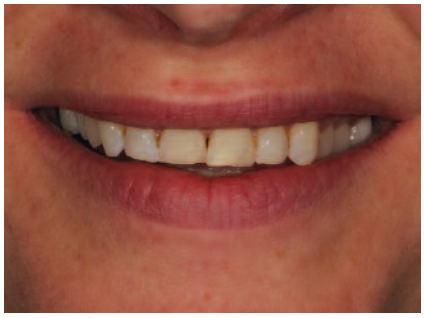
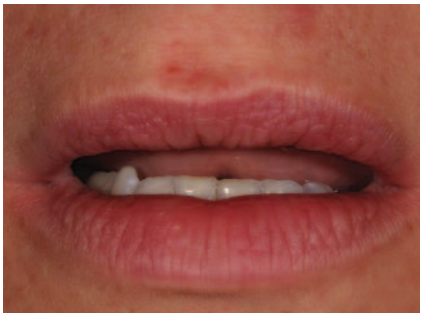
Her comprehensive long-term treatment was initiated with an Invisalign work-up (Figure 9). She underwent an Invisalign evaluation and treatment and was satisfied with the results, knowing definitive restorations in the maxilla were preplanned (Figures 10 to 13). Note the perfect imperfections in the lower arrangement and a chip that returned on tooth No. 8.

The patient endured a horrific fall off a balcony and was in a coma for one month. The accident caused a broken back that required her to undergo extensive rehabilitation. Dental restorations and retainers were not even considered for several months (Figures 14 to 16).

Upon her full recovery over a 6-month period, tooth No. 19 abscessed from failing endodontics and had to be extracted. Several other teeth needed simple direct composite resin restorations and CEREC onlays (Sirona Dental Systems) due to caries that had resulted from inadequate oral hygiene.

Now that she was stable again, a diagnostic box work-up was done. A diagnostic box work-up (ie, comprehensive work-up) includes AACD accreditation photos, facebow mounted models in centric relation, shade analysis with EasyShade (Vident), tooth size Indicator (DENTSPLY Trubyte), and a full-mouth series of radiographs.

The aesthetic and functional work-up indicated a gum lift would create a better balanced gingival architecture (Figure 17). Further, due to the extensive exposed dentin on the lingual aspect, leaking interproximal restorations, decay, and enamel breakdown, the interproximal areas of the incisors would be included in proposed restorations (Figure 18). That notwithstanding, enamel was still the bonding substrate

*Figures 14 to 16: Due to an accident (neck brace in full-face image) and resulting complications, dental restorations and retainers were not even considered for several months. Relapse is visible and no maxillary teeth are visible in the "M" position photograph.*

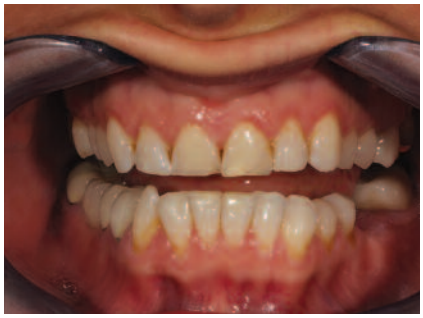


*Figure 17: Initial healing of crown lengthening.*

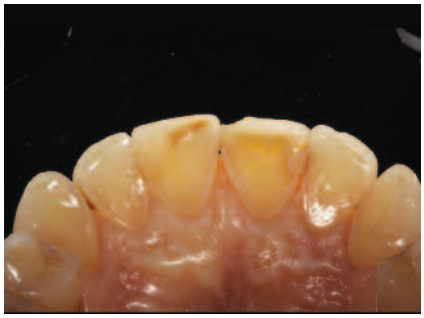
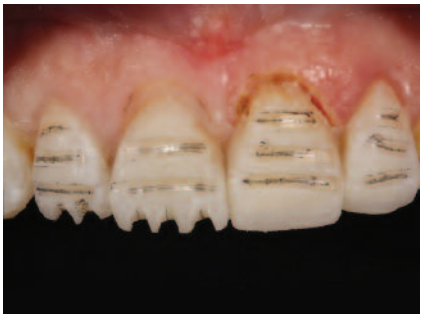


*Figure 18: Preoperative view of lingual showing exposed dentin, defective composites, and interproximal breakdown.*



*Figures 19 and 20: Depth cutting guide of 0.5 mm to limit removal of natural tooth structure and to help maintain preparation in enamel. Note no preparation of any enamel on facial of tooth No. 8.*

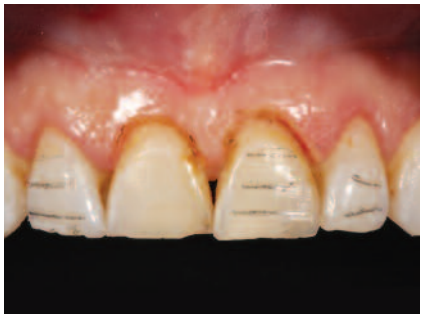
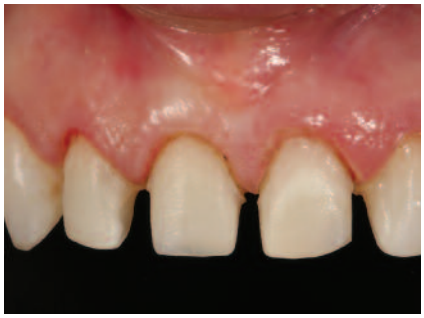
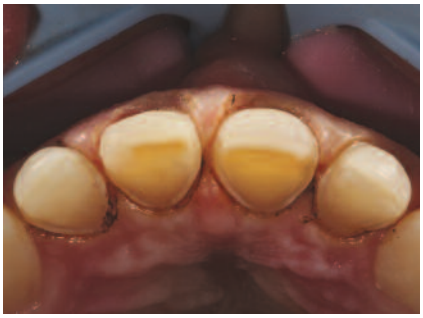


*Figure 20.*

*Figures 21 and 22: Facial and occlusal view of preparations demonstrating complete enamel bondable substrate; except where dentin was exposed preoperatively on lingual. Minor gingivectomy with electrosurgery obtained ideal zenith.*

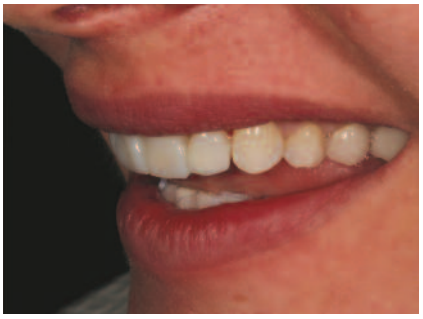


*Figure 23: Lateral view of prototype restorations.*

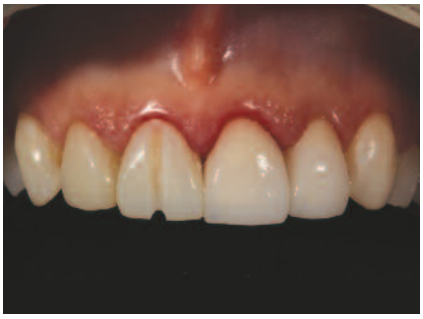
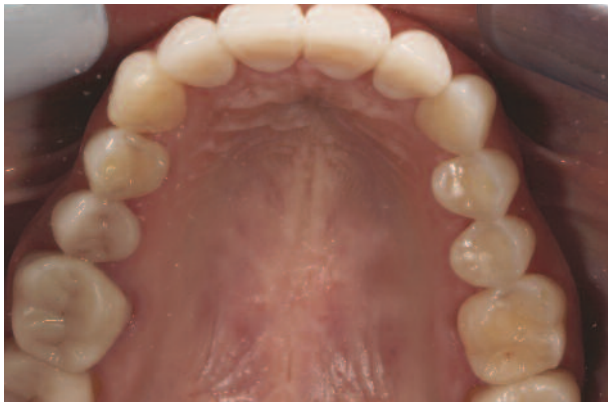
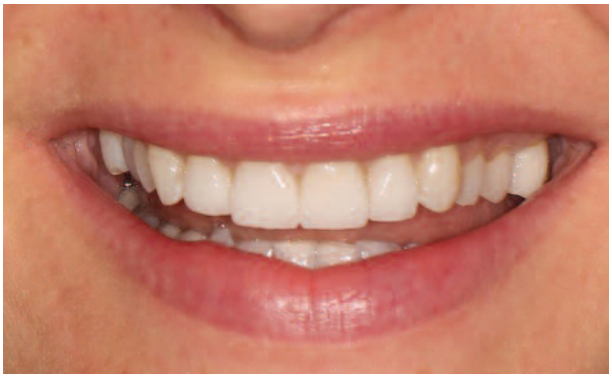


*Figure 24: Try-in of conservative allceramic restorations on teeth Nos. 9 and 10 compared to prototypes still remaining on teeth Nos. 7 and 8.*





***Figures 25 to 27: The patient's post-treatment smile demonstrates harmony and balance with the smile design principles of white, pink, and black aesthetics.***

interproximally and at the margins circumferentially. Composite bonding to eliminate enamel breakdown/staining on mesial and alter incisal embrasures of canines was done (Venus Diamond, Heraeus Kulzer).

Using bis-acrylic (Integrity, DENTSPLY Caulk) in a putty matrix (FlexiTime, Heraeus Kulzer) made from the diagnostic wax-up, 0.5 mm depth cutting burs were placed in the acrylic (Figures 19 and 20). This translated into no-preparation of tooth No. 8 on the facial and minimal preparation for crown restorations (Figures 21 and 22). Facial veneers were not an option, since the lingual surface required coverage due to the exposed dentin and the need to re-establish a stable centric relation stop on all incisors for anterior coupling and long-term occlusal stability. The ceramist was provided all-inclusive information: dies, models, vinyl polysiloxane impressions (FlexiTime), stump shade photos, prototype photos, bite registration, etc.

Prototype restorations revealed gingival health following the gum lift (Figure 23). With the prototype restorations still on the right side, the veneers for teeth Nos. 9 and 10 were tried-in (Figure 24). This is imperative to show the patient that the length and color of the final restorations are indeed what he or she had wanted. Without this step, the patient may get home and feel the finals are not the same length as the prototypes that had been approved.

Figures 25 to 27. The patient's post-treatment smile demonstrates harmony and balance with the smile design principles of white, pink, and black aesthetics.

Ultimately, the MI treatment planned for this patient accounted for her risk factors and produced a pleasing smile. The treatment results demonstrated harmony and balance with smile design principles of white, pink, and black aesthetics interpreted through an artistic and responsibly aesthetic design (Figures 25 to 27).

The patient will go back into Invisalign due to relapse from not being able to wear her retainers at the time of her fall.

## In summary

Responsible aesthetics and comprehensive care requires a thorough patient examination and evaluation of risk factors that help to prevent and curtail re-restoration and more aggressive tooth preparation. Managing identified risks that could potentially lead to otherwise piecemeal dental procedures keeps dentists treating comprehensively planned cases, not just teeth.

Dentistry that is comprehensive, desired, and evidence-based is a valuable service to patients and a satisfying

endeavor for dentists and their teams. By choosing between the sure thing of a quick fix and discussing what the patient wants, dentists can embrace a MI, responsibly aesthetic approach to treatment planning, case acceptance, and most importantly, patient oral care.

*Disclosure: Dr. Lesage maintains a financial interest in Heraeus Kulzer.*



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