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# Porcelain Veneers in a Single Appointment

## INTRODUCTION

For the past few decades, tooth preparation for indirect restorations has remained the same, with slight variations by practitioners. Traditional dental preparation is a complex clinical function that can be inefficient and difficult to control. This can lead to some difficulties in a dentist's performance, clinical diagnosis, and treatment.<sup>1</sup> In recent years, advancements in digital technology have allowed dental laboratory technicians and dentists to digitally design restorations. Now, when indicated, by using FirstFit technology, laboratory teams and dentists can also design tooth preparations and transfer their designs with 3-D printed guides. These guides increase efficiency, reduce chair time, and minimize errors in restorative dentistry.

This article will present the basic principles of FirstFit and its advantages over traditional crown and bridge and veneer preparations. It details a step-by-step procedure of restoring teeth with veneers by utilizing minimal preparation design with FirstFit technology.

## Brief Historical Background

Innovations and developments for the routine practice of dentistry, including prosthodontic protocols, are often driven by the introduction of new dental materials and fabrication technologies. Dental prostheses (such as fixed partial dentures,

*...now, with FirstFit, we can improve on efficiency and accuracy in restorative or cosmetic dentistry.*

removable dental prostheses, and crowns) are fabricated from a number of different dental materials using a variety of dental laboratory processes.<sup>2</sup>

Over the years, the basic form of a preparation has not changed much, although new materials can often present with their own unique preparation design requirements with respect to the details of the preparation's geometry.<sup>3,4</sup>

## Advancing the Preparation, Fabrication, and Delivery Protocols

The digital laboratory process of fabricating dental prostheses is set to take a dramatic leap forward with the use of 3-D printed guides for tooth preparation; fabrication; and the delivering of crowns, bridges, and veneers. A new and revolutionary technology, known as FirstFit, has been developed by Dr. Cyrus Tahmasebi. FirstFit incorporates the advancements of 3-D printing in dentistry by using them to design and fabricate guides that allow for conservative tooth preparation. It eliminates the need for temporary restorations and provides the convenience of same-day delivery of prostheses.

FirstFit 3-D printed guides allow dentists to preserve healthy natural tooth structure by restoring teeth with minimal preparation. The precisely made guides provide the dentist with the ability to transfer the tooth preparation designs with very high accuracy. Using the FirstFit delivery system, multiple restorations can be delivered simultaneously, helping to increase clinical efficiency. The difference is allowing the clinician to prepare crowns, bridges, and veneers in a more predictable, reliable, and efficient way with the



Figure 1. Preoperative smile.



Figure 2. Pre-op, retracted facial view.



Figure 3. Pre-op maxillary incisal view.



Figure 4. Pre-op mandibular incisal view.

*continued on page 60*



# Prep and Seat in a **Single Visit**

FirstFit is a **Guided Prosthetics Delivery System** that utilizes the latest digital technology to provide you with 3D printed prep guides and the final ready-to-seat restoration at the same time.

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**Figure 5.** Digital design of FirstFit veneers.



**Figure 6.** The 3-D printed guide for FirstFit veneers.



**Figure 7.** A printed model of the maxillary arch, after preparation.



**Figure 8.** The fit of a FirstFit guide was confirmed.

### Porcelain Veneers in a Single...

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use of preparation guides. By doing this, the quality of the final restoration can be substantially improved due to increased precision of the preparation and the absence of common preparation errors, leading to improved marginal fit.<sup>5</sup>

### CASE REPORT

#### Diagnosis and Treatment Planning

A young woman was concerned about the spacing between her teeth and the gray look in the incisal one half. She wanted a bigger, wider, and whiter smile. Figure 1 shows that her anterior maxillary teeth exhibited a slightly reverse smile line along with the appearance of some wear on the incisal edges of the central incisors. Her mandibular incisors were very

*...the fit of the guides was confirmed by evaluating the seat on the most terminal teeth on the guides.*

triangular in shape, resulting in black triangles (Figure 2). The patient had a lingual bonded retainer wire in place between her maxillary central incisors (Figure 3), and her mandibular anterior teeth were slightly maligned (Figure 4). Overall, she had excellent dental health with no active caries or periodontal disease.

Various treatment options were presented to the patient, which included doing nothing, orthodontic tooth alignment, tooth whitening, cosmetic bonding with direct composite resin, and all-ceramic veneers. She chose to have her teeth treated with porcelain veneers for the benefit of shade selection, shape, longevity,



**Figure 9.** The teeth were prepared using the FirstFit guide.



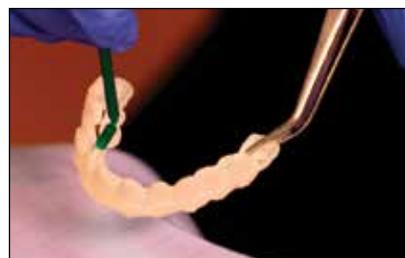
**Figure 10.** Retracted facial view of the prepared teeth.



**Figure 11.** Maxillary incisal view of the prepared teeth.



**Figure 12.** Mandibular incisal view of the prepared teeth.



**Figure 13.** A silane primer (Bis-Silane [BISCO Dental Products]) was applied to the maxillary restorations.



**Figure 14.** After a previous tac-and-wave technique, the resin cement (Variolink Esthetic [Ivoclar Vivadent]) was fully light cured.



**Figure 15.** A fine diamond bur was used to adjust the ceramic material.



**Figure 16.** Retracted facial view of the 18 completed all-ceramic veneers.



**Figure 17.** Maxillary incisal view of the finished case.



**Figure 18.** Mandibular incisal view of the finished case.



**Figure 19.** The patient's new smile.

and the immediacy of the treatment outcome. The FirstFit treatment process was chosen because it eliminated the need for temporary veneers and, in addition, the preparation design

for the teeth involved would be very conservative.

#### Clinical Protocol

At the first treatment appointment,

the patient's maxillary and mandibular impressions were made using an A-Silicone impression material (Panasil [Kettenbach LP]). The impressions were then sent to the dental laboratory team, where hard models were poured and digital scans of the models were done. A digital design of the preparations was created for the maxillary 10 and mandibular 8 most anterior teeth (Figure 5). (Dentists are required to review and approve the proposed designs.) Upon approval by the dentist (in this case, Dr. Shaharyar Fiza, Huntersville, NC), the case was sent for production, which involved fabri-

*These guides increase efficiency, reduce chair time, and minimize errors in restorative dentistry.*

cation of patented FirstFit 3-D printed guides along with the restorations and delivery system. One of the maxillary guides is shown photographed on a mirror surface in Figure 6. The 3-D printed preparation guides, printed models of prepared teeth (Figure 7), burs for the case, and restorations were all sent back to the dental office from the laboratory.

### Preparation and Delivery Appointment

At the next appointment, the fit of the guides was confirmed by evaluating the seat on the most terminal teeth on the guides (Figure 8). Teeth were then prepared by using the corresponding burs for each guide (Figure 9). The guides were used in order based on their identification numbers. The guides are also color coded to match the color of their corresponding burs.

In Figure 10, the prepared teeth can be seen from the facial retracted view. In the incisal view in Figure 11, the minimally prepared maxillary teeth can be visualized. The mandibular preparations are shown from the incisal in Figure 12.

After the preparations, the all-ceramic restorations (IPS e.max [Ivoclar Vivadent]) were tried in for fit and then delivered using the included FirstFit placement system, allowing the delivery of all 10 maxillary veneers as one unit. A silane primer (Bis-Silane [BISCO Dental Products]) was applied to the etched intaglio surfaces of the restorations (Figure 13). The restorations were bonded into place using a light-cured cement (Variolink Esthetic [Ivoclar Vivadent]) and utilizing the tac-and-wave technique (Figure 14). The process was then repeated for all 8 mandibular veneers. Excess luting composite was

removed using small carbide finishing burs in a high-speed handpiece. Minimal occlusal adjustments were accomplished using fine finishing diamonds (Brasseler USA) (Figure 15), followed by porcelain polishing points (Dialite HP Blue Course Point Porcelain Polisher [Brasseler USA]).

Figure 16 shows the completed FirstFit veneers from the retracted facial view. The incisal view of the 10 maxillary FirstFit veneers in place is shown in Figure 17. The completed mandibular veneers can be seen in place in Figure 18. In Figure 19, the patient's new smile is shown.

### CLOSING COMMENTS

FirstFit Technology can revolutionize the way dentists prepare and deliver single and multiple restorations, when indicated. In this case, we were able to address the patient's chief complaint by providing her with long-last-

ing restorations through a minimally invasive treatment. This technology allows dentists to offer same-day dentistry, thus reducing valuable chair time while providing immediate care to the patients. Guided dentistry has proven to have significant benefits and uses in surgery, and now, with FirstFit, we can improve on efficiency and accuracy in restorative or cosmetic dentistry.♦

### References

1. Dai N, Zhong Y, Liu H, et al. Digital modeling technology for full dental crown tooth preparation. *Comput Biol Med.* 2016;71:190-197.
2. Miyazaki T, Nakamura T, Matsumura H, et al. Current status of zirconia restoration. *J Prosthodont Res.* 2013;57:236-261.
3. Podhorsky A, Rehmman P, Wöstmann B. Tooth preparation for full-coverage restorations—a literature review. *Clin Oral Investig.* 2015;19:959-968.
4. Wyatt CC. Resin-bonded fixed partial dentures: what's new? *J Can Dent Assoc.* 2007;73:933-938.
5. Renne W, McGill ST, Forshee KV, et al. Predicting marginal fit of CAD/CAM crowns based on the presence or absence of common preparation errors. *J Prosthet Dent.* 2012;108:310-315.

**Dr. Nash** maintains a private general practice in Huntersville, NC, where he focuses on cosmetic, aesthetic, and full-mouth rehabilitative treatment. He presents workshops and lectures nationally and internationally on these types of procedures and has authored chapters in 2 clinical textbooks. Dr. Nash is

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*Disclosure: Dr. Nash reports no disclosures.*

**Dr. Fiza** practices general dentistry full time in Huntersville. He offers a wide variety of procedures, including cosmetic dentistry, implant placement, endodontics, and orthodontics. His dedication to continuing education allows him to be at the forefront of technology and the latest developments in dentistry. He is a graduate of the University of Pittsburgh School of Dental Medicine and serves as faculty of the Nash Institute for Dental Learning. He can be reached at shaharyarfiza@gmail.com.

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**Dr. Tahmasebi** is the inventor of FirstFit technology. He previously served as past president of VIAX Dental Technologies; past vice president of clinical education and research and development at DenMat; and CEO of Glam smile Distribution USA, CN, UK. He received his DDS degree from the University of Southern California and practiced dentistry in La Jolla, Calif. He has lectured extensively in the United States, as well as in more than 30 other countries on a wide array of dental topics. He can be reached at cyrus@firstfit.com.

*Disclosure: Dr. Tahmasebi is the senior educational manager of FirstFit.*



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