

# The “First Implant”: Protocol for the GP Part I, Treatment Planning



Michael  
Tischler, DDS



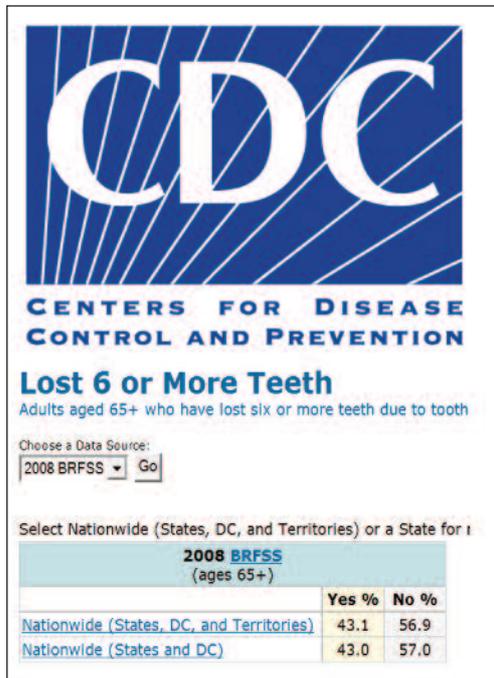
Scott D. Ganz,  
DMD

## INTRODUCTION

It is the authors' opinion that dental implants have now reached a level where they are an essential part of “conventional” dentistry and should be considered as the first treatment alternative to replace missing teeth. Therefore, we believe that all general dentists should learn to safely and predictably place and restore a single dental implant to enhance patient treatment choices and their practice. However, we also realize that most implants are not placed into ideal receptors sites, ie, the bone or soft-tissue contours may not be in the right place, or in sufficient quantity or quality, to achieve success. There is a learning curve associated with placing and restoring dental implants; that is why we have developed a 3-part series of articles aimed at the general dentist, describing the necessary steps to place and restore the first dental implant.

To ensure success, we propose a “first implant protocol” (FIP) that we believe will provide clinicians with the necessary skill set to accomplish this goal. An essential part of the protocol is to identify the ideal implant receptor site with adequate bone and soft tissue to utilize a flapless implant placement protocol with the help of computed tomography/cone beam computed tomography (CT/CBCT) imaging technology, and a surgical template (or guide). The information in this series of articles is an overview, and *it is highly recommended that further educational hands-on training courses be taken before a clinician implements these protocols.*

Part I of this 3-part series will focus on *justification and treatment planning* for implant placement. The rationalization for general dentists to place a dental implant in their practice will be discussed, as well as statistics that show the success of dental implants long-term. After rationalization of dental implants is covered, the process to treatment plan for single dental implant placement will be outlined. This will include the screening process of an ideal first dental implant patient, a review of the



**Figure 1.** Image from cdc.gov Web site, showing 43% of US adults older than the age of 65 years are missing 6 or more teeth.

important anatomy, and the presurgical prosthetic steps that are necessary prior to the surgical appointment. The second and third parts of this article series will focus on the surgical placement and restoration of a dentist's “first implant.” The steps outlined in these articles, combined with the appropriate hands-on training courses, offers a clinician who has little or no experience a protocol to place his or her first dental implant in adequate bone and soft tissue.

## JUSTIFICATION FOR SINGLE TOOTH DENTAL IMPLANTS

### Statistics of Single Tooth Loss in the United States

Many of our patients are missing at least one tooth. According to the American Association of Oral and Maxillofacial Surgeons, 69% of adults ages 35 to 44 years have lost at least one permanent tooth to either periodontal disease, a failed root canal, an accident, or tooth decay.<sup>1</sup> More than 44 million Americans are missing posterior teeth in one or more quadrants.<sup>2</sup> The US Department of Health and Human Services in 2000 published that by the age of 17 years, more than 7.3% of US children have lost one permanent tooth.<sup>3</sup> In 2008,

according to the US Centers for Disease Control and Prevention (CDC) National Center for Chronic Disease Prevention and Health Promotion Web site, 43% of all Americans older than the age of 65 years were missing 6 or more teeth due to tooth decay or gum disease (Figure 1). In some states, this CDC report showed a rate as high as 65%.<sup>4</sup> In the US, it is clear that there is a significant amount of our population that is partially edentulous.

### Importance of Replacing Missing Teeth

With such a large population of our patients in a general practice missing teeth, it is important for the treating doctor to understand the ramifications of single tooth edentulism. For instance, when a single tooth is missing, over-eruption of the opposing tooth is a real concern. Over-eruption of an opposing tooth has been shown to be significant and to cause undesirable vertical movement (Figure 2). It has been shown that 83% of unopposed teeth over-erupt and present with clinical significance.<sup>5</sup> Once a tooth is extracted, there is a 25% decrease in ridge width during the first 3 years after primary tooth extraction.<sup>6</sup> Christensen<sup>7</sup> has shown that, after tooth loss, there is a 40% to 60% amount of bone loss for the first 2 to 3 years (Figure 3). Besides bone loss and over-eruption, clinical consequences related to a missing tooth has demonstrated rotation, space closure, and axial inclination of adjacent teeth.<sup>8</sup> While detrimental effects do occur when a tooth is missing, reports in the literature state that there are sometimes minimal negative effects to tooth loss.<sup>9</sup>

### Rationalization and Success Rate of Implants for Single Tooth Replacement

Misch<sup>10</sup> compared statistics from insurance companies to see when they were paying for implants, removable partial dentures, Maryland bridges, and fixed partial prosthesis to be replaced. Therefore dental implants had the longest success rate when replacing a single missing tooth. There are certainly situations in which alternatives to implants are more appropriate to replace a missing tooth, such as a patient with a severely compromised medical condition.<sup>11</sup> Avoidance of surgery might be an advantage in that situa-

*continued on page xx*



This, and all future articles that are presented in multiple parts, are available to our readers at our Web site, [dentistrytoday.com](http://dentistrytoday.com).

### The “First Implant”...

*continued from page 00*

tion. However, for improved hygiene and distribution of forces (without the need for preparation of adjacent teeth with resultant stress reduction), an implant provides a better option than a partial fixed prosthesis for a single missing tooth.

For the FIP, we have chosen areas with a very high success rate. The success rate for replacement of a molar or premolar with a dental implant restoration has been shown to have a success rate greater than 95%.<sup>11</sup> Many clinicians feel that, due to the substantial success rate, implants should be considered as the definitive choice over other tooth-replacement alternatives.<sup>12</sup> This is supported by the dental literature for many implant systems in every area of the mouth.<sup>13</sup> Therefore, when we consider the amount of edentulism currently documented, it is essential for clinicians to incorporate dental implants into everyday practice.

#### INTRODUCING SINGLE-TOOTH IMPLANTS INTO THE GENERAL PRACTICE

How does a general practitioner introduce the surgical and prosthetic modality of the dental implant procedure into the practice as a new service? First, clinicians must truly believe that dental implants are the most logical treatment alternative for their patients, and develop a philoso-

phy of treatment and a rationale to recommend dental implants.

There are 2 basic rationales for placing a single dental implant. The first is that the dental implant obviates the need to cut down or prepare adjacent natural teeth for a 3-unit fixed prosthesis, especially if the natural teeth do not have existing restorations. The second, and in the authors' opinion, the most important reason for placing an implant is that it is the only treatment alternative that replaces the root of the tooth. By replacing the tooth root, the implant becomes the anchor in the bone and the support for the clinical crown, providing stimulation and thus preservation of the surrounding bone.<sup>14</sup>

How can we as clinicians understand the unique anatomic presentation of our individual patients? Two-dimensional (2-D) imaging modalities have been superseded by the accuracy of CBCT technology, allowing clinicians to better understand the 3-dimensional (3-D) anatomy, thus taking the guesswork out of the equation completely. This empowers the clinician to achieve a higher degree of diagnosis for safe and predictable placement of a simple dental implant in adequate bone. The planning for the implant position and preparing of the osteotomy site is guided by the CT scan and interactive treatment planning software (Figure 4). Furthermore, as part of the FIP, we will provide the services of oral maxillofacial

radiologists and CT technicians who will aid the practitioner through the process via an online collaboration.<sup>15</sup>

We believe that a dentist's "first implant" placement should preferably be with a patient who the dentist knows fairly well, and with whom he or she feels comfortable. A long-standing patient of record, who has been informed that this will be a new procedure for the doctor, is ideal. Most clinicians will be surprised how many patients are comfortable with this scenario in which their doctor is using their mouth to learn a new procedure. Many patients in a general dental practice want their personal doctor, who they know and trust, to perform the implant service when needed. The relationship that dentists build with their patients is very powerful and should not be underestimated. The starting point for a clinician, though, is to personally believe in the value of dental implants for his or her patients, trust the success rate, trust the state-of-the-art technology, and start off with the simple protocol (FIP) outlined in this article.

#### Working With Local Implant Surgeons

The FIP protocol is the standard of care for implant placement based on prosthetically-driven CT scan guidance. A dentist utilizing this protocol should feel comfortable with bringing in a new service to the practice and now have the ability to help many patients. However, just because a dentist is

going to start introducing implant surgery into their dental practice, it shouldn't create a competitive environment with local implant surgical doctors. At this introductory skill level, a clinician will still be presented with many cases that should be referred out to local implant surgeons for implant surgery and grafting. It is the authors' advice for doctors starting with the FIP to foster relationships with local clinicians who are experienced in implant work. These local oral surgeons, periodontists, prosthodontists, and general dentists who perform advanced implant procedures can be invaluable mentors as you learn/grow your implant surgical and placement skills.

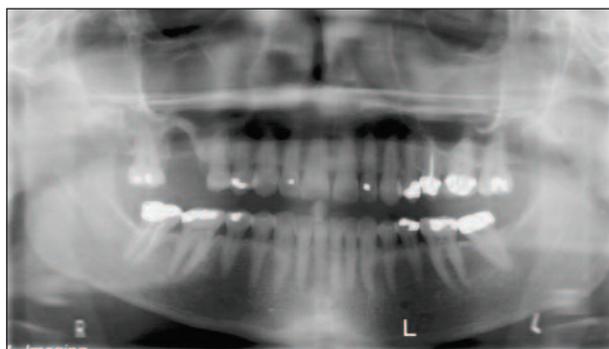
#### Joining Implant Organizations and Further Education

While all the articles in this series will outline the rationale and steps to placing a dental implant in adequate bone, an article series alone is not enough to fully prepare you to perform these services. A good starting point, and recommended next step, is to join one or more of the major implant organizations such as: the International Congress of Oral Implantologists, the American Academy of Implant Dentistry, and the Academy of Osteointegration. These organizations offer scientific meetings, satellite courses, Web sites, and literature with the purpose of giving clinicians the needed support, resources, and credentialing

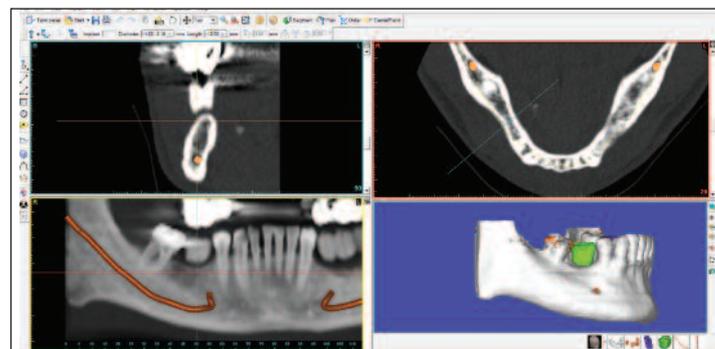
*continued on page xx*



**Figure 2.** Edentulous maxillary first molar area. Note the super erupting opposing tooth.



**Figure 3.** Panoramic radiographic image showing extreme bone loss after extraction of the maxillary right first molar.



**Figure 4.** Images resulting from an interactive computed tomography program.



**Figure 5.** Edentulous area exhibiting adequate keratinized tissue that is important for implant success.



**Figure 6.** Periapical x-ray showing lack of divergence of adjacent roots to an implant. This is an important criteria that a periapical or panoramic x-ray can demonstrate to the clinician.



**Figure 7.** Clinical view of an implant with adequate spacing of 2.0 mm to the adjacent teeth (mesial and distal).



**Figure 8.** Measuring the amount vertical of jaw opening. This is important when surgical templates are used to ensure that there is enough room for the initial drills.

## The “First Implant”...

continued from page 00

for further development. Joining these organizations shows that a clinician is committed to the science and art of dental implantology. The informed consent forms and certain legal advice offered by these organizations give a clinician a certain level of medical-legal backup. In addition to dental implant organizations, there are various short educational venues, or longer “Maxi” courses offered throughout the United States.

### TREATMENT PLANNING FOR THE “FIRST IMPLANT”

#### First Step: Identifying the Ideal Implant Site and Educating the Patient About Available Alternatives

For an ideal “first implant” site, a clinician should look for a single-tooth edentulous area with visually abundant width and height of bone. The best locations for a clinician’s first dental implant are in the maxillary and mandibular premolars and first molar areas. The reason these sites are recommended by the authors is that they are relatively out of the aesthetic zone and usually accessible, dependant on the patient’s anatomy. The mandibular sites mentioned have the mental foramen and inferior alveolar nerve as anatomical restrictions, but the CT scan that will be utilized in this protocol will avoid violation of those areas. The maxillary sites men-



Figure 9. Scan template created by a certified laboratory (Biohorizons).



Figure 10. An in-office cone beam computed tomography machine (i-Cat Imaging Sciences).

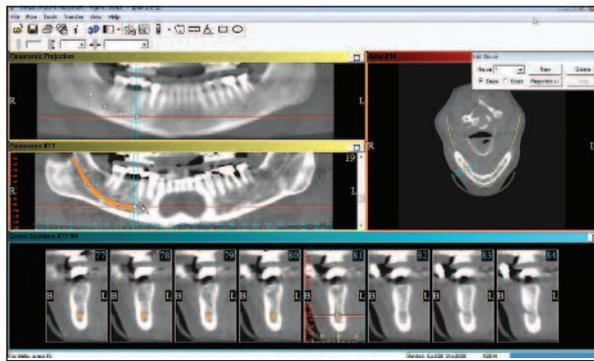


Figure 11. CT planning (as done by 3D Diagnostix).

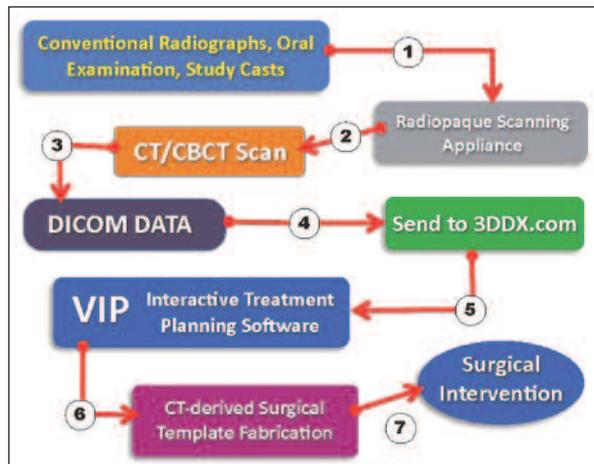


Figure 12. Chart of the “sequence of events” that takes place during the treatment planning phase of the “First Implant” Protocol.



Figure 13. Scan template in the patient’s mouth prior to taking a CBCT scan.

tioned have the maxillary sinus as the main anatomical area to avoid, but once again the CT scan utilized in the FIP will avoid this. Adjacent or opposed teeth may provide another anatomical restriction, but the application of sound prosthodontic fundamentals, vertical dimension of occlusion, mounted articulated study casts, coupled with CBCT guidance and interactive diagnostic software in the protocol outlined, will address this.

An important soft-tissue parameter in an ideal “first implant” site is abundant keratinized tissue. When there is keratinized tissue present, a dental implant has the potential to have a better implant/tissue interface and be less prone to soft-tissue problems<sup>16</sup> (Figure 5).

The clinician should also look for adjacent teeth that are relatively straight, to avoid interferences of a

convergent root when placing the implant, to assure adequate distance and spacing near the root apex. A panoramic or periapical x-ray can offer a basic clue to inter-root space as well as relative bone height available (Figure 6). These 2-D images are simply a starting point prior to taking a CBCT scan. However, these images do not provide information about the bone quality, the thickness of the cortical plates, density, or spatial proximity of adjacent vital structures.

The clinician must check for adequate inter-arch space when treatment planning for the FIP; therefore, opposing teeth need to be considered. Ideally, 8.0 mm of space is needed, measuring from the soft tissue to the occlusal table at the middle of the implant receptor. This vertical interocclusal space of 8.0 mm allows for an adequate implant abutment and crown height. Mesiodistally, the clinician ideally needs between 7.0 mm and 9.0 mm of available spacing for a pre-molar site. This allows for a 3.0 mm or 4.0 mm implant body to be placed and provides 1.5 mm to 2.5 mm of clearance to the adjacent teeth (mesial and distal). In a larger molar site, there will be more mesiodistal cantilever due to the wider space requirement (Figure 7). If there is more than 12.0 mm of mesiodistal space in a molar area, then 2 implants should be considered and it would not be a good candidate for a clinicians “first implant” site.

Once a clinician has identified a potential FIP site, the next step is to inform the patient about the value of dental implants and the alternative treatments available. The data on single tooth implant success should be shared as well as the advantages and disadvantages of a fixed partial prosthesis, removable prosthesis, or a bonded Maryland bridge. Diagrams, models, and photos can be used for this. This is an important part of the treatment plan and the informed consent process.

### Second Step: Gathering of Clinical Data and Medical History

A complete medical health history and dental charting should be completed.

Records of the patient’s medical history have to be carefully screened. Contraindications to implant placement are any uncontrolled diseases, pregnancy, or psychological diagnosis that would preclude compliance of surgical and postoperative appointments. If the clinician has any concerns, then clearance from the patient’s primary care physician is in order. A review of the patient’s current medications needs to be completed and discussed with the patient. Blood thinners are quite common, and are important to note since their use can lead to a failure of the blood to clot during surgery. Tobacco use is a consideration (but not necessarily a contraindication) and should be discouraged. A baseline blood pressure should be taken on the patient. Any Systolic reading more than 140 mm Hg, and diastolic reading more than 90 mm Hg, should be referred for a medical consult and clearance with the patient’s physician.

The patient’s occlusal relationship should be recorded and study models taken and mounted. Signs of parafunctional activity should be noted since this could create potential stress on an implant, causing premature failure. An examination of the temporomandibular joint function and health needs to be done as part of this exam. If parafunctional wear is noted, then a night guard should be fabricated after the implant has been placed and restored. It is also very important to make sure the patient does not have a restricted jaw opening (Figure 8). The surgical guide, which will be used to place the implant during the FIP, requires adequate interocclusal space. This is especially important in the first molar area. The study models will be used to create the radiopaque guide that should be worn during the CT scan.

The patient should have a complete periodontal exam (with charting), and any pocketing or mobility should be addressed with appropriate therapy *prior* to implant treatment. Tooth mobility can cause stress on a dental implant so it must be addressed. An oral cancer screening should also be done. Preoperative photographs of the implant site should be done to document pre-existing conditions of the soft tissue, adjacent teeth, aesthetics, and soft-tissue contours.

continued on page xx

## The “First Implant”...

continued from page 00

### Third Step: Analyzing the CT Scan and Appointment Sequencing

Once a FIP site has been visually identified and recent radiographs have been reviewed and analyzed, the clinician must have a CT scan taken of the upper or lower arch. A CBCT scan offers the best diagnostic 3-D view of an implant site with the lowest radiation.<sup>17-19</sup> The FIP is dependent on this step (taking a CT scan); it will allow for proper diagnosis and treatment planning, and provide for the necessary data to fabricate a CT-derived surgical guide. From this surgical guide, the clinician can place an implant with absolute safety and predictability. A CT scanning template must be worn for FIP during the CT scan. This is important, allowing the implant to be positioned correctly within the envelope of the tooth in order to support the final crown. The CT scanning template is created by a certified laboratory (such as that done by BioHorizons) with the FIP, and is created from study models taken by the treating dentist. This certified laboratory creates a specific scan appliance incorporating important fiducial markers that will later be used to directly create a surgical guide after planning. This sequence is specific to the FIP, and uniquely allows the clinician to “try in” the surgical guide prior to surgery (Figure 9).

CBCT sites are available throughout the United States, and there are also mobile CT companies that will come right to the clinician’s office location. A local Internet search for “CBCT sites” or “mobile CT” will help in this matter. Another option is to utilize a fan-beam hospital based CT; however, the disadvantage here is that the radiation levels are substantially higher than those realized with a CBCT scan.<sup>20</sup>

The steps to utilize a CT that is taken will now be outlined. Ideally, a clinician would have an in-office CBCT machine, offering immediacy when a CT is needed (Figure 10).

Once a CBCT scan has been acquired, the raw CT data has to be reconstructed into a form that can be read and used by the doctor to plan implant placement. There are various imaging companies in the United States that will perform this task. 3D Diagnostix (3D Diagnostix) is an example of a company that will analyze the CT data. They will also set up an online “meeting” between the clinician and knowledgeable CT plan-

ning technicians so a plan can be developed. Oral and Maxillofacial Radiologists will review the scan, providing a report of their findings. Once the plan is approved by the clinician, a surgical guide will be fabricated (Figure 11).

The online meeting consists of the doctor approving the plan after looking at various 3-D and CT views provided by the imaging company. The angles of the implant and position of the implant to adjacent anatomy and teeth are approved by the doctor before being finalized. When the clinical situation is a single tooth implant, it may appear to be a fairly straightforward process. However, sometimes that patient’s anatomy will not be ideal and the receptor site may be found to be unacceptable. This is the key to the FIP: having an expert opinion that formulates the plan in a 3-D manner, taking the guesswork out of the equation. This offers the best in clinical planning and medical legal protection for the doctor.

The clinician will be required to set up an account with the imaging company. Once this is established, the CT data can be electronically sent to the imaging company via specialized software and a high-speed Internet connection. The online meeting is set up at a predetermined time, and does not necessitate the doctor to have any knowledge of CT planning software. Another potential advantage of working with a diagnostic imaging company is a financial one—the clinician does not need to invest or purchase interactive treatment planning software. Once the clinician becomes familiar with the process, gains confidence in the technology, and is motivated to utilize these state-of-the-art tools, the software can then be purchased, if desired.

After identifying a good implant candidate and implant receptor site, a basic summary of the sequence of events (Figure 12) in the FIP is to:

1. Send working casts, face-bow, and a stable bite registration to the certified imaging service lab, for the fabrication of a CT scan template incorporating fiducial markers.

2. The CBCT scan is then taken with the template positioned intraorally (Figure 13).

3. The CBCT scan is analyzed by 3D Diagnostics as per the FIP.

4. Using VIP interactive treatment planning software, the receptor site is assessed and a simulated implant of appropriate length and width is positioned to ideally support the desired tooth.

5. The clinician reviews this data and approves the plan.

6. A “CT-derived” surgical guide or template is then fabricated.

7. The patient is appointed, and the implant is placed utilizing the surgical guide.

8. If the implant is well-fixated, an abutment can be placed, allowing for the fabrication of a non-functional (out of occlusion) immediate provisional restoration.

9. After adequate healing and integration has occurred, the implant will be restored with a definitive prosthetic crown.

### CLOSING COMMENTS

This first article, in a 3-part article series, outlined the treatment planning protocol and set the groundwork for a dentist to place his or her first single implant, followed by the restoration. The justification and rationale for dental implants, statistics of missing teeth, and a specific protocol for clinician’s practice has been presented. The treatment planning steps and appointments needed for a dentist to place and restore his or her “first implant” has been outlined, with the caveat to take further training before implementing these measures having been expressed.

Part 2 in this series will cover specifics of the presurgical and surgical aspects of a dentists “first implant.” ♦

### REFERENCES

1. Dental implants. American Association of Oral and Maxillofacial Surgeons. [http://www.aaoms.org/dental\\_implants.php](http://www.aaoms.org/dental_implants.php). Accessed March 31, 2011.
2. Misch CE. *Contemporary Implant Dentistry*. 2nd ed. St Louis, MO: Mosby; 1999:5.
3. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health. 2000:2-3.
4. Oral health resources. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. <http://apps.nccdc.dcc.gov/nohss/ListV.asp?qkey=7&DataSet=2>. Accessed March 31, 2011.
5. Craddock HL, Youngson CC. A study of the incidence of overeruption and occlusal interferences in unopposed posterior teeth. *Br Dent J*. 2004;196:341-348; discussion 337.
6. Ostler MS, Kokich VG. Alveolar ridge changes in patients congenitally missing mandibular second premolars. *J Prosthet Dent*. 1994;71:144-149.
7. Christensen GJ. Ridge preservation: why not? *J Am Dent Assoc*. 1996;127:669-670.
8. Petridis HP, Tsiggos N, Michail A, et al. Three-dimensional positional changes of teeth adjacent to posterior edentulous spaces in relation to age at time of tooth loss and elapsed time. *Eur J Prosthodont Restor Dent*. 2010;18:78-83.
9. Shugars DA, Bader JD, Phillips SW Jr, et al. The consequences of not replacing a missing posterior tooth. *J Am Dent Assoc*. 2000;131:1317-1323.
10. Misch CE. Endosteal implants for posterior single tooth replacement: alternatives, indications, contraindications, and limitations. *J Oral Implantol*. 1999;25:80-94.
11. Simon RL. Single implant-supported molar and premolar crowns: a ten-year retrospective clinical report. *J Prosthet Dent*. 2003;90:517-521.
12. Jivraj S, Chee W. Treatment planning of implants in posterior quadrants. *Br Dent J*. 2006;201:13-23.
13. Lemmerman KJ, Lemmerman NE. Osseointegrated dental implants in private practice: a

long-term case series study. *J Periodontol*. 2005;76:310-319.

14. Ganz SD. An implant restoration as the primary treatment alternative replacing a maxillary first bicuspid tooth. *Implant Soc*. 1992;3:2-5.

15. Ganz SD. Computer-aided design/computer-aided manufacturing applications using CT and CBCT scanning technology. *Dent Clin North Am*. 2008;52:777-808, vii.

16. Chung DM, Oh TJ, Shotwell JL, et al. Significance of keratinized mucosa in maintenance of dental implants with different surfaces. *J Periodontol*. 2006;77:1410-1420.

17. Tischler M. In-office cone beam computerized tomography: technology review and clinical examples. *Dent Today*. 2008;27:102, 104, 106.

18. Ganz SD. CT scan technology—an evolving tool for predictable implant placement and restoration. *Int Mag Oral Implantol*. 2001;1:6-13.

19. Ganz SD. Conventional CT and CBCT for improved dental diagnostics and implant planning. *Dent Implantol Update*. 2005;16:89-95. (Author: This was found on PubMed: different journal, with a slight difference in titles. Please verify that this is your correct reference.)

20. Pauwels R, Beinsberger J, Collaert B, et al. Effective dose range for dental cone beam computed tomography scanners. *Eur J Radiol*. 2010 Dec 31. [Epub ahead of print]

**Dr. Tischler** is a general dentist in private practice in Woodstock, NY. He is a Diplomate of the American Board of Oral Implantology Implant Dentistry, a Diplomate and Fellow of the International Congress of Oral Implantologists, a Fellow of the American Academy of Implant Dentistry, and a Fellow and graduate of the Misch International Institute. He is on the CE editorial board for *Dentistry Today* and on the editorial advisory board for the *Journal of Implant and Advanced Clinical Dentistry*. He has published many articles in various dental journals and lectures internationally on the principles of implant dentistry and bone grafting. He is the director of implant education for da Vinci Dental Studios and is also on the BioHorizons educational speakers’ panel. He offers in-office courses at his teaching facility in Woodstock many times during the year and has a popular instructional DVD available that covers the principles of implant dentistry and bone grafting. He can be reached at (845) 679-3706 or visit [tischlerdental.com](http://tischlerdental.com).

Disclosure: Dr. Tischler lectures for Biohorizons and is compensated at times for speaking.

**Dr. Ganz** graduated from the University of Medicine and Dentistry of New Jersey (UMDNJ) Dental School, and then completed a 3-year specialty program in maxillofacial prosthetics at MD Anderson Cancer Center in Houston, Tex. Dr. Ganz is now on the board of directors of the International Congress of Oral Implantologists. He maintains a private practice for prosthodontics, maxillofacial prosthetics, and implant dentistry in Fort Lee, NJ. He is on the implant faculty of many preceptorship programs nationally, is on the staff of Hackensack University Medical Center, and is presently on faculty at UMDNJ Dental School. He currently serves as assistant editor for the peer-reviewed journal *Implant Dentistry* and is on the editorial staff of *Practical Procedures and Esthetic Dentistry*. He has published more than 55 articles in various scientific journals. Dr. Ganz authored a book, *An Illustrated Guide to Understanding Dental Implants*. He has presented internationally on the prosthetic and surgical phases of implant dentistry. He can be reached at (201) 592-8888 or via e-mail at [sdgimplant@aol.com](mailto:sdgimplant@aol.com), or by visiting the Web site [drganz.com](http://drganz.com).

Disclosure: Need