

# FOCUS ON: Implant Dentistry

*Ara Nazarian DDS, discusses implant dentistry in today's practices.*

**Q: Is there an increasing need presently for implant dentistry?**

**A:** Today, there is an even larger need for some type of tooth replacement due to the economic situation that has led patients to putting off dental treatment. In fact, here in Michigan where I practice, patients have put off dental treatment until it starts to hurt. By that time, it is too late to salvage some, or all, of the teeth in question, and the necessity for implants and implant-supported restorations is needed. In addition, several studies indicate a direct relationship between tooth loss and a person's age. Since there is an increase in these patients (baby boomers), so will the need for tooth replacement whether it is a few teeth or a full-mouth reconstruction. Other causes of tooth replacement may include periodontal disease, extensive decay, failing crown/bridge and endodontic failures, or fractures.

Dental providers who are trained appropriately for the placement and restoration of dental implants within their general practice will find an opportunity to increase their practice's potential as well as restore the patient's mouth to proper form and function. However, it is important to note that the utilization of services from the appropriate specialists is still recommended for those individuals who may not be comfortable with bone grafting or implant placement.

**Q: Are there other uses for small-diameter implants besides overdentures?**

**A:** When patients present for implant treatment, they may not always present with the most ideal ridges for dental implant placement due to the area being edentulous for several years or no grafting was placed at the time of the extraction. For those patients that have been wearing a denture or partial for many years, the resorption of the underlying bone greatly reduces the height and width for traditional implant placement. Although bone augmentation procedures can create a more ideal height and width of bone for dental implants, patients still may decline due to the additional cost, time, and morbidity. Because of these reasons and more, small-diameter implants are being used as an alternative diameter choice to gain acceptance. Some of the advantages of this type of implant include its size, limited cost, one-piece design, and simplified insertion protocol.

The utilization of small-diameter implants in limited osseous regions increases patients' ability to choose implants as a viable restorative option. In the past, small-diameter implants were mainly indicated for overdentures or limited



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fixed cases in the incisor region (maxilla and mandible). However, their usage should be considered an option in select posterior regions where there is not adequate bone width or height for traditional implant placement. Already, there have been several papers documented from leaders in the industry that have indicated small-diameter implant use in limited regions following strict principles in regard to implant occlusion and biomechanics. The most important factor, to keep in mind when using small-diameter implants in these cases, is to direct the force of occlusion through the long axis of the implant while avoiding eccentric interferences on the final prosthesis. In addition, there should be no excessive cantilevers in the buccal-lingual dimension.

**Q: What are metal-free implants?**

**A:** The most common composition of dental implants to date has been some form of titanium or titanium alloy. Recently, we have seen the introduction of a metal-free option utilizing zirconium.

Not only is zirconium resistant to corrosion, but it is also much lighter in weight than steel. Discovered in the late 1700s in Germany, it was

isolated as a mineral about 30 years later. By the late 1960s, it was introduced as a potential bio-material called TZP and its first uses were initiated in hip prosthetic reconstruction. This material was later enhanced to an extremely hard ceramic material: a British physicist, Ron Graving, stabilized the tetragonal structure of zirconium dioxide by adding about 5.5% of yttrium oxide material. Not only did this improve its already exceptional mechanical properties but it also its biological stability.

In the last 2 decades, we have seen the use of zirconium in the field of dentistry for restorations including inlays, onlays and crowns due to its high strength and tooth-colored composition. More recently, we are seeing its use as a metal-free dental implant which has already received great acceptance in Europe.

Aesthetically speaking, zirconia is similar in color to natural teeth, which eliminates the dark line around the gum that is characteristic of titanium dental implants. When it comes to dental hygiene, zirconium is favored by many providers because it retains less plaque and calculus than titanium.

**Q: What is the future of implant dentistry?**

**A:** Implant dentistry has a very bright future, especially in light of the newer developments in implant design, materials, surface texturing and surface coating. Having the ability to place a dental implant, and then restore it in a fraction amount of time usually required due to these new developments, allows dental providers the instrumentation to rebuild form and function very efficiently. Today, patients do not want to wait long periods of time to be able to function with their dental implants and restorations.

With increasing technology in the field of cone beam computed tomography software, we are quickly approaching the ability to do live surgery with simultaneous 3-dimensional views of the bone anatomy while we are working on it. Surgical guides that are tissue born may be fabricated without having to take preliminary dental impressions.

**Dr. Nazarian** maintains a private practice in Troy, Mich, with an emphasis on comprehensive and restorative care. He is a Diplomate in the International Congress of Oral Implantologists and is the director of the Reconstructive Dentistry Institute. He has conducted lectures and hands-on workshops on aesthetic materials and dental implants throughout the United States, Europe, New Zealand, and Australia. Dr. Nazarian is also the creator of the DemoDent patient education model system. His articles have been published in many of today's popular dental publications. He can be reached by calling (248) 457-0500 or via e-mail at [aranazariandds.com](mailto:aranazariandds.com).