


Mini Implants: Insight from Dr. Gordon Christensen

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with Gordon J. Christensen, DDS, MSD, Ph.D.

Dr. Gordon Christensen, a pioneer in the field of implantology and a leading proponent of small-diameter, or mini, implants, has shared his knowledge and experience during his visits to the laboratory. The following details his recent insights on the current and future state of mini implants.

Mini implants as a permanent solution

Initially, I was using minis as transitional implants when I had placed conventional implants and just wanted something to hold the denture or the fixed bridge in place while the conventional-diameter implants integrated. I found, after three or four months of waiting for the conventional diameter implants to integrate, that I seldom could take the mini implants out easily. In fact, I had a couple that I practically had to cut out. That was the turning point.

When the early transitional implants were introduced, they were pure titanium. They were so weak that you could bend them with your finger. They were not adequate. However, when Dr. Victor Sendax (one of the first proponents of small-diameter implants) got together with the IMTEC Corporation and made them from titanium alloy, they were significantly stronger. The combination of strength and ease of placement, and the fact that they could be loaded immediately, made me change my mind about using small-diameter implants.

Current state of implant placement

My observation is that we are only treating a small fragment of the American population who could benefit from dental implants – it's abominable. At most, maybe 2 percent of Americans have had an implant. A lot of countries I visit have 10 percent, 15 percent, 18 percent. We are basically at nearly zero.

We have aimed at the boutique level, but what about the other 98 percent? What about the rest of the people who make around \$55,000 a year, the average American salary for a family? We need to get involved with people who have a typical income.

Implant dentistry is on fire! It's going to continue to grow and grow. It's going completely beyond what I expected. But we are only hitting the market with the large-diameter implants. We're not involved with the other part of the population because of high costs. We are going with the big implants and they only fit in patients with 6 mm of bone facial-lingual. Who has that? Not people at age 50 or 60 or 70. They usually don't have that much bone. So the obvious change is going from just serving the boutique level to treating typical people.

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Why so few dentists are placing implants

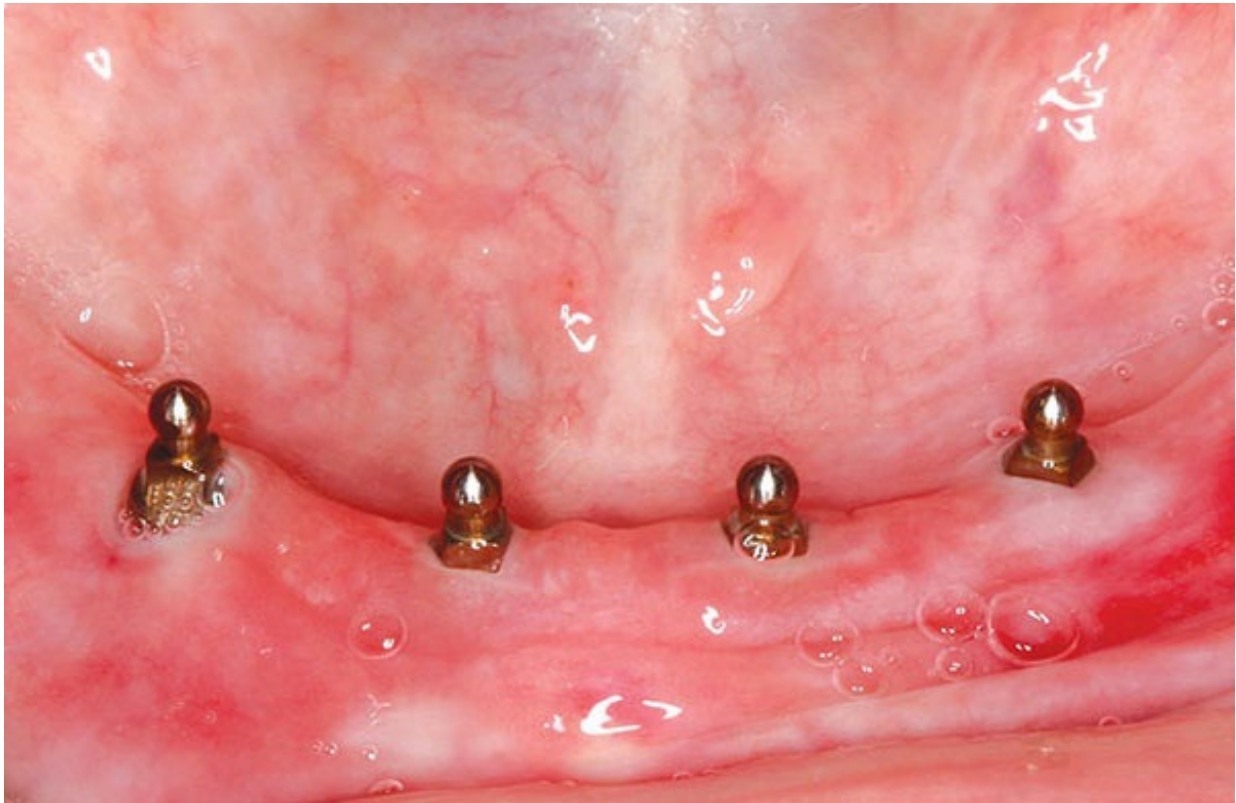
I've been doing surgical placement of implants for about 25 years. As a prosthodontist, it was a very difficult thing to get into because the surgeons wanted to dominate the area. For many years, they did. Now, we are starting to see general practitioners become more involved. But still, there is frustration on their part. Are they going to hit a tooth? Are they going to hit the sinus? Will they perforate the inferior alveolar canal? And all the other negatives that are pretty obvious to any one of us.

Yet, a statistic that I'm going to give you right now is very clearly oriented toward the

desirability of general practitioners placing implants. We know that about 69 percent of general dentists will do a third molar impaction. According to our legal experts, that is potentially far more legally threatening and problematic than placing an implant – and I'll qualify this – in a healthy person with good bone.

We did a survey recently of 140 procedures in dentistry to identify the difficulty of each on a scale of 1 to 10, 1 being simple and 10 being extremely difficult. An implant, in a healthy person with good bone, got a rating of 5. And so did a Class II composite.

Who does most of the routine surgery in dentistry? The general dentist. Most general dentists will take out a third molar, but less than 10 percent will do an implant in a healthy person with good bone. There is an educational demand there.



Courtesy of Christopher P. Travis, DDS



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Advantages of mini implants for patients

The primary benefit of mini implants is for a person who is too debilitated to undergo the surgery necessary for conventional implant placement; the person who does not have the money for a complex case, which very often might be better; or the person who will not accept, or cannot have for health reasons, a major bone graft.

Advantages of mini implants for clinicians

Simplicity. In the November 2007 CRA[®] Newsletter (now Clinicians Report[®]), when asked about difficulty of implant placement, respondents reported placement without a flap as “simple” and placement with a flap as “slightly more difficult.” That’s about what we saw as the major advantage to the clinician. I delivered a program at the World Congress of Minimally Invasive Dentistry (WCMID) on about 20 different minimally invasive techniques. Minimal invasiveness is one of the major benefits of small-diameter implants.

Another significant advantage is that they can be immediately loaded in bone that is adequate. With Type I bone, there’s no question; I’ve loaded hundreds of them immediately.

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Conditions that cause mini implants to fail

Improper radiography and lack of thorough treatment planning are often the cause of mini implant failure. I strongly suggest a facial-lingual radiograph for any treatment plan – either a tomograph or a CBCT scan. The quality and quantity of bone, as well as the ideal location of the implant, can be evaluated pre-surgically.

Too much soft tissue thickness on the ridge is another issue. If the thickness of the soft tissue is more than 2 mm, the clinician should take a V-wedge out and allow the soft tissue to heal before even considering making any kind of an impression. About 2 mm of soft tissue should be the maximum on the crest.

Too few implants placed can also be a major problem. For Type I bone, four mini implants in the anterior region of an edentulous mandible is more than enough. I usually say two small-diameter implants would equal one conventional-diameter implant.

Besides diameter, the length of the implant must be considered; 10 mm is very borderline. If you're going through 2 mm of soft tissue, you really don't have enough bone-to-implant contact. The average length used by the profession is 13 mm.

Regarding lining up the implants – and this is totally empirical – I do not like anything greater than 15 degrees from parallel. Usually, the housings will compensate for that quite nicely. If the divergence is too great, the O-rings will wear more quickly.

And poorly adjusted occlusion is a total killer. If clinicians attempt to put minis into a bruxer, they're kidding themselves.

Finding success with mini implants

Making minis succeed means adequate numbers of implants and proper treatment planning. It means parallelism. It also means not having too much soft tissue coronal to the bone. It means adjusting occlusion well after the prosthesis is delivered. And, in the event that the bone is of questionable quality, it means waiting, with a soft denture reline, for several months before loading. However, most of the small-diameter implants I have placed were loaded immediately.

But there is a cautionary note, and that is: recognizing what makes them fail. If clinicians respect the several points I've mentioned, minis will serve patients well for years.

Small-diameter implants are a revolution in implant therapy. This is where the action is! Small-diameter implants will satisfy two-thirds of the population who are not well served by larger diameter implants. When we wake up and recognize that and learn how to use those small-diameter implants, we will have a whole new marketplace in our practices.

Dr. Christensen is founder and director of Practical Clinical Courses (PCC). PCC offers step-by-step continuing education videos for dentists that show how to place and restore both conventional and mini implants. For a list of titles, such as "Placing Mini Implants – Simple,

Safe, and Effective” (V2360), and additional information on these valuable resources, call 800-223-6569 or visit pccdental.com.