

Understanding bone grafts and dental implants

Dental implant therapy has become a very routine and standard option for replacement of a single tooth or several teeth. Although in the hands of properly trained clinicians they are typically straightforward, the diagnostic process is quite complex. Conventional dental x-rays and a clinical examination have been used for years to assist in the diagnosis of whether or not a particular location is appropriate for a dental implant, and often a surgical guide made from a dental model is also used to assist the surgeon in proper positioning of the implant. Today, however, modern imaging techniques with something called a conebeam CT scan allows a computerized three dimensional visualization of the actual bone architecture and density. Very precise surgical guides can be made directly from these images that are much more accurate than the traditional model approach. Although both approaches usually yield acceptable results, modern technology has removed a lot of the guesswork and allows dental implant therapy to occur much more predictably.

When dental implants are placed, it is often necessary to add bone or a bone substitute around the dental implant to improve the prognosis. For example, when an implant is to be placed immediately at the time of tooth extraction, bone graft material is used to backfill around the implant, much



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like dirt is backfilled around a fence post. If the planned implant site involves the sinus region, bone grafting can be used to lift the lining of the sinus slightly to make room for the implant. In extreme cases, bone grafting can be used to widen the ridge of bone where the implant will be placed. Again, modern imaging helps the surgeon plan for bone grafting before surgery.

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The most common type of bone graft is freeze-dried and sterilized cadaver bone. When possible, bone from another area of the mouth is used because it has the best chance of success. Sometimes, an artificial bone substitute can also be used. In very complex situations, bone can also be grafted from other areas of the body, such as the top of the hip bone, for grafting. With

the exception of a hip-bone graft, most of the bone grafting procedures do not require a second surgical site or more complicated surgery than the implant placement itself. However, bone grafting usually extends the healing time before the implant can be restored with a prosthesis. Essentially, the bone graft material is dissolved over a period of 3-6 months by the body and converted to healthy new natural bone. When planned appropriately, bone grafting is a very predictable adjunctive procedure to dental implant therapy.

As with all surgical, medical, and dental procedures, unforeseen complications can occur. For example, when a dental implant is planned from conventional techniques, the need for additional procedures may be discovered during the placement surgery, such as the need for bone grafting or the need to reposition a dental implant. Modern imaging techniques, like conebeam imaging, can greatly lower the chance of surprises such as these.

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For questions about dental health or to schedule a complementary consultation, call 330-364-2011, visit www.doctorhuff.net, or ask your regular dentist.