

Dental Implants: The Basics

What is it? A dental implant is a surgical fixture that is placed in the bone in order to replace a tooth that is missing or has been lost due to decay, trauma, or periodontal disease (see Figure 1). Most modern dental implants are made of either a *titanium* or a *bioceramic* material. Health-conscious patients tend to prefer the bioceramic implant. *I will provide more information on this in my upcoming article.*



bioceramic implants, respectively, with natural teeth on either end

What are the benefits? The most obvious benefit of a dental implant is that it is fixed in the mouth—meaning, unlike a partial denture, a dental implant does not need to be removed from the mouth to clean or to chew. Through a process called osseointegration, the bone actually locks in around the implant to secure it, allowing you to chew, talk, brush and floss as you would with a natural tooth. In this way, a dental implant most closely mimics a natural tooth and is more of a long-term solution than a bridge or partial denture (Figure 2). Another benefit is that, unlike a dental bridge, a dental implant does not require any cutting of the adjacent teeth (Figure 3). Instead, we can preserve teeth and avoid unnecessarily compromising tooth structure.

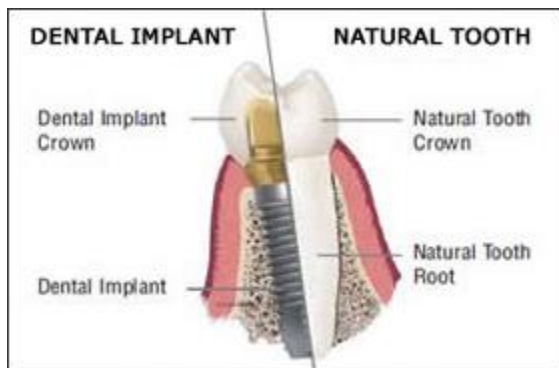


Figure 2. Anatomy of dental implant compared to anatomy of tooth



Figure 3. Cutting adjacent teeth to place a bridge

The most important benefit of an implant is that it preserves bone. When teeth are lost, the surrounding bone wears away. The longer the teeth have been gone, the more bone is lost. When enough bone is lost, the appearance of the face changes from full to sunken-in (Figure 4). But when an implant is placed, the bone is engaged and does not wear away. Figure 4

What are the risks? Like any surgical procedure, there is risk of prolonged bleeding and potential for infection, both of which can be treated. There is also a risk that the implant could fail to integrate with the bone and the procedure would have to be repeated. Lastly, there is increased risk for people with high sensitivities and multiple major allergies. For such people, the bioceramic implant is a fantastic option, but it still is a foreign body, so special consideration must be taken in such cases.

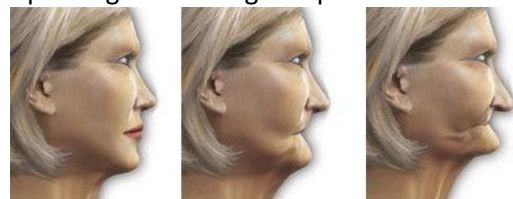


Figure 4. Example of facial change when significant jaw bone is lost.

Who can get a dental implant? The ideal candidate for a dental implant is someone with healthy gums and bone. Good oral hygiene is a must, as too much plaque and bacteria can lead to the implant failing to be secured by the bone. Another potential issue is the use of bisphosphonate drugs (osteoporosis medication), as they can place a person at risk of bone death in the area where oral surgery is performed. This risk is higher with intravenously administered bisphosphonate therapy. Prolonged steroid use also affects the structure of bone. Heavy smokers and patients with uncontrolled diabetes are not good candidates for dental implants.

What is the Process?

-First, there is an evaluation to determine if there is enough bone to support the implant. If there isn't, surgical techniques may be planned to supplement the bone that is present. Also, the patient's health is reviewed to confirm that he/she does not have any conditions that could jeopardize the success of the implant surgery.

-Then, the implant is placed. Many patients remark that the surgery is actually much simpler and quicker than they thought. Healing is also usually not demanding for the healthy patient. Usually, 4-6 months are needed for the bone to grow around implant and secure it (osseointegration). During this time, a retainer may be worn to protect the implant from forces (chewing, tongue, speaking) so that it can successfully integrate with the bone.

-Lastly, a custom crown is made and cemented on top of the implant once healing is complete and the implant is secure

Overall, dental implants are a great solution for missing teeth. Like any dental procedure, there are risks. But the benefits are numerous and the success rate is very high. Implants may not be ideal for some people because of medical, anatomical, and/or financial reasons. But for the majority of healthy individuals, dental implants could be next step toward achieving their ideal smile and maintaining a healthy mouth.