

What are Dental Implants?

Implants are successful and effective in majority of patients treated. A natural tooth consists of a crown (the part you see above the gum), and the root (the part hidden under the gum). It is the root in the jawbone that holds the natural tooth in place, but with a ligament attachment which has elasticity, or “give”. Implants become osseointegrated or in common terms “bonded to the bone” after healing. So, the implant is different than a tooth, which normally has a ligament surrounding the entire tooth adjacent to the bone, and there is a slight give and movement due to this ligament attachment.

A dental implant is a small titanium screw-like cylinder that serves as a replacement for the root portion of a missing natural tooth. Titanium is used because it is the most compatible with our human body. A dental implant is placed in the bone of the upper or lower jaw and functions as an anchor for the replacement tooth just like roots hold natural teeth in place. In addition, implants can act as mechanism to attach a removable prosthesis, like a complete denture or partial denture. Therefore, after the bone has healed and grown around the implant (osseointegrated), implants can hold a crown, bridge, partial overdenture, or complete overdenture prosthesis. Implants can provide additional support where teeth are missing without putting forces onto remaining natural teeth. They may be used to support the replacement of a single missing tooth or several implants can be combined to provide a complete functional set for individuals who have lost many or all their teeth.

Today, implant procedures are called “routine.” We would like you to have a basic understanding of what implants are, what can be expected from them, and what limitations they might have in your specific area of need. Implants are very successful. Maxillary and Mandibular implants are more than 95% successful. Lower implants have a somewhat higher success rate than upper implants. Occasionally, implants fail, but it is not common. Chances of an implant failure, many times, can be determined during or after the surgical phase before the replacement tooth or teeth are constructed.

A dental implant is a titanium, or sometimes ceramic, root substitute that is placed or “implanted” in the jaw bone. This is called an endosseous implant. It can be used to replace a single missing tooth, provide an abutment (anchor or retainer) for a fixed partial denture (bridge) and replace several missing teeth, or provide added retention to a removable dental prosthesis - such as a partial denture or complete denture. In fact, if you are missing all your natural teeth, it is possible to have maxillary (upper) and mandibular (lower) fixed replacements. The replacements do not come out and you cannot remove them yourself, they become part of you like your natural teeth.

Two separate events are needed when replacing a missing tooth with an implant. First is the surgical phase in which the implant is placed. In the second phase the replacement teeth are constructed and fixed into proper position, or the implants are used to retain a removable prosthesis. We prefer to do both phases of the implant procedure, but may choose to perform just the fabrication of the prosthesis only. This depends on the complexity of the case. If this is the case, you will be referred to a Periodontist or Oral Surgeon who will perform the surgical portion of the implant placement. In addition, bone grafting procedures to prepare the site for implant placement, or augmentation procedures to add bone during implant placement may be indicated.

The implant placement procedure involves making a small incision in the gum area where the

implant is to placed, preparing a site in the underlying bone, inserting the implant into the prepared site, and closing the tissue over the implant with several sutures. This area is left undisturbed, usually for 3 to 6 months. More healing time may vary due to the density of your bone, bone grafting procedures, etc. The lower jaw is composed of bone that is denser than that of the upper jaw. This healing time allows for allowing bone to grow around the implant within your bone, called *osseointegration*. The implant is held in place by the bone.

After the healing and integration of the implant the implant is ready to be used. Either the implant was placed 1) in a one-stage procedure which leaves the healing cap exposed and allows for immediate use, or 2) the placement site was covered and then is exposed by reopening the gum. Depending on what the purpose of the implant for restoration or anchorage, the next steps vary. For a crown or bridge, an impression post(s) will be used to index the implant and then indirectly fabricate a prosthesis. A post will then be placed and secured into the implant to the internal threads, or a one-piece crown will be placed. The crown, bridge, or other type of replacement will be attached to this post either as one piece or in two pieces, depending on the design for your situation.

We will discuss with you the requirements and options for your situation. There are usually several possibilities for effectively replacing missing teeth. It is important to decide on the design of the implant-retained replacement prior to the actual implant surgical procedure. Position and alignment of the replacement teeth need to be carefully considered before determining the location of the implant.

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If you have any questions about implants, please feel free to ask us.