



# Dental Implants

Compiled by Cecilia Addyman for Implant Perio Inc



**Implant  
Perio** Inc

Periodontics, Implants & Oral Medicine

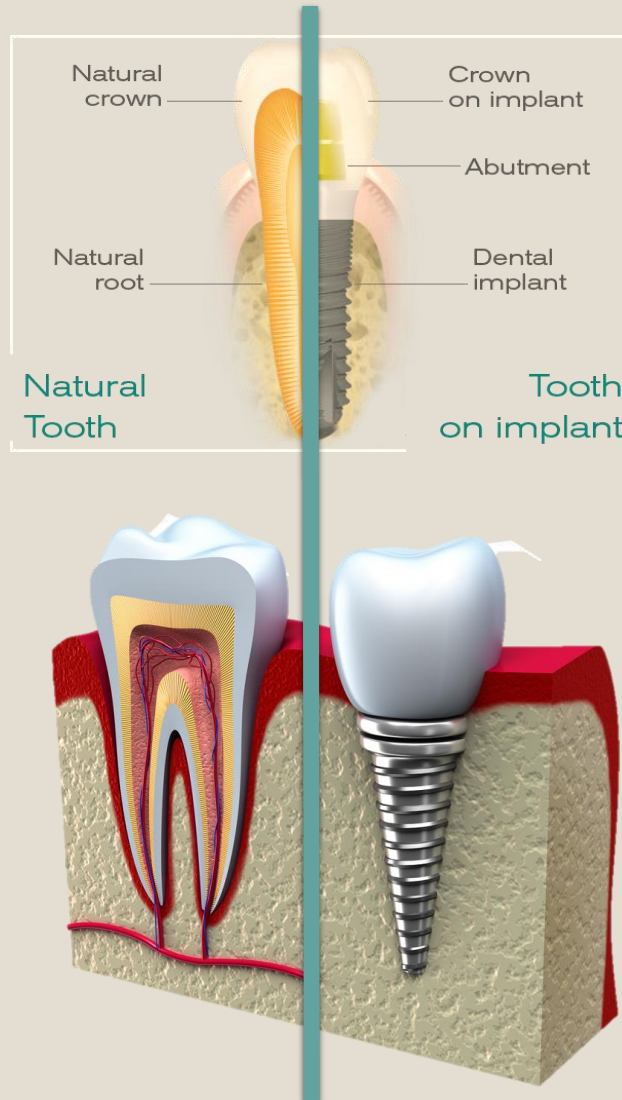
# Tooth and Implant comparison

Before we look at the various phases of implant treatment, it is important to understand the differences between teeth and implants.

## Our teeth are made up of the following:

- **Enamel:** The hardest, white outer part of the tooth. Enamel is mostly made of calcium phosphate, a rock-hard mineral.
- **Dentin:** A layer underlying the enamel. It is a hard tissue that contains microscopic tubes. When the enamel is damaged, heat or cold can enter the tooth through these paths and cause sensitivity or pain.
- **Pulp:** The softer, living inner structure of teeth. Blood vessels and nerves run through the pulp of the teeth.
- **Cementum:** A layer of connective tissue that binds the roots of the teeth firmly to the gums and jawbone.
- **Periodontal ligament:** Tissue that helps hold the teeth tightly against the jaw.

Usually when there is a problem with a tooth, we are aware of it as we experience sensitivity, pain, throbbing, etc in the area. This is because our teeth have nerves to indicate when there is a problem.



## Dental Implants:

A dental implant is a surgical component that interfaces with the bone of the jaw or skull to support a dental prosthesis such as a crown, bridge or removable denture. After the implant is placed, a variable amount of healing time is required.

Dental implants come in a variety of shapes and sizes, so there is one to suit every clinical situation. An implant is actually an "artificial tooth root"; the implant surface is ribbed for better integration into bone tissue. Most often, dental implants are made of titanium. Titanium is the most favoured material by most of the dental clinicians and implant manufacturing companies due to its high biocompatibility, non-allergic and tissue friendly nature and its great ability to make a connection of its surface with the alveolar bone for the process of osseointegration.

Pain on an implant usually indicates advanced stages of problems. Implants do not have nerves so have regular check-ups to pick up problems early on.

# Dental Implant

A dental implant usually consists of 3 parts on completion.

## IMPLANT BODY

A dental implant most often takes the form of a small, screw-shaped titanium post that replaces the root-part of a missing tooth. The surgical procedure used to place an implant is actually quite minor and routine, requiring only local anaesthesia in most cases.

## ABUTMENT

After a period of healing is allowed, a healing abutment (sulcus former) is placed into the implant body which will stretch the gum in preparation for the crown to be placed.

## CROWN

Once the gum is prepared sufficiently, a crown can be fitted onto the implant. This is the last phase of the implant treatment, which is done by your restorative dentist, and not by your periodontist who will be placing the implant.



# Bone Augmentation

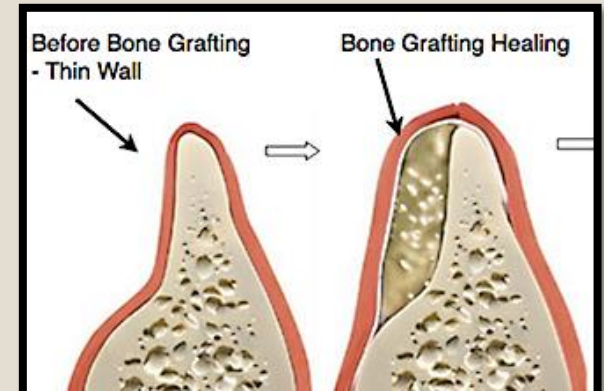
So, you have lost a tooth or you are about to...  
What now?

When we lose teeth, there is no longer anything stimulating the bone to keep it there and bone resorption takes place. In some cases the bone is too far resorbed and cannot be rebuilt, but in most cases, bone can be put back as in the first image on the right. To see how much bone is needed in an area, a CBCT (Conebeam CT 3D) x-ray is usually taken during the consultation. This will give us a good indication of how much bone there is in an area where implants are considered, and in the Maxilla (top jaw), it also indicates if sinus lift procedures will be necessary to create adequate bone height for implant placement.

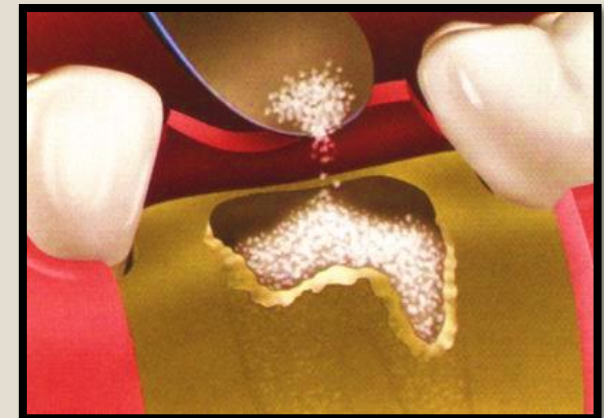
When a tooth is to be extracted and an implant is being considered for the site to replace the missing tooth at a later stage, a surgical removal of the tooth will be done along with bone augmentation.

When a tooth is extracted the conventional way, most often the bone that surrounded the tooth is damaged and some of the bone structure removed along with the tooth. With a surgical removal, the ligament that binds the tooth to the bone structure is gently loosened with a special instrument, allowing for the tooth to be removed in such a way as to preserve as much of the bone structure as possible. A bone granulate, generally of bovine origin, is placed in the socket where the tooth was extracted. This bone will act as scaffolding for your body to form its own one in the area over a period of 3 – 6 months. Everyone heals differently – some people will have great new bone formation in 3 months after surgery, where others may still need some more healing time before an implant can be placed.

Although we find in most cases that bone augmentation is needed, it is not always the case. This is however determined by the CBCT scan, and varies from case to case.



Teeth lost for a while



Extraction

# So, how do implants work?

During a minor surgical procedure, your dental implant is inserted directly into the jawbone in the space vacated by the missing tooth. It will then be left to heal for a period of months before the final crown is attached. During this healing period, the implant actually fuses to the bone surrounding it.

## Replace One Tooth

— When you have one tooth missing, a single implant is inserted into the bone to replace the root part of that tooth; a crown then goes on top to simulate an actual tooth. This treatment choice has the highest success rate, making it the best long-term investment for replacing a single missing tooth. Even if the initial cost is slightly higher than other options, it is the most cost-effective solution over time. An implant will never decay or need root canal treatment, and feels just like the tooth that was there.



## Replace Multiple Teeth

— When you have more than one tooth missing, implants provide an ideal replacement mechanism. You don't even need one implant for every missing tooth. Instead, implant teeth can act as supports for fixed bridgework. For example, if you are missing three teeth in a row, we can place two implants, one on either side of the gap, and a crown in between that has no implant underneath. That way, you won't need to use any of your remaining natural teeth as bridge supports, which could weaken them and make them more susceptible to decay.



## Replace All Teeth Permanently

— Implants can support an entire arch of upper or lower replacement teeth that are fixed into the mouth and are never removed. Sometimes the new teeth can be supported by as few as 4 implants. It's comparable to the structure of a table, which only needs 4 legs to hold it up. In cases where jawbone density and volume have deteriorated, 5 or 6 implants might be needed to support a row teeth. Dental implant replacement teeth protect your jawbone, won't slip, and should last a lifetime..



## Support Removable Dentures

— Implants can even make removable dentures more comfortable, effective and healthier to wear. Traditional dentures rest on the gums and put pressure on the underlying bone. This accelerates bone loss so that the jaw shrinks and the dentures slip, particularly on the bottom. But today dentists can attach a removable denture onto implants, transferring that pressure into the bone structure rather than the bone surface. This prevents the dentures from slipping while you eat and speak, and preserves the bone directly beneath them.



# Where do I start?

The first step will be to arrange a consultation with your Periodontist

## A consultation will generally involve the following:

- Patient interview – during the interview phase, we would obtain information from you regarding your medical history, habits, dental problems/concerns and what your specific dental requirements are.
- A full periodontal evaluation will be done to assess your overall dental health and if you will be a suitable candidate for implant placement. Often, patients present with a form of periodontal disease causing tooth loss, which may need to be addressed before implant placement will be considered.
- X-rays – various x-rays may be taken to assess your bone levels, ranging from small periapical x-rays to a more advanced 3D scan.
- Treatment discussion – once all information is collected, we can make a recommendation and discuss the various options available in your specific case.

Prior to any further treatment commencing, you will be supplied with cost estimates for the various phases of the treatment. It is important to note that implant placement happens over a few phases and may require several appointments to get to the final result.

### **IMPORTANT**

Once the implant treatment is complete, regular maintenance appointments **MUST** be kept to, to ensure the long-term prognosis of the implant(s) and to maintain the warrantee on the implants.



Tel: 041 363 0124

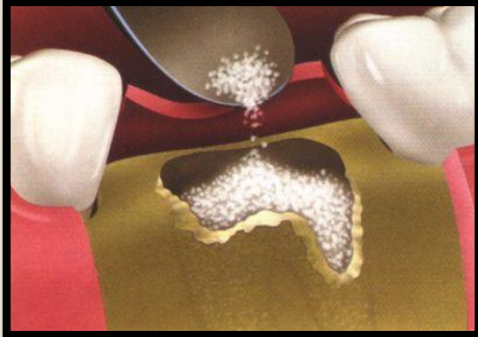
Fax: 086 262 2189

reception@implantperio.co.za

www.implantperio.co.za

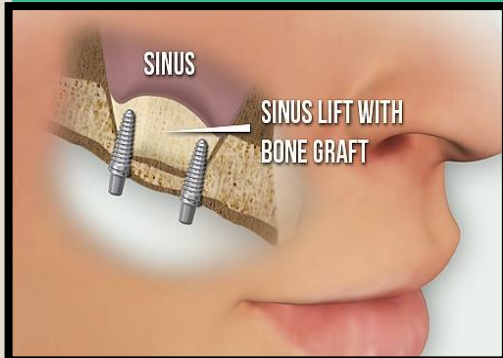
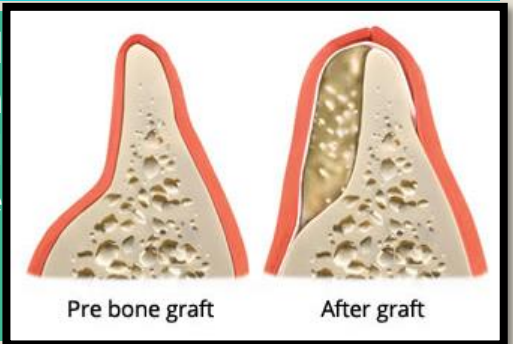
By now we would have established if you have any periodontal disease, and if you will need bone augmentation done before implant placement, if you may need sinus lifts, if the implants and bone augmentation can be done together, or if you do not need bone augmentation at all. If no bone augmentation is needed, you will start with the implant placement phase.

## Phase 1 – Bone Augmentation



**If you lost a tooth**, the extraction site is usually filled with bone material and closed up for a period of 3 – 6 months to allow healing and new bone formation, before the implant will be placed in the area. If the bone defect is too large and an implant is placed immediately, it increases the chance of implant failure.

**If a tooth/teeth have been lost for a period of time**, bone may need to be built up in the area to allow for enough bone height and width for implant placement. In this case, the area will be closed up and left for a period 3 – 6 months to allow for healing and new bone formation, before an implant/implants will be placed in the area(s).



When teeth have been lost in the maxilla (upper jaw) we sometimes find that bone resorption has taken place under the sinus, or that the sinus has drifted down into an extraction site. If there is not enough bone height in the maxilla, a sinus lift(s) may be necessary to create adequate bone height in the areas. Depending on the amount of bone that needs to be placed, the areas may be left to heal before implant placement to allow for the bone to heal sufficiently.

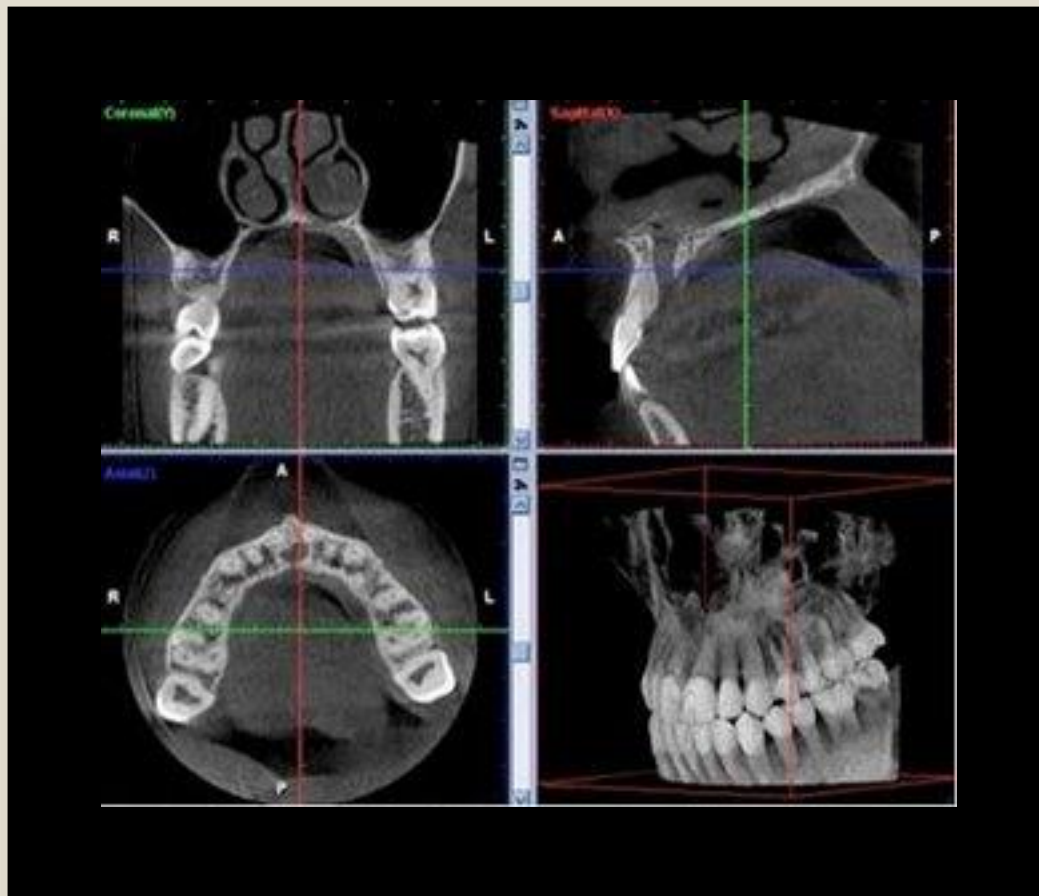
## Phase 2 – Evaluation and CBCT scan

By now it will be 3 – 6 months later and time to evaluate the bone that was placed. The time between appointments will vary from patient to patient, depending on the amount of bone placed and clinical findings.

At this appointment, a detailed periodontal examination will be done again to rule out any infection and to ensure that your dentition is in a healthy state.

Another CBCT scan will be taken to assess the bone that was placed, to attain if enough bone width and height was achieved with the bone augmentation process. A CBCT scan picks up any pathology that a conventional 2D x-ray may miss and allows for accurate treatment planning.

This appointment will determine if more time must be allowed for healing, if the implant placement can commence, or if more bone may be needed during implant placement.





# Phase 3 – Implant Placement

For the implant placement, the areas to be worked on will be anaesthetised (numbed) for your comfort, and the adrenaline in the anaesthetic also acts as a vasoconstrictor, restricting blood flow to the areas.

The procedure could be done in theatre, or in the dental chair with Sedation or administration of a Dormicum tablet.



In the event that the implants are stable enough in the bone for the healing abutments to be placed at implant placement, the 4<sup>th</sup> and 5<sup>th</sup> phases will fall away. **Note that this rarely happens.**

First, the a gingival flap is raised to expose the bone which will be supporting the implant.

Then, several drills are used to create space for the exact size implant to be placed.

There are various types of implants – the right one for your specific case will be placed.

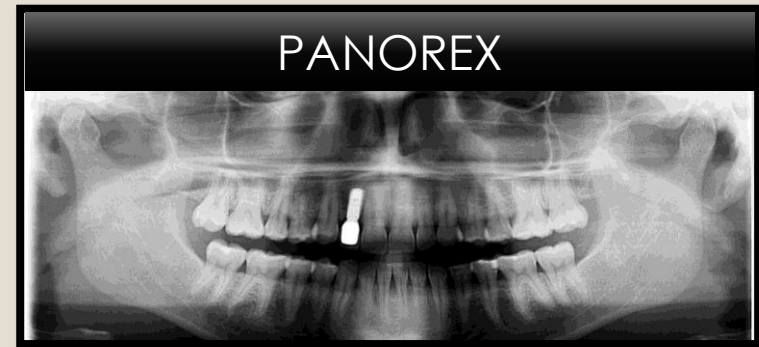
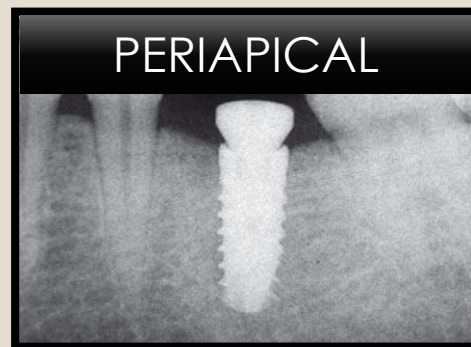
Once the space has been prepared for the implant, the implant will be secured into the bone.

When the implant is secured and a cover screw secured into the hollow implant, extra bone will be placed if needed, and the gum resecured over the implant to allow another phase of healing, up to 4 months.

## Phase 4 – Implant Evaluation

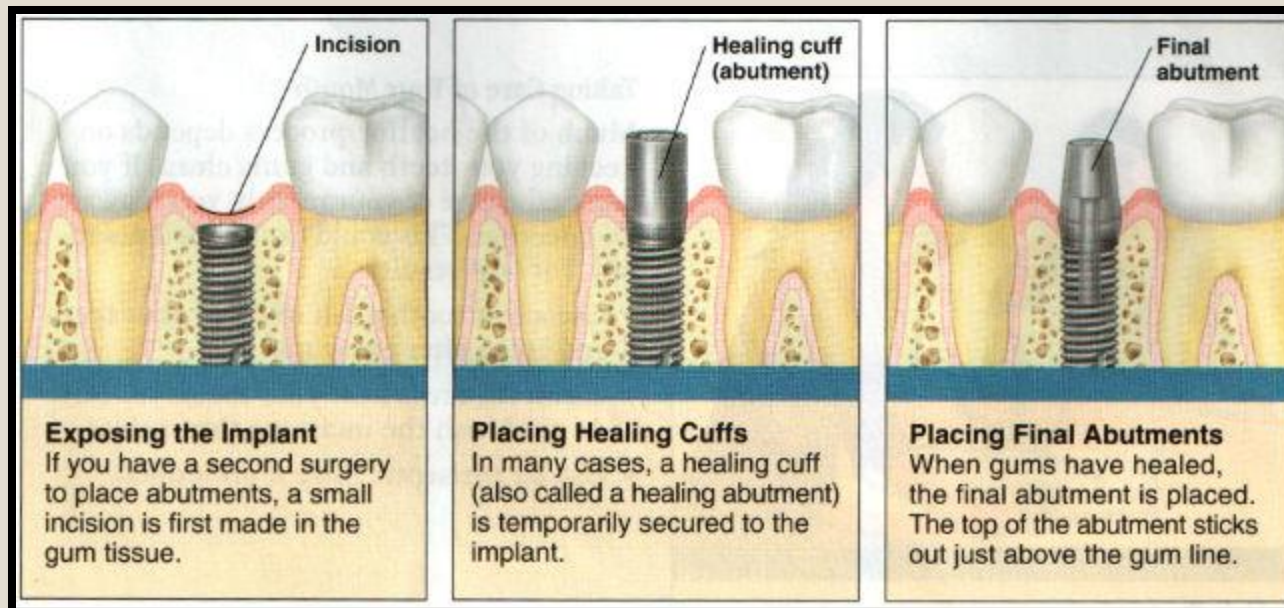
Evaluation appointments between surgical phases are critical for the long-term success of the implant. These appointments allow for any pathology to be picked up early on should there be any. The bone and implant integration is also monitored during these appointments to ensure all is well for the next phase to commence.

A periodontal evaluation will again be performed and x-rays taken. The appropriate time for the next phase will be confirmed at this appointment. The next phase, the uncovering of the implant, is usually scheduled for a week after this appointment, however depending on the findings during this appointment, a further healing period may be advised but is not always necessary.



## Phase 5 – Uncovering of the Implant(s)

Once the implant(s) has been evaluated and all is well, the uncovering of the implant(s) can commence. This is done by making a small incision in the gum above the implant(s) and removing the cover screw(s) from the implant(s). The cover screw(s) is then replaced with a healing abutment(s) which will stretch the gum in preparation for the crown(s), bridge(s) or other fixture(s) to be placed. The gum is secured around the healing abutment(s) and left to heal for approximately 2 months.



## Phase 6 – Implant Evaluation and Cleaning



Just like a tooth, plaque can accumulate around the implant surface and that of its components. It is very important to care for an implant the same as for your own teeth. Failure to do so can lead to infection of the gum, the bone surrounding the implant; and eventually cause the implant to fall.

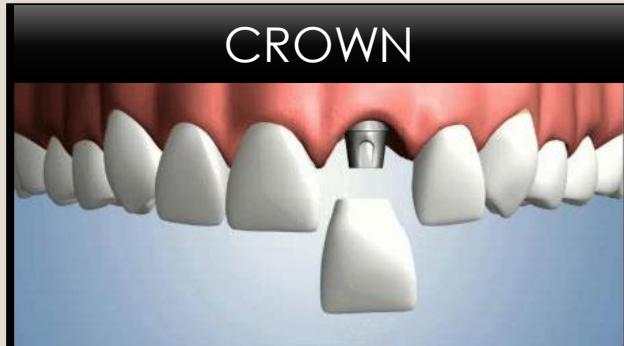
The implant evaluation and cleaning appointment is usually scheduled just before, or on the same day as your appointment with your restorative dentist to start the process for your final crown(s) or other fixtures, be it removable or fixed.

At this appointment, a periodontal examination will be done, an x-ray taken, and a complete dental cleaning will be done, focussing on the implant.

Before you leave our office, your first follow-up appointment will be scheduled. This forms part of your maintenance and aftercare which is vital to keep the implant healthy, and to keep the warranty on your implant(s).

# Phase 7 – Placement of Prosthetics

You are ready to have your prosthetics placed!



CROWN



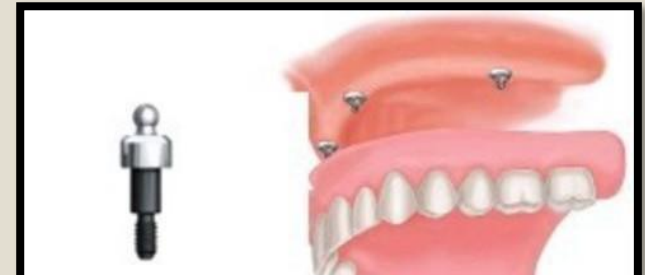
BRIDGE

Depending on the placement of the implants and quantity, as well as what will be best suited for your case, there are various restorative options.

**NOTE: this is done by a restorative dentist, and their fees are separate to ours.**



BAR RETAINED DENTURE



BALL CLIP DENTURE



SCREW RETAINED DENTURE

# Implant Maintenance

Ways an implant can lose attachment to the bone and fail once it has successfully fused: include poor oral hygiene or excessive biting forces. Poor oral hygiene and/or a lack of regular cleanings can lead to a destructive bacterial infection called peri-implantitis. Flossing and brushing your teeth on a daily basis, along with regular professional cleanings, can prevent this. Excessive biting forces can come from either a habit of clenching or grinding your teeth, or an insufficient number of implants to handle the forces generated by your bite. You should receive the correct number of implants so this does not happen. And if you have a habit of grinding or clenching your teeth, a nightguard will be recommended to protect your implants. After all, implants are a long-term investment in your smile, your health and your well-being, so it's best to protect your investment.

The daily care of dental implants is very similar to the care of natural teeth. Restored dental implants should be kept clean and plaque free twice a day using a brush and floss. Cleaning is especially important after meals. This is accomplished by gently brushing, giving special attention to all sides of the implant.

Oral hygiene aids may include:

- Small, soft, manual toothbrush or an electric brush
- Low-abrasive, tartar-control toothpaste
- Dental floss for cleaning around the abutments

Other supplies that may be recommended by the doctor can include:

- Antimicrobial mouth rinses
- Inter-dental brushes or other aids for removing plaque between the teeth on either side of the implant(s)

**You must be committed not only to daily performance of dental hygiene at home, but to regular visits to your dentist. It is recommended that you see your dentist every 6 months for a professional exam and cleaning. The implant(s) should be examined with an x-ray annually. Failure to attend maintenance appointments, may render your warrantee void.**



# Implant Warrantees

There are hundreds of different implants on the market, however we only use implants with a proven track record and that comes with a warranty. Some implants come with a 25-year warranty and others with a lifetime warranty. Some companies only have a warranty on the implant body, where others cover the implant and all its components too.

When an implant is selected, we take into consideration what the patient's restorative dentist is comfortable with, what the patient's budget allows, and most importantly, what the patient's clinical requirements are.

Every patient has a different medical history, different risk factors and different needs when it comes to implants. Every aspect of the treatment is carefully planned to ensure each patient receives the best possible treatment for his or her unique case.



# Implant Perio<sup>Inc</sup>

Periodontics, Implants & Oral Medicine

Tel: 041 363 0124

Fax: 086 262 2189

Email: [reception@implantperio.co.za](mailto:reception@implantperio.co.za)

Website: [www.implantperio.co.za](http://www.implantperio.co.za)

*Contact us for an  
appointment, or if you  
would like more information*