

Dental implants are artificial tooth roots that are inserted into the jawbone to replace missing natural teeth. Implants and their attached crowns closely mimic the look and function of real teeth. They can make an attractive alternative to dentures and bridges. Dental implant techniques can replace one or several missing teeth. In some patients, an entire set of artificial teeth can be carried on dental implants.

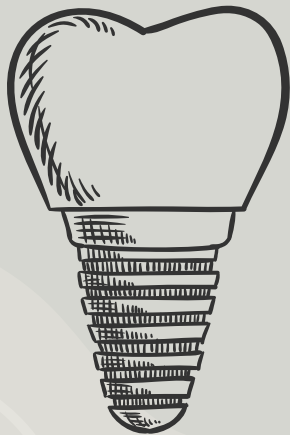
A dental implant is the metal "root" that is inserted into the jawbone. The artificial tooth (crown) is attached to the implant once it is fully healed.

Dental implants:

- Protects the surrounding teeth from becoming loose by preventing bone loss and preventing the teeth from tipping inward.
- Keeps the face looking fuller and prevents the formation of hollowed or collapsed cheeks that can occur after tooth extraction.
- May prevent gum recession
- Unlike bridges, do not require the cutting and reshaping of neighbouring healthy teeth
- Are firmly secured in the jaws
- Are usually more comfortable than dentures
- Usually do not require separate care routines or special cleaning products, as with dentures or bridges
- Like natural teeth, are cleaned by interproximal brushes and brushing with regular toothpaste.
- Help to withstand greater bite pressures with dentures

A dental implant is designed to last for many years, but poor oral hygiene can shorten its lifespan. Like real teeth, artificial teeth that are not regularly cleaned can develop deposits (plaque and calculus) that eventually lead to dental problems such as bleeding gums, loss of bone, infection, and pain. Properly maintained implants that are anchored by sufficient bone can last for many years, although repairs may be needed.

The aim of this information is to provide a general guide. If you have any questions, your dentist or specialist dental practitioner will be pleased to answer them. If specialist treatment is required, your dentist will write you a referral.



PRIOR TO TREATMENT

You and your dentist will discuss whether dental implants are the best treatment for your dental problem. If you decide to opt for dental implants, the dentist will need to make sure you are a suitable candidate for the procedure. While most people can have dental implants, exceptions include:

- Age - children younger than 17 years are usually not considered suitable because their bones are still growing. Otherwise, age is generally not a restriction.
 - Bone Loss - a patient who lacks sufficient jawbone may not be suitable for implants. In many patients, bone replacement techniques can be used to rebuild enough bone for an implant site.
 - Smoking - smoking impairs healing and may cause implant failure by preventing the implant from integrating with the bone. Over time, smoking may cause a breakdown in the integration between the implant and the bone.
 - Pregnancy - general anaesthesia (if needed) and other medications may risk the unborn baby's health in some cases.
- Certain medical conditions – illnesses such as uncontrolled diabetes increase the risk of complications, including infection and delayed healing around implants.
 - Alcohol or drug abuse - the patient may have dietary problems, be unable to follow the dentist's instructions, or fail to maintain proper oral hygiene.

YOUR MEDICAL AND DENTAL HISTORY

Tell the dentist your full medical and dental history. The success of the dental implant and your recovery after the procedure can be influenced by the medications you take and any major illnesses or surgeries you may have had.

Tell your dentist if you have had:

- haemophilia or any other kind of blood disorder
- heavy bleeding when injured or following surgery
- rheumatic fever
- heart problems or heart surgery

- facial radiotherapy
- any medicines on a regular or occasional basis, especially aspirin, warfarin or other "blood-thinning" medication
- a reaction to an anaesthetic drug
- an allergy to antibiotics or other medications.

Give your dentist a list of ALL medicines you are taking or have recently taken, including prescription drugs, bisphosphonates, over-the-counter medicines, and herbal remedies.

DIAGNOSTIC TESTS

Prior to implant surgery, your dentist will perform diagnostic tests to confirm that you are suitable for the procedure and to help plan the best treatment approach. These tests may include:

- Dental examination
- Photographs
- Dental X-rays
- CT scans of your jawbones
- Impressions or 3D scans of your mouth

Decisions on the size shape and appearance of your artificial tooth are based on the teeth that remain in your mouth. At this stage, discuss with your dentist any concerns or suggestions about the look of your artificial teeth.

Dental problems usually need to be corrected before implant treatment. People who decide to have a dental implant may have oral health problems such as decay or gum disease that contributed to the loss of their natural teeth. These problems need to be diagnosed, treated and controlled, to ensure the success of the implant after the procedure. Talk with your dentist about the best treatment plan for your oral health problems and the expected costs.

You may damage your dental implants and crowns if you habitually grind your teeth (bruxism). Evidence of bruxism includes flattened teeth, chipped tooth enamel and broken fillings. To allow for the extra loading on the implants, your dentist will recommend the fabrication of a splint to protect your teeth in conjunction with ongoing Botulinum toxin treatment for the masseter muscles to help reduce the force of the jaw. If you do not treat your bruxism following implant treatment, it may adversely affect the lifespan of your implant.

Not all dental implant procedures produce "life-like" results. Some restorations are challenging, and the result may be less satisfying than you imagined. Discuss your expectations with your dentist and make sure you have a realistic understanding of the procedure's benefits and limitations. Do not expect crowns and implants to look and feel exactly like your own teeth. Biting and chewing will feel differently, and it may take time to get used to the new sensations. While well-maintained dental implants are considered to be virtually permanent, you should anticipate regular dental check-ups and maintenance to keep your artificial tooth or teeth in good repair.

Your dentist cannot guarantee that the implant surgery will be successful or without risk. A dental implant may have to be replaced. About one in twenty implants fail to integrate with the bone or comes loose over time. The factors that contribute to implant failure include:

- The bone's density and strength
- The location of the implant (the most difficult location is the back of the upper jaw where the bone has less height and density than in other areas)
- The patient's general health, including the ability to heal after surgery
- Patient's commitment to oral hygiene
- Smoking

DENTAL IMPLANT PROCEDURES

Several types of implants are available. Most implants are made from materials such as titanium that can form a strong integration with the surrounding bone tissue.

In most cases the procedure involves two separate treatment stages:

- Insertion of the implant and abutment into the bone
- The attachment of the artificial tooth (crown) to the abutment or connector.

Following the surgical placement of the implant, it is vital to wait three to six months for healing prior to fitting the crown. This depends on factors such as your general and dental health, the amount of bone, pace of healing, degree of integration between implant and the bone, and the extent of any other dental problems. Your dentist will advise which setting is the most appropriate for you. Depending on the complexity of your case, the procedure can take from 60 minutes to several hours.

Procedure

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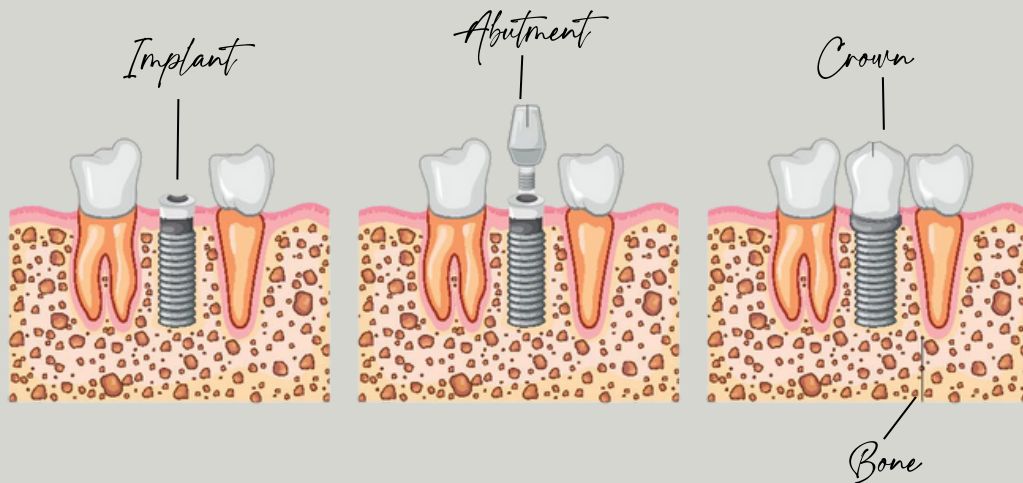
PREPARATION OF IMPLANT HOLE

The dentist prepares a site in the gum to expose the underlying bone. A drill prepares a hole in the jawbone to accept the implant. When several missing teeth are being replaced, the number of implants placed depends on the amount of bone available at each site. It is not always necessary to insert one implant per missing tooth because a single implant can support a "bridge" of artificial teeth. Your dentist will tell you how many implants are required.

2

INSERTION OF THE IMPLANT

The implant is cylindrical, and its surface is either threaded or smooth. A threaded implant is screwed into the drilled hole. A smooth-sided implant is gently capped into position. The gum is stitched closed, and the stitches are removed seven to 10 days later. Implant stability improves over the weeks and months as bone grows onto the implant surface. This process is called "osseointegration" or "biointegration". The dentist may allow up to six months for your bone to integrate with the implant.



3

ATTACHMENT OF THE ARTIFICIAL TOOTH

The dentist will have an appointment with you after your healing time has passed to check that the implant is integrated and strong enough to withstand the forces exerted by the artificial tooth. The dentist may also take an X-ray at this time to check bone levels. If everything is healed and ready, an artificial tooth, or crown, can be fabricated for the tooth.

At the first crown appointment, the healing abutment is removed, and a screw is inserted into the implant where an impression or scan will be taken and sent to the lab. The healing abutment is then replaced while the lab fabricates your crown.

At the second appointment, we remove the healing abutment and screw and screw in your permanent crown. Once the crown is fitted, a dental X-ray radiograph may be taken to ensure the correct placement of all implant components.



RECOVERY AFTER IMPLANT SURGERY

- Arrange for someone to drive you home.
- Some may choose to take a few days off work.
- Swelling, bruising, pain and headache are normal reactions that may occur and usually resolve within one week. Ice packs used immediately after surgery may reduce swelling and pain. An over-the-counter pain medication should help discomfort. If not, your dentist can prescribe stronger medication.
- Your dentist may prescribe a course of antibiotics. If so, take them as directed.
- Drink plenty of water starting two to three hours after surgery (not hot drinks).
- Avoid alcohol, especially if you are taking medications.
- Avoid hard foods during healing, opt for soft foods for up to six weeks.
- Your dentist may advise home selfcare, such as rinsing your mouth with salty water or antiseptic solutions.
- Follow-up appointments and regular check-ups ensure the success of implant treatment.
- Visit your dentist regularly.
- Contact your dentist immediately if pain or swelling worsens, or if you develop a fever.
- Good oral hygiene is important. Follow your dentist's instructions.

CARING FOR YOUR DENTAL IMPLANT

Bacteria in the mouth form a sticky coating called plaque that adheres to both natural and artificial teeth. Your implant-supported teeth may fail if you do not keep them clean because plaque can lead to gum inflammation (gingivitis) and infection.

Tips for caring for your dental implants and natural teeth include:

- Brush after every meal. Carefully clean every surface of each tooth.
- Use fluoride toothpaste to reduce the risk of decay in your natural teeth.
- Avoid using floss as this can shear off and get caught around the implant.
- Use a toothbrush with a small head and soft bristles. A toothbrush cannot reach between teeth or below the gum line. Use interdental brushes at least once daily.
- Smoking impairs healing and increases the risk of implant failure.
- Sugary foods encourage plaque buildup. Limit your intake of sweet foods and drinks.
- Contact your dentist immediately if you have a toothache, gum inflammation or any other dental problem.

POSSIBLE COMPLICATIONS OF IMPLANT SURGERY

Like all surgical procedures, dental implant surgery carries some degree of risk, despite the highest standards of practice. It is not usual for a dentist to outline every possible, rare complication of treatment. However, it is important that you have enough information to fully weigh up the risks, benefits, and limitations of treatment. If you have any concerns about possible complications, discuss them with your dentist. Any discussion of frequency of risks or benefits (for example, one patient in 100, or "rare" and so on) can only be estimates as the outcomes of clinical research can vary widely. Such outcomes can depend on many factors, such as the surgical methods, equipment, dentists' experience, data collection, and so on. The following risks are listed to inform you, not to alarm you. There may be other risks that are not listed.

Please read the below consent form carefully. It is important that you are informed about your dental condition and proposed treatment including the potential benefits and risks involved. This disclosure is not meant to scare or alarm you; it is simply an effort to better inform you so that you may give or withhold your consent to the treatment. It is important that you fully understand this information, so please read this document thoroughly. If you have any questions regarding the procedure, ask your dentist prior to signing the consent form.

GENERAL SURGICAL RISKS

- Allergic reaction to the anaesthetic.
- Short-term nausea following anaesthesia.
- Rarely, excessive bleeding from the surgical site may be life-threatening and require a blood transfusion.
- Infection of the wound may require antibiotic treatment.

SPECIFIC RISKS OF IMPLANT SURGERY

- Affected sinus. The sinuses are air filled cavities within the skull. An implant inserted into the upper jaw may contact or perforate the lining of the sinus within the bone (maxillary sinus) and cause infection (sinusitis). Antibiotics are typically used to treat the infection. Excessive bleeding from an affected sinus is rare.
- Fractured lower jaw. Rarely, the lower jaw may break during the procedure. Specialist treatment may be needed.
- Damaged nerve. The inferior dental nerve runs the length of the lower jaw. An implant can damage this nerve and cause numbness in the gums, lips, or in the skin around the mouth. In most cases, the numbness is temporary and resolves within six to 18 months. In some cases, the numbness is permanent.
- Inhaling or swallowing equipment or parts. The patient may inhale or swallow the implant, attachments or a piece of equipment. This can cause complications such as breathing obstruction. Surgery may be needed to remove the object.

SPECIFIC RISKS OF IMPLANT TREATMENT

- Speech problems. Some patients have speech problems following the fitting of the artificial tooth or teeth. This usually resolves once the patient gets used to the altered feel of the mouth. If not, speech therapy may be recommended.
- Gum tissue growth (hyperplasia). Gum surrounding the implant may enlarge and push above the gum line, causing redness and pain. Gum growth may be reversed with good oral hygiene or can be surgically removed.
- Local infection. The area around the implant may become infected. If infection does not respond to antibiotics, the dentist may have to remove the implant.
- Systemic infection. In certain people, implants can lead to infection in areas other than the implant site. Infectious endocarditis is a potentially life-threatening infection of the heart. People who have undergone prior heart surgery are most at risk of this rare complication.
- Bone loss. In most cases, biting and chewing encourages strong bone tissue to grow around the implant. In rare cases, the implant causes bone loss, and the implant eventually becomes unstable.
- Loose implant. The implant may fail to integrate with bone, or it may become unstable with time. The implant must be removed and another inserted into the jawbone nearby. Alternatively, the bone is given time to heal and another implant is inserted into the original site.
- Loose tooth. The artificial tooth may come loose from the abutment, or the abutment may come loose from the implant. Either case requires treatment to tighten or replace screws.
- Tooth problems. Chipping or breakage can occur. In some cases, a new artificial tooth must be created and fitted.

COSTS OF IMPLANT TREATMENT

Ask for an estimate of fees before agreeing to the procedure. As the actual treatment may differ from the proposed treatment, the final account may vary from the estimate. Discuss costs with your dentist before treatment rather than after.

Consent

Name: _____

Date: _____

Signature: _____