

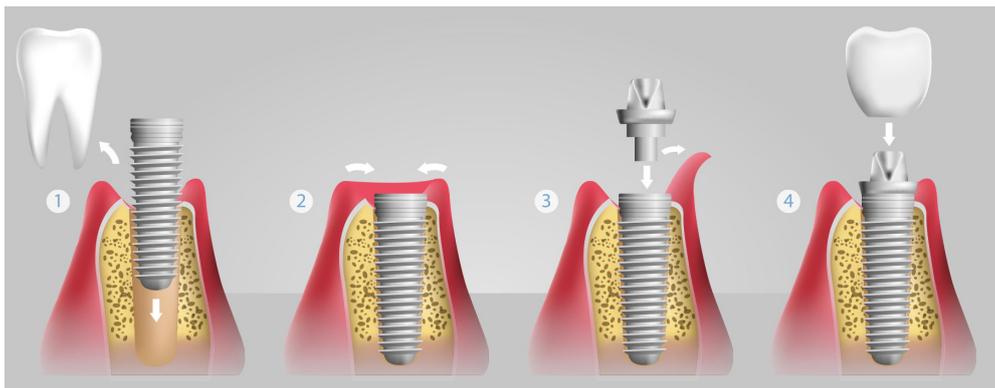
DENTAL IMPLANTS

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Dental implants are predictable alternatives for the replacement of missing teeth. The technology behind this treatment modality has evolved enormously over the past decades and current treatment protocols follow years of research.

A dental implant is essentially a fixed titanium screw that integrates with the bone in your jaw. This process is called osseointegration. Dental implants are placed into carefully drilled sockets at the pre-planned precise location. The aim during placement is to achieve close contact with the surrounding bone. This creates initial stability, which over time is steadily enhanced by further growth of bone into the microscopic roughness of the implant surface.

In order to support the replacement teeth, dental implants normally have some form of internal screw thread or post space that allows a variety of components to be fitted. Once fitted, these components provide the foundation for long-term supported crowns, bridges or dentures.



How long do implants last?

Implants are a predictable treatment modality with success rates for single teeth being >95%. When more implants are placed supporting a larger number of teeth, the success rate does drop, however this does not mean that you need a dental implant for each missing tooth. You will be assessed thoroughly prior to implant placement and particular risk factors for implant failure that you may possess will be discussed with you. As a general rule, dental implants last many many years but may not last your entire lifetime.

As with all dentistry, it is the quality of your home care that will greatly influence the long-term survivability of your implants. You will need to be very motivated with your oral hygiene. Secondly, you will need to present for regular maintenance reviews with your dental practitioner to ensure their health and provide professional cleaning. The componentry such as the internal screws or crowns may require occasional repairs or replacements.

How many teeth can be supported by implants?

If you are missing one tooth, one implant is normally placed. Larger spaces created by multiple missing teeth do not necessarily need one implant per tooth however exact numbers will depend on your particular case. Dental implants can also be used with patients with removable dentures to aide stability and retention while still allowing you to remove it to clean it thoroughly.



What happens during the placement of a dental implant?

There are four stages to implant treatment: Planning, Surgery, Restoration and Maintenance. You may be involved with a couple of different clinicians as often the surgeon and restorative dental practitioner will differ as each stage is where their expertise lies.

Pre-operative assessment:

Before implants can be placed, radiographs (x-rays) and impressions of your mouth will be needed. These allow your surgeon to plan your case. The surgeon will assess many factors including your bone volume and proximity to important anatomical structures such as nerves or your sinus. The surgeon will also run through your medical history to ensure it is safe to proceed with surgery.

Surgical treatment:

The next stage of your treatment is to insert the implants. The bone is accessed by lifting a small flap of your gum. The bone is progressively drilled into to create a space for the implant and then the implant is placed. Either a cover screw or a healing abutment is placed. These are smaller internal screws that are placed to allow for healing of the bone while the implant osseointegrates. The gum is placed back with some dissolvable sutures (stitches). Implants are not normally loaded (used for chewing) straight away as this increases the risk of failure. Implants buried under the gum will require a second small surgical procedure to expose them before they can be restored.

Restorative treatment:

This will be carried out by your dentist, or a Specialist Prosthodontist. Further impressions will be taken, and the prostheses made in a dental laboratory before it is inserted.

Risks of dental implants

Immediate surgical risks and complications:

1. Bleeding: severe bleeding is rare but can occur if the implant has been perforated through the bone into an area with many blood vessels.
2. Pain and swelling, with limited jaw opening (trismus)
3. Infection of the surgical site that may require antibiotic treatment
4. Damage to adjacent nerves: if the implant placement is in close proximity to the nerves this can occur. This can result in change in sensation including complete loss, decreased sensation or altered/unpleasant sensation (e.g. pins and needles, spontaneous pain). The change may be transient or permanent.
5. At the time of surgery, the surgeon may not be satisfied with the surgical site, or the primary stability of the implant and may remove the implant and leave the site to heal without implant placement.
6. Swallowing or inhaling equipment: this is rare but may occur due to the small size of the implant components during surgery
7. Damage to adjacent teeth or soft tissues
8. Injury to or bruising or scarring of the corners of the mouth or skin of the face from retraction or bur abrasion
9. Damage to the nasal floor or sinus: this can occur with implant placement in the upper jaw. The opening into the nasal floor and maxillary sinus is located above your upper teeth. Sinusitis pain may result. Further treatment may be required to treat or correct this. The implant may also be displaced into these spaces and require further surgery to retrieve it.
10. Allergic reaction to the anaesthetic, other drugs or products used
11. Secondary surgery in the case of further complications, or referral to other specialists for additional treatment

Failure of Implants

Early failure:

Osseo-integration can take up to 12-26 weeks. It is uncommon but, in some cases, the bone does not heal around the implant. Smoking and certain medical conditions will increase this risk. This may result in removal of the implant or redoing the procedure with additional need for bone grafting of the area.

Late failure:

Peri-implantitis and peri-implant mucositis (infection in the gum and bone surrounding the implant) can occur after the implant has integrated. It is a similar disease process to periodontitis or gingivitis. This may be months or years after the placement. Those who had previous gum disease are higher risk, as are smokers and those with certain medical conditions (for example: diabetes mellitus). Early signs may be pocketing around the implant, bleeding of the gum, exposure of the implant (grey appearance) and poor aesthetics.

The implant may become progressively looser until it requires removal. It may not be possible to place another implant if that occurs. Like other dental treatment, implants will require very good oral hygiene and further maintenance by your dental professional.

Risks associated with the prosthodontic stage may include fracture or loosening of the implant and/or crown components. This can occur for a variety of reasons and may require replacement of the components or removal of the implant. The restorative dentist or prosthodontist will be able to give you more information about this.

Associated Procedures

During the planning stage, it will be decided if dental implants are appropriate for your mouth. There are times, however, that procedures may be required prior to their placement.

Insufficient space for prosthesis:

There may be times when your existing teeth will need to be adjusted to create sufficient space for the prosthesis. This may include orthodontics, polishing back or building up adjacent teeth, or ensuring their protection by wearing a protective splint.

Insufficient bone for the dental implant:

To provide sufficient support to the prostheses, dental implants need to be a particular length and diameter. When teeth are lost the bone that once supported them is also lost over time. This can be due to infection, during the extraction, due to gum disease or generalised resorption with age.

There are a number of options which may be suitable to increase the bone volume. This may include use of particulate bone, or more advanced procedures including block grafts. 'Bone grafting' is an additional procedure and may need to be done prior to implant placement, or perhaps at the same time to allow an implant to be placed in a more favourable position.

Implants that are placed in the upper jaw may lie in close proximity to the maxillary sinus. If there is insufficient bone then augmentation is required. A procedure called a 'sinus lift' needs to be done. This can be done through the hole created during implant placement, or a more involved procedure where a window is opened from the side of the sinus and bone placed beneath the sinus membrane.

If you require these procedures, more information will be provided to you by your surgeon.

Different Implant Systems

There are actually hundreds of different 'implant companies' or 'implant systems' on the market being placed around the world. Unfortunately, most of the componentry is not interchangeable between them. The quality of the manufacturing and research behind each also differs greatly. Therefore, your surgeon or dental practitioner should pick a company that will stand the test of time and be around if the componentry needs to be repaired in the future. It is wise to investigate what system your surgeon will be placing so you have an idea if it is a reliable or novel system.

Do I need to replace my missing teeth?

Not every missing tooth needs to be replaced. Sometimes dentists may recommend replacing some teeth or you may want them replaced due to aesthetics or increasing function within your mouth. There are other treatment modalities for replacing teeth including removable dentures or bridges. Every patient is unique and priorities for everyone differ. If you think that dental implants may be something you would be interested in, please discuss this further with your dental practitioner.

Hopefully the information in this pamphlet will answer most of your questions about dental implants and associated procedures. If you have any further questions, please feel free to discuss this with your dental practitioner or Oral Surgeon.

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