



WHAT IS A DENTAL IMPLANT?

A dental implant is an artificial replacement for a tooth root, usually made from titanium. There are many different implant systems available and when competently used they all deliver a highly reliable form of treatment. The main aim during the placement of any implant is to achieve immediate close contact with the surrounding bone. Over time further growth of bone onto the implant surface enhances the stability of the implant.

In order to support 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 support of crowns, bridges or dentures.

WHO IS SUITABLE FOR DENTAL IMPLANTS?

Dental implants are suitable for most adults with good general health. They can only be used once the jawbone has stopped growing and so generally are not used with younger patients.

Habits such as heavy drinking or smoking can increase the number of problems associated with initial healing and thereafter may be bad for the long-term health of gum and bone surrounding each implant. Some dentists will decline to place implants if smoking cannot be reduced or given up altogether.

HOW WILL YOU KNOW IF YOU ARE SUITABLE FOR IMPLANTS?

At your initial consultation the dentist will assess the feasibility of providing implant treatment. You will be expected to answer detailed questions concerning your medical history and there will be a complete examination of your mouth and remaining teeth to discover the nature and extent of any current dental problems. Usually x-rays will be taken and models of the teeth prepared so that these can be examined after your visit. These x-rays and models will be used to determine the optimal position for an implant, how many implants can be placed in the gap and the quality and volume of bone that is available. Establishing good basic dental health is a key stage in any treatment plan. At this first appointment you should be made aware of which problems are urgent, and what treatment is required to stabilise any gum- or tooth-related problems. It would be reasonable to expect a verbal outline of costs.

HOW LONG DOES TREATMENT TAKE?

For routine cases, from the time of implant placement to the time of placing the tooth/teeth, treatment times can vary between six weeks and six months. The availability of better quality bone can be used to decrease treatment time, whilst more time and care must be taken with poorer bone, which can therefore extend treatment times beyond six months.

WHAT SHOULD YOU KNOW BEFORE YOU START TREATMENT?

It is accepted practice that you should be given a written summary of your treatment planning discussion(s), highlighting your current dental situation and any alternatives there are to dental implants. This summary should also include an overview of the anticipated treatment stages and give you some idea of how long treatment is likely to take, how many implants are required and what the fees are expected to be. There may well be other issues specific to your case and these would be dealt with accordingly.



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HOW LONG WILL THE IMPLANTS LAST?

Once the implants and surrounding soft tissues are seen to be healthy and the new teeth comfortable and correctly adjusted, it is the quality of your personal attention to oral hygiene and willingness to attend regular maintenance reviews that will have most influence on how long they will last.

HOW MANY TEETH CAN BE SUPPORTED BY IMPLANTS?

Dental implants can be used to replace one or several missing teeth. All the common forms of tooth replacement, such as bridges or dentures can be supported by dental implants. If you are missing just one natural tooth, then one implant is normally all that will be needed to provide a replacement. However, larger spaces created by two, three or more missing teeth do not necessarily need one implant per tooth; the exact number of implants will depend upon the quality and volume of bone at each potential implant site. Patients who have a habit of clenching or grinding (bruxing) their teeth may be at risk of overloading their implants. For most people bruxism occurs during sleep, which is why they are generally not aware of it. Heavily worn or flattened teeth, chipped enamel edges and/or regularly breaking pieces of heavily filled teeth are the most common clinical signs of bruxism. The effects of bruxism need to be considered during treatment planning and can be compensated for by placing additional implants, selecting appropriate restorative materials and providing a night time bite guard to protect the new teeth.

AN OVERVIEW OF THE IMPLANT PROCESS

Implant treatment normally involves several stages that take place over period of time from three to nine months. Although there are various implant treatment methods, a typical process often includes:

- **Assessment and treatment planning:**
At initial consultation, following full discussion of all possible alternatives, the dentist will assess the feasibility of providing implant treatment. X-rays will be taken and models of the teeth prepared. A written treatment plan will then be formulated detailing the sequence of treatment and associated costs.
- **Implant placement:**
Implant placement is a relatively simple minor surgical procedure that can be performed under sterile conditions in a dental surgery. The treatment is performed under local anaesthesia with sedation if required. If, during assessment, the underlying bone is deemed deficient, a number of options are available for bone regeneration. Bone regeneration is carried out prior to or at the same time as implant placement depending on requirements.
- **Integration period:**
Implants can take from six weeks to six months to fuse with the patient's bone. During this integration period, temporary dentures or bridgework can be worn as appropriate. In some cases, temporary teeth can be fixed to the implants while they integrate in a process known as 'immediate loading'.
- **The restorative phase:**
Once integrated, the implants can be brought into function with a variety of new teeth



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options (definitive restorations) ranging from a single crown, small or large bridge or a removable overdenture. A dental technician who works closely with the dental surgeon constructs these definitive restorations.

- **Maintenance:**

Following completion of implant treatment, the patient must regularly and thoroughly clean the new teeth (restorations) as instructed by their dentist. A dental hygienist may also advise on care and maintenance of the restorations and natural teeth. Regular visits to your dentist are essential so that the health of the soft tissue, bone levels and the integrity of the restoration can be reviewed.

IF YOU DO NOT HAVE ENOUGH BONE WHAT CAN BE DONE?

So far we have covered the building blocks that are part of routine implant placement. This has included the initial examination and diagnosis, special x-rays such as CBCT scans, sedation during surgery and what to expect after the implants have been placed. However, for some people, bone loss after the removal or loss of teeth leaves them without enough to secure an implant. There are procedures that can be done if this is the case:

- In the upper jaw above the back teeth, it is possible to increase the height of bone available by creating new bone in the sinus. This procedure is called a 'sinus augmentation'. A skilled surgeon can deliver highly predictable results in this location and without the general success of this technique many patients would be unable to have implants in a part of the mouth where teeth are so commonly missing.
- There are many ways in which bone can be added; however, one simple concept is to take a piece of bone from somewhere else and secure it as an 'onlay graft' to a deficient area. The new piece of bone will slowly join to the underlying region and when healed and mature, an implant can be placed in a more favourable position.

WHERE CAN YOU GET EXTRA BONE FROM?

Bone can be harvested from a number of sources but usually from behind the back teeth in the lower jaw or from the chin. Sometimes it is taken from the hip or shinbone (tibia). When you use your own bone to create new bone in another area of the mouth you will have to contend with the discomfort created by the donor site as well as the surgical site. Many people feel this is well worth any additional discomfort as your own bone is normally considered the 'gold standard'.

Alternatives to your own bone for grafting

For those who would prefer an easier but slightly slower, solution there are other sources of bone such as bovine (derived from cow), porcine (derived from pig) or synthetic materials that have been specially prepared to make them safe for use in humans. All of these materials, including your own bone, simply provide a scaffold into which new bone will grow in order to be ready to receive dental implants a few months later.

New bone can take anything from 3 to 12 months before it is ready to receive dental implants. Do not be in a hurry to move to the next stage. If you need a large volume of bone it will take longer to mature than a small amount.



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Each surgeon will have his or her preferred way of creating new bone. Many of them will also use a supplementary technique called 'guided tissue regeneration'. Using this technique, slow-moving bone cells are given time to allow a space by placing a barrier material between them and the fast moving cells of the soft tissues lining the mouth. This is a 'resorbable barrier' that will disappear naturally a few months after it has done its work.

HOW DO YOU LOOK AFTER THE IMPLANTS?

It is important that you maintain good oral hygiene with your implants to improve their life span. Cleaning your implants is not difficult.

For most implant-supported teeth you will be able to clean around each supporting implant by brushing and flossing in just the same way that you would around natural teeth and tooth-supported bridges. In some areas special floss, interdental toothbrushes and other cleaning aids may be needed to maintain good oral hygiene.

It is reasonable to expect some of the daily hygiene procedures to be a little more complex than around your original teeth and equally expect to spend more time than you may have done in the past if you wish to maintain optimum implant health.

For the first few months the implants are in place your dentist may ask that you are seen more frequently; however, once they are satisfied your treatment is performing as planned, ongoing care will be similar to any patient with natural teeth.

DIFFERENT IMPLANT PROCEDURES

- **One-Stage Implant** - The implant is placed into a new, healing or healed extraction site (where the original tooth has been removed from) and is visible above the gum immediately after placement. The advantage of this method is that a second surgical stage is not necessary to expose the implant. The implant will not normally be ready to support a tooth for several weeks or months.
- **Two-Stage Implant** - The implant is placed into a new, healing or healed extraction site and then covered by a layer of gum so that it cannot be seen – this is the first stage. At the second stage some weeks or months later, the implant is uncovered and components added bringing it above the gum ready to
- **Same Day Implants** - This technique is most often used to treat the lower jaw and requires considerable planning before the actual day of surgery. Several implants are installed and a few hours later a complete arch of temporary or permanent teeth can be fixed in place. If temporary teeth are used these will normally be replaced with a permanent bridge after a suitable healing interval. Not all patients are suitable for this style of treatment.



Information courtesy of
Association for Dental Implantology
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