Why replace missing teeth?

If you are missing one or more teeth there may be other things you miss. You may miss your natural smile or the full function of being able to crunch into an apple. Tooth loss can cause additional problems over and above the obvious aesthetic and functional considerations.

These include:

- Shrinkage of the bone at the extraction site.
- Drifting and over eruption of adjacent teeth.
- The increased risk of decay and gum disease in the surrounding teeth.
- Increased load and wear on remaining teeth.
- Loss of self-confidence.

What is a dental implant?

Modern dental implants are titanium cylinders that are embedded into the jaw bone to take the place of the missing tooth root. Once or before Osseo-integration has occurred (a process in which the bone fuses to the surface of the implant) a replacement tooth can be secured to the top of the implant. The new tooth can look, feel and perform just like a natural tooth. It is also possible to use multiple implants to support a bridge or denture.
What are the benefits of implants?

Implant supported teeth are more comfortable than conventional dentures because there is no slipping or movement, because the implants are fixed they feel and function like natural teeth. This eliminates some of the key worries of denture wearers and improves self-confidence.

Dental implants are an alternative to conventional bridgework. They eliminate the need to grind down healthy teeth and do not place additional loads on the teeth supporting the bridge. The drilling of healthy tooth generally leads to problems and more invasive dentistry, the downward spiral will then be compounded as one destructive treatment leads to another each having a worse prognosis than the one that preceded it.

When teeth are missing the surrounding bone shrinks. Implants function in and stimulate the bone, this maintains the shape and structure of the jaw.

Images of a typical case to replace a missing upper incisor

Implant in situ with healing abutment - the patient wears a temporary denture over the abutment.

X-ray image of the implant showing trial seating of the final abutment and crown. The implant replaces the natural tooth root without causing any damage to the adjacent teeth.
Image following cementation of the crown to the abutment.

**What is involved in the implant process?**

The dental implant process normally involves several steps that take place over a period of time from three to nine months. There are various implant methods such as placing implants at the time the tooth root is extracted or even placing the implant and restoring it with a tooth on the same day. However, a typical process often includes:

**Assessment and Planning** - At initial consultation after discussing possible alternatives the implantologist will assess the feasibility of providing implant treatment. We will then present you with an initial plan detailing costs and other treatment options. Should you wish to proceed with implant treatment we will then carry out a full and detailed assessment this will involve the taking of impressions, x-rays and in some cases ct scans. We will then complete the diagnostic planning and provide you with a full written plan detailing the sequence of treatment, costs and possible complications.

**Implant Placement** - This is generally a simple procedure that is performed
under sterile conditions in a dental surgery using local anaesthesia. We often use some of the bone saved from the drilling procedure and some artificial bone and a gore-tex type membrane to augment the proper contour of the ridge and gum around the implant.

**Integration Period** - Although some implants can be loaded into function immediately or soon after surgery, it is often suggested that a period of three to six months be allowed for the implant to fully integrate and fuse with the supporting bone. The patients own denture or in some cases a simple adhesive bridge can be worn during the healing phase.

**The Restorative Phase** - Once the implant has integrated we will connect a small post (healing abutment) to protrude through the gum, the gum will then be closed around the post and allowed to mature. We then take impressions to bring the implant into function with a variety of restorations, ranging from a single crown, bridgework or a removable denture clipped onto the implants. The replacement teeth are constructed by a specialist dental laboratory working closely with our implantologists or in some cases by the referring dentist.

**Maintenance** - Following the completion of the restorative phase, patients will be advised on cleaning thoroughly around the implants. We will set up a programme to review the health of the gum, bone levels and the integrity of the implant and restoration.

Immediate implants - teeth in a day

Following advances in technology and as a result of patient’s increasing demands for an instant solution it is possible to place implants and restore them with crowns or bridges on the same day. On some occasions we even extract teeth, place implants and then fit a crown to the implant in one short session. This option allows patients to convert from failing natural teeth or dentures directly to a fixed crown without many of the
conventional intervening stages detailed above. It is not always possible to provide immediate implants, for example to tooth to be removed may have pre-existing infection.

**Can anyone have dental implants?**

Most patients can have dental implants, providing growth has stopped age is not a factor, generally speaking if you are healthy enough to undergo routine dental extractions then you should be a suitable candidate for implants. In some rare cases a lack or loss of bone may preclude implant treatment. Smoking can increase the number of problems associated with implants and we may decline to treat patients if smoking can not be reduced or given up altogether.

**How long do implants last?**

An implant will normally serve its owner for life, modern implants placed over 40 years ago are still functioning today! Statistics confirm a success rate of nearly 95% for individual implants and even higher for the bridges they support.

**Is the treatment painful?**

Patients are often surprised at how little discomfort they experience during and after implant procedures. In general the placing of a single implant fixture is no more traumatic than a tooth extraction.

**Is it expensive?**

Implant treatment may initially be considered costly. For instance a single implant will cost about twice as much as a single tooth bridge. Research shows that over a ten year period less that 70% of these bridges will last necessitating more destructive and expensive treatment. However, 95% of the implants will survive, therefore, in the long term they are both more conservative and cost effective than conventional treatment.
Computer guided implants

With advances in computer technology and the wish to place implants very accurately, less traumatically and restore them immediately we invested in using a computer guided implant placement system. To complement the process we have become one of the few sites in the UK to have in house 3D scanning facilities.

In this fast developing process we use cone beam scan data in our computers, this data will produce a very accurate three-dimensional map of the jaws and soft tissues. We then plan implant placement on the computer model in conjunction with ideal tooth positions gained from scanning a denture indicating the best position for each tooth. We then manufacture a computer formed stent to guide the accurate placement of implants in the positions generated on the 3D computer model.

The technique has the added advantage of allowing us to place the implants without the need to cut the gum and then stitch up afterwards in a conventional fashion, this speeds up the operation time and reduces the post operative recovery period dramatically. More significantly the accuracy of this process allows us to produce a temporary bridge in advance that will be fitted at the time of surgery.

What if I do not have enough bone?

Through clinical examination and with the help of x-rays, models and ct scans we can determine whether you have sufficient bone for implant placement. Should the bone volume be less than favourable we can offer a number of augmentation techniques:

- **Guided bone regeneration** - this involves the use of some bone saved from the drilling process and additional bovine material to act as a scaffold into which bone forming cells lay down new natural bone.
- **Block grafting** - in this case we take bone from a donor site elsewhere in the mouth and fix it in position to build out the thickness of the implant
area. This is normally carried out as a separate procedure prior to implant placement.

- **Sinus augmentation** - commonly the bone above the upper back teeth is shallow and not strong enough to support an implant. Sinus floor augmentation is a process where we make a small hole into the air space above the upper teeth, we then gently reflect the mucosal lining of the sinus lifting it up rather like a tent. Implants are then placed to hold the lining up acting rather like tent poles, we then pack the bone removed from the drilling process and some osseo-conductive material around the implants and close the wound.