INTRODUCTION TO OSTEO-TI IMPLANTS; A NURSES MANUAL
INTRODUCTION
This handbook has been designed to give you a basic understanding of dental implants and related surgery procedures. As with all dental procedures, minimizing patient anxiety whilst undergoing treatment is of paramount importance. All members of the dental team can contribute towards this. The following information will provide the dental nurse with the underpinning knowledge required to assist the dentist efficiently and effectively, thus inspiring patient confidence.

WHAT IS A DENTAL IMPLANT?
A dental implant resembles a small screw and is usually made from titanium. This is a material which the body accepts as its own. The implant is inserted into the jawbone to take the place of a missing tooth root. Replacement teeth are made and fitted onto the implant when the bone has firmly attached to the implant. This normally takes a period of three to six months. The final restoration may take the form of a single crown, a bridge or an overdenture which clips to the implants. Dental implants feel, look and function like normal teeth.
WHAT PROCEDURES ARE REQUIRED FOR IMPLANT TREATMENT?

INITIAL CONSULTATION

Medical History
As with all dental treatment ensure that the patient’s medical history is updated before commencing treatment. Although implant placement is a relatively straightforward surgical procedure it is always wise to take special care to check patients are not taking medication to thin the blood.

When dental implants are placed all patients are required to take a course of antibiotics which they should start two days before the implant placement. Amoxicillin is normally given but Clindamycin is a suitable alternative for patients with a Penicillin allergy. It is also a good idea to keep sachets of antibiotics in the surgery that can be taken at the time of the appointment if required. E.g.. If the patient forgets.

X-Rays
An Orthopantomograph is essential to give the dentist valuable information required for treatment planning. The OPG will give some idea of the quality and quantity of bone, position of air sinuses and the location of the inferior dental nerve.
Periapical x-rays and/or study models may also be required.

Patient Interview
Try and put the patient at ease by inviting them to sit away from ‘the dental chair’ and talk to them about the implants. This is an excellent opportunity for the dental nurse to give the patient confidence by imparting their knowledge to the patient. Patients may also feel more comfortable asking questions to the nurse rather than the dentist. Show implant models, outline the procedures and appointments required, give information leaflets and encourage questions. Implants are usually placed under local anesthetic, but for patients who are particularly anxious, sedation may be discussed at this stage. The dentist will now discuss the proposed treatment plan and costs involved. These details will later be incorporated into a consent letter which must be signed and returned to the surgery before treatment commences. When the treatment plan has been finalized it is wise to record in the patient notes the required appointment details so that reception are prepared if and when the patient makes contact to arrange the treatment.
PLACEMENT OF IMPLANTS

IMMEDIATE PLACEMENT
Some implants are placed at the same time that a tooth is extracted. The advantages to this method are that treatment time is reduced and valuable bone is preserved. Immediate placement may not always be possible if infection is present at the extraction site. In this case, placement will be deferred for several months until new healthy bone reforms in the area.

POST IMMEDIATE PLACEMENT
An implant is placed within three to six months of a tooth being removed.

DELAYED PLACEMENT
This is insertion of the implant into a region of the mouth where the tooth has been missing for sometime. If considerable bone loss has occurred additional bone grafting techniques may also be required.

OUTLINE OF PLACEMENT PROCEDURE
This procedure is carried out in a sterile environment, usually under local anesthetic, occasionally with sedation. A cut is made in the gum, the bone is exposed and a hole is drilled to an appropriate length, before inserting the implant into the bone. The implant may be left buried or exposed for a period of several months until it becomes firmly attached or integrated to the jaw bone. During this period existing or new temporary dentures or bridges can be worn.
INSTRUMENTATION

Ensure all necessary equipment is prepared before the patient enters the surgery. A well organized surgery will reduce stress on both the dental team and patient. Equipment to prepare will include the following:

- Protective eyewear, mask and gloves
- Local anesthetic and syringe
- Size 12D scalpel blade
- Sutures
- Surgical aspiration tips
- Cheek retractors
- Drapes
- Extraction forceps
- Grafting materials
- Selection of implants
- Post operative instructions, analgesic, Gengigel mouthrinse and gel
- Sedation equipment if required
- Surgical drilling system, including contra angle handpiece, irrigation tubing and saline will be required for mandibular placement.
- Placement kit
The placement kit should include:

- Ratchet Wrench
- Torque wrench
- Universal Driver
- Extender
- Pilot Bur
- Universal Sizing Bur
- Bur Cleaning Probe
- Site Former
- Universal Hex Tool
- Surgical Mallet
- Angled Scalpel Handle
- Finger Grip
- Extender
- Dilators
- Site Formers
- Palatal Flap Elevator
- Periosteal Elevator
- Mini Periosteal Elevator
- Implant Explorer
- Graft Dish
- Implant Forceps
- Bone Curettes
- Addisons Forceps
- Suture forceps
- Suture scissors

PATIENT MANAGEMENT

Invite the patient into the surgery and try to put them at ease with a friendly welcome. Check their medical history is unchanged since the consultation and ensure they started taking their antibiotics two days ago. The consent letter should already have been signed and returned to the surgery but do double check if in any doubt. If the patient is going to be sedated check that they have arranged to be escorted home after the appointment. Show the patient to the dental chair and offer eye protection and a bib. Advise the patient to take pain relief before commencing treatment. Dolobid is a suitable analgesic, which you should keep in the surgery for patient use.
DETAILED PLACEMENT PROCEDURE IN THE MANDIBLE OR MAXILLA

- Patient takes Dolobid
- Local anaesthetic is administered
  - A scalpel is used to cut the gum. This may not be necessary for immediate placement
- Bone is exposed using a palatal flap elevator or periosteal elevator
  - For immediate placement bone curettes will be used to clean the extraction socket
- The nurse keeps the gum retracted with the periosteal elevator and maintains a clear, dry field with the surgical aspirator

Maxillary Placement:

- Once the bone is exposed a Dilator may be used to expand the thin maxillary ridge
- A Site Former is then used to measure and shape the osteotomy site ready for implant insertion
- The correct size of implant is now selected. Attach the extender to the implant driver. Remove the implant from its packaging and use the implant forceps to attach the implant to the driver. Take care not to let the sterile implant touch anything before insertion.

Mandibular Placement:

- Once the bone is exposed the osteotomy site is prepared using a surgical drilling system, with a contra angle handpiece with attached irrigation tubing. The nurse will need to retract any gum flaps whilst aspirating the saline away from the implant site.
- The correct implant is selected and positioned at the osteotomy site using the sterile implant holder which is incorporated within the implant packaging.
- The ratchet wrench is then used in conjunction with the extender to ensure the implant is secured into the mandible.
- The implant will now be left buried or sticking out of the gum. If buried, a cover screw will be used to cover the end of the implant. The universal hex tool is used to fit the cover screw before the gum is sutured. Alternatively, the implant may be covered with a small plastic grey collar which will protrude through the gum.
**Post Operative Instructions**
Allow the patient plenty of time after the implant placement to recover and ensure they are clean and tidy before leaving the surgery. Take a few moments to sit down with the patient and discuss the post operative instructions. These should also be given in writing, together with out of hours surgery contact details. Advise when the next pain relief may be taken if required and suggest the use of Gengigel mouthrinse and gel. These are very soothing natural products which also promote healing.

The day after the implants have been placed, it is a thoughtful gesture to contact the patient to check on their wellbeing. This will reassure the patient of your care and concern for them.

**IMPLANT REVIEW**
Approximately seven to ten days after placement the patient should return to the surgery to check that all is healing well. Sutures can be removed if necessary and x-rays may be taken to show the precise location of the implant. This is also an opportunity to reassure the patient should they have any queries or concerns.
UNCOVER THE IMPLANTS
Once attached to the bone, the implant will need to be uncovered, unless it was left ‘exposed’ at placement. Uncovering the implant is normally carried out under local anaesthetic, however, this may occasionally be supplemented by sedation.

INSTUMENTATION
Ensure all the equipment, listed below, is prepared before the patient enters the surgery.

- Protective eyewear, masks and gloves
- Local anaesthetic and syringe
- Size 12D scalpel blade
- Sutures, suture holders and surgical scissors
- Surgical aspiration tips
- Cheek retractors
- Post operative instructions
- Sedation equipment if required
- Lock on Bases
- Labwork to try in or fit may be required for this stage
- Uncover Kit
- The Uncover Kit should include:
  - Universal Implant Driver
  - Tissue Dissecting Forceps
  - Palatal flap Elevator
  - Periosteal Elevator
  - Mini Periosteal Elevator
  - Implant Forceps
  - Scalpel Handle
  - Finger Grip
  - Quick Transfer Forming Tool
SURGICAL PROCEDURE: UNCOVERING IMPLANTS

• Local anaesthetic is administered
• A scalpel is used to cut the gum
  The gum flap is retracted with a periosteal elevator to expose the buried implant
• Soft tissue or bone is scraped from the top of the implant to expose the cover screw
• Surgical aspiration is required to remove this debris
• The Cover Screw is removed with the Universal Hex Tool
• A Lock-on Base is fitted to the implant and pressed into place
• Transfer Impressions are often taken at the Uncover stage
• Sutures are sometimes required
• Discuss the post operative instructions required after the implants have been uncovered and give the patient written instructions also
TRANSFER IMPRESSIONS

Transfer impressions are taken to enable the lab to construct either single crowns or, in the case of multiple implants the lab will prepare metalwork to try in. The impressions may be taken either at Placement, Uncover or at a separate appointment, depending on the individual treatment plan.

INSTRUMENTATION

- Protective Eyewear, Gloves, Masks, Bib
- Mouthrinse, Mirror, Cosmetic Wipes
- Lab Prescription Pad
- Finger Grip
- Universal Hex Tool
- Universal Driver
- Implant Forceps
- Lock on Base
- Quick transfer
- Low Profile Screws
- Lab Putty
- Impression Materials: Monopren Transfer and Bite Registration Mousse
- Stock Trays

TAKING THE TRANSFER IMPRESSIONS

- A Lock in base is pressed either into the top of the implant or the top of the Lock-on base
- Impression material is syringed around the Quick Transfer
- A stock tray is filled with Monopren Transfer and the impression is taken over the Quick Transfer
- When the impression material is set the tray is removed. This rigid impression material picks up and retains the Quick Transfer
- The Lock-on Base is now filled with lab putty and the excess is removed with the aspirator. Temporary dentures or bridges can be worn over the Lock-on Bases.
TRY–IN FRAMEWORK

The lab will prepare implant bridgework in the form of a metal frame for the patient to try in. For multiple implants, the framework will probably require adjustment before it is returned to the lab for finishing.

INSTRUMENTATION

• Protective Eyewear, masks, gloves and bib
• Labwork
• Universal Driver
• Universal Hex Tool
• Finger Grip
• Lab Putty
• Slow Handpiece and Diamond Separating Disc
• Acrylic Resin
• Implant Forceps

TRY-IN PROCEDURE

• Lock on bases are removed from the mouth with a pair of orthodontic pliers
• The abutments are removed from the models and fitted to the appropriate implants using the Universal Hex Tool
• The metal framework is ‘tried in’ onto the abutments
• If the framework doesn’t fit accurately the slow handpiece and a diamond disc are used to separate the metalwork, which will be tried in again in two pieces. It will then be glued together into the correct position in the mouth using the acrylic resin.
• Once the framework fits correctly it will be fitted back onto the stone models together with the abutments and returned to the lab for finishing.
• The Lock on bases are replaced in the patient’s mouth
FIT

The restoration is fitted at this appointment. This may be a single implant crown, an implant bridge or denture with magnetic attachments. It may be necessary to see the patient again to make any final adjustments and review patient progress with their new implant restorations.

INSTRUMENTATION
- Protective eyewear, masks and gloves
- Labwork
- Universal Hex Tool
- Finger grip
- Universal Driver
- Torque Wrench
- Implant Forceps
- Retrieve Cement
- Vaseline
- Articulating paper
- Post Operative Instructions

PROCEDURE FOR FITTING THE IMPLANT RESTORATION
- The Lock on bases are removed from the mouth
- The abutments are removed from the model and fitted to the implants.
- The crown or bridge is ‘tried in’ to ensure the abutments are fitted at the correct angle.
- When all is fitting accurately, the abutments are tightened with the torque wrench.
- The crown or bridge is now cemented to the abutments with cement called Retrieve, which has been specially designed for cementing implant restorations. The cement may be weakened further with the addition of Vaseline.
- When the cement is set adjustments may be made to ‘the bite’ and excess cement removed.
- Post Operative implant care is discussed with the patient and written instructions are also given.