Patient Information Leaflet (PIL)

The dentist (the mentee) is undertaking postgraduate training in dental implant treatment at an ICE Ltd Facility. As part of the course requirements s/he will need to complete a certain number of implant cases and present these in a clinical portfolio for assessment purposes. You have been invited to have your implant treatment by the dentist as part of his/her clinical studies under the supervision of a recognised mentor who is an experienced implant dentist.

The details of your proposed treatment will be outlined in a treatment proposal letter and will be explained to you by the dentist. This leaflet is intended to provide you additional information that should help you to make an informed decision about your implant treatment.

The dentist will describe the current condition of your teeth and discuss the treatment options, the nature of the implant treatment, its specific objectives and goals in accordance with your wishes and preferences, its advantages, disadvantages and possible complications. The details of your case will then be studied by the dentist's mentor who will be asked to approve it before any treatment is commenced.

The treatment proposal letter will also include an itemised cost estimate calculated by using a recommended fixed fee structure. This estimated cost of treatment will not be exceeded even if additional treatment (which may not have been foreseen during the planning stages) is found to be indicated once your treatment has commenced. You should however, understand, that should an implant fail or any remedial treatment is indicated you may be asked to pay additional costs associated with such treatment at the usual fees charged by your dentist. Please also note that if you lose more teeth in the future you may require further implant treatment at additional costs.

Having read and understood this information leaflet and discussed any queries you might have with your dentist, please sign the consent form and return it back to your dentist together with a copy of your treatment proposal letter.
It is important that you inform your dentist of any changes to your medical history and of any other additional treatment you may be receiving from a doctor or dentist. Failure to keep the dentist informed may lead to complications.

WHAT IS A DENTAL IMPLANT?

If you are a denture wearer, you might be familiar with functional problems and discomfort associated with dentures that do not stay in place when eating and talking. This can cause mental and physical suffering and may also lead to loss of self confidence.

Even if they are constructed to the highest possible specifications, there are many problems associated with dentures and conventional restorations (e.g. construction of dental bridges require cutting and grinding of usually healthy adjacent teeth). Once the natural teeth are lost, the bone in which they were embedded begins to shrink. This process, known as bone atrophy (similar to muscle wasting when limbs are no longer used) can alter facial appearance and may necessitate the periodic replacement of dentures. Bone loss often leads to functional and cosmetic deterioration of the oral and dental structures.

Many people soon discover that dentures are a poor substitute for their natural teeth and simple tasks such as eating or even talking can be a source of anxiety, pain and discomfort for the rest of their lives. Yet, thanks to an accidental discovery, innovation, scientific study and recent developments in biomaterials, dental and medical sciences, the suffering endured by people who wear dentures, is no longer necessary. Following two decades of research and development, today dental implants, artificial roots made of surgical grade titanium similar to hip or knee prostheses, can replace missing teeth or stabilise dentures with high degree of predictability and success.

SUCCESS OF IMPLANT TREATMENT:

When they heal successfully and maintained correctly in the future, dental implants are an excellent way of replacing missing or failing teeth. Long term research data shows that the success rate of dental implants is very predictable and in the region of 90 to 95%. However, it should be noted that some implants may not be successful. The main conditions that can affect the success of implant treatment (known as "risk factors") include; active gum disease, inadequate plaque control/oral hygiene, smoking and poor bone condition. There is strong clinical evidence to show that smoking can predispose to gum recession and shrinkage of the bone support around natural teeth and implants leading to their premature loosening. The success of implant treatment may be reduced by three times in smokers compared to non-smokers. If you are a smoker, you would be strongly advised to discontinue smoking if you wish to keep your implants healthy as long as possible. Please also note that smokers usually experience stronger and more prolonged postoperative pain and breakdown of healing. If one or more of these factors apply then the success of implant treatment could be less predictable. Your dentist will discuss the specific risk factors that may alter the expected prognosis in your case with you before you agree to proceed with treatment. Elimination of these risk factors (e.g. smoking) will undoubtedly improve the chance of success significantly.

ALTERNATIVE TREATMENT OPTIONS

There are other alternatives to dental implant treatment which we have considered during your consultation appointment to see if they would be appropriate or desirable in your case. These include:

a) Dentures

The disadvantage of alternative types of treatment are generally recognized and well known. For example, removable dentures may be unstable, loose or uncomfortable; usually they are not well tolerated, causing nauseous feeling

and interfere with speech or taste sensation; they cause loss of self-confidence and sometimes dental disability; they can cause plaque and food accumulation more easily which may lead to further gum disease in some cases. More importantly, dentures do not prevent bone loss and usually contribute to gradual shrinkage of the jaw bones resulting in more functional denture trouble and adverse changes in facial profile.

b) Bridgework

Conventional bridges retained by adjacent natural teeth have the advantage of being less costly and not requiring surgical treatment. They are usually provided over one or two dental visits. Their main disadvantages are that they usually require cutting and grinding of adjacent teeth which in the long term result is morbidity such as decay or root fracture. If one tooth supporting the bridge is damaged, the entire bridge may need to be discarded or replaced with a new and bigger bridgework. Bridges can also be rather costly but they do not prevent bone loss.

A variation of conventional bridge known as “Adhesive or Maryland Bridge” does not necessitate the grinding of the adjacent teeth - the false teeth are glued to them. The main disadvantage of “adhesive” bridges is that they have limited indication and can be unpredictable in the long term.

c) No Treatment

Of course not every missing tooth needs replacement if there are no aesthetic, specific dental or functional reasons. In some cases, it may be perfectly acceptable to have space or a gap after tooth loss. Nevertheless, it has been shown that in a good proportion of patients the opposing and adjacent teeth can move in to the gap of a missing tooth causing dental, periodontal and occlusal problems in the future. This can cause overeruption and interference with the occlusion and biting which may lead to further tooth loss or may contribute to jaw joint trouble.

THE NATURE and SEQUENCE OF TREATMENT

Your treatment will be planned after a process of detailed clinical and radiological assessment and investigations. This normally requires intraoral and panoramic radiographs. If found necessary additional images including CT scans may be indicated. This process will enable your dentist to formulate a treatment plan for you and produce a written treatment plan proposal which would include the options of the proposed treatment and its likely prognosis with reference to individual risk factors identified during your examination.

The treatment plan will be discussed with the dentist's mentor who will be asked to consider its suitability before approving it.

Please note that in borderline cases where there may be limited volume of jaw bone remaining, the final decision whether or not to proceed with implant placement could only be made at the time of the surgery. If insufficient amount of bone is encountered, then a bone augmentation or grafting procedure is indicated. This could be carried out at the time of implant placement (simultaneous augmentation), or if this proves impossible, in a two stage procedure (staged augmentation) using bone substitute materials (usually a purely synthetic or cow bone which may also be mixed with bone harvested from within the mouth). If a two-staged bone grafting is indicated, implant placement may be deferred between 4 to 8 months to allow the bone graft to mature in the first place.

After placement, dental implants are normally allowed to heal for a period of time ranging between 6 weeks to 6 months. The actual healing period is determined by several factors including the type of the implant, quality and quantity of the bone, type of the bone graft used etc. Your dentist will discuss these factors with you in detail prior to the start of your treatment.

Please also note that occasionally dental implants are placed in close proximity to the maxillary air sinuses. This technique known as "closed sinus lift" procedure is usually asymptomatic and a safe procedure but your dentist will discuss the need to carry out

this type of implant placement prior to the commencement of your treatment if applicable.

Implant treatment may be carried out either at the time of tooth removal (immediate implantation) or after a period of time following tooth extraction. Although it may be preferable to carry out immediate implantation for obvious reason, this may not always be feasible. Your dentist will consider the advantages, disadvantages and the most optimum timing for placement of your implant and discuss these with you in detail.

There are two techniques employed when facing implants a) submerged technique (when shoulder of the implant is fully embedded in the supporting alveolar bone) b) transmucosal technique (when head of the implant is placed just at the level of the gum). In case of the former, a small implant exposure procedure is required approximately 6 weeks to 6 months after implant placement to allow the construction of the tooth.

Occasionally, altered sensation to the skin of lip or tongue is possible when implants are placed in the lower jaw close to the dental nerves. When it happens, it is usually transient (a few days or weeks) but very rarely may be persistent. Obviously the x-ray is important in determining the position of this nerve in order to minimize the chance of damage which could result in altered sensation. In complex cases, CT scan imaging may be carried out to plan the most optimum placement of implant(s) in proximity of the adjacent dental structures or dental nerves.

TYPE OF ANAESTHETIC

The implant placement surgery is usually carried out under a local anaesthetic, with sedation if required. Your dentist will discuss the choice of the anaesthetic with you.

AFTER IMPLANT SURGERY

Immediate postoperative recovery after implant surgery usually takes between 3 to 5 days. Depending on complexity of the procedure and number of implants placed, mild to moderate facial swelling, some bruising and discomfort should be expected. In more complex cases, including multiple implant placements, grafting from the lower jaw or the hip and sinus augmentations, the postoperative symptoms are usually stronger and may include *more persistent* discomfort, trismus, swelling, bruising, numbness and para/anaesthesia (altered sensation) of the nerves supplying the skin of the lip or tongue. Appropriate medication including anti-inflammatory drugs, analgesia and antibiotics will be prescribed to reduce these symptoms. Please note that the course of post-operative healing can vary significantly between patients. The duration and severity of symptoms may be influenced by the type/length of the operation, medical history and general well being of the patient. It is, for example, well known that smokers experience stronger postoperative symptoms, complications and more pain. Some patients with underlying medical conditions such as diabetes or history of certain medication may be prone to slow healing and infections.

Post operatively it may be advisable to reduce work or social commitments for a number of days and avoid travelling abroad. After staged bone grafting (from the lower jaw or the hip) or multiple implant placement surgery you may need to take a few days off work.

The implants are normally allowed to heal for a period of 6 to 12 weeks after they are placed so that the bone can heal around the implant. The required integration period is determined by the *type* of the implant and mainly the *density* of the jaw bone. At the end of this period the implant is checked to confirm that it is rigidly fixed to the surrounding bone. If the implant healing is found to be unsatisfactory, the healing period may have to be extended or the implant replaced with a new one.

RESTORATIVE TREATMENT PHASE

After an average period of 3 months the making of the artificial teeth is undertaken. Occasionally, the implant becomes covered during the healing phase by the overlying gum - in which case trimming of the surplus gum tissue is carried out before the next phase of the treatment can be undertaken. This may require a superficial local anaesthetic injection. Once the implants have been uncovered restorative treatment involves taking impressions of the implants and your mouth for the construction of the teeth. During this time titanium cover screws or metal abutments may become visible. Depending on the complexity of the reconstruction, this phase of the treatment may take between two weeks to a few months. Adjustments to your existing teeth, some minor filing, crowning or other conventional treatment may be carried out simultaneously. Visits to the laboratory may be arranged so that the technician could check the colour and size of your teeth to achieve the best possible match to your natural teeth. The final connection of the teeth to implants is normally a simple procedure that does not require a local anaesthetic injection.

OUTCOME OF TREATMENT

Implant treatment is normally carried out for functional reasons to replace teeth with stable and comfortable prostheses anchored to implants. Whilst every effort is made to ensure that implanted teeth look and feel as natural as possible, you must understand that dental implants are artificial prostheses and, as such, will inevitably be different than natural ones in many ways. It should also be recognised that after tooth loss the gum and the bone surrounding a tooth socket undergoes a shrinkage process and it is not possible to prevent or correct such recession of the gum margin. In this situation it may be necessary to replace the missing or damaged gum by grafting or the application of gum coloured material to masque the recession. Your dentist will discuss these alternatives with you should they be required.

Although dental implant treatment has a high success rate, in approximately 5% cases implant failures may be encountered. These failures are usually noticed when starting the restorative treatment. If the implant is found to be loose it is normally removed and

replaced, if possible, with a new fixture. However, sometimes it may be necessary to treat the implant socket with bone augmentation materials before re-inserting the implant after a few months later.

MAINTAINANCE REQUIREMENTS FOR IMPLANTS

After the completion of the implant treatment you will require routine check-ups and periodic oral hygiene appointments with the hygienist to ensure the long term success of implant therapy. You will be referred back to your routine dentist for long term maintenance and follow up of your implants. It will be your responsibility to ensure that you maintain your gums and implants as healthy as possible and see the hygienist regularly. Moreover any removable prostheses will require periodic inspection and maintenance to ensure that they are kept in most optimum mechanical condition.