



*Southgate***DENTAL**

EXPERTS IN DENTAL EXCELLENCE.

# CONSIDERING DENTAL IMPLANTS

A PATIENT'S GUIDE  
TO DENTAL IMPLANT  
TREATMENT



# **Southgate**DENTAL

## EXPERTS IN DENTAL EXCELLENCE.

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### **Disclaimer**

This booklet has been designed for information purposes only. Any errors are unintentional and the information contained within should not be relied upon without further detailed discussions with a Specialist Oral Surgeon. No doctor/patient relationship is established by reading this and no diagnosis or treatment is being provided. No guarantees or warranties are made regarding any of the information contained within this booklet. Some of the opinions outlined in this booklet are those of the author and so should not be taken as those of all dentists. Some content has also been taken from the ADI (Association of Dental Implantology) and EAO (European Association of Osseointegration). Dental Implantology is a surgical procedure and cases vary from person to person. Suitability is a key factor to this treatment as not everybody is suitable. Patients will require oral and radiographical examinations, including CT scans to determine suitability in order to then diagnose and prescribe treatment. Your oral hygiene must be at a sufficient standard to proceed with any Implant treatment. It is imperative that you understand and discuss the procedure with the oral surgeon, in detail before you proceed with treatment.



# INTRODUCTION

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Thank you for choosing Southgate Dental, we are a highly skilled, state of the art multi-discipline clinic in Drogheda. We are dedicated to using modern dentistry to restore and protect your mouth.

Southgate Dental opened in Sept 2013 and the clinic has gone from strength to strength since then. Our facilities are warm and welcoming and designed to ensure that our patients are in a relaxed and friendly environment when they attend for an appointment. We pride ourselves on our excellent patient and customer care and wholeheartedly believe that we wouldn't be where we are today without the wonderful patients we have had since we opened. We are here to help all of our patients past, present and future, to achieve the smile they have always dreamed of and we are looking forward to treating you too.

This brochure has been designed by the staff at Southgate Dental specifically for our patients benefit. Inside we will take a closer look at all parts and stages of a dental implant. Please be sure to read the brochure in detail and do not hesitate to call us if you have any questions.

## A PROVEN SOLUTION THAT IS MORE THAN FIFTY YEARS OLD

Dental Implants are not a new trend in dental care, in fact they have been used to permanently replace one, several or even all the teeth in the upper and/or lower jaw since the 1960's.

Dental implants are small screws made of titanium. Titanium is a metal which has been tried and tested and can be accepted by the body. It has a well-documented ability to heal and fuse well with our own bone tissue. Based on years of extensive research, implants provide a secure anchor for new, natural looking teeth. Moreover, a recent review of studies shows that dental implants represent a more long term, cost effective treatment option.

*Dr. Roka is registered with the Irish Dental Council's as both a general dentist and specialist Oral Surgeon. Antal is also a member of the Irish Dental Association (IDA), Association Of Dental Implantologist UK (ADI) and the newly formed Irish Association of Oral Surgery (IAOS).*

*He is an enthusiastic, conscientious dentist/surgeon and wants to offer all of his patients the best possible care that he can.*



**Dr. Antal Roka, DMD, MSc**

Owner, Principal Dentist, Registered Specialist in Oral Surgery

# GENERAL CONCEPTS

CROWN

## PORCELAIN CROWN

ROOT

## ABUTMENT

IMPLANT  
BODY

Required  
bone width is  
7,5-8 mm

Min. 2mm

**3.5 - 5mm**

Min. 2mm

# BONE

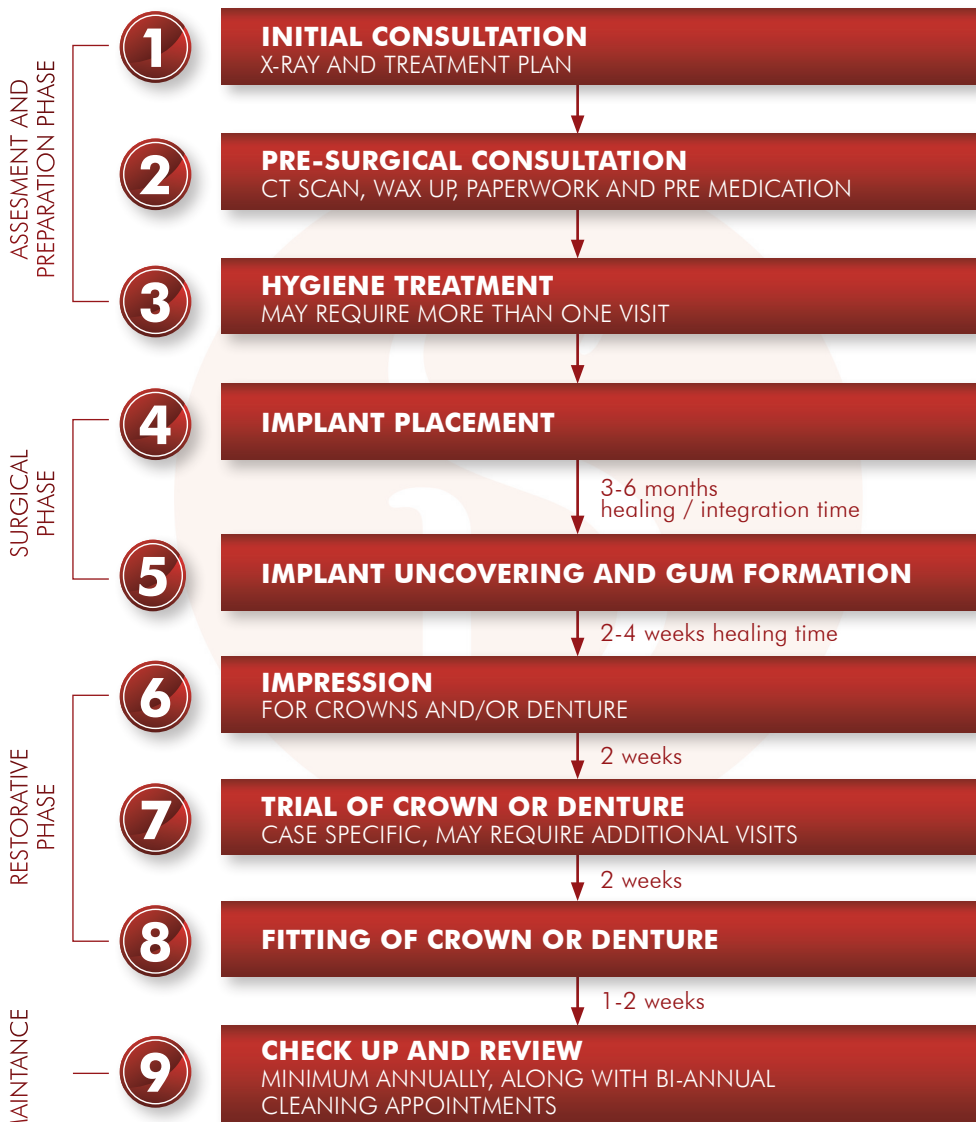
# GUM



# GENERAL CONCEPTS

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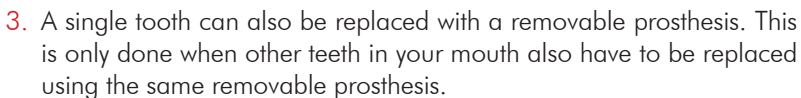
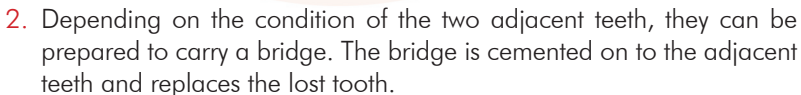
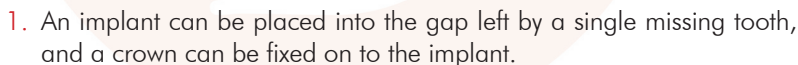
## BASIC TREATMENT SEQUENCE\*



\* Please keep in mind that if extractions, dentures, bone augmentation or sinus lifts are required prior to implant procedures, then this will add time to the overall treatment length.

A dental implant is a screw, an artificial replacement for a tooth root, usually made from titanium. The implant is placed into the jaw bone where it provides a solid foundation for a crown or denture. 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. However keep in mind that the prosthesis should be changed every 10-12 years. Sometimes sooner depending on how well it is being cared for and maintained.

Dental implants are considered today's gold standard for tooth replacement. Your own bone can solidly attach to them and they can't have tooth decay therefore, they last longer than any other tooth-replacement option. Implants also help preserve tooth-supporting bone that deteriorates when a tooth is lost.





## WHAT ARE DENTAL IMPLANTS FOR?

Implants are used to fix a crown, bridge, prosthesis that replaces one or more missing teeth. The aim is to improve your health, chewing function and / or aesthetic appearance.

## ADVANTAGES

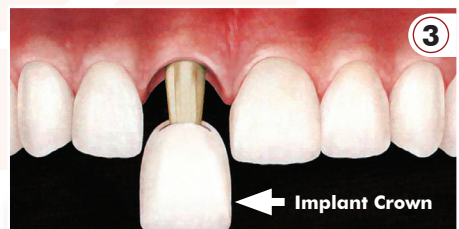
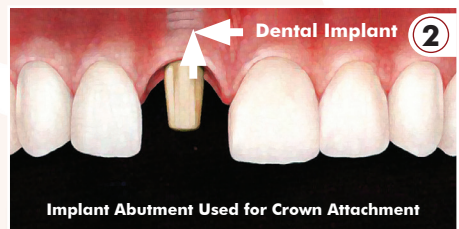
- Aesthetic, functional, predictable, reliable
- Does not affect adjacent teeth
- Cannot have tooth decay
- Will never need root canal treatment
- More cost-effective tooth-replacement option overtime

## DISADVANTAGES

- More expensive initially
- Requires surgery
- Requires healing time before permanent tooth replacement

## CAN DENTAL IMPLANTS PRESERVE BONE?

This is one of the most important features of dental implants. Once in place and supporting teeth, everyday functional forces (eating, smiling, talking) stimulate the surrounding bone, which responds by becoming stronger and denser. Like all things there are limits as to how much work an implant can do. We will be able to discuss this in more detail as it relates to your individual case.



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 **drinking or smoking** can increase the number of problems associated with initial healing, and therefore the long-term health of the gum and bone surrounding each implant maybe affected. Some dentists will decline to place implants if smoking cannot be reduced or given up altogether. However, each case is different and if you do have any medical problems then speak to your doctor or dentist prior to starting any treatment – it is only in some circumstances that health problems prevent the use of dental implants altogether.

*Dental implants are suitable for most adults with good general health*

At your initial consultation we 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.

For routine cases, from the time of implant placement to the time of placing the first tooth/teeth, treatment times can vary between three months and nine 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.



## HOW DO YOU KNOW IF YOU HAVE ENOUGH BONE FOR DENTAL IMPLANTS?

Routine dental x-rays show large amounts of detail, but in only two dimensions. The big problems with these x-rays is magnification and distortion. The views are all magnified to varying degrees and so it is impossible to take accurate measurements from these x-rays. This means an OPG x-ray doesn't allow us to know how far the implant will be from a nerve, for instance.

Dental 3D Scans – there are now a number of advanced x-ray techniques that allow your jawbone to be looked at in all three dimensions. The most accurate and widely available is known as the CBCT (cone beam computed tomography) scan.



## DO YOU NEED TO HAVE A HEALTHY MOUTH?

When you first enquire about dental implants it is often in response to an awareness of ongoing dental problems or the recent loss of teeth. The cause of these problems will need to be understood and treated before undertaking implant treatment. If you are aware of bad breath, loose teeth, or have noticed excessive bleeding, particularly when your teeth are cleaned professionally, you may have gum problems.

## WHAT SHOULD YOU KNOW BEFORE YOU START TREATMENT?

It is important to note that on the day of surgery we have allocated a specific time for your procedure. If you have questions regarding anything outlined in this brochure or your individual treatment plan it is in your best interest to arrange another appointment beforehand to discuss everything prior to surgery. Any time used on the day of surgery may result in treatment being postponed.

Treatment will also be postponed if pre-op care such as hygiene treatments have not been followed as advised. As implants are a surgical procedure we want to ensure that everything is done to optimise the success of the implant placement and your comfort and reassurance throughout the treatment.

## WILL I EXPERIENCE PAIN AFTER THE IMPLANT IS PLACED?

Any mild discomfort that may be experienced after surgery can be controlled with conventional painkiller tablets. You may experience swelling and/or bruising after surgery as everybody heals differently, so this is to be expected for a few days. The longer the operation the bigger swelling may be.



# 10 SUITABILITY AND THE PROCESS

## AN OVERVIEW OF THE IMPLANT PROCESS

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

### • **ASSESSMENT AND TREATMENT PLANNING** *(Steps 1-3)*

At initial consultation, following full discussion of all possible alternatives, we 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. Once full assessment is completed, you will require a pre-surgical appointment to discuss the surgery in detail.

### • **IMPLANT PLACEMENT** *(Step 4)*

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. 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 and can affect cost and treatment time. After implant is placed the gum is closed using stitches.

### • **INTEGRATION PERIOD** *(Step 5)*

Implants can take from three months to nine months to fuse with the patient's bone. During this integration period, temporary dentures or crown / 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'. Temporary fixations will incur an additional cost.

### • **THE RESTORATIVE PHASE** *(Steps 6-8)*

Once integrated, the implants can be brought into function with a variety of new teeth options (definitive restorations) ranging from a single crown, small or large bridge or a removable overdenture. A dental technician who works closely with our dentist constructs these definitive restorations. It is important to remember that the restorative phase is not for life. The prosthesis needs to be cared for like natural teeth and we recommend they are changed every 10-12 years.

### • **MAINTENANCE** *(Step 9)*

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.



## IMPLANT PLACEMENT MODALITIES

### 1. STANDARD APPROACH (TWO-STAGE IMPLANT)

The implant is placed into a 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 begin placing a new tooth.

### 2. STANDARD APPROACH WITH HEALING CAP (ONE-STAGE IMPLANT)

This is the same as the first method, but we are placing a healing cap into the implant and therefore the cap 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 months.

### 3. IMMEDIATE IMPLANT

For this technique a tooth is removed and an implant placed immediately into the extraction site. Bone grafting is needed as the size of the tooth is bigger than the implant itself. This creates a void which needs to be sealed with artificial bone. Not all patients are suitable for this approach.

### 4. IMMEDIATE IMPLANT WITH PARTIAL EXTRACTION THERAPY (PET)

The loss of bone of the postextraction site is a significant challenge in restorative and implant dentistry. A variety of ridge preservation techniques using tissue and augmentative materials are used in our clinic. A slightly different approach is to use the tooth itself. Root submergence has been reported in the literature for decades, and it has been demonstrated that the submerged tooth root retains the tissues and preserves the bone. The socket-shield technique or PET entails preparing a tooth root section simultaneous to immediate implant placement and has demonstrated clinical results that are highly promising to esthetic implant treatment. This is a new and innovative approach and has been used since 2015.

### 5. IMMEDIATE OR EARLY LOADING

This is distinctly different from the implant placement. It is effectively a one-stage technique where the implant is placed into a new, healing or healed extraction site and is fitted with a new tooth at the same appointment. This first tooth (*temporary crown*) will normally be kept out of direct contact with opposing teeth for a healing period of more than three months, after which it is finally restored. This technique tends to be more common in regions of the mouth where optimum aesthetics are important. (Again, not all patients are suitable for this approach.)

## 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.

When poorly cared for, implants will develop a covering of hard and soft deposits (calculus and plaque), which is very similar to that found on neglected natural teeth. Untreated, these deposits can lead to gum infection, bleeding, soreness and general discomfort. It could be said that implants will last as long as natural teeth.

Well-maintained implants placed into adequate bone can be expected to last for many years and possibly for your lifetime. However, just as you would expect conventional crowns, bridges and fillings to need occasional repairs or replacements, your implant supported teeth may also have similar maintenance requirements over the years.

## WILL IMPLANTS FEEL DIFFERENT FROM MY NATURAL TEETH?

Natural teeth are surrounded by the periodontal ligament which enables sensations of pressure to be felt as we bite and chew. Implants are not surrounded by the periodontal ligament so the sensation of pressure may not be felt in quite the same way as by natural teeth.

## 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 crowns, 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. This will be discussed in your initial consultation and detailed in your treatment plan.

## HOW SHOULD I CLEAN 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, but sometimes can be challenging.

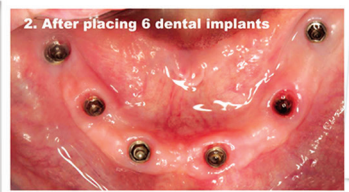
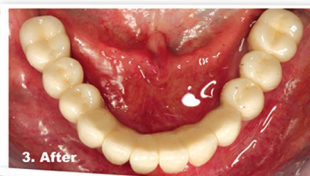
For most implant-supported teeth you will be able to clean around each supporting implant by brushing and flossing in just the same way that you would around natural teeth and tooth-supported bridges. In some areas special floss, interdental toothbrushes and other cleaning aids may be needed to maintain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

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.

## HOW OFTEN SHOULD I GO TO MY DENTIST / HYGIENIST TO HAVE MY TEETH CLEANED AFTER GETTING DENTAL IMPLANTS?

As a minimum, an annual dental check-up and bi-annual hygiene appointment is likely to be recommended, but supportive periodontal therapy every three months could be necessary if you have had tooth loss due to periodontitis. Your oral surgeon and hygienist will keep you informed of your specific requirements. Oral Hygiene maintenance is imperative and you should follow the instructions of your oral surgeon and hygienist to the letter.



### ONE EXAMPLE OF OUR CASES: FULL MOUTH RECONSTRUCTION

with 6 implants and 12 unit porcelain bridge.

You can find further cases on our website:  
[www.southgatedental.ie](http://www.southgatedental.ie)



# 14 RISKS AND POTENTIAL COMPLICATIONS

## ARE THERE ANY SURGICAL RISKS WHEN IMPLANTS ARE PLACED?



As with all treatment procedures, there is a degree of surgical risk when an implant is placed. The likelihood of a risk occurring depends on a range of factors, including the area being treated. Minor risks are in most cases transitory and can be controlled. They include hematoma, bleeding, swelling, pain or discomfort. There are very few major risks associated with implant surgery and although they can potentially occur, they are extremely rare.

## WHAT ARE THE POTENTIAL COMPLICATIONS OF DENTAL IMPLANTS?

Several complications may be encountered, but they can all be managed effectively.

### BONES LOSS

Bones loss can occur around implants. Regular check-ups by your implant dentist will ensure that any more extensive bone loss is spotted and treated.

### INFECTION

Infections around implants mostly result from poor oral hygiene. To prevent infections, implants should be professionally cleaned by your dentist or a hygienist on a regular basis. If you are a periodontal patient you should also follow a programme of preventive periodontal therapy. Adequate oral hygiene two times daily is important.

### IMPLANT LOSS

An implant can be lost for different reasons such as infection or fracture. Sometimes, osseointegration does not take place. It is normally possible to replace a failed implant with a new one.

### IMPLANT FRACTURE

Fracture of implants occurs rarely (in less than one per cent of cases). This type of complication usually results in patients with parafunctional habits (bruxers or clenchers) or unstable occlusion, as well as with other kinds of overloading.

### COMPLICATIONS RELATING TO THE PROSTHESIS

The porcelain of crowns or bridges placed on implants can fracture. Minor porcelain fractures (chipping) can be more prevalent on implants than on natural teeth because of a lack of shock absorbency between the implant and the bone. This type of complication usually also results in patients with parafunctional habits (bruxers or clenchers) or unstable occlusion, as well as with other kinds of overloading.

## WHAT ANATOMICAL STRUCTURES MUST BE AVOIDED DURING THE PLACEMENT OF DENTAL IMPLANTS?

In the upper jaw, provided the implants stay within the bone that once supported your own teeth there are really no important risk areas. If you have missing upper back teeth then the shape and location of the region above the roots (maxillary sinus) can be shown to you. The maxillary sinuses can be seen on most x-rays and are therefore readily avoided.

In the lower jaw the most important anatomical structure to be avoided is the 'inferior dental nerve'. This nerve runs from the area behind the wisdom teeth, passes under the back teeth (molars) and emerges onto the skin of the face in the region where your middle teeth (premolars) are or used to be. This is why a normal dental anaesthetic produces a numb lip even when the needle was placed right at the back of the mouth. If this nerve is disturbed or damaged during the placement of dental implants it can lead to temporary or even permanent numbness or altered sensation. This is an extremely rare complication, but important to point out.

## WHAT CAN YOU DO IF AN IMPLANT DOES NOT WORK?

In general the success rate for dental implants is around 95%; however, in practice this could mean that 1 in 20 of the implants placed might not survive in the long-term. It is a good idea to discuss how your treatment plan might be affected by the loss of an implant.

There are many reasons why a dental implant can fail including smoking, oral hygiene, and systemic disease. In these particular risk groups, the failure rate could be expected to be much higher.

If an implant does not integrate well with the surrounding bone it will eventually become loose and no longer be able to support replacement teeth. Commonly the failing implant causes no discomfort and if there are enough implants remaining, it may not be necessary to replace it at all.

It is important that you discuss the possible complications that may occur with your dentist.

*In general the success rate for dental implants is around 95%  
In our practice in the last 3 years we have lost only 3 implants,  
which means we have approximately a 99% success rate.*



## IF I HAVE LOST MY TOOTH/TEETH DUE TO PERIODONTAL DISEASE, ARE DENTAL IMPLANTS STILL AN OPTION?



Periodontal disease affecting natural teeth may increase the risk of infection around dental implants. Therefore, it should be treated before implant placement.

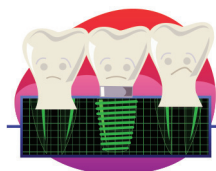
Peri-implant diseases are often compared to periodontal diseases that affect natural teeth. The initial inflammation of the mucosa surrounding a dental implant is termed peri-implant mucositis. This inflammation may be reversible if adequate treatment is provided. If the soft tissue inflammation is accompanied by loss of bone around the implant, the condition is termed peri-implantitis. Treatment of this condition must be managed by your dentist and their team.





## CAN PERI-IMPLANT DISEASES BE TREATED?

Yes, peri-implant diseases can be treated. If bone loss is identified at the inflamed site(s), it is often necessary to perform surgical interventions to re-establish healthy conditions.



## IF I AM UNDERGOING PERIODONTAL TREATMENT FOR MY NATURAL TEETH, SHOULD THE TREATMENT ALSO INCLUDE MY DENTAL IMPLANTS?

As with natural teeth, it is important to monitor dental implants and the tissues surrounding them. Periodontal patients have a greater risk of complications relating to implants, so it is critical that the tissues around the implants are monitored, and that inflammation is treated if it develops.

## WILL SMOKING AFFECT THE SUCCESS OF MY DENTAL IMPLANT TREATMENT?

Smoking increases the risk of implant complications, just as it increases the risk of periodontitis around natural teeth. The failure rate is 20% higher than in non-smoking patients. Smoking cessation is recommended before implant treatment takes place in order to ensure a better treatment outcome. However, implants can be successfully placed in a high percentage of patients who smoke.



## WILL SMOKING AFFECT BONE LOSS AROUND MY DENTAL IMPLANTS AND REMAINING TEETH?

Smoking appears to increase the risk of inflammation and bone loss around implants. Therefore, smoking cessation is an important step in order to achieve good overall oral health and to reduce bone loss around dental implants, as well as around the natural teeth.

# 18 FUNCTION AND AESTHETICS



## CAN DENTAL IMPLANTS HELP IMPROVE MY SMILE?

If you have lost one or more front teeth, dental implants are an excellent treatment option that can help improve your smile. In most cases crowns on dental implants look very natural, just like your real teeth. Normally, people will not realise that what you have is actually an implant-supported crown. Dental implants attach to the bone and stay fixed in position allowing you to smile comfortably and naturally.

## CAN DENTAL IMPLANTS HELP ME PRESERVE MY REMAINING TEETH?

Loss of one or more teeth in a segment of your mouth can lead to drifting of the neighbouring teeth. Similarly, loss of a tooth or teeth can lead to shifting of opposing teeth as they drift out (super-erupt) into the open space. In general, our teeth have a constant tendency to move both towards the front of our mouths and towards the opposing jaw, unless they are stopped by something in their way - usually the adjacent or opposing teeth. Loss of teeth allows this to proceed. As teeth drift, they may create discrepancies in the height and contours of the gum tissue that predispose adjacent teeth to periodontal disease and/or dental decay from accumulation of plaque. Drifting teeth can also adversely affect the occlusion (bite), as well as the overall aesthetics of your face and smile. Dental implants can replace missing teeth and in this way may help preserve your remaining teeth.



## WILL I BE ABLE TO BITE ON AN IMPLANT AS WELL AS I CAN WITH MY NATURAL TEETH?

Crowns on dental implants will feel very natural and in most cases quite similar to your real teeth. Normally, you will not be able to feel that you have a dental implant. Dental implants remain fixed in the bone and allow for normal function and mastication (chewing). However, natural teeth are surrounded by the periodontal ligament which enables sensations of pressure to be felt as we bite and chew. Implants are not surrounded by the periodontal ligament so the sensation of pressure may not be felt in quite the same way as by natural teeth.

## WILL MY FRIENDS NOTICE THAT I HAVE HAD DENTAL IMPLANTS?

Correctly placed and restored dental implants will provide aesthetic results very similar to those of your natural dentition. Crowns on dental implants will appear very natural and quite similar to your real teeth. Normally, no one will notice that you have a crown supported by a dental implant.



## SHOULD MY PROSTHESIS BE SCREW-RETAINED OR CEMENTED?

Both techniques are widely used and effective. However, each has advantages and disadvantages. We will recommend the technique that is preferable for you, however there is a trend that we try to use screw retain option if possible.



## SHOULD MY PROSTHESIS BE FIXED OR REMOVABLE?

Both dental implant restoration methods fixed and removable work well. Removable implant-supported restorations are generally easier to clean, as they can be detached and reattached. They are normally also less costly. If extreme bone resorption (shrinking) has occurred they can restore phonetic (speech) and facial profile aesthetics more effectively without the need for major surgical procedures. However, fixed implant-supported restorations are a better solution in most cases. Most people prefer to have a fixed restoration which they don't need to remove, although this type of restoration can be harder to clean.



## I WAS TOLD THAT MY IMPLANT-SUPPORTED PROSTHESIS SHOULD INCLUDE SOME ARTIFICIAL GINGIVA IS THAT RIGHT?

When teeth are lost, the underlying bone (alveolar bone) and gum (gingiva) tend to shrink (resorb) both vertically and horizontally. The alveolar bone supports the teeth and when it no longer receives stimulation from forces on the teeth, it tends to melt away. The soft tissue or gingiva will follow the bone in this process of resorption. Areas where teeth have been missing for a long time, or where they have been replaced with removable dentures, are often characterised by considerable tissue loss.



At times, this tissue loss can be regained with adjunctive procedures (bone and gum grafts), but sometimes the best option is to mimic the missing bone and soft tissue with artificial gingiva. Recreating artificial gingiva can be as important to the aesthetic result as the recreation of a natural looking tooth or teeth, particularly if you have a high smile line. In addition, the artificial gingiva will often help give adequate lip support, enhancing overall facial aesthetics.



# 20 RECONSTRUCTION OF LOST TISSUE

## 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 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 bone 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 or use artificial 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.

## WHAT CAN CAUSE BONE LOSS?

Whenever a tooth is lost or extracted a considerable amount of the bone that once surrounded the remaining root may disappear. This loss can be particularly rapid during the first few months and is described as 'bone resorption'. Although the rate and amount of bone resorption is highly variable between individuals, it will always occur to some extent, unless specific care is taken to reduce its effects.

Many patients report that after a while their dentures become progressively looser and do not fit as well as they once did. Initially the increased rate of bone loss following extractions is responsible for the observed deterioration of the denture fit. Over the long-term it is the direct effect of chewing forces that causes slow deterioration of the supporting bone. Therefore the longer dentures are worn, the less bone is available for dental implants.

## WHY DO I NEED A 3D SCAN?

3D or CBCT scans are generally the best means for identifying the location of nerves, vessels and allow implants to be placed with considerable confidence. Whilst CBCT scans are more expensive than routine dental x-rays, the information they provide is often invaluable for complex treatment planning and knowing where important anatomical structures are located.



## 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 can be taken from the hip or shinbone (tibia). However this treatment can only be carried out in a hospital environment. 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

• **BOVINE**

• **SYNTHETIC**

• **HUMAN**

For those who would prefer an easier but slightly slower, solution there are other sources of bone such as **bovine** (derived from cow), 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. 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' or GBR. Using this technique, slow-moving bone cells are given time to fill 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.

*Bone grafting requires a considerably higher degree of skill from the operator and is often more complex to perform than the placement of the implant itself.*



**OUR  
MAIN BONE  
SUBSTITUTE  
MATERIAL  
IS DERIVED**

*from  
Bovine*



## **DOES BONE GRAFTING AFFECT THE LENGTH OF TREATMENT?**

If you need bone grafting, it will almost invariably increase the length of time your treatment will take; however, when successfully applied it will greatly improve the outcome of the implant(s) placed. When used in the front of the mouth it can also allow for creation of much better aesthetics.

In certain situations some operators will recommend combining the implant placement with bone grafting and the placement of a barrier membrane all at the same time. This considerably reduces treatment time and can produce results that are difficult to achieve any other way. However, many surgeons will still prefer to carry out bone grafting as a distinct stage, so that the implants are only placed when the bone grafting has been successful. Whatever method is chosen to improve the bone quantity the time, effort and expense is generally well worthwhile.

## **WHAT HAPPENS TO THE GUM AND THE JAW BONE AFTER A TOOTH IS LOST?**

Immediately after a tooth is removed, a blood clot forms in the socket. Over the following weeks, blood vessels and cells from the socket wall form bone, repairing the socket. At the same time, gingival cells migrate across the surface of the blood clot creating new gingiva and closing the extraction socket. Unfortunately, healing of the socket is normally associated with shrinkage and reduction of both bone and soft tissue. The extent of the tissue loss depends on a number of factors including your individual biology and the degree of tissue trauma during the removal of the tooth.



## **CAN THE LOSS OF TISSUE AFTER A TOOTH IS EXTRACTED BE PREVENTED?**

The loss of tissue following tooth extraction can be minimised by limiting the trauma to the bone and soft tissue, and by avoiding removal of bone during the extraction. Sometimes the empty socket is filled with a bone grafting material immediately after extraction to minimise loss of tissue, this is called socket preservation.





## CAN LOST BONE BE RECONSTRUCTED?

Lost bone can be reconstructed in various ways. This includes using autogenous (your own) bone tissue. The process generally involves removing bone from a second surgical site, and as a result it is associated with the risk of additional morbidity. There are other types of bone grafting materials (bone substitutes) that can be used.

All grafting materials have to be integrated into the recipient site by penetration of newly formed bone which originates from the underlying jaw bone. Autogenous grafts have a biological activity of their own through the bone cells and bone matrix that is transferred. Other grafting materials are devoid of biological activity and rely on the ability of the residual bone tissue to incorporate them. The extent of bone loss, the location of the bone defect, and the condition of the overlaying soft tissues will have an impact on the material and technique of choice.

## I HAVE BEEN TOLD THAT I NEED A SINUS LIFT. WHAT IS THIS?

A sinus lift is a surgical procedure that elevates the inner lining of the maxillary sinus. This creates a space between the maxillary bone and sinus membrane into which bone grafting material is placed. A sinus lift is often necessary within the molar and bicuspid areas of the upper jaw because the bone height is reduced after the bicuspid and molar teeth are lost. As a result, the bone height needs to be restored before implants can be placed. Where the loss of bone height is limited, a sinus lift can be performed through the socket that is prepared for the implant. Where bone loss is more extensive, access to the sinus membrane is required through the lateral sinus wall to allow for a controlled and safe elevation of the membrane. Sometimes implants can be placed at the same time as the sinus lift procedure is performed.



## WHAT ARE THE ALTERNATIVES TO A SINUS LIFT?

Alternative approaches are the use of short implants that can be placed in the residual bone underneath the sinus membrane. Another option is the use of angulated implants that are placed into the triangular bone contour in front of and behind the sinus membrane.

*Patient's happy smile*



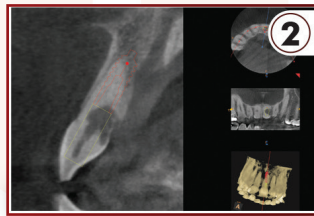
# Jack's story

Jack attended with a hopeless front tooth which had an endodontic lesion. Implant therapy with an immediate approach was performed using the modern diagnostic assessments and diagnostic instruments.

*"I am satisfied with my treatment at Southgate Dental Clinic, and would have no hesitation to recommend them to my family and friends."*



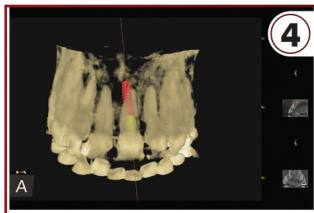
Hopeless UL1 tooth



CT Scan showed internal resorption



After extraction dental implant in place



Safe implant placement with modern diagnostics



After porcelain crown fitting: nice adaptation of soft tissue and shade matching



Patient's happy smile

## I AM TAKING BISPHOSPHONATES FOR MY OSTEOPOROSIS. CAN I HAVE DENTAL IMPLANTS?

## I AM TAKING ANTICOAGULANT MEDICATION. CAN I HAVE DENTAL IMPLANTS?



Oral surgery is not recommended during pregnancy, even though implant surgery is generally very simple and without complications. However, some complications can potentially arise with the need to prescribe antibiotics and / or anti-inflammatory medications. As a result it is best to avoid implant surgery during pregnancy. (Also bear in mind we cannot take x-rays.)



There are only a few absolute contraindications that relate to cardiovascular diseases. For example, implant placement cannot be considered within six months of a heart attack. Also, for any cardiovascular pathology, implant surgery can only be performed with the authorisation of your cardiologist. Medical recommendations may vary depending on the country you live in.

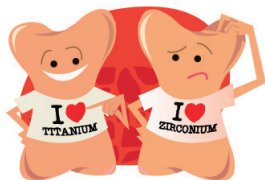
Yes, there are no contraindications to placing implants in patients over 80 years of age. No increase in the rate of failures has been reported in most cases. If you have no other contraindications for oral surgery, you can have implants. However keep in mind that healing time can take longer for some older patients.



Dental implants are only appropriate when facial growth is complete. If a dentist places implants too soon, there can be adverse cosmetic results when facial growth is complete. We will identify the most effective interim solution that allows implant placement to be performed at the right time.

## NON IMPLANT OPTIONS

## NON-IMPLANT OPTIONS FOR REPLACING A SINGLE TOOTH

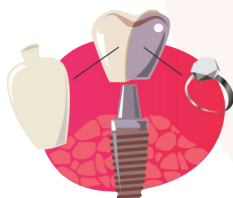


## IS TITANIUM THE ONLY MATERIAL THAT OSSEOINTEGRATES?

Various materials can osseointegrate, but implants made of commercially pure titanium are the most common. Implants made of ceramic materials (e.g. zirconium oxide) have been introduced in recent years, but long-term studies of their survival rates are not yet available.

## I AM ALLERGIC TO TITANIUM. CAN I STILL HAVE DENTAL IMPLANTS?

Dental implants are normally made of commercially pure titanium. Allergy to titanium is rare and very few cases have been reported. If you are allergic to titanium, it may be possible for you to have an implant made of another material that will be accepted by your bone and osseointegrate.



## WHAT MATERIALS ARE USED FOR IMPLANT RESTORATIONS?

Once the implant has been placed, a restoration (a crown, bridge or removable prosthesis) is placed on it.

Removable prosthesis are normally made of acrylic material. Fixed restorations (crowns and bridges) have an inner framework of metal or a strong ceramic material. A tooth-coloured ceramic material (porcelain) is then fused on to this framework. The inner core of metal can be made from various alloys. The most common metals used are various types of alloys as cobalt, chrome or nobel alloys as zirconium or titanium.

Restorations that are made of an inner framework of metal combined with a porcelain coating are called 'metal-ceramic'. Restorations that are made entirely of porcelain are called 'all-ceramic'.

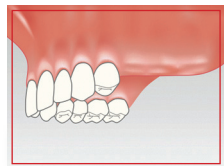
All-ceramic restorations are normally not recommended for the replacement of molars.

## OVERVIEW OF OPTIONS

A diagram of a maxillary dental arch. The teeth are shown in white against a red background. A red shaded area is present above the teeth, representing the maxillary sinus region.

A diagram of a dental arch with a central implant. The implant is a dark, cylindrical post with a textured surface, extending from the top of the arch. The surrounding area is highlighted with a red glow, suggesting heat or inflammation.

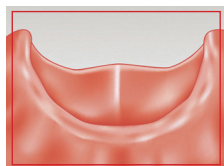
## REPLACING SEVERAL TEETH – DENTAL BRIDGE ON IMPLANTS



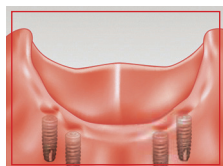
**4** The new teeth are securely placed and are ready for use.



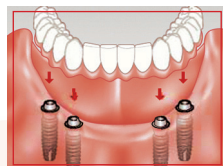
## REPLACING ALL TEETH – DENTAL IMPLANT BRIDGE – FULL ARCH



**1** A bridge attached directly to several dental implants is the most advanced solution for replacing all missing teeth.



**2** The number of (4-8) implants depends on your individual situation.



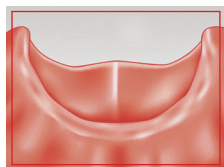
**3** Abutments act as connecting elements between the bridge and the implants.



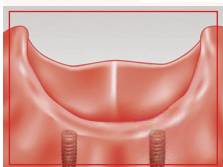
**4** The dental implant bridge is attached directly to the abutments, creating a secure and permanent solution.

## REPLACING ALL TEETH –

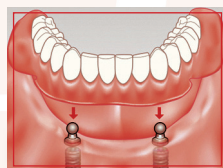
## IMPLANT-SUPPORTED OVERDENTURE OR CLICK IN DENTURE



**1** An overdenture is supported by at least two dental implants and is a more secure, but removable, alternative to dentures.



**2** Two or more (3-4) dental implants, creating a secure foundation for the final prosthesis.



**3** Ball, or so called Locator abutments act as the intermediate connecting element to the implants. Sometimes bar connections are used.



**4** With an overdenture in place, functionality and appearance of normal teeth is created.

## WHAT YOU SHOULD EXPECT FROM THE SURGERY?

So far we have covered the steps of a routine implant procedure. The big question is what will happen when you get the implant placed?

### BEFORE SURGERY

- ❶ As we discussed earlier after the initial consultation and pre-surgical consultation we perform the surgery under antibiotic cover. That means you take an antibiotic 1 hour before the actual surgery. This gives you the added protection and safety that the medication is already in your blood stream. Our mouths will never be sterile so we can only reduce the effect of possible bacterias.
- ❷ If you are nervous we can supply a relaxer free of charge, which needs to be taken in advance as well, so please advise us before the day of surgery.
- ❸ After you sit in the dental chair the surgeon will deliver the anesthetic required.
- ❹ You will have to rinse your mouth with an antiseptic mouthwash for 30 seconds.
- ❺ Our nurses will clean and disinfect the skin around your mouth.
- ❻ After the anesthetic kicks in we will cover you with a sterile sheet to create a sterile environment. If you are claustrophobic please let us know in advance.
- ❼ The surgeon will start the procedure which can take anything from 1 hour to 3 hours depending your treatment plan.

### AFTER SURGERY

After the surgery a control x-ray or Scan will be taken to make sure the implant is positioned in the right way. You will be given a take home aftercare pack with post-operative instructions and a complementary icepack.

Please note that we recommend a soft diet and rest for a few days following surgery.

After 1 or 2 weeks we will bring you back for a check-up to make sure everything is going well and the way we would expect.

After 6 or 8 weeks you will be required to see the hygienist for healing assessment and to perform pocket depth and attachment loss charting. (Case specific)



## Abutment.....

An abutment is the component which attaches the implant to the definitive tooth restoration.

## Barrier membrane.....

A membrane which is draped over a bone defect or bone graft to allow bone healing to occur without the ingress of soft tissue which could compromise the healing process.

## Bone grafting /regeneration.....

This is the placement of either natural or synthetic bone material to an area where natural bone is deficient. This may be performed at the time of implant placement, or as a separate procedure prior to implant placement.

## Bone resorption.....

Bone resorption is the loss of height and /or width of bone in either upper or lower jaws. This process occurs throughout life, but is accelerated in locations where tooth loss has occurred.

## Bridge.....

A bridge is a method of replacing a missing tooth or teeth by means of artificial teeth attached to other natural teeth or dental implants. Bridges may be glued in place (adhesive bridges) or supported by crown preparations (conventional bridges), and may be constructed of a variety of materials.

## Bruxism.....

The clenching or grinding of teeth at times other than eating.

## Calculus.....

Hard deposits around teeth sometimes referred to as tartar. Calculus is the result

of calcification of plaque around teeth, and can be prevented by rigorous attention to good oral hygiene measures. Once calculus has formed, it is difficult to remove, and in most cases this would involve the services of a dental therapist or hygienist.

## Complete arch.....

A complete arch is referring to the teeth of the whole of the upper or lower jaw.

## Consultation.....

An appointment with the dentist to discuss possible treatment options. The appointment may include an examination, x-rays and photographs along with open discussion and explanation where appropriate.

## Crown.....

A crown is any form of restoration which covers the entire exposed surface of a tooth, and can be made of a variety of materials, including porcelain, porcelain bonded to metal and gold. Most crowns in visible areas of the mouth are white in colour.

## CBCT scan.....

Cone Beam Computed Tomography scan is an advanced x-ray technique that produces three-dimensional images of the jawbone. These images may only be viewed on a computer screen, since they are three dimensional in nature.

## Definitive restorations.....

The definitive restoration is the term used for the final implant-supported crown, bridge or denture in the course of treatment. The restoration will need periodic maintenance work and may need to be replaced every 10-12 years.

## GLOSSARY

cases may be resolved by rigorous oral hygiene measures.

Unchecked gingivitis may progress with time to a more serious form of gum disease known as periodontitis; this involves loss of bone, and may compromise the survival of a tooth or teeth.

Providing a temporary crown or bridge simultaneous with the placement of the implant. This treatment is not suitable for all patients.

Sometimes referred to as the inferior alveolar nerve, this runs within a bony canal in the lower jaw, and supplies sensation to the lower teeth, before emerging from bone as the mental nerve which supplies sensation to the lower lip.

This means to bond or fuse together.

An interdental small brush, often just one tuft of "bristles". This is particularly useful for cleaning between teeth, and around implants, and may be used as an alternative to floss.

A hollow air filled space situated above the upper premolar teeth. This varies in size from individual to individual, and gets larger throughout life.

The last three upper and lower teeth on both sides of the mouth.



## Onlay grafting.....

Where bone is taken from elsewhere in the body, i.e. hip (rarely), chin or behind the molars, and secured to the area where bone is deficient.

## Osseointegration.....

Osseointegration is where the implant and bone bond or fuse together, and typically takes several weeks to months.

## Plaque.....

Plaque is a soft sticky, colourless film of bacteria that constantly forms on teeth and gums and can harden into calculus if not removed daily by effective oral hygiene such as brushing, flossing etc.

## Premolars.....

The two teeth located in front of the molars on both sides of the mouth, in the upper and lower jaw.

## PRGF.....

Plasma Rich in Growth Factors

## Reline procedure.....

Reline procedure is where a soft or hard material is used to correct the fitting surface of a denture after an extraction or surgery.

## Removable overdenture.....

A denture which is supported by implants but is removable by the patient for cleaning purposes.

## Restorations.....

The restoration is a filling, crown, bridge or denture. It effectively restores the tooth / teeth for functional use.

## Restorative phase /appointment....

This follows the surgical phase of the treatment regime, usually after a suitable degree of healing, typically a few weeks

to a few months. In most cases this will involve the taking of impressions thus allowing the technician(s) to fabricate the definitive restoration.

## Ridge Expansion/ Splitting.....

New equipment called piezosurgery allows to expand bone where before we had to graft. Piezosurgery allows us to make tiny cuts in the bone into which expanders are placed to push out the bone plate.

## Sinus lift.....

A surgical procedure where bone regenerative material is inserted into the sinus to encourage the formation of new bone to increase the height of bone available to accommodate implant placement.

## Sterile conditions.....

Sterility in this context means the removal of bacterial contamination. Realistically we never manage to achieve absolute sterility; however, we must always aim to get as close as we can to a sterile working environment. This will include the use of autoclaves to sterilise all non-disposable instruments, along with drapes and gowns to isolate working surfaces and personnel.

## Stiches (sutures).....

Thin, thread like fiber used to close wound in order to promote healing.

## Titanium.....

This is a biocompatible metal from which implants are manufactured. Titanium has been used for medical procedures, including hip replacements, for decades.

## Treatment plan.....

A written detailed report on the patient's dental implant procedure including proposed treatment, timeframe and costs.

**Endoret (PRGF) is a biomedical technology aimed at stimulating tissue regeneration by applying autologous proteins.**

## PRGF

### PLASMA RICH IN GROWTH FACTORS

Thanks to this, today it is possible to use the human body's own resources to cure itself which is the principle on which this technology is based. This technique enables us to isolate, concentrate and remove growth factors: a set of proteins in our blood. This technology has been a revolution in the field of dental medicine that means we can offer solutions that are minimally invasive, customised biosafe and predictable to guarantee the success of treatment.



At the moment we are using only for dental treatments, but we are planning to use in FACIAL REJUVENATION as well. Further information go to

Pricing is unique for each individual and accordingly the clinical assessment (bone quality, space, biting forces, etc) cost and delivery of care will be customised.

Generally speaking a standard implant procedure starts from €1075. This includes the body of the dental implant, the titanium abutment and a porcelain fused metal crown. However in many cases this option is not feasible, so our more commonly used implant, which is approximately €1275, tends to be more suitable. Also please note that no temporisation, hygiene treatment, dentures, extractions or bone grafting procedures etc. are included in this price and will incur an additional cost.

In the case of the cosmetic region, such as front teeth we recommend metal-free solutions such as a zirconium abutment (white) and a zirconium crown. This is an additional cost of €250.

At Southgate Dental we fully understand that some patients are put off larger treatments such as implants, because they are considered expensive and as such more difficult to pay for.

To help cater for this concern, our clinic offers payment plans to approved patients on certain treatments. Payments can then be split by appointment, which means you only pay for the treatment you have had done on any given day. For example, with implants, treatment can take approx 3-6 months, giving you a little longer to spread the payments. Our stipulation is that the account balance must be cleared once the teeth are in place, even if the teeth are only fitted with temporary cement.

Please do not hesitate to call or reception team to discuss what payment options are available to you.



We are delighted, that our clinic has been accepted to join Leading Implant Centers, as we fulfill all the strict criteria for membership. Creating worldwide transparency within the market of dental specialists working as implantologists. In order for patients to reliably find experienced implantologists, who have been verifiably certified to the highest level in the field of oral implantology by their respective scientific association.

Our oral surgeons have placed over 3000 implants so far, with a success rate to date of approx. 98%.



## Clinic facilities

Each of our 7 beautifully designed surgeries are equipped with the highest quality, state of the art equipment and materials. Cleanliness and hygiene are paramount at Southgate Dental so that we can ensure our patients and staff safety in all areas of the clinic and during treatments. In addition we have an onsite patient recovery lounge, dental laboratory, and a cone beam 3D CT scan for dental CT scans, allowing us to cater of all our patients needs under one roof in a faster more efficient manner. Our waiting areas are equipped with comfortable sofas and LCD televisions to help our patients relax calmly before and after their treatments. Most important of all to us are our wonderful patients. We treat each and every person with special care and it is important for us to provide an excellent patient experience to everyone who visits Southgate Dental.

Best wishes with your upcoming treatment and please do not hesitate to contact us if you have any questions or feedback as our team are on hand to help you with any queries you may have.

## Clinic artwork

The artwork in this brochure is featured in both waiting rooms of our clinic, and was painted free hand by Dr. Roka's wife - Maria Lujza Polonkai.



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**WWW.SOUTHGATEDENTAL.IE**  
**INFO@SOUTHGATEDENTAL.IE**