





How dental implants can change your life





## **Contents**

Dental Implants. One hundred percent yourself!

3

Invisible of course —
implants in single-tooth gaps!
Anyone can lose a single tooth.
It often happens in just a few seconds:
playing sport, tooth gone ...

4 - 5



As if nothing had ever happened — implants in larger tooth gaps!

Dental implants are not just for filling gaps ...

5 - 7



Life with bite! Implant solutions for the edentulous jaw

Are there no teeth left in the upper or lower jaw? 8 - 9

Frequently asked questions with answers on dental implants from A to Z

10 — 23

# Dental implants. One hundred percent yourself!

#### Dear patient,

Life leaves traces — including on the teeth. An accident playing sport or a fall can leave a gap in your smile at any stage of life. Caries and periodontitis can cost you whole rows of teeth over the years. A stressful situation. But facing a tooth gap bravely is now unnecessary. An obvious or loose denture also. Your dentist has a contemporary solution: original implants by Friadent — highly developed, used all over the world, tried and tested a million times over.

The small titanium bodies are artificial high-tech tooth roots that become a part of the jaw. They are as firm as if they were part of you, and provide a stable base for single-tooth crowns, larger bridges or dentures. Implant-borne teeth are virtually identical to your second set. And they have a completely natural mouth feel. No problems or flapping dentures. It is not necessary to damage healthy neighboring teeth to fix bridges in place. Friadent implants offer a secure solution for every age and for every situation. Permanent, bite-resistant and as individual as you are.

Gain security and quality of life with implants. Have an attractive smile and enjoy good food again. This brochure describes how surprisingly simple it can be to do this.

You will find out how Friadent implants can be used to replace one tooth, several teeth or all teeth safely and without complications. You will also find answers to all your questions about the treatment, care of implants and much more.

Welcome to the fascinating world of Friadent implants.

# Naturally invisible — implants in single tooth gaps!



One single tooth is missing.



## Anyone can lose a tooth. It often happens in seconds: playing sport and a tooth is gone, just like that.

A shock, but no great drama any more. Implants resolve the small problem naturally and invisibly. The dentist inserts the small high-tech root at the position where the natural tooth was in the jaw. This usually does not take any longer than any other routine treatment by your dentist. A temporary restoration closes the gap until the implant is healed. Then the final tooth crown is fixed in place — permanently. With the new root it is fixed firmly in the jaw and feels identical to your natural teeth.

## It's your choice: conventional bridge or implant?

As an alternative the missing tooth can generally be replaced with a fixed bridge. Healthy teeth must be ground down to fix the bridge in place. And this means the teeth that are on the left and right of the gap. They act as bridge abutments. The denture is fixed to the bridge with the aid of crowns. The pontic that closes the gap is between the crowns. It is close enough to the jaw bone to look identical to a natural tooth at first. But it does not load the jaw bone like a natural

Matthew, 21 years old, after a baseball hit him in the mouth.

tooth. Because of this the bone atrophies over time like a muscle that is not used and gradually wastes away. This is why bridge components are often clearly visible when people are laughing and talking.

Is there no tooth on the left or right because the gap is at the end of a row of teeth? Or a tooth bordering the gap clearly has a limited life expectancy and is



The conventional solution: a bridge supported by teeth. This means that the healthy neighboring possible in the side tooth region. teeth must be ground to support the bridge.



Sometimes only a partial denture is



An implant-borne crown is the best solution.

therefore not suitable as a bridge abutment? Then there is the removable partial denture. It needs retainers such as small metal clasps attached to the neighboring teeth. However, over time the metal clasps may overload the retainer teeth and cause more tooth losses. This is not necessary — you can have implants.

## Implants: the best solution — in every way

An implant-borne crown does not need retainer clasps. It is not necessary to grind down any teeth. The implant also retains the natural shape of the jaw bone. Friadent implants imitate the anatomy of the natural tooth root, so the bone and gum are correctly loaded and shaped. No one will detect the tiny difference, not even you. Your new tooth is used in exactly the same way as its natural neighbors. You take care of it in exactly the same way, and it will stay in place — even if you continue to play sport vigorously.

Ask your dentist about the options. Do it now.



Matthew is smiling again with his implant-borne tooth.

# As if nothing had ever happened — implants for larger tooth gaps



Several adjacent teeth are missing.

#### Dental implants are not just used to fill in gaps.

The tiny titanium screws are a medical miracle. When the smile suddenly looks old, several teeth are missing or older dentures are causing more and more problems, you can turn back the clock and your teeth can look new again.

Single-tooth implants are a particularly elegant solution. Regardless of whether one or more teeth are missing in a row: Every tooth is individually replaced and the situation is restored to its original condition. If three or more teeth in a row are missing, you can decide to have an implant-borne bridge. In this solution the new

crowns are linked together and — depending on the size of the gap — are placed on a stable and secure base of two or more implants.

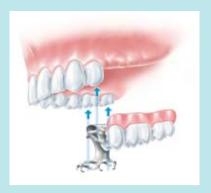
lan, 47 years old, has several teeth missing at the end of the row.

After precise planning the new tooth roots are generally placed in the jaw in one single treatment session. A temporary denture closes the gaps during the healing phase. After healing the final crowns or the bridge are permanently fixed to the implants.



One possible alternative to the implant solution is the conventional bridge. However, the natural teeth to the left and right of the gap must be used to retain the bridge. They are ground and carry the crowns to which the bridge component is fixed. This is a pity if the teeth are perfectly healthy. The grinding process means that they lose their protective enamel coat and are more heavily loaded. This reduces their life expectancy in many cases.

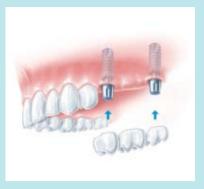




The removable solution: a simple clip-fastened partial denture.



Single tooth implants are the most elegant solution.



Alternative: the implant-borne bridge.

If the gap is open to the end of the row — referred to as a free-end situation — the dentist may also offer a partial denture as an alternative. The same is applicable if the gap is too large to close for lasting stability with a conventional bridge. A simple partial denture is attached to the existing teeth with metal clasps. Metal clasps and prosthetic plastic are also supported on the gums or the jaw, but the metal clasps may damage the retaining teeth over time. High-quality partial dentures can also be attached to the natural teeth with rods or attachments. This means that the teeth must be ground and fitted with crowns, like a tooth-supported bridge.

and you will also not have to worry about clasps. Your implant-borne teeth will be indistinguishable from your natural teeth: They look exactly the same, they feel exactly the same. It is as if nothing had ever happened there.

Ask your dentist about the options. Do it now.

## Implants: the best solution — in every way

All the above is unnecessary with implants. The small titanium screws are artificial tooth roots that invisibly and securely support your new crowns. It is not necessary to grind healthy teeth and cover them with crowns



lan with single tooth implants: as if nothing had ever happened.

# Life with bite! Dental implants for the edentulous jaw.



Do you have no teeth at all in your upper or lower jaw? You will still be able to laugh with dental implants. As few as two to four new roots will be enough to provide a firm base for a full denture. A bridge can be fixed to six implants. This will give you a high degree of security in every situation because nothing can come loose unexpectedly. No more embarrassing surprises.

Your full denture is attached to the implants with special retainer systems, which consist of two components. One component is permanently attached to the implant, its counterpart is part of the denture. The components click together just like pressing a button. Your denture is firmly attached. For cleaning the denture can be easily removed and just as easily replaced after cleaning. If you wish, your denture can also be permanently attached to the implants. A bridge can be

permanently anchored to at least six implants in your jaw. The denture is then so firmly attached that the supporting pink denture plastic is not required.

Heather, 75 years old, is not happy with her full denture.

After precise planning the new tooth roots are generally placed in the jaw in one single treatment session. During the healing process they become fully integrated into the bone and become an integral component of the jaw. This means that after a relatively short time the retaining elements for the full denture or the new bridge can be fixed in place. It is often possible to fix the denture to the new roots at the same time implants are placed in the jaw. You come to the appointment in the practice or hospital and leave a few hours later with firmly fixed, beautiful teeth.

## It is never too late for implants

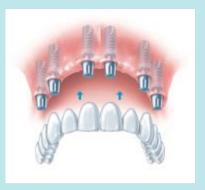
You will be able to eat, talk and laugh with your implantborne third set of teeth as if they were your second. You will have a perfectly natural security that is very difficult or impossible to achieve with conventional prosthetics. Your own teeth that could be used for attachment no longer exist. And even if you still did have some of your original teeth, they are often not



The denture does not stay in place.
The mucosa is continuously inflamed.



Removable but still secure: full denture fixed to implants.



Permanently secure: bridge fixed to implants.

suitable for a permanent stable anchorage of the denture. The prosthesis is based on the jaw only and in the ideal case forms a suction attachment to the oral mucous membrane and the gum. However, because the jawbone without a load atrophies over time like an unused muscle, the suction effect become weaker as time passes.

When third teeth become second nature

You don't have this annoyance with implants. The artificial tooth roots allow your denture to be securely fixed to the jaw — and this can be done at any age and with virtually any initial situation. Your dentist can retain the last of your original teeth and integrate them harmoniously into the denture as abutments. If you have already been wearing a full denture for an extended period, your jaw bone may be too thin and too narrow to accept implants. In this case your dentist or a surgeon specializing in implants can carefully build up the jaw. This is done with bone from your body or with natural replacement materials. The day-surgery procedure can now be done atraumatically and is quickly forgotten. The improved quality of life is perma-

nent. For original Friadent implants have all the properties for your new tooth roots to last for the rest of your life with appropriate care. Don't hide your smile any more but enjoy the finer side of life actively without embarrassment with your new implants.

Ask your dentist about the options. Do it now.



Heather is enjoying life again with her implant-borne third set of teeth.

# Frequently asked questions with answers about dental implants from A to Z

Could dental implants be the solution for you, too? Are you interested in knowing more about the exciting possibilities? The most frequently asked questions and answers about implant treatment are collected on the following pages by keywords from A to Z.



## Is there a minimum age for dental implants?

Bone growth should be completed at the time of implant placement. It can be assumed that this is complete by about the age of 18 years. Girls generally finish growing earlier than boys. In case of doubt the state of the bone can be checked by an x-ray examination of the carpal bones.

## Is implant placement contraindicated at an advanced age?

It is never too late to improve your quality of life with implants. The treatment is so low-risk that implants can be placed in patients aged 70, 80 or even 90 years. There is no upper age limit. If you are fit for any other routine dental treatment and you are in good health, you can also have implants.

## Airport security check

# Will metal detectors beep at my implant, such as at an airport check?

No, don't worry about it. Implants are not magnetic and they are also much too small to trigger the detector. And if the detector ever does beep at your implants, you will have your implant pass that will explain the problem quickly and easily.

## Allergy

## Is it possible to be allergic to dental implants?

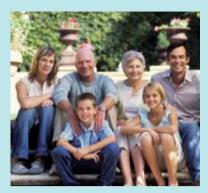
Dental implants have been available for more than 40 years. Over this long period no allergies to titanium implants have become known. Titanium has no allergenic components and is completely

neutral in the body. Of the materials used for crowns and bridges ceramic has proven the most compatibility to the body. The allergy risks vary for metals and plastics. Let your dentist advise you what material is best for you.

#### **Anesthetic**

# Is a general anesthetic really not necessary for implant placement?

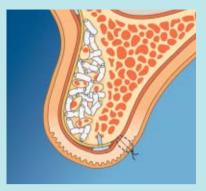
No. Local anesthetic can completely prevent any pain. When the dentist prepares the implant site in the bone and place the implant in, you will feel vibration and a slight pressure but no pain. For most patients the procedure feels like a normal treatment for caries, which is also conducted under local anesthetic. However, if you still want to "sleep" during the treatment the dentist can explain the implications of general anesthetic.



Dental implants: no problem from the age of 18.



Airport security check: detectors rarely respond to implants.



Bone that has atrophied can be restored very easily. (Cross-section of upper jaw: the atrophied side of the jaw has been built up again by a special procedure. The bone is now wide enough for the implant.)



#### I only need a couple of implants, but I would also like all my teeth to be whiter or more attractive. What can the dentist do here?

The dentist can frequently bleach darker-colored teeth. Unattractive front teeth can be coated with plastic or fine ceramic, referred to as veneers. The crowns for the implants will be brighter from the start or the new tooth shape will be modified accordingly. Ask your dentist. The dentist can offer a solution for almost every problem.

### Bone grafting

#### When is bone grafting necessary?

If the jaw has no teeth and is not subject to the associated natural chewing load over a long period, the bone gradually atrophies. This is a similar process to that of a muscle that atrophies because it is no longer used. Certain bacteria can also destroy the bone. This is referred to as periodontitis otherwise known as periodontosis —, an inflammatory disease of the periodontium. If the bone is weakened or thin and an implant cannot be placed in it, the dentist will recommend bone grafting. The bone tissue is restored with autologous bone or bone replacement material as atraumatically

as possible. A mixture of both autogenous bone and bone replacement material is often used. The grafting material is layered directly on the bone and gradually converted by the body to strong bone substance. The bone can be widened or lifted by this method. At the back of the upper jaw the bone is generally raised by a sinus lift procedure. This prevents part of the implant from extending into the maxillary sinus. Bone grafting can often be done during implant placement. However, in other cases a separate outpatient procedure may also be required.



Adhesive bridge as temporary denture for a single tooth gap.



## Could implants affect my cardiac pacemaker?

No. Implants have no electromagnetic effect. They cannot affect the operation of your pacemaker in any way.

#### Ceramics

## What material is used for crowns?

Most crowns and bridges are metal or metal alloys and are veneered with ceramic in a color to match the natural tooth. The high-quality esthetic alternative is porcelain. Zirconium oxide ceramic with its high strength is particularly suitable for implant-borne dentures. It is suitable for single-tooth

crowns, and also for larger bridges and it reflects the light identically to the natural tooth enamel. This means that the denture is virtually identical to the natural teeth.

#### Consultation

## How can I prepare for the consultation?

You should be thoroughly informed before the consultation. This brochure contains all the important basic information that you should know. You should also take advantage of the consultation to ask any questions that you might have. Make a list of questions beforehand so you don't forget any. Don't forget to inform the dentist of any other diseases and medications that you take regularly. You should also bring a note to remind you of this.



All your questions about the procedure will be answered at the initial consultation.



What do dental implants cost? The health and cost schedule has all the information.



Complications during the surgery are unlikely.

#### Cost

#### How much will it all cost?

The cost depends on the extent of treatment. Your dentist (or implantologist your dentist has referred you to) will discuss this with you prior to treatment.



## Is the implant placement really a day-surgery procedure?

Yes. The implant dentist works atraumatically and safely so multiple implants can generally be placed without problems in an outpatient procedure in one single session.



The most important dental care utensils: toothbrush, dental floss and interdental brush.

#### Dental care

#### How do I care for my implantborne teeth?

Implant-borne teeth not only look like natural teeth. They can be cleaned just as easily with a toothbrush — including an electric toothbrush — and tooth paste. When cleaning implants the spaces between the teeth and the transitions to the gums are particularly important. These areas are colonized by bacteria that attack the gum and over time they can also attack the jawbone around the implant. This can be prevented with dental floss or small interdental brushes. The prophylaxis team at your dentist will show you how to handle the instruments and will provide professional tooth cleaning at regular intervals — such as every three months. This will remove stubborn plaque and your teeth will look as good as new. You should make regular prophylaxis appointments with your dentist. It's worth it.

#### **Dental** material

>>> See "Ceramics" at C.

#### **Diabetes**

## If I am a diabetic can I still have an implant?

Yes. However, your diabetes must be well controlled. Diabetes that is poorly controlled or untreated may adversely affect the healing processes for metabolic reasons. If there is any doubt the dentist will consult your doctor.



Enjoy life without worries again with implant-borne teeth.

#### **Diseases**

## Are there any diseases that would prevent implant placement?

Not really. If you have a serious general disease such as a cardio-vascular disease, serious kidney damage, a tendency to hemorrhage or an impaired immune system, you should always inform the dentist. In some cases side effects of medications may affect the healing process, so the dentist should be informed of any medications that you take regularly at the first consultation. The dentist will advise you of the options and assist you to make your own decision on the basis of your health profile.

>>> See also under
"Medications" at M.

## Durability

#### How long does an implant last?

After the healing phase a correctly inserted quality implant will be more resistant to many influences that the natural root of the tooth. A titanium implant with the optimum prosthetic load will not break. And it is immune to caries. Consistent oral hygiene will keep your gums and the implant site healthy. With appropriate care implants can last a lifetime.

Food

## Can I bite and eat normally with an implant-borne denture?

Regardless of whether you have an implant-borne crown, bridge or denture: you will be able to eat, bite, talk and laugh just you could formerly with your second set of teeth. The denture will be firmly attached to your implants and you can feel quite secure with it.

## Foreign body feeling

any difference.

Will implant-borne teeth feel like my own or will I feel as if I have a foreign body in my mouth? Implant-borne teeth will feel quite natural when you are talking, eating and laughing. You won't feel



The pure titanium used for manufacturing dental implants is highly compatible to the human body.



## Can implants be placed immediately after removing teeth?

Yes, this is often possible today. The implant is placed in the fresh wound immediately after removal of a tooth. This is referred to as immediate implant placement (not to be confused with immediate loading of implants).

## Immediate loading

## What exactly does "immediate loading" mean and does it apply to me?

The usual plan for implant-borne teeth includes an healing phase with no loading on the implants after they have been inserted. In this procedure the gap is temporarily closed with a classical

temporary denture, which is normally attached to the neighboring teeth. However, in immediate loading new implant systems and methods are used that under specific conditions allow the denture or the temporary denture to be attached to the implants immediately. Patients receive their implant and have fixed, naturallooking teeth on the same day. Whether immediate loading is suitable for you will depend on the state of the jawbone and the position of the implants. Ask your dentist about the options.

>>> See also under
"Treatment duration" at T.

### **Implant Material**

#### What are implants made of?

Friadent implants are pure surgical-grade titanium. The material has proven to be so good that now 99 percent of all dental implant systems are made of pure titanium. It is extremely stable and is very compatible to the body. Titanium also becomes firmly integrated into the bone tissue. These positive properties have been confirmed not only in implant dentistry but also in many other medical areas, such prosthetic joints, for many decades. The silvery-gray color of titanium is also not a disadvantage, because implants — like natural tooth roots — are completely buried in the jawbone and are invisible. White implants of ceramic have also been available for some years. The first generations of aluminum oxide ceramic were not strong enough to present serious competition for titanium. Current ceramic implants are now made of extremely stable zirconium oxide ceramic and are still in the testing phase. Titanium is still the gold standard of implant materials.



Please inform your dentist if you are on regular medication.



>>> See "Implant Material" at I.

>>> See also under "Ceramics"
 at C.

#### Medications

## Are there any interactions with medications?

This is possible with certain medications. For example, cortisone can change the metabolism and immune system of the body in such a way that problems with healing may be encountered. Anticoagulation medications may cause serious hemorrhages during implant placement. If you are required to take medications regularly, you must discuss them with your dentist.



#### Will I have to remove an implantborne denture at night?

A conventional denture should be removed at night, because it may come adrift during sleep and may block the pharynx or the respiratory passage. An implant-borne denture is normally fixed in place and can be left in place at night without danger. Your dentist will advise you about this. You only have to ask.



## Will I be in pain after the procedure?

The gum will probably be sensitive in the first few days after the procedure but will not bleed any more. Your cheek may swell for a short time and may feel uncomfortable. However, most patients will not even need a painkiller on the following day and can return to normal life.

## Periodontosis/ periodontitis

>>> See "Bone grafting" at B.





2

1-3 Friadent systems: the exact solution for every situation.



#### Are there difference in quality among implants?

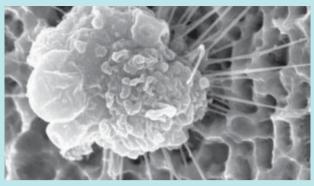
Like virtually any product there are very high-quality implants and lower-quality models. For example, there are differences in the shape of implants, particularly with the surface. The surface of an implant can be modified to improve the principally tissuecompatible material properties of titanium, but they can also be reduced. Always have your dentist inform you about the characteristics of the implant that is to be used. Ask about long-term experience. Also ask about the longterm availability of replacement components in case your denture ever has to be renewed in the future.

#### Why can I trust Friadent implants?

Friadent implants are quality German products, whose design is based on decades of research. development and documented clinical experience. They are the result of high-precision manufacture. Starting from the purchase of the raw material the entire production chain is subject to extremely rigid certified quality standards.

The range of products covers three systems with differently shaped implants in various sizes and lengths, so the dentist can select the exact type for your specific initial situation. All implants are made of pure surgical titanium and have a unique microstructured surface, which actively supports the healing process of the bone.





Microstructured implant surfaces promote healing.

(The picture shows a bone-forming cell which has become attached to the implant surface.

Magnification: 2000x.)

The highly developed surface characteristics make it possible for bone cells to be deposited directly on the implant and the new bone and to form new bone. Friadent implants offer the best conditions for optimum healing and the formation of a permanent stable base for implants.

Friadent systems also offer extremely esthetic prosthetic solutions for every requirement and for every initial situation. And if the denture fixed to Friadent implants ever needs to be replaced, you can be quite sure that your dentist will be able to obtain all the required components even years later regardless of where you are in the world.



## Are there any risks involved with implant placement?

An implant placement is a minor surgical procedure. Complications such as injuries to nerves and blood vessels during placement of implants are certainly possible. This is extremely unlikely these days with the advances in diagnostics and planning. When an implant is placed by a qualified dentist, the risks are no greater than when removing a wisdom tooth.

A sudden rejection reaction of a fully healed implant is also very unlikely. However, in rare cases the bone may not hold the implant firmly enough. In this case it cannot be resist loading sufficiently and will most probably have to be removed under local anesthetic. In most cases a new implant can be placed in the same session if you wish.

## And if an implant becomes infected?

When detected early enough infections caused by bacteria can usually be treated successfully. If you attend regular appointments for dental care and prophylaxis at your dentist and also clean your teeth regularly at home, you are unlikely to be affected.



Safe implant placement with modern diagnostics.

## Replacement and modification of the denture

## Can implant-borne dentures be replaced or, if more teeth are lost, extended?

Yes, the denture can be replaced or modified at any time. A Friadent single-tooth implant can be converted into an abutment for a bridge or prosthesis without difficulty, even after many years.

#### I already have a normal full denture. Do I need a new one for attachment to the implants?

If the existing denture will guarantee optimum load of the implants and good chewing function, it can certainly be adjusted for fixing to implants. Ask your dentist. The dentist can assess your individual situation and will recommend the best solution for you.

# What happens if one of my own teeth that is integrated into the denture as an abutment is lost?

If a tooth has to be removed, for example because of a root inflammation, it can generally be replaced by an additional implant without difficulty. The support and possibly also the denture will be modified accordingly.



>>> See "Bone grafting" at B.





Play sport again just a few days after implant placement.

## **Smoking**

## Are dental implants advisable for smokers?

The long-term success rate of implants can be endangered by smoking. Discuss it with your dentist. He can assess the risks in your case.

## **Sport**

## Can I still exercise and play sport after implant placement?

Exercise after implant placement is not a problem. However if you take part in activities involving vigorous movement, you should consult the dentist first. A few days of rest may be recommended to avoid affecting the healing process.



## When and how are the teeth placed on the implant?

In a normal healing process the implants will be fully integrated into the bone in the upper jaw after about six months and in the lower jaw after about three months. Your new crowns can now be firmly fixed in place.

The dentist uncovers the "head" of the implant and temporarily screws on a small cap, called coping, to shape the gum correctly. An impression is taken at this stage. The dental technician uses the impression as the basis for the fabrication of your denture. After the colors have been precisely matched and a test fit the denture is securely attached to the implants.

# Will I be without teeth during treatment and the healing phase?

No. If you had a removable denture before treatment, it will generally only require a minor adjustment to allow you to continue to use it. If you did not have a removable denture beforehand, the gap can still be covered with a temporary denture. In some circumstances it can sometimes be fixed to the implants immediately. In the case of such long-term temporary dentures there are very sophisticated solutions that are virtually indistinguishable from the final crowns and your natural teeth.

>>> See also under "Immediate
 loading" at I.



The implant is placed in one single treatment session.



Existing dentures can often be modified for implants.

#### Treatment duration

## How many appointments will be required for my new tooth roots?

This depends on the scope and type of treatment. One session is usually enough for the consultation at which the dentist will be able to answer your questions. The next appointment will be for the preliminary examinations and planning. The new tooth roots can generally be inserted in the iaw bone a short time later in one treatment session. In this procedure the dentist makes a small incision in the gum at the implant position, which is then sutured over the implant after insertion of the implant. The wound is checked to ensure that it is healing properly one or two days after implant placement. After about ten days the sutures are removed. Now you can wait for the bone to regenerate during the healing phase without any more treatment sessions.



#### When can I go back to work again?

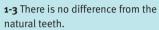
Your dentist will probably give you a certificate for a few days off work. However, you will usually be able to live normally the day after the operation and go back to work a few days later.

>>> See also under "Sport" at S.

## Is there anything else I need to worry about?

In brief: no. Think of your implants as a natural part of your body. You can exercise, talk, eat, laugh and live as if nothing had happened. There is no difference from your natural teeth.









The first step?
Ask your dentist. Your dentist can advise you of the options and has additional information material for you. Do it now.

