

# More reasons for you to smile

Solutions for repairing damaged  
teeth or replacing missing teeth

Patient-clinician flip chart





# Introduction

**Why seeking care for missing or damaged teeth is important**

**How missing teeth affect jawbone and gums**

**Please note:**

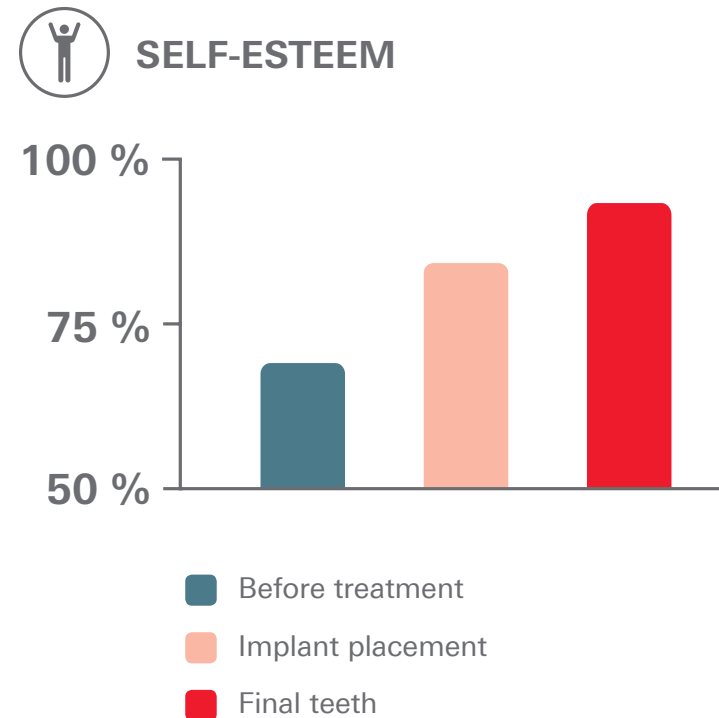
This booklet provides information on routine dental implant treatment. Treatment plans involving dental implants will be unique for each patient. Timing, cost, and delivery of care will be customized to suit each patient's individual situation. Care providers have their own preferences for the way a particular course of treatment is delivered and may suggest alternatives or variations not included in this information.



# Why seeking care for missing or damaged teeth is important

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## Confidence and well-being



Ref: Kolinski et al. 2013, De Rouck et al. 2009

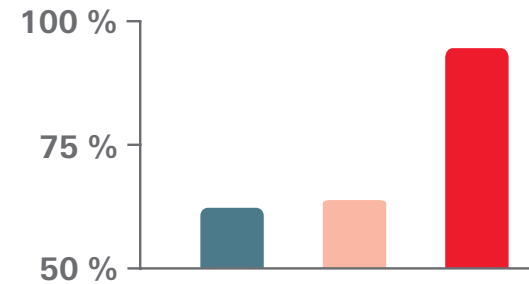


# Why seeking care for missing or damaged teeth is important

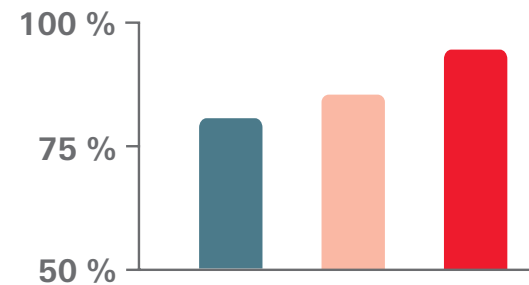
## Eating and speaking



### FUNCTION



### SPEECH



- Before treatment
- Implant placement
- Final teeth

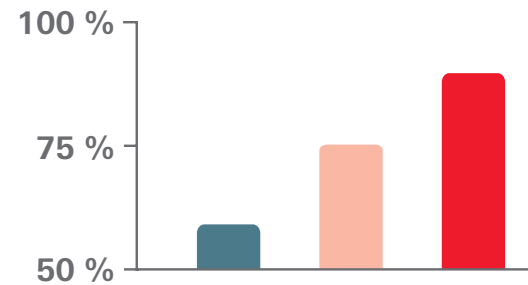
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# Why seeking care for missing or damaged teeth is important

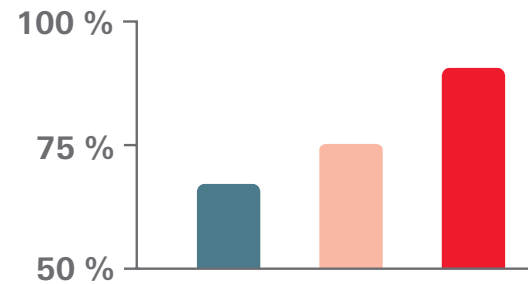
## A youthful appearance



### ESTHETICS



### SENSE

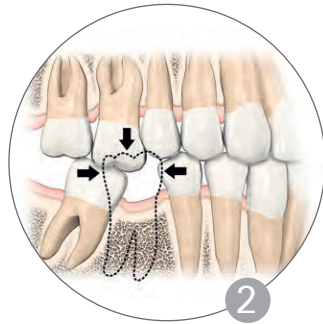
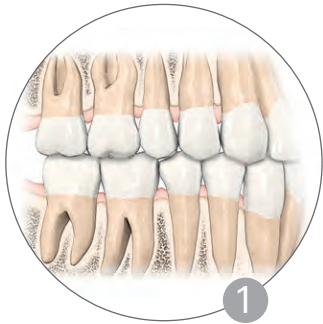


- Before treatment
- Implant placement
- Final teeth

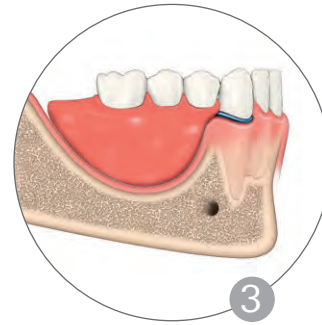
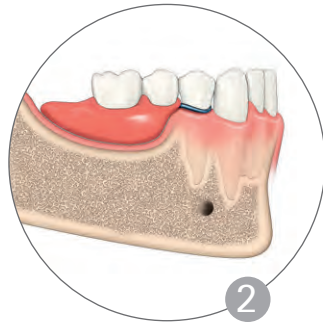
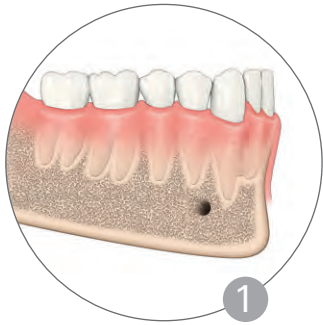
Ref: Kolinski et al. 2013, De Rouck et al. 2009

# How missing teeth affect jawbone and gums

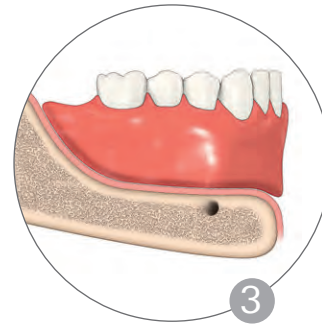
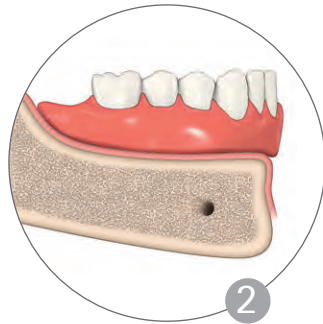
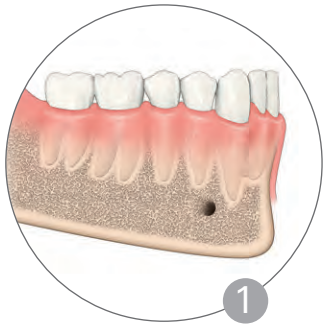
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Single missing tooth



Multiple missing teeth



All teeth missing



# Solutions

**Solutions for repairing a  
single damaged tooth**

**Solutions for replacing a  
single missing tooth**

**Solutions for replacing  
missing teeth**

**Advantages of  
dental implants**

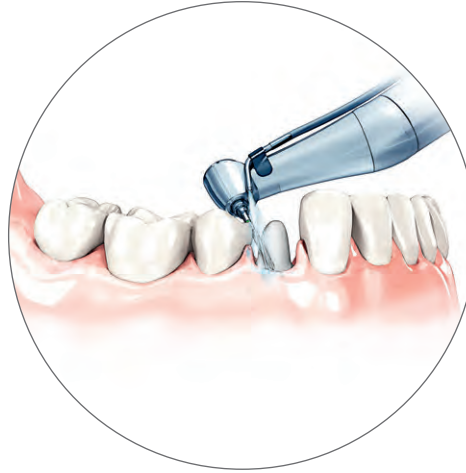


# Solutions for repairing a single damaged tooth

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Dental crown



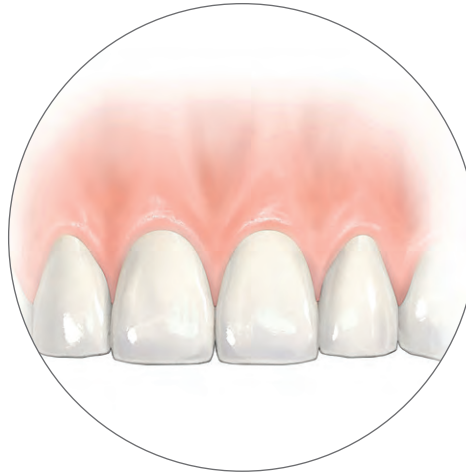
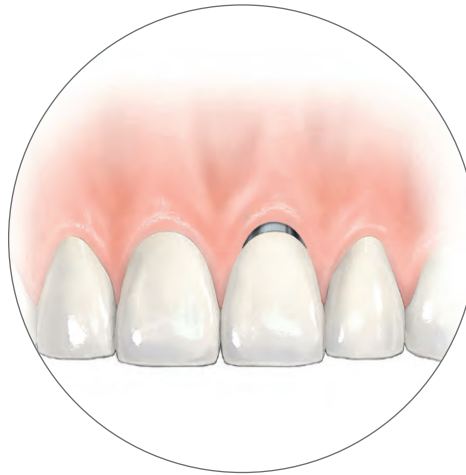


## Dental crown – all ceramic or ceramic with metal underneath

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Dental crown



# Solutions for replacing a single missing tooth

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Dental bridge



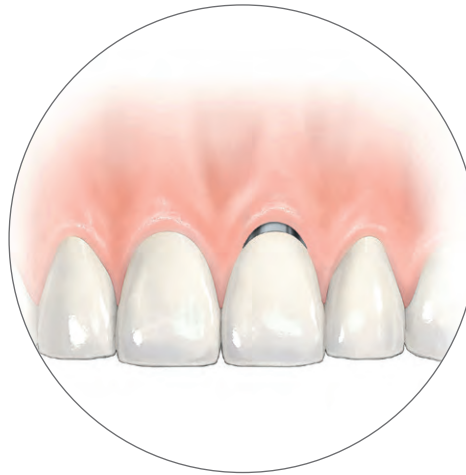


## Dental bridge – all ceramic or ceramic with metal underneath

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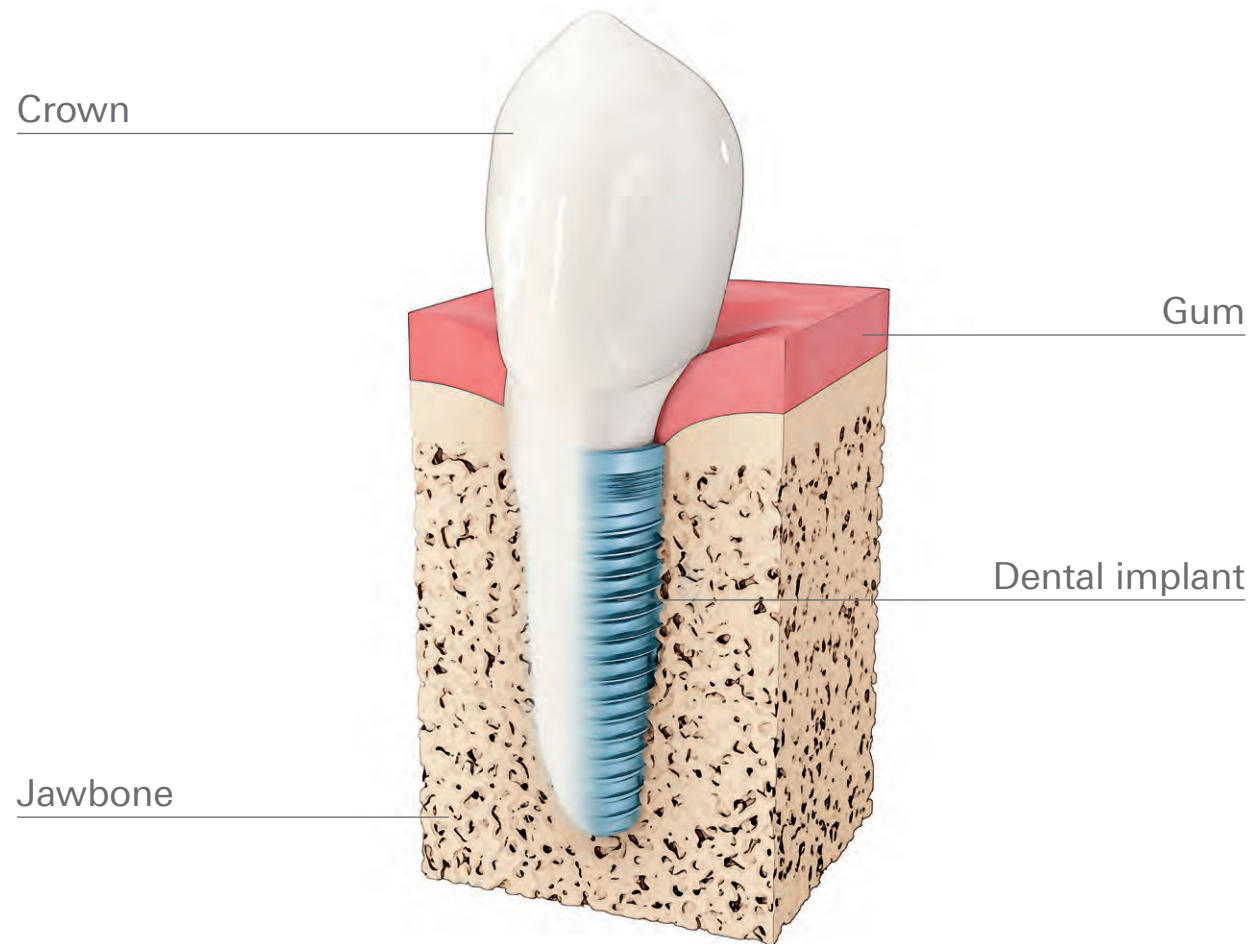


Dental bridge



# Solutions for replacing missing teeth

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# Advantages of dental implants

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- A natural-looking smile
- Normal eating and speaking
- Neighboring teeth stay intact
- Stable and comfortable fit
- A long-lasting and proven solution

## **Important safety information**

Treatment with dental implants is a surgical procedure and requires prior evaluation by your dentist to make sure your dental and general health permits dental implant treatment. Placement of dental implants is done during a surgical procedure, which has associated general risk, including infection, possible damage to nerve tissue, and excessive bleeding during or after the surgery. Consult your clinician to find out if dental implants are the right option for you.

# Implants for a single missing tooth

**Placing a crown on a  
dental implant**

**Conventional implant  
placement**

**Immediate implant  
placement and  
function**





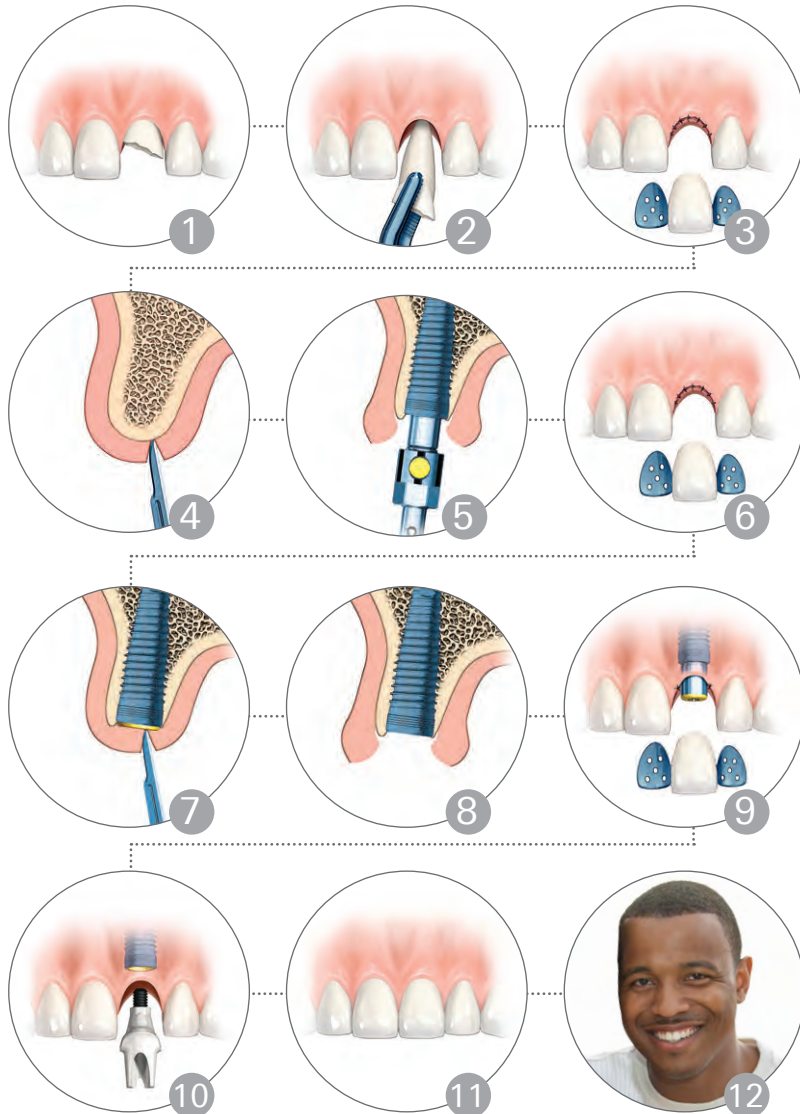
# Placing a crown on a dental implant

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# Conventional implant placement

## Treatment including tooth extraction



Day of extraction

### 1st procedure

Two to three months after extraction

### 2nd procedure

Six to nine months after extraction

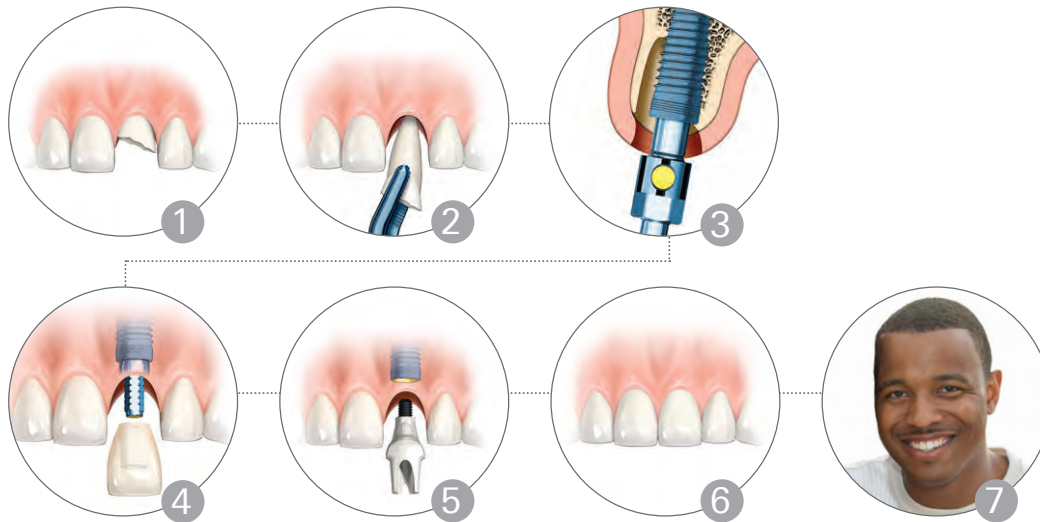
Another month later



# Immediate implant placement and function

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## Treatment including tooth extraction



Day of extraction and implant placement

Several months after implant placement

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# Implants for multiple missing teeth

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dental implants**

**Conventional implant  
placement**

**Immediate implant  
placement and  
function**



## Placing a bridge on dental implants

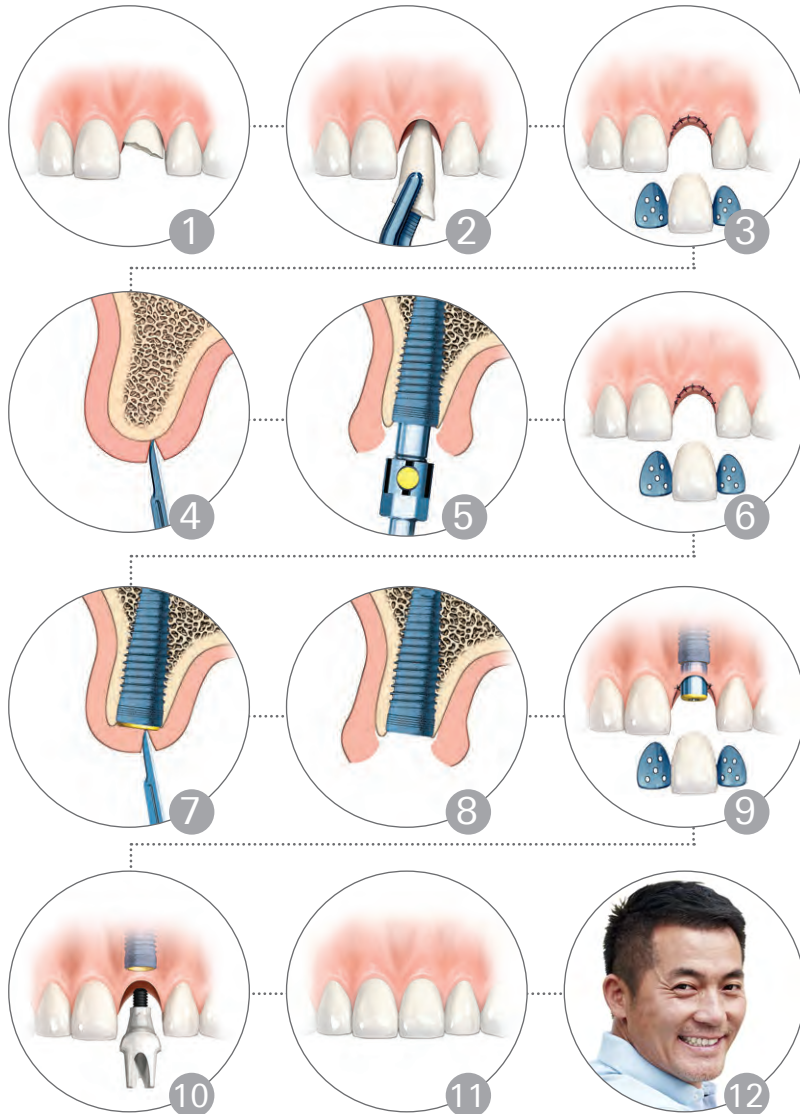
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# Conventional implant placement

## Treatment including tooth extraction



Day of extraction

### 1st procedure

Two to three months after extraction

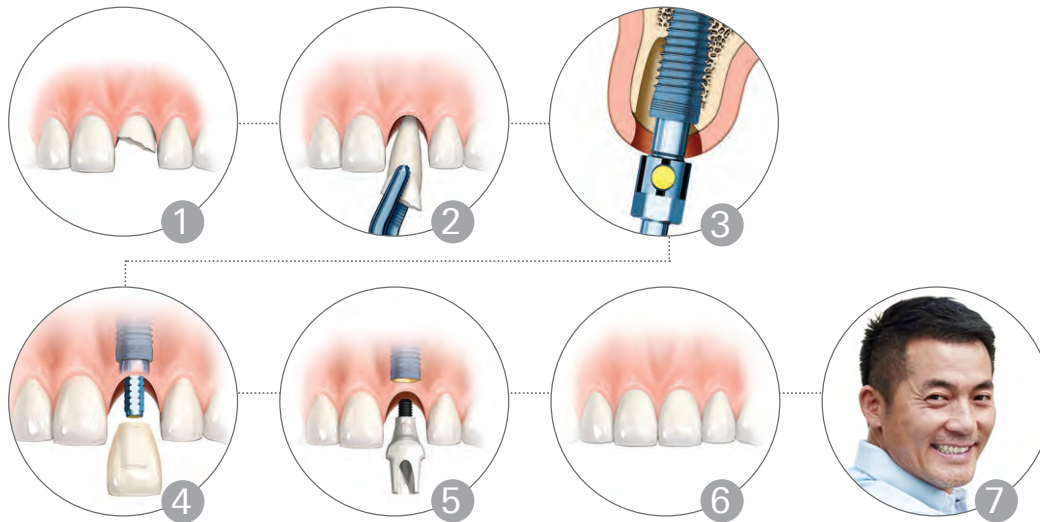
### 2nd procedure

Six to nine months after extraction

# Immediate implant placement and function

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## Treatment including tooth extraction



Day of extraction and implant placement

Several months after implant placement

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# Implants for a secure and confident smile

**Alternative solutions  
to dentures or  
all missing teeth**



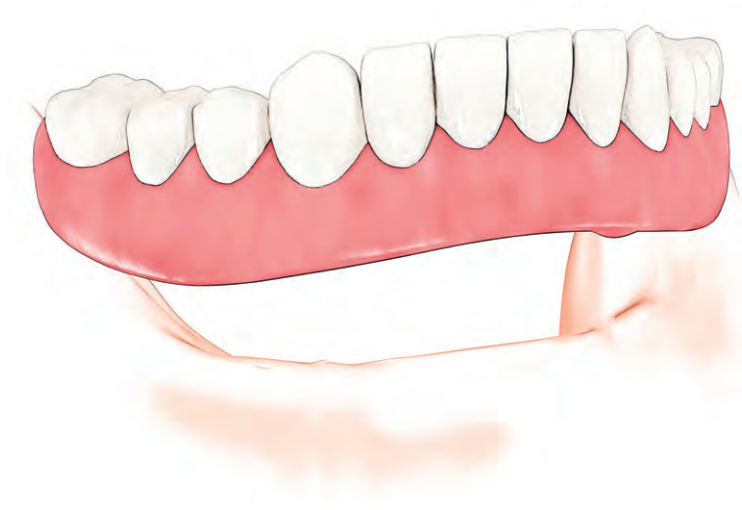
Implants – full arch



# Alternative solutions to dentures or all missing teeth

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## Dentures



Dentures

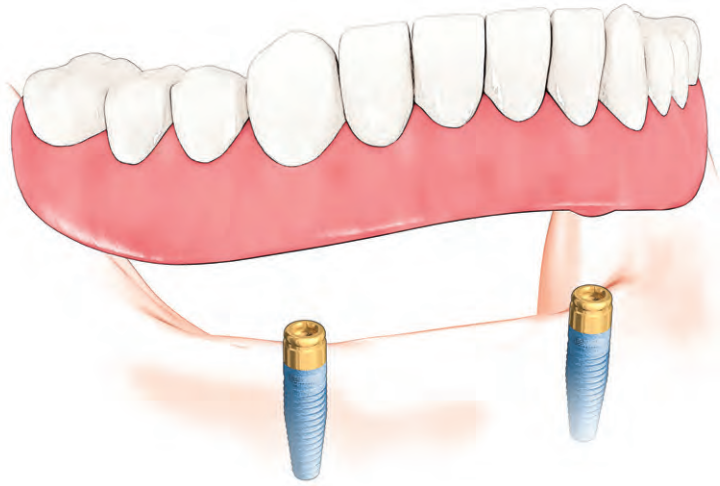


Shrinking jawbone

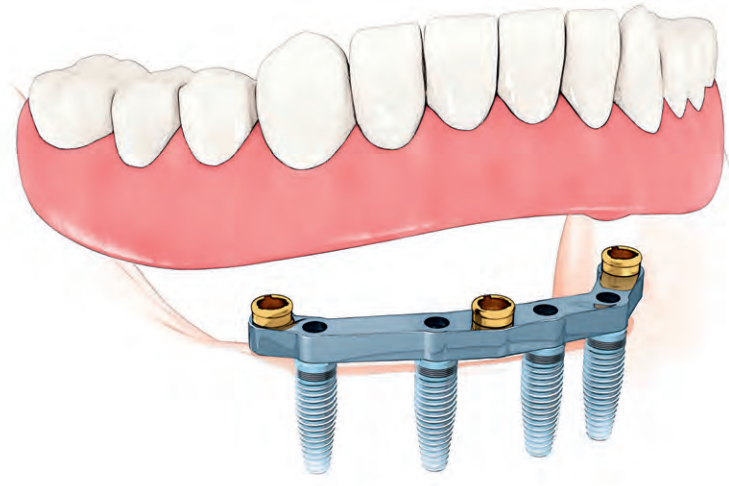
# Alternative solutions to dentures or all missing teeth

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## Fixed-removable solutions



Fixed-removable bridge on two implants

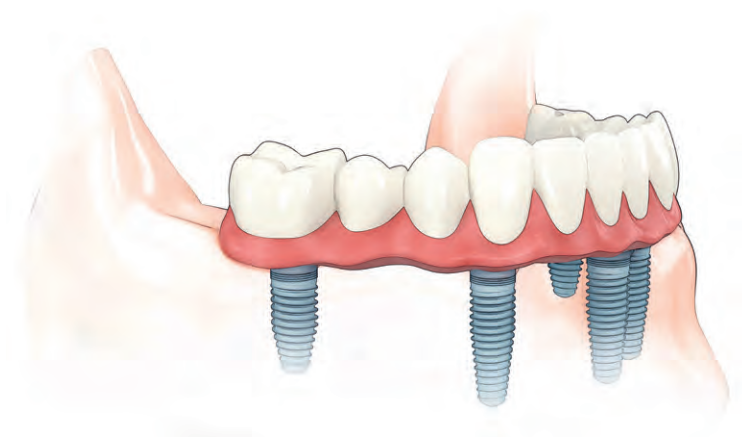


Fixed-removable bridge on an implant bar

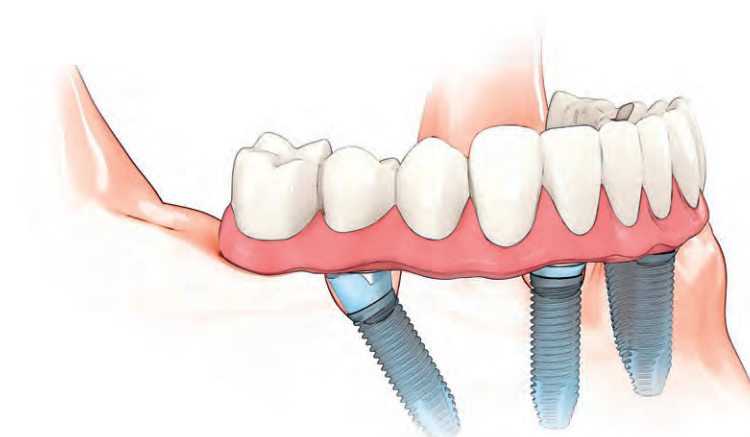
# Alternative solutions to dentures or all missing teeth

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## Fixed solutions



Fixed bridge on multiple implants



Fixed bridge on the All-on-4® treatment concept using four implants

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# Treatment steps

**What does treatment look like?**

**Digital diagnosis and treatment planning**

**Costs versus benefits of bridges and dental implants**

**Bone augmentation techniques**

**Why your dentist partners with Nobel Biocare**



# What does treatment look like?

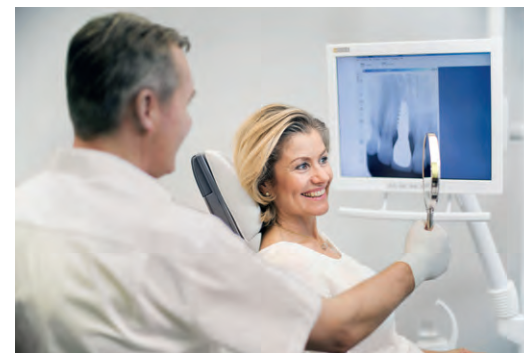
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Consultation, diagnosis  
and treatment planning



Implant placement



Final (definitive) restoration

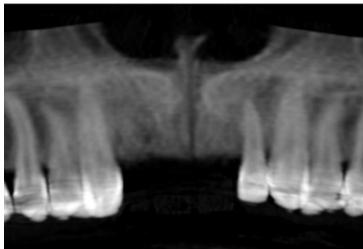
# Digital diagnosis and treatment planning

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First examination



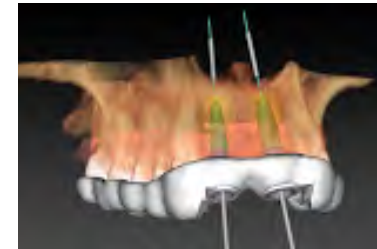
3D planning and surgical template



2D X-ray

















3D image



Surgical template



# Costs versus benefits of bridges and dental implants

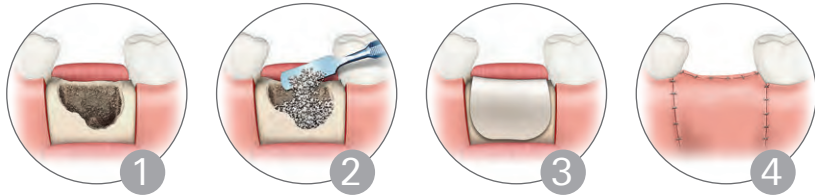
	BRIDGE	DENTAL IMPLANT
		
<b>COSTS</b>		
Initial costs		
Long-term costs after treatment		
<b>BENEFITS</b>		
Durability		
Keep neighboring teeth intact		
Preserve jawbone		
<b>Important safety information</b>		

Treatment with dental implants is a surgical procedure and requires prior evaluation by your dentist to make sure your dental and general health permits dental implant treatment. Placement of dental implants is done during a surgical procedure, which has associated general risk, including infection, possible damage to nerve tissue, and excessive bleeding during or after the surgery. Consult your clinician to find out if dental implants are the right option for you.

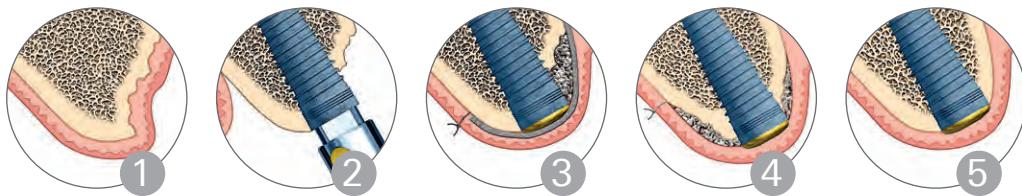
Ref: Attard et al. 2005, Dierens et al. 2014, Palmqvist et al. 2004, Stoker et al. 2007, Vogel et al. 2013

# Bone augmentation techniques

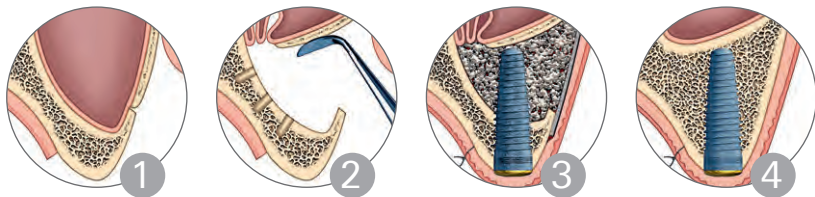
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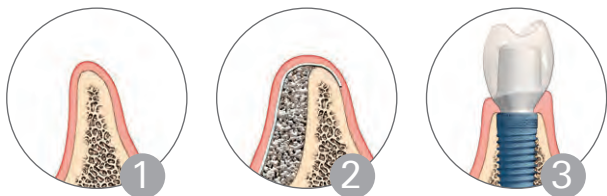
Extraction site bone augmentation



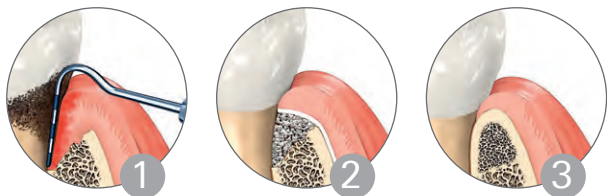
Bone augmentation around the implant



Sinus augmentation



Horizontal and vertical bone augmentation



Guided tissue regeneration

# Why your dentist partners with Nobel Biocare

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- Pioneering dental implant treatment since 1965



- Collaboration with leading experts



- Excellent standards of practice with continuous training for dentists and dental laboratories



- Scientific excellence focusing on safety and product performance



- Global network of dental practices at your disposal wherever you are



- Lifetime warranty on dental implants





# Introduction

**Why seeking care for missing or damaged teeth is important**

**How missing teeth affect jawbone and gums**





# Why seeking care for missing or damaged teeth is important

Missing or damaged teeth can affect your quality of life. Not only can they negatively impact how you eat and speak, they also detract from your appearance.

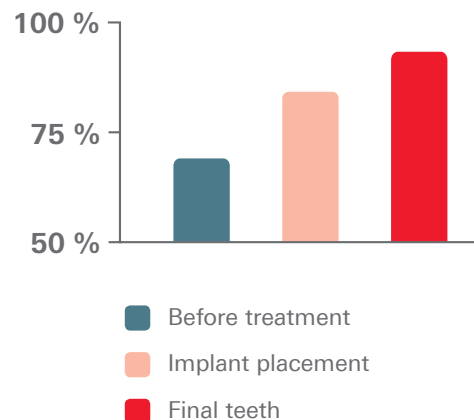


## Confidence and well-being

- You might feel less confident smiling or laughing.
- You might avoid contact with other people.
- This can lead to feelings of depression, anxiety and loneliness.



## SELF-ESTEEM



Studies report excellent results on implant success, stable bone levels, good soft-tissue health and patient satisfaction. The results on quality of life are also noteworthy, with significant improvements in patient self-ratings on self-esteem, function, speech, esthetics and sense (implant restoration feeling like one's own teeth).

Kolinski ML, Cherry JE, McAllister BS, Parrish KD, Pumphrey DW, Schroering RL. Evaluation of a variable-thread tapered implant in extraction sites with immediate temporization: a 3-year multicenter clinical study. J Periodontol. 2014 Mar;85(3):386-94. doi: 10.1902/jop.2013.120638. Epub 2013 Jun 27.

Cosyn J, De Rouck T. Aesthetic outcome of single-tooth implant restorations following early implant placement and guided bone regeneration: crown and soft tissue dimensions compared with contralateral teeth. Clin Oral Implants Res. 2009 Oct;20(10):1063-9. doi: 10.1111/j.1600-0501.2009.01746.x. Epub 2009 Jun 10.





# Why seeking care for missing or damaged teeth is important

Missing or damaged teeth can affect your quality of life. Not only can they negatively impact how you eat and speak, they also detract from your appearance.

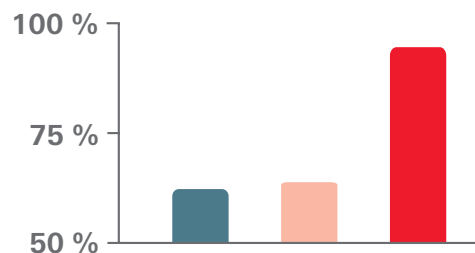


## Eating and speaking

- Eating hard, crunchy or sticky food such as nuts, fruit and vegetables can become very difficult.
- Shifting teeth and inflamed gums can cause pain and pressure on muscles and joints.
- You might find yourself frequently eating the same foods, which can have negative effects on your overall health.



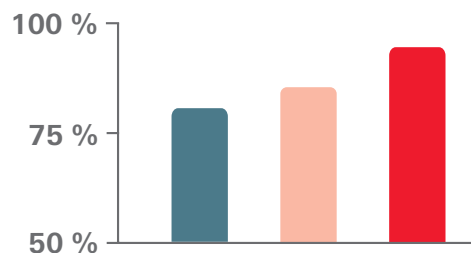
## FUNCTION



- Before treatment
- Implant placement
- Final teeth



## SPEECH



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# Why seeking care for missing or damaged teeth is important

Missing or damaged teeth can affect your quality of life. Not only can they negatively impact how you eat and speak, they also detract from your appearance.

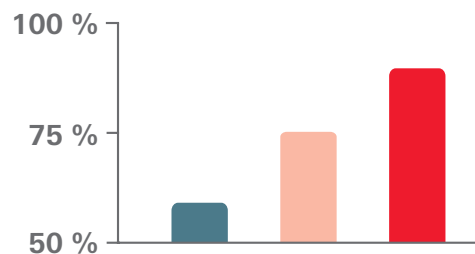


## A youthful appearance

When teeth are lost, the bone and soft tissue covering the bone also start to shrink. Lips are no longer supported by teeth, so cheeks become hollow. Your face can look a lot older than it should.



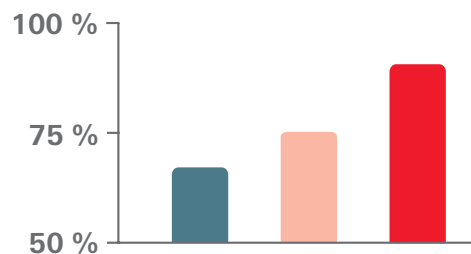
## ESTHETICS



- Before treatment
- Implant placement
- Final teeth



## SENSE



Studies report excellent results on implant success, stable bone levels, good soft-tissue health and patient satisfaction. The results on quality of life are also noteworthy, with significant improvements in patient self-ratings on self-esteem, function, speech, esthetics and sense (implant restoration feeling like one's own teeth). (Kolinski et al. 2013, De Rouck et al. 2009)





# How missing teeth affect jawbone and gums

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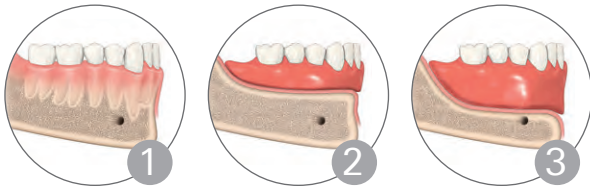
## Single missing tooth

- A missing tooth disturbs the interplay between teeth and bone.
- The jawbone starts shrinking and gums pull back.
- Neighboring teeth can collapse into the gap, while opposing teeth can grow into the gap.



## Multiple missing teeth

- When multiple teeth are missing, bone loss can become so significant that it causes changes to the jawline and facial appearance.
- A dental bridge can give short-term relief, but over time its movement can increase pressure on the jawbone and worsen bone deterioration.



## All teeth missing

- When all your teeth are missing, bone deterioration can become so severe that facial structures can collapse.
- Dentures can give short-term relief, but over time their movement can increase pressure on the jawbone and worsen bone deterioration.





# Solutions

**Solutions for repairing a  
single damaged tooth**

**Solutions for replacing a  
single missing tooth**

**Solutions for replacing  
missing teeth**

**Advantages of  
dental implants**





# Solutions for repairing a single damaged tooth

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## Dental crown

- Chipped or cracked teeth should not be ignored.
- A dental crown is made of biocompatible material (such as ceramics). In other words, your body accepts it.
- A dental laboratory designs it to make it look and feel like your natural tooth.

## Grinding down the tooth

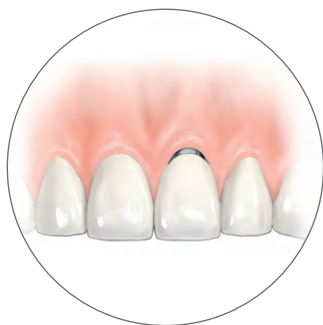
- Your old tooth needs to be ground down to become a uniform platform for the new crown.



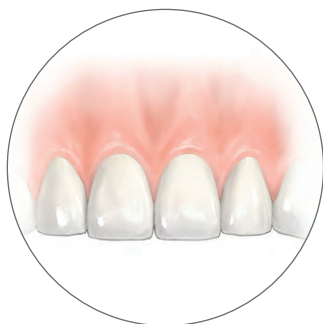


## Dental crown – all ceramic or ceramic with metal underneath

Dental crowns are available in different materials:



- **Porcelain fused to metal (PFM) crowns** are usually cheaper, but can show unsightly metal edges over time. This is due to the metal base shining through around the gumline or darkening the porcelain on top of it. It is more likely to happen in people who have receding gums, but should be taken into consideration when choosing the right crown.



- **Ceramic crowns** stay white along the rim and are more appealing. The material is also thinner and well-accepted by the body.





# Solutions for replacing a single missing tooth

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## Dental bridge

- A bridge is a set of new teeth used to fill the gaps caused by one or more missing teeth.
- It prevents neighboring teeth from shifting and affecting your bite.
- It recreates a stable chewing surface.

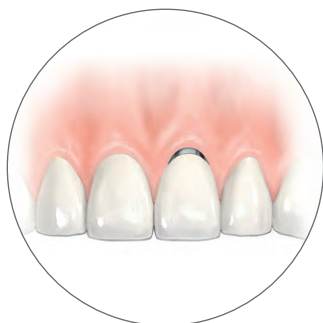
## Things to consider

- The bridge is anchored to neighboring teeth that need to be ground down.
- This can mean sacrificing neighboring teeth that might be healthy.
- The movement of a dental bridge in your mouth can increase pressure on the jawbone and worsen bone deterioration over time.

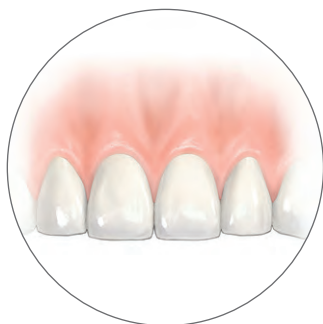


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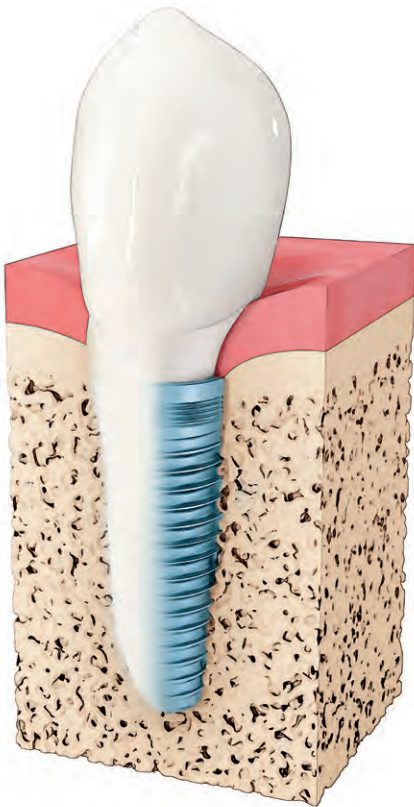
- **Ceramic bridges** stay white along the rim and are more appealing. The material is also thinner and well-accepted by the body.





# Solutions for replacing missing teeth

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## Dental implants

- Dental implants replace tooth roots and provide a stable foundation for new teeth.
- They are only a few millimeters long and carefully engineered.
- After the implants are inserted, the bone attaches to the implant to provide anchoring support for replacement teeth.





# Advantages of dental implants

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## **Restorations supported by dental implants provide the following advantages:**

- A natural-looking smile
- Normal eating and speaking
- Neighboring teeth stay intact
- Stable and comfortable fit
- A long-lasting and proven solution

### **Please note:**

Dental professionals are advised to always inform patients about potential risks of dental implant treatment based on their individual dental situation. For a list of potential risks, please refer to the Nobel Biocare patient website [nobelsmile.com](https://nobelsmile.com).

### **Important safety information**

Treatment with dental implants is a surgical procedure and requires prior evaluation by your dentist to make sure your dental and general health permits dental implant treatment. Placement of dental implants is done during a surgical procedure, which has associated general risk, including infection, possible damage to nerve tissue, and excessive bleeding during or after the surgery. Consult your clinician to find out if dental implants are the right option for you.



# Implants for a single missing tooth

**Placing a crown on a  
dental implant**

**Conventional implant  
placement**

**Immediate implant  
placement and  
function**





## Placing a crown on a dental implant

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A missing tooth is replaced by a crown placed on a dental implant

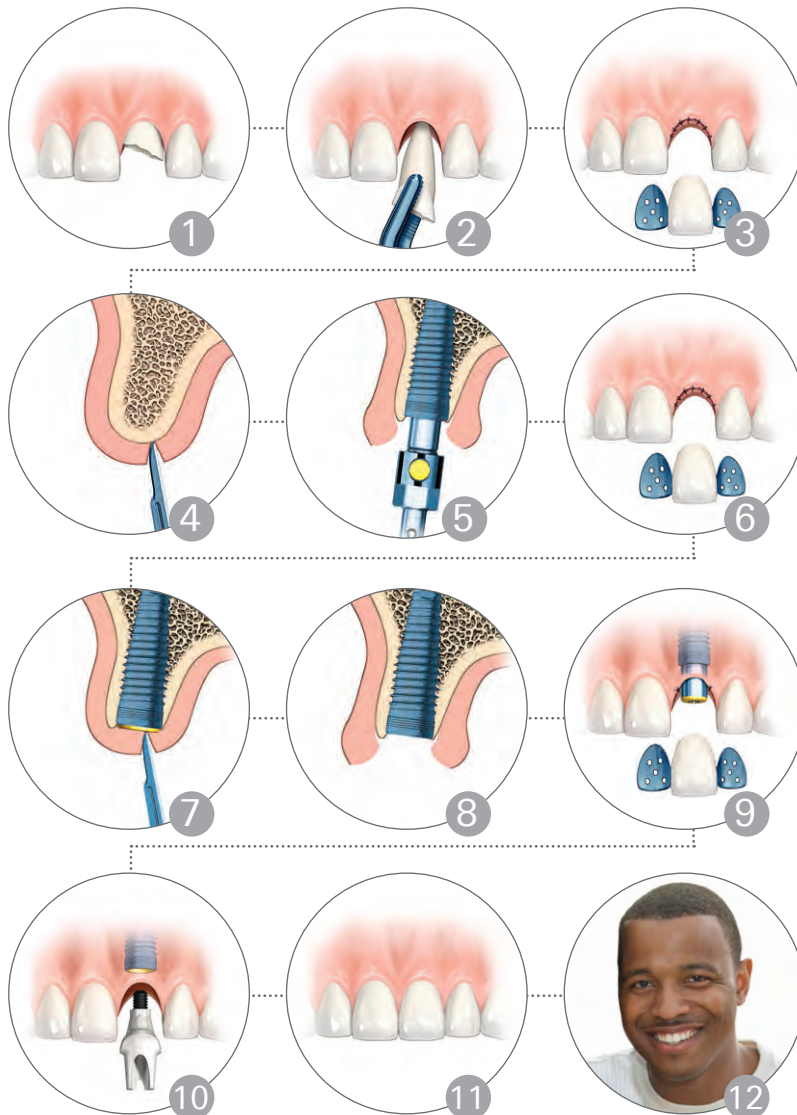
- A dental implant replaces the tooth root and functions as a foundation for the dental crown.
- The surface material of the dental implant can maintain existing jawbone levels and help prevent further bone loss.
- Neighboring teeth are kept intact, because the new tooth is connected directly to the implant.





# Conventional implant placement

## Treatment including tooth extraction



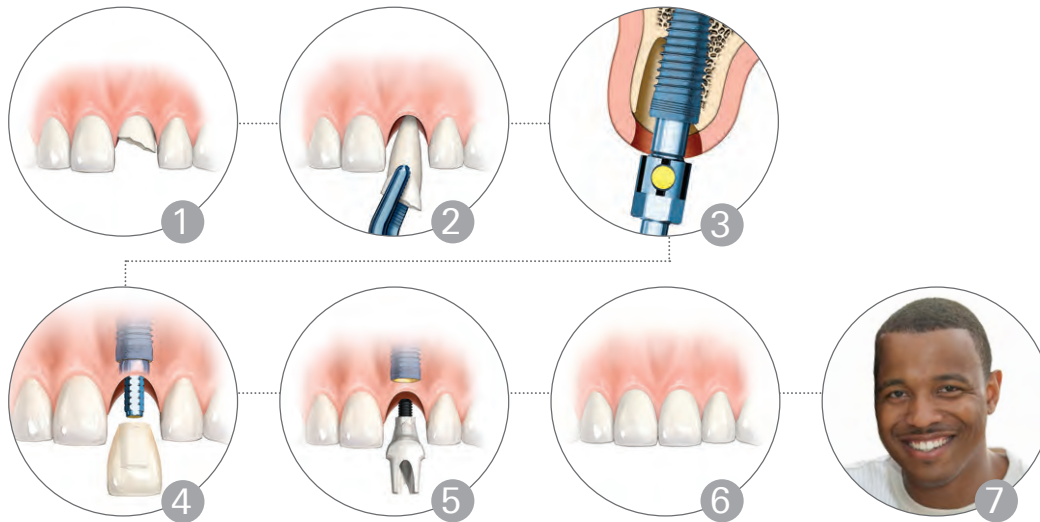
- On the day of extraction, the unrestorable damaged tooth is removed and the wound is closed. A temporary (provisional) restoration is fitted and glued to the neighboring teeth, while the wound heals.
- Two to three months after extraction, the healed site is opened again. Without a tooth or an implant, the bone will have receded but an implant can be placed. The wound is closed with a few stitches and the implant is left to integrate with the bone. The temporary restoration is put back in place.
- The healed site is opened again to uncover the implant. A healing abutment is attached to the implant. After closing the wound again, the temporary restoration is put back.
- The final crown arrives. The final (definitive) restoration is placed on a special abutment. You can go back to your normal lifestyle after up to 10 months of living with temporary restorations.





# Immediate implant placement and function

## Treatment including tooth extraction



- On the day the unrestorable damaged tooth is removed, the implant is placed. If all conditions are met, a provisional restoration can be attached that minimizes functional and esthetic compromise during the healing period. It is discouraged to put pressure on the new tooth during the first several weeks.
- Several months after implant placement, the final (definitive) restoration arrives and is placed. No additional surgery is needed. You can go back to your normal lifestyle.

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### Important safety information

Treatment with dental implants is a surgical procedure and requires prior evaluation by your dentist to make sure your dental and general health permits dental implant treatment. Placement of dental implants is done during a surgical procedure, which has associated general risk, including infection, possible damage to nerve tissue, and excessive bleeding during or after the surgery. Consult your clinician to find out if dental implants are the right option for you.



# Implants for multiple missing teeth

**Placing a bridge on  
dental implants**

**Conventional implant  
placement**

**Immediate implant  
placement and  
function**





## Placing a bridge on dental implants

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Missing teeth are replaced with a bridge anchored to dental implants

- An implant bridge is a set of natural-looking new teeth.
- It prevents remaining teeth from shifting and influencing your bite.
- It fully restores your chewing function.
- If it is secured on dental implants, neighboring teeth are left untouched.
- Correct chewing movements and the surface material of the dental implant can maintain existing jawbone levels to prevent further bone loss.

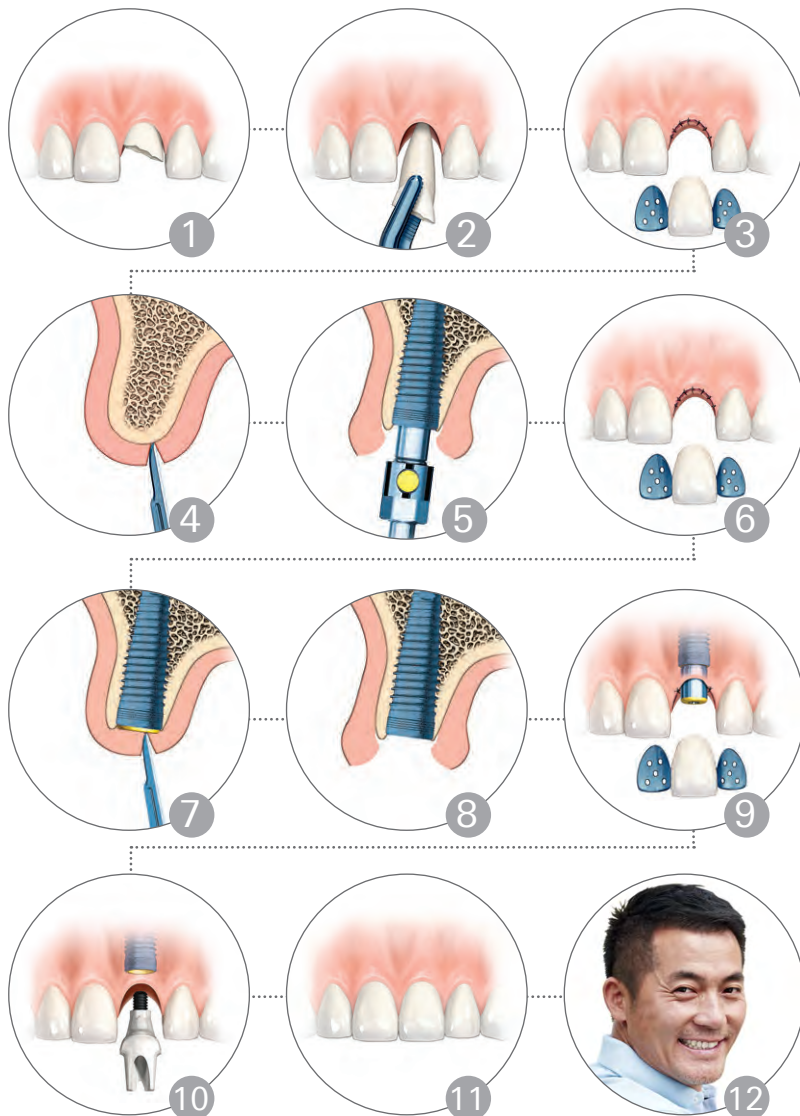




# Conventional implant placement

## Treatment including tooth extraction

**Please note:** Illustrations show placement and restoration of a single implant. Treatment steps are similar for the replacement of multiple missing teeth, and these illustrations can be used to show the patient these treatment options. However, to avoid any confusion, you may wish to point out to your patient that the illustrations show treatment for one missing tooth.



- On the day of extraction, the unrestorable damaged teeth are removed and the wounds are closed. A temporary (provisional) restoration is fitted and glued to the neighboring teeth, while the wounds heal.
- Two to three months after extraction, the healed sites are opened again. Without a tooth or an implant, the bone will have receded but implants can be placed. The wounds are closed with a few stitches and the implants are left to integrate with the bone. The temporary restoration is put back in place.
- The healed sites are opened again to uncover the implants. Healing abutments are attached to the implants. The wounds are closed again and the temporary restoration is placed.
- The final bridge arrives. The final (definitive) restoration is placed on special abutments. You can go back to your normal lifestyle after up to 10 months of living with temporary restorations.

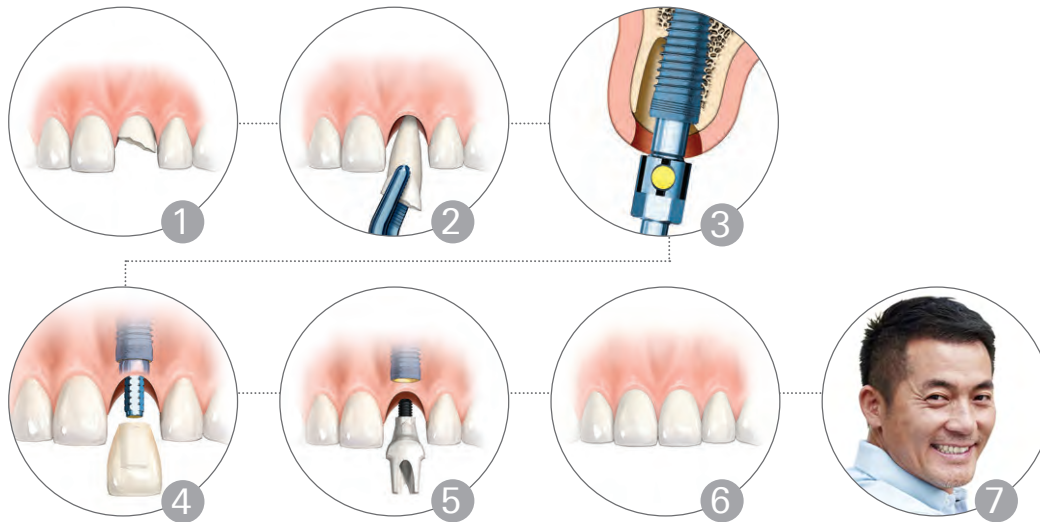






# Immediate implant placement and function

## Treatment including tooth extraction



- On the day the unrestorable teeth are removed, the implants are placed. If all conditions are met, a provisional restoration can be attached that minimizes functional and esthetic compromise during the healing period. It is discouraged to put pressure on the new teeth during the first several weeks.
- Several months after implant placement, the final (definitive) restoration arrives and is placed. No additional surgery is needed. You can go back to your normal lifestyle.

### Please note:

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### Important safety information

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# Implants for a secure and confident smile

**Alternative solutions  
to dentures or  
all missing teeth**

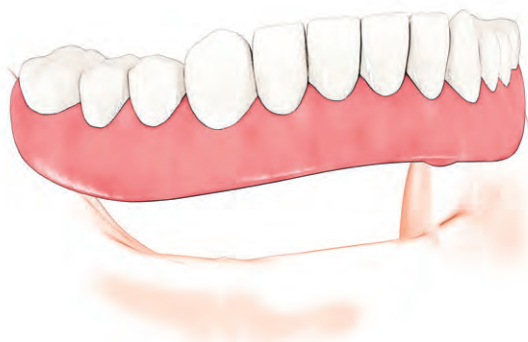


Implants – full arch



## Alternative solutions to dentures or all missing teeth

Dentures are often the first solution that comes to mind for replacing multiple damaged or missing teeth. The problem is that dentures can sometimes cause more problems than the missing teeth. Even after numerous dental visits to get your dentures to fit properly, many denture wearers still remain frustrated and in pain.



Dentures

**Dentures** do not stimulate the jawbone since your own teeth and tooth roots are no longer present. This will cause your jawbone to start shrinking.

- This shrinking will negatively influence how your dentures fit, meaning more refitting visits to your dentist.
- Missing teeth further affect your appearance, because your lips are no longer supported from the inside, your chin starts to move forward and upward and your lips turn inward.
- Even with dentures, your shrinking jaw can make you look older.



Shrinking jawbone

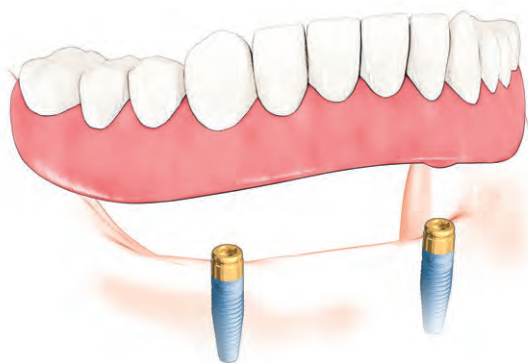




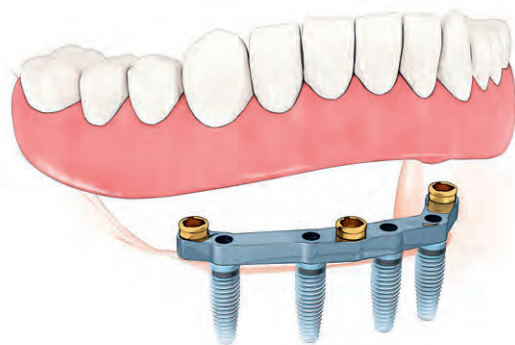


## Alternative solutions to dentures or all missing teeth

Jaws without teeth can be restored with either fixed-removable solutions or fixed solutions. The choice depends on factors such as your cleaning preference, the desired level of stability and costs.



Fixed-removable bridge on two implants



Fixed-removable bridge on an implant bar

**Fixed-removable solutions** are a full denture alternative that use implants as fixed anchors. But you can easily remove the prosthesis yourself for cleaning. They offer many advantages compared with conventional dentures:

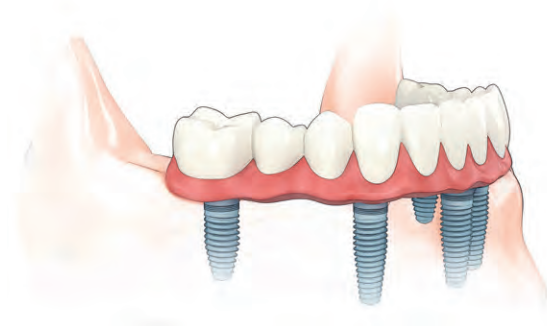
- No need to use denture adhesives.
- Secure fit in the mouth, providing better chewing and speaking function.
- Avoid irritation and inflammation of the gums often caused by conventional dentures.
- Look and feel like natural teeth.
- The overdenture can be easily removed for cleaning.



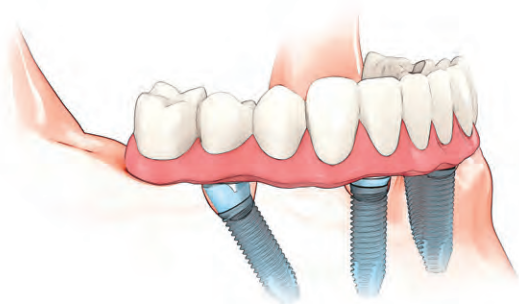


## Alternative solutions to dentures or all missing teeth

Jaws without teeth can be restored with either fixed-removable solutions or fixed solutions. The choice depends on factors such as your cleaning preference and behavior, the desired level of stability and costs.



Fixed bridge on multiple implants



Fixed bridge on the All-on-4® treatment concept using four implants

**Fixed solutions** use implants as anchors and securely fix the prosthesis to them. You cannot remove it yourself. They offer several advantages compared with conventional dentures:

- Securely fixed to four or more implants that are placed in jawbone and function like natural tooth roots.
- Maintain existing bone and positively impact further bone loss.
- All-on-4® treatment concept can make bone augmentation unnecessary (see section “Bone augmentation techniques”).
- Avoid irritation and inflammation of the gums often caused by loose or ill-fitting dentures.
- Look and feel like natural teeth.

### Please note:

Dental professionals are advised to always inform patients about potential risks of dental implant treatment based on their individual dental situation. For a list of potential risks, please refer to the Nobel Biocare patient website [nobelsmile.com](http://nobelsmile.com).

### Important safety information

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# Treatment steps

**What does treatment look like?**

**Digital diagnosis and treatment planning**

**Costs versus benefits of bridges and dental implants**

**Bone augmentation techniques**

**Why your dentist partners with Nobel Biocare**





# What does treatment look like?

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## Consultation, diagnosis and treatment planning

- First your dentist needs to assess whether dental implant treatment is a suitable option for you. Your gums and jawbone need to be free from inflammation or other conditions.
- During diagnosis, the type and quantity of jawbone is also evaluated by X-ray. Depending on how long you're already living with missing teeth, your jawbone can have severe bone loss.
- Digital tools will help to plan your treatment by generating an exact 3D image of your mouth. Seeing the full height, width and depth of your jaws helps find the best position for your implant.

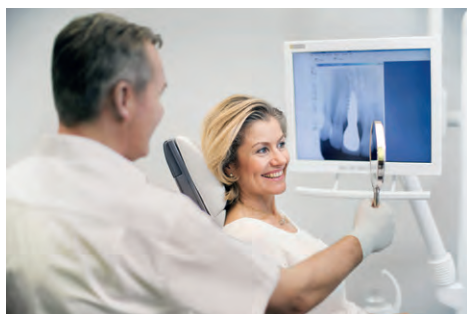


## Implant placement

- Implant placement is usually an outpatient procedure, and, thanks to local anesthesia, you shouldn't experience discomfort during the procedure.
- Depending on the individual situation in your mouth, implants are placed in a single- or multiple-step procedure.

## Temporary (provisional) and final (definitive) restoration

- Depending on your individual situation, a provisional restoration may either be put on top of the implant right after placement or after completion of the healing period.
- In this situation, healing period means the time needed for the bone to grow to and firmly connect to the implant. This biological process is called osseointegration and may take anywhere from a few weeks to a few months. You are unaware of this process as it is occurring.
- Once this state of osseointegration has been reached, the implant is then ready for the definitive restoration designed for long-term function and esthetic appearance. The production of this customized restoration may take anywhere from a few days to a few weeks. After your approval, the restoration is then placed onto the implant as an office procedure.



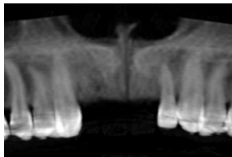


# Digital diagnosis and treatment planning

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- Examination by a dental-health professional is necessary to give a full overview of your dental situation.



- A classic X-ray image will only provide a 2D image of your jaw; important aspects of your anatomy are not visible.



- A Cone Beam CT scanner (CBCT) creates accurate 3D images of your jaw, which can then be viewed for diagnosis in special 3D planning software.



- With the help of this 3D planning software, a treatment plan is created to ensure accurate placement of the implant based on the height, width and depth of your jaw as well as the final shape of your prosthesis.



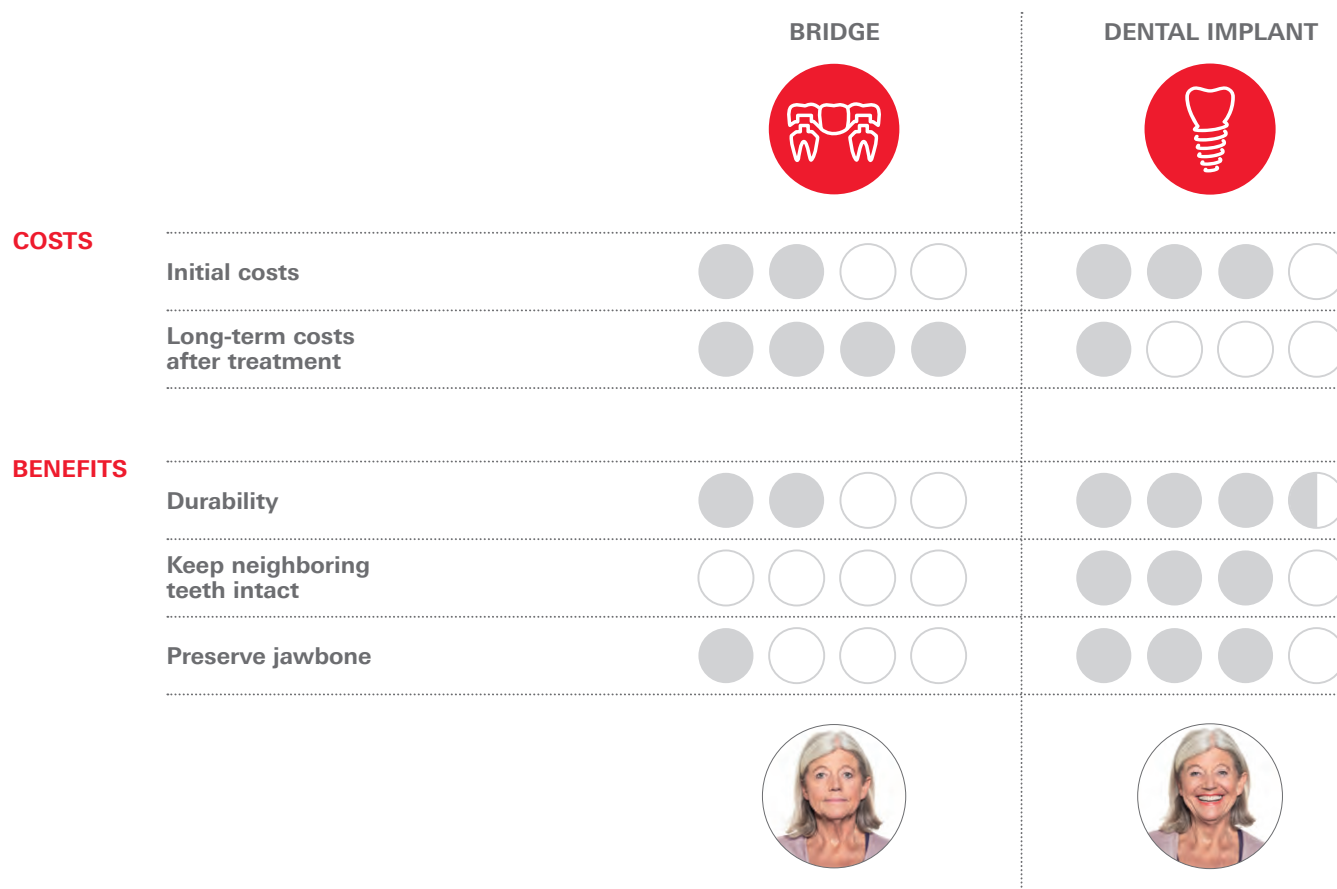
- Optionally, a surgical template can be created based on your individual treatment plan. This helps to ensure safe and accurate drilling (and implant placement in the case of fully guided surgery).





# Costs versus benefits of bridges and dental implants

This chart illustrates the costs versus benefits of bridges and dental implants. The scale ranges from zero (minimum) to four (maximum) points. (This chart shows estimated cost/benefits only; results may vary.)



## Please note:

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Attard NJ, Zarb GA, Laporte A. Long-term treatment costs associated with implant-supported mandibular prostheses in edentulous patients. *Int J Prosthodont* 2005;18:117-23.

Dierens M, Vandeweghe S, Kisch J, Nilner K, Cosyn J, De Bruyn H. Cost estimation of single-implant treatment in the periodontally healthy patient after 16-22 years of follow-up. *Clin Oral Implants Res* epub ahead 2014.

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Stoker GT, Wismeijer D, van Waas MA. An eight-year follow-up to a randomized clinical trial of aftercare and cost-analysis with three types of mandibular implant-retained overdentures. *J Dent Res* 2007;86:276-80.

Vogel R, Smith-Palmer J, Valentine W. Evaluating the health economic implications and cost-effectiveness of dental implants: a literature review. *Int J Oral Maxillofac Implants* 2013;28:343-56.



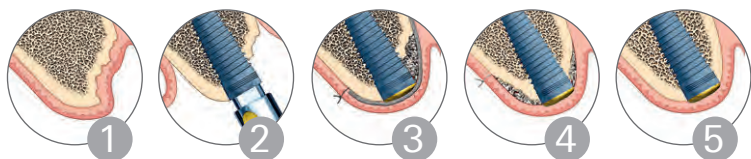
# Bone augmentation techniques

Missing teeth and the resulting lack of chewing forces may make the jaw's supporting structure shrink (or resorb). Bone augmentation regenerates bone and is used before implant placement. Bone material can be taken from other parts of your own body, another human being, animals or synthetic sources.



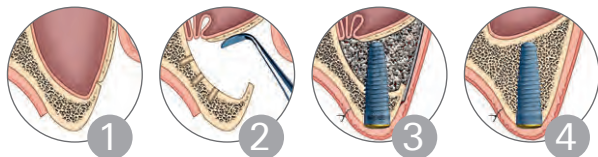
## Extraction site bone augmentation

- Purpose: A collection of techniques preventing soft tissue from growing into the gap left after tooth extraction.
- The space can be filled with bone replacement material and after a certain healing time the implant can be placed.



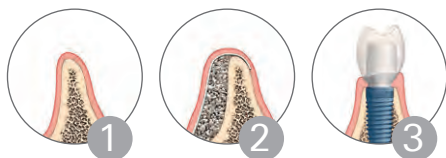
## Bone augmentation around the implant

- Purpose: Used to replace or supplement missing tissue to provide a more favorable site for the implant or improve esthetic results.



## Sinus augmentation

- Purpose: Used when too little bone is present for implant placement in the upper jaw.
- Additional bone material lifts the sinus floor, creating a new bone layer for implant stability.



## Horizontal and vertical bone augmentation

- Purpose: Used when too little bone is present for implant placement in the lower jaw.
- Bone material creates more height or width for implant stability.



## Guided tissue regeneration (GTR)

- Purpose: A collection of techniques to preserve natural teeth by adding bone material around the tooth root.



# Why your dentist partners with Nobel Biocare

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- Pioneering dental implant treatment since 1965



- Collaboration with leading experts



- Excellent standards of practice with continuous training for dentists and dental laboratories



- Scientific excellence focusing on safety and product performance



- Global network of dental practices at your disposal wherever you are



- Lifetime warranty on dental implants





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