

# *Implant-Supported Bridge*



*Reviewed by the Faculty of  
Columbia University College of Dental Medicine*

## **What Is It?**

An implant-supported bridge is similar to a regular dental bridge, but it is supported by implants and not by natural teeth. In most cases, when an implant-supported bridge is used, one implant is placed in the jawbone for each missing tooth. Then the crowns are connected to each other to form one piece.

## **When Is This Used?**

An implant-supported bridge is used when more than one tooth is missing. It also may be used when your dentist is concerned that you might put too much pressure on individual implants that are not connected to each other. For example, clenching or grinding your teeth can put a lot of pressure on individual implants. This can increase the chances that they will loosen from the bone and fail. An implant-supported bridge reduces the pressure on the individual implants in the bone, and spreads it across the entire bridge.

If the implants will be placed next to natural teeth, the natural teeth and surrounding gums must be in good health. If you don't have enough bone to place and support the dental implants, the supporting bone can be built up using bone augmentation or grafting before the actual implant procedure begins.



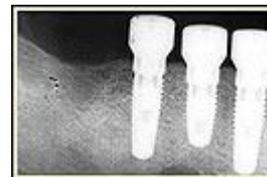
This person is missing teeth in the upper jaw.

## How Does It Work?

In some cases, your dentist may not want to put an implant in a certain place in your mouth. There may not be enough jawbone to support an implant, or the location may be too close to a nerve or sinus cavity (located above your upper teeth). In that case, your dentist can avoid the area by placing implants on both sides of the space. An implant-supported bridge will be placed on top. An implant-supported bridge also can be made similar to a traditional bridge, with a crown suspended between two implant-supported crowns.

An implant-supported bridge consists of:

- The **implant** is made of titanium and surgically placed in the jawbone. You may have one implant for each missing tooth. In other cases, your dentist may skip one or more spaces because there's not enough jawbone, or because the space is too close to a nerve or your sinus cavity.



X-ray of implants in the jaw

- The **abutment**, a cylinder made of titanium, gold or porcelain, is screwed onto the implant. In the past, some abutments were attached to the implant using cement. Today all abutments are secured with screws. Abutments can be pre-fabricated or custom-made by the dental lab.



Prefabricated titanium abutments



Gold, custom abutment

- The **restoration** (the part that looks like teeth) is a series of crowns connected to form a bridge. They are made of porcelain attached and fused to a substructure of metal.



Porcelain-fused-to-metal bridge

## The Implant Process

The time it takes to complete the implant process depends on many factors. When the traditional method of placing an implant is used, the shortest time frame is about five months in the lower jaw and seven months in the upper jaw. This includes surgeries and the placement of the implant-supported bridge. However, the process can last a year or more, particularly if bone needs to be built up first. More recently, many dentists have been placing an implant and crown in a single visit.

Two surgeries usually are needed to place and prepare the implant. During the first surgery, the implant is placed in the jaw and covered with gum tissue. The dentist then waits three to six months. At the end of the healing period, a second surgery is done to expose the implant so that the bridge can be placed.

## Initial consultation

Before any work is done, you will visit either a dental specialist called a prosthodontist or a general dentist who has advanced training in the placement and restoration of implants.

Your dentist will do a comprehensive examination. During the exam, he or she will review your medical and dental histories, take X-rays and create impressions of your teeth and gums so that models can be made. In some cases, the dentist may order a computed tomography (CT) scan of your mouth. This will show where your sinuses and nerves are. The dentist can then make sure that they will not be affected by the implants.

You also may have a CT scan if your dentist is not sure how much bone is available to hold the implants in place. People missing more than one tooth are more likely to have lost bone. Therefore, CT scans are more common for multiple-implant surgeries than for single-implant surgeries.

If the X-rays and CT show that your jaw does not have enough bone to hold an implant, the dentist can discuss options. These include bone grafting or bone augmentation, for building up the bone. The bone can be taken from your own mouth, chin or hip, or processed cadaver bone or cow bone can be used. If you need one of these procedures, it will take about four months for the bone to be ready for the implant.

## First surgery — implant placement

*Month 1 (if no bone grafting is necessary)*

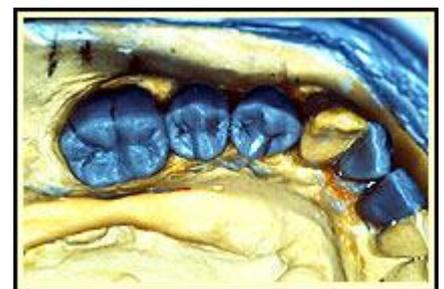
*Month 5 (if bone grafting is necessary)*

Once it's determined that you have enough bone to successfully hold an implant, you will schedule the first surgery. This involves [placing the implant or implants in your jaw](#). A periodontist or an oral surgeon usually does this surgery, using a surgical guide made by your prosthodontist or general dentist.

Your dentist will plan the placement of the implants carefully to make sure that their position allows your new bridge to look natural.

To help determine where the implants should be placed, your dentist creates a model, called a wax-up, of what the bridge will look like when it is completed. To do this, he or she uses a model of your mouth made from impressions taken of your teeth and jaw.

Using the wax-up, your dentist will make a surgical guide. The surgical guide is a clear piece of plastic similar to a mouthguard. It fits over your existing teeth and extends over the area where teeth are missing to show where the implants need to be placed.



The missing teeth are shaped in wax on this plaster model.



One week after first surgery

After the first surgery, the specialist will wait three or four months if implants were placed in the lower jaw, and five or six months if they were placed in the upper jaw before scheduling the second surgery. During this time, the bone and the implants fuse to one another.

There are several types of implants. The most popular type is the root-form implant, designed to serve as a tooth root. It is placed in the jawbone in the space created by the missing tooth.

## Second surgery

*Month 4 or 5 (no bone grafting, lower jaw)*

*Month 6 or 7 (no bone grafting, upper jaw)*

*Month 8 or 9 (bone grafting, lower jaw)*

*Month 10 or 11 (bone grafting, upper jaw)*

Once the implants have become fused with the bone, you can schedule the second surgery. Your dentist will confirm whether the implants are ready for the second surgery by taking X-rays. This surgery is simpler than the first. A small incision is made in your gums to expose the tops (heads) of the implants.

A collar, called a healing cap, is placed on the head of the implant after it is exposed. This guides the gums to heal correctly. The collar is a round piece of metal that holds the gums away from the head of the implant. The collar will be in place until the temporary bridge is inserted.



Healing caps in place



Healing caps are removed, showing the gum healed around the implants.

## The restorative phase

There are many types of implant-supported bridges. They can be held on by cement or with screws. They can be attached directly to the implant or to an abutment. Your dentist will determine which type will work best for you.

If a screw-retained bridge will be used, the first step is to remove the healing cap and screw a permanent abutment into the implant.

An impression will be made with the abutment in place. The abutment is shaped like a natural tooth that has been cut down to fit inside a crown.



At the next visit, the temporary bridge will be placed on the abutments. The temporary bridge will stay in place for four to eight weeks.

The temporary bridge is made of softer material than the permanent bridge. The softer material helps to cushion and protect the implant from the pressure of chewing.

**Temporary bridge** During the next visit, your dentist will test the fit of the metal framework that supports the porcelain bridge. If the framework doesn't fit correctly, it will have to be adjusted and you will have to return for another try-in. It might take several visits before the fit is right. If the teeth will not be connected, each tooth will be tried.

Once the metal framework fits, the rest of the bridge will be completed, and it will be placed in your mouth and secured.

## **Caring for Your Implant-Supported Bridge**

You will be able to clean the area between the gum and the bridge. Your dentist may recommend a special type of floss or a small brush for this type of cleaning. Otherwise, you can treat the bridge like your natural teeth.

Call your dentist if you have any problems with your implant-supported bridge. Your dentist will want to see you for a checkup after six months.

## **What Will X-Rays Show?**

On X-rays, you will be able to see the implants in the bone, and the bridge.

## **Possible Complications**

In addition to the risks of surgery and the possibility of the implants failing, screws can break or loosen. Crowns also can break or come loose.

## **What Can You Expect From Your Implant?**

Your implant-supported bridge will feel more secure and comfortable than a removable partial denture, which rests on the gums. You should be able to chew normal food comfortably, and the bridge should look like the natural teeth it is replacing.

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