

## Replace the Missing Teeth with Implant or Dentures

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Did you know that the average adult between the ages of 20 and 64 has one, two, three, or more decayed or missing teeth? If you have one or more missing teeth, there are plenty of reasons to correct the problem. Missing anterior tooth or teeth can disturb the esthetic and missing posterior tooth can disturb our oral function. A large space between your teeth may affect how you speak or eat. Remaining teeth may shift and in some cases, bone loss can occur around missing teeth [1].

Nowadays, we can see many people missing their teeth because extraction, trauma, infection. Unfortunately, they don't concern about the effect to keep the space in their mouth. The long term effect of keeping the missing teeth is oral dysfunction. So, it's important to educate people to replace the missing teeth [1].

With today's advances, people don't have to suffer from missing teeth. There are some options to replace missing tooth or teeth [2]:

1. A tooth-supported fixed partial dentures which is anchored to the adjacent teeth. These can be removable or fixed, depending on the mouth, your dentist's recommendation and patient's needs.
2. Removable partial dentures is an option if people have lost all or most of the teeth.
3. Implant is the most similar to a natural tooth, but more invasive treatment.

The fixed partial denture is a prosthetic appliance that is permanently attached to remaining teeth or implants and replaces one or more missing teeth. In years past, this type of prosthesis was known as a bridge, a term that has fallen from favor and is no longer used [1,2].

A tooth or implant serving as an attachment or a fixed partial denture is called an abutment. The artificial tooth suspended from the abutments is a pontic. The pontic is connected to the fixed partial denture retainers, which are extracoronal restorations that are cemented to or otherwise attached to the abutment teeth or implants. Intracoronal restorations lack the necessary retention and resistance to be used as fixed partial denture retainers. The connectors between the pontic and the retainer may be rigid or nonrigid if the abutments are teeth. As a rule, only rigid connectors are used with implant abutments [1,2].

**Removable partial denture:** A removable partial denture is generally indicated for edentulous spaces greater than two posterior teeth, anterior spaces greater than four incisors, or spaces that include a canine and two other contiguous teeth. An edentulous space with no distal abutment will usually require a removable partial denture. There are exceptions in which a cantilever fixed partial denture can be used, but this solution should be approached cautiously [3].

Multiple edentulous space, each of which may be restorable with a fixed partial denture, nonetheless may call for the use of a removable partial denture because of the expense and technical complexity. Bilateral edentulous spaces with more than two teeth missing on one side also may call for the use of a removable prosthesis instead of two fixed prosthesis [3].

The requirement of an abutment for a removable partial denture are not as stringent as those for a fixed partial denture abutment. Tipped teeth adjoining edentulous spaces and prospective abutments with divergent alignments may lend themselves more readily to use as removable rather than fixed partial denture abutments. Periodontally weakened primary abutments may serve better in retaining a well-designed removable partial denture than in bearing the load of a fixed partial denture. It is also possible to design the partial denture framework so that retentive clasps will be placed on teeth other than those adjacent to the edentulous space [3,4].

Short teeth or those with short clinical crowns usually are not good fixed partial denture abutments for anything other than a single pontic prosthesis. An insufficient number of abutments may also be a reason for selecting a removable rather than a fixed partial denture. If there has been a severe loss of tissue in the edentulous ridge, a removable partial denture can be more easily be used to restore the space both functionally and esthetically. For successful removable partial dentures treatment, the patient should demonstrate acceptable oral hygiene and show signs of being a reliable recall candidate [3,4].

Patients of advanced age who are on fixed incomes or have systemic health problems may require special treatment simplification efforts, either to cut down on the amount of appointment time required to restore the mouth or to make the treatment affordable. A large tongue is a good reason to avoid a removable prosthesis if at all possible, as is a lack of muscular coordination. An unfavorable attitude toward a removable partial denture also makes it a poor choice [3,4].

**A tooth-supported fixed partial denture:** When a missing tooth is to be replaced, a fixed partial denture is preferred by the majority of patients. The usual configuration for a fixed partial denture uses an abutment tooth on each end of the edentulous space to support the prosthesis. If the abutment teeth are periodontally sound, the edentulous span is short and straight, and the retainers are well designed and executed, the fixed partial denture can be expected to provide a long life of function for the patient. Several factors influence the decisions of whether to fabricate a fixed partial denture, what teeth to use as abutments, and what retainer designs to use [5].

There should be no gross soft tissue defect in the edentulous ridge. If there is, it may be possible to augment the ridge with grafts to enable the construction of a fixed prosthesis. This treatment is reserved for patients who are both highly motivated and able to afford this special procedure. If the patient does not meet these criteria, a removable partial denture should be consider [5].

A dry mouth creates a poor environment for any crown. The margins of the retainers will be at great risk from recurrent caries, limiting the life span of the prosthesis. However, an absence of moisture in the mouth also will hinder the success of a removable partial denture. In either case, the patient must be made aware of the high risk involved. The risk may be minimized through home fluoride application and frequent recall, but it can not be eliminated [6].

Types of a tooth-supported fixed partial dentures or bridges are divided into:

1. **Traditional bridges:** This type of bridge is most common one, and it's usually made of either ceramics or porcelain fused to metal. The bridge is created by a crown for the tooth or implant on either side of the gap, and the pontic lies in between.
2. **Cantilever Bridges:** This type of bridge is not as common as the traditional bridge, and it is not recommended for the back of the mouth where it will receive much force. Cantilever bridges are used when there are adjacent teeth found on only one side of the gap of missing teeth.
3. **Maryland Bonded Bridges:** With this type of bridge, the resin-bonded bridge is made of porcelain, porcelain fused to metal, or plastic teeth supported by a porcelain or metal framework. The existing teeth on either side of the gap are bonded to the metal or porcelain wings on the bridge.

The advantages of using bridges to replace the missing teeth:

1. **Simple procedure:** Unlike dental implants, bridges don't require surgery, making bridges a lot less painful. All it takes is a simple dental procedure to get your teeth fixed.
2. **Faster:** It's much quicker and easier to get dental bridges (only a few weeks at the most), whereas implants may take several months.
3. **Affordable:** Bridges are generally more affordable than implants, and they are still strong and supportive for your mouth.

The disadvantages of using bridges to replace the missing teeth:

1. **Less Aesthetically Pleasing:** Bridges are not as natural looking as implants, and therefore are not as aesthetically pleasing.
2. **Periodic Replacement:** Bridges need to be replaced periodically. They should be changed every 5-7 years.
3. **Damage Natural Teeth:** Adjacent teeth undergo a lot of preparation that requires the removal of a considerable amount of tooth structure.

**Implant-supported fixed partial denture:** Implant is a titanium post (acting as a tooth root) that supports a crown. It is surgically inserted into the jawbone where it will fuse (osseointegrate) into the jawbone to ensure that it is anchored in position. After the osseointegration process is finished (usually 3 until 6 months), an abutment is attached to the post frame. It protrudes above the gum line to provide the area where the dental crown is cemented or screwed into. Fixed partial dentures supported by implants are ideally suited for use where there are insufficient numbers of abutment teeth or inadequate strength in the abutments to support a conventional fixed partial denture and when patient attitude and/or a combination of intraoral factors make a removable partial denture a poor choice. Implant-supported fixed partial dentures can be employed in the replacement of teeth when there is no distal abutment. Span length is limited only by the availability of alveolar bone with satisfactory density and thickness in a broad, flat ridge configuration that will permit implant placement [4,7].

A single tooth can be replaced by a single implant, saving defect-free adjacent teeth from the destructive effects of retainer crown preparations. A span length of two to six teeth can be replaced by multiple implants, either as single unit restorations or as implant-supported fixed partial dentures. In fact, an entire arch can be replaced by an implant-supported complete prosthesis [7].

The retainers used for most implant system require a great degree of abutment alignment precision, as do the retainers for a tooth-supported fixed partial denture. If implants are placed by someone other than the restorative dentist, implant/abutment alignment demands close coordination between surgeon and restorative dentist. The abutment should be positioned so that the occlusal forces will be as nearly vertical to the implants as possible to prevent destructive lateral forces [6,7].

Implants should be better able than natural teeth to survive in a dry mouth. Implants may be a better choice for fixed partial denture abutments if prospective tooth abutments would require edodontic therapy with or without dowel cores, periodontal surgery, and possibly root resections to support a long-span, complex, and expensive prosthesis [6,7].

Type of implants are divided into:

1. **Endosteal implants** are directly implanted into the jawbone during surgery. A second surgery is needed to connect the post to the first implant once the gum tissue is healed. Last, an artificial tooth is mounted to the post.
2. **Subperiosteal implants**, a metal frame is fitted onto the jawbone right below the gum tissue. The frame becomes fixed to the jawbone as the gums heal. Once ready, the artificial tooth is attached to the post.

The advantages of using implant to replace the missing teeth:

1. **Little maintenance:** One big perk about dental implants is that they can last a lifetime when they are high quality. They require little maintenance.
2. **Natural looking:** Dental implants look, feel, and function like a natural tooth. They are strong and stable, and they keep your smile confident.
3. **Protect Your Jawbone:** Having an open space in your mouth where a missing tooth once was puts your jawbone at risk for deterioration. Dental implants stimulate and preserve natural bone growth, which helps prevent bone loss.
4. **No Strain on Teeth:** Unlike a bridge, an implant stands on its own support without putting strain on other teeth. This helps to protect surrounding teeth.

The disadvantages of using implant to replace the missing teeth:

1. **Surgery:** Because the implant must be attached to your bone, it requires surgery. And there are always risks to consider with any kind of surgical procedure. Some of the risks include infection, nerve damage, damage to surrounding teeth, jaw fractures, and more.
2. **Time:** Getting a tooth implant is not something that can be done in a single office visit. Bone heals slowly, to the entire procedure can take several months, around 3 months on the fast end.
3. **Cost:** Now, the cost will vary depending on the type of implant and the conditions of the tooth issue. Still, the high cost associated with getting a dental implant is often what deters people from considering this procedure.

### Which one is the best choice to replace the missing teeth?

Removable partial denture, a tooth-supported fixed partial denture, implant-supported fixed partial denture can replace the missing teeth. It depends on the case, indication, and contraindication of the treatment.

1. Comparing the costs. As you can see, the price of a tooth-supported fixed partial denture or bridge can vary dramatically. Still, it may or may not end up being a more affordable option than a dental implant.
2. The long lifespan and little maintenance associated with dental implants makes patients over the age of 40 good candidates for this procedure. They may need to be replaced every 15 years or so due to natural wear and tear. Bridges, while more affordable, must be replaced every 5 - 7 years, and possibly 10 years with the proper care and maintenance. While bridges are usually covered by most dental insurance plans, implants are rarely covered.
3. Implants make little or no bone or gum loss, but bridge make some bone or gum loss.
4. Implants give the best aesthetics, bridge looks very natural.
5. A bridge can be fixed in 2 - 3 visits over a few weeks, but an implant is a long procedure that requires and recovery times over the span of several months.
6. If the patient have systemic disease, such as hypertension, diabetes mellitus, it's better to replace the missing teeth with removable partial denture or a tooth-supported fixed partial denture without local anesthesia because implants treatment is more invasive than denture.



Figure 1: Removable Partial Denture.

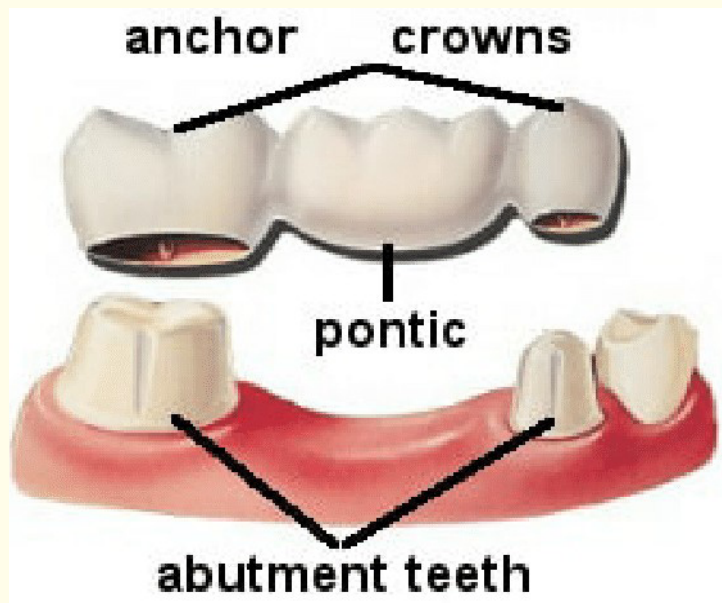
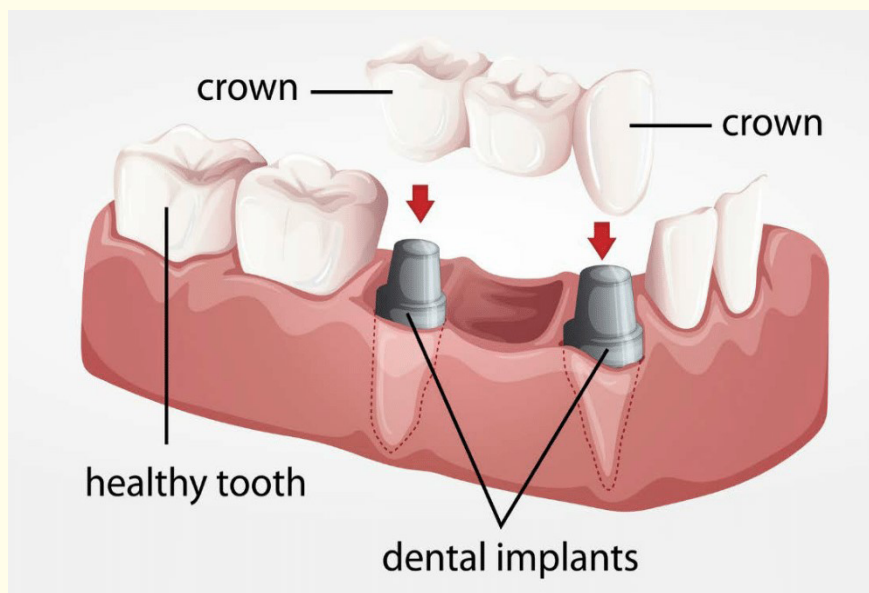


Figure 2: A tooth-supported fixed partial denture.



**Figure 3:** Implant-supported fixed partial denture.

**Which one is the better one?**

It's all up to the condition and the needs of patient. The most important thing is to have a good communication between dentist, patient, and dental technician to give the best treatment.

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