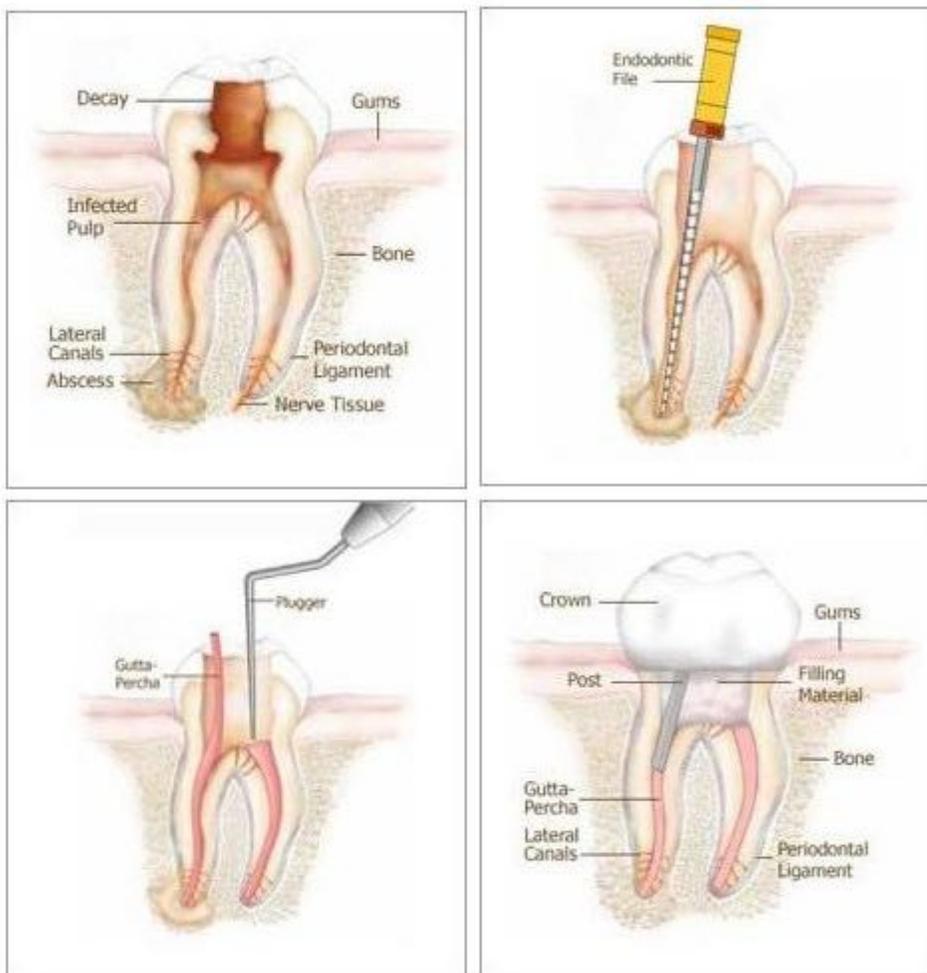




## ROOT CANAL TREATMENT

After root canal treatment, tooth becomes weak and brittle. In case of root canal treatment, infected nerve which is present at the centre of the tooth is removed and only the sides of the tooth are available for support which will cause tooth to become weak and brittle. Nerve supply and the blood supply of the tooth are also gone in case of root canal treated tooth. To increase the strength of the tooth, dental crown is advised after root canal treatment. If dental crown is not placed on root canal treated tooth, then the tooth will become more liable to fracture and breakage. A root canal treated tooth with only dental filling on it and no dental crown is more prone to fracture as compared to a normal tooth. If there is loss of more than 2/3 of the tooth structure, then only dental crown is not able to support the tooth. In such a case, after root canal treatment, post and core followed by dental crown is given on the tooth. Post is placed inside the root of the tooth and core build up is done on it. Posts are usually prefabricated and are available in many shapes. After giving post and core, dental crown is placed over it.



## **NEED FOR DENTAL CROWN AFTER ROOT CANAL TREATMENT**

Teeth (especially the molars) are subjected to high masticatory forces or chewing forces. A root canal treated tooth without dental crown can break easily by chewing forces. During the preparation of access cavity, tooth may become weakened. Tooth also becomes brittle due to loss of fluid substance of the tooth during root canal procedure. Amount of stresses on edges of the tooth are tremendous which can cause root canal treated tooth without dental crown to fracture. If a tooth is fractured after root canal treatment, then it becomes more difficult to repair the tooth. That is why dental crown is recommended after root canal treatment. If dental crown is not given after root canal treatment and the tooth is fractured, then tooth extraction may also be required. After the root canal treatment, tooth may also become discolored because it becomes non-vital. (Pulp of the tooth is removed in case of root canal treatment which is responsible for vitality of the tooth). Discoloration occurs because of entry of hemosiderin pigment which is formed from hemoglobin into the dentinal tubules. Discolored tooth is not aesthetically acceptable especially if it is a front tooth and dental crown can be given to provide esthetics.

In a nut shell, it can be said that Dental Crowns are given after Root Canal Treatment:

1. To provide strength to the weak and brittle root canal treated tooth
2. To hide the discoloration that may occur at times after root canal treatment

So dental crown after root canal treatment should not be neglected.

After root canal treatment, porcelain/ceramic dental crowns or porcelain fused to metal dental crown can be given to the patient for the front teeth and for back teeth, porcelain fused to metal or metallic dental crowns can be given to the patient.

### **What If Dental Crown Is Not Given After Root Canal Treatment?**

Root canal treated tooth without dental crown can fracture. If a tooth is fractured after root canal treatment, then it will become even more difficult to repair the tooth. If much of loss of tooth structure occurs due to fracture of the tooth, then post and core followed by dental crown may be required for the tooth. Tooth extraction may also be required in case of vertical tooth fracture or if not much of tooth structure is left behind. If the tooth has to be extracted, then patient will have to get dental implants or dental bridge to replace the missing tooth which will be 3-4 times more expensive than getting dental crowns after root canal treatment. That is why dental crown is recommended after root canal treatment.

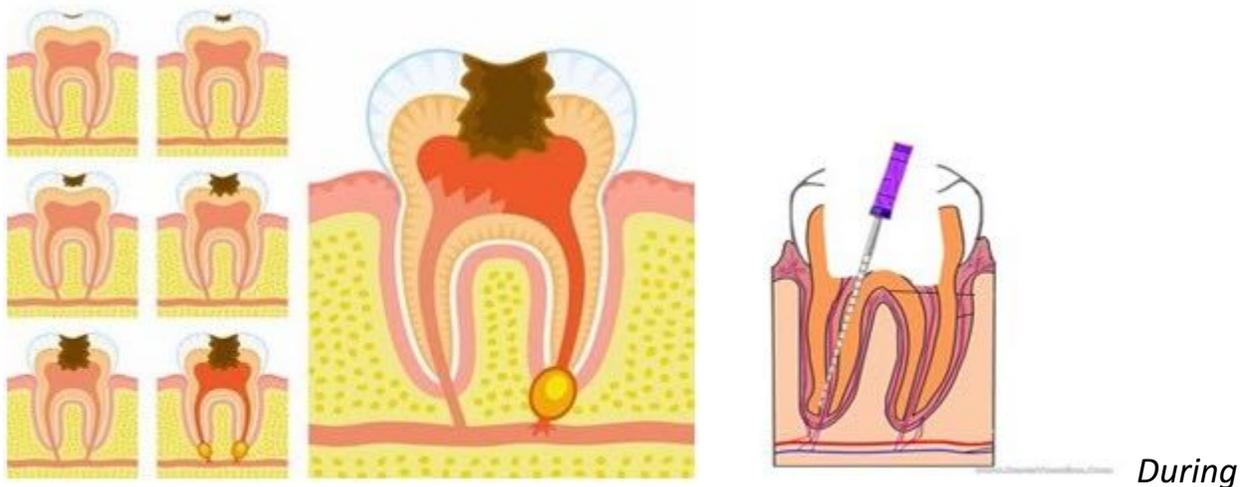
### **How Long To Wait For Dental Crown after Root Canal Treatment?**

If it is a back tooth that is molars or the bicuspids, then patient should get dental crown immediately after root canal treatment. Dental crown is a restoration which covers the tooth like a cap and covers the outer surface of the tooth and further increases the strength of the tooth. A front tooth may become discolored after root canal so dental crown is also to be given to front tooth after root canal treatment.

Some people wait for months to years after root canal treatment to get dental crown. This is not recommended. Waiting for too long for dental crown after root canal treatment can lead to fracture of tooth and if a vertical crack line occurs on the tooth, then tooth extraction may also be required.

## Cost of Root Canal Treatment and Dental Crown?

Patient can get root canal treatment done from an endodontist or can get it done from a general dentist. Cost of root canal treatment varies from \$500-\$1000 depending on the type of the tooth and whether root canal procedure is performed by a general dentist or an endodontist. Cost varies from place to place and dentist to dentist. If the patient has got the root canal treatment done from an endodontist, then he can refer to a general dentist to get a dental crown. Cost of dental crown varies on the basis of type of dental crown which is given to the patient. Dental crown can cost \$600-\$1200 to the patient. Cost of dental crown varies according to the type of dental crown which is given. All porcelain/ ceramic dental crowns are most expensive and porcelain fused to metal crowns are cheaper as compared to all porcelain crown. Both root canal treatment and dental crowns are covered by dental insurance companies.



*During a root canal, the dentist numbs the affected area, and then creates a small hole in the tooth from where the infected material is extracted. While doing the Root Canal Treatment of tooth, the dentist will numb the tooth and gain access to nerve of tooth. After this dentist will clean the infection in the pulp of canals and fill the canals with sterile filling material and do the filling on top of tooth.*



**Don't Put Off That Filling!** A small cavity today can be easily repaired with a low cost filling. If you wait the

*cavity grows larger and deeper and will eventually grow into the nerve causing you to spend a lot more money for a root canal and crown. If you cannot afford a root canal and a crown, then you will end up paying to have the tooth removed*

## **DENTAL PROCEDURES EXPLANATION**

### **ENDODONTICS**

This is the procedure to remove the nerve from the canal in the tooth and to seal it afterwards. There are different reasons for root canal treatment including the following:

- Decay in the tooth involving the pulp, nerve and blood vessel
- Irreversible pulpitis due to trauma or an old leaking restoration
- Acute pulpitis
- Fracture into the pulp
- Re-preparation of an old root canal treatment

The aim is to remove all the putrefaction from the canal so that it is prepared for a root canal filling. Due to the nature of tooth decay, bacteria are involved and the bacterial infection in the canal must be treated to prevent this from spreading into the apex of the tooth involving bone.

The dentist files the canals with profile rotating instruments and constantly washes the canals with sodium hypochloride or ozone water. After a session of filing and cleaning the canal, and the patient is symptom free, the canal is then filled with a rubber material called Thermafill.

This procedure is done with proper local anaesthetic and can be completely pain free. In some severe septic cases the anaesthetic is not very effective and the patient may have discomfort or some pain initially, this is rare though.

The root canal in more than 90% cases is usually successful, but if there is a complication of an abscess it can be treated surgically.

### **CROWN AND BRIDGE**

Crowns or caps are dental restorations that are placed over a tooth when conservative restorations are not enough to restore form and function. A bridge is a custom-made artificial tooth that fills the gap where a tooth is missing and attaches to the two teeth on either side.

Crowns address aesthetic needs, restore tooth function and enhance the overall health of your mouth. Where teeth have large broken fillings a crown can protect the remaining natural tooth. Teeth that are root canal treated also need crowns to protect them from cracking as they become more brittle with time.

#### **• First Visit**

With crowns and bridges the dentist shapes the teeth to provide stable support and precise fit to the final restoration.

After the preparation impressions are taken and temporary crowns are made, a replica of your mouth is made in the dental laboratory on a model to make the final restorations. The dentist carefully select the colour, shape and size of the crown or bridge.

Temporaries are done to protect the prepared teeth and maintain the precise space left by the tooth until the new crown is ready.

- **Second Visit**

When final crowns are ready the dentist removes the temporary restoration and tries on the crown or bridge.

It should fit precisely and meet both the patient's and the dentist's approval. The crown or bridge can then be permanently bonded to the prepared tooth with an adhesive bonding agent and cement.

## **ORTHODONTICS**

### ***Who needs orthodontic treatment?***

Everyone wants a beautiful smile and that's one of the best reasons to have orthodontic treatment. An attractive smile enhances self-esteem which can actually improve the quality of life itself.

Everyone knows braces straighten crooked teeth, but we, as dentists, want you to know that the scope and purpose of orthodontics are much broader than beautiful smiles.

Orthodontic treatment also plays a role in improving overall oral health and leads you to a lifetime of healthy and attractive smiles.

Orthodontics do more than just straighten crooked teeth, they also possess the expertise to correct irregularities of the bite and facial structures in the mouth and jaw area. The goal in orthodontic treatment is to achieve balance and harmony between the teeth and face for a lifetime of beautiful healthy smiles.

Major orthodontic problems can be present behind acceptable smiles and those problems if left untreated can severely jeopardise the health of teeth, gums and the jaw's joint.

## **CHILD DENTISTRY/PEDODONTICS**

It is said that children are our future. We need to address children's needs to make sure we have a future with healthy mouths and cooperating patients.

It's absolutely normal and understandable that children might show signs of anxiety with their first visit to the dentist. We advise patients to bring children along when they visit their dentist/oral hygienist for their regular check-ups. From an early age the child gets used to the routine of going to the dentist and will show less signs of anxiety or fear, when it's their turn.

Children can usually only cooperate in the chair from the age of three to four years, when they have the cognitive ability to understand the reason for visiting the dentist. At their first appointment we will only introduce them to the environment and perhaps a clean or polish of the teeth.

Making it a six-monthly habit, you overcome their fear of an unknown/unfamiliar environment, making it a lot easier to perform actual dental work, when necessary. In more serious cases where a lot of restorative work needs to be done, or with a very

anxious or traumatised child, we will consider taking the child to theatre, where general anaesthetic will be used under the supervision of an anaesthetist.

At the average age of six months the first primary/milk or deciduous teeth start to erupt. By the age of 2,5 to 3 years, toddlers should have all their milk/primary teeth ie 20 teeth. Some of these primary teeth (primary molars) only exfoliate at the age of 10 to 12 years, making it a good reason to take good care of these teeth.

If a child loses these teeth too early, drifting of the other teeth can close up spaces, resulting in space shortages for the eruption of permanent teeth and ultimately result in skewed teeth. It is advisable that children should practise a good oral regime from an early age. Teeth need to be brushed (usually by the parents) as soon as they have erupted. There are numerous brands of toothpastes and toothbrushes on the market, especially formulated for children. As with good oral hygiene practices, teeth should also be brushed twice daily ie mornings and at night.

## **QUESTIONS FREQUENTLY ASKED BY PARENTS**

- ***When do the permanent teeth erupt/when does my child lose his first milk tooth?***

The first permanent tooth will erupt at the age of +/- 6 (there are, however, children who start to lose teeth at the age of five and some only at the age of seven, making it impossible to predict the precise time of eruption). The bottom front teeth are usually the first to start the journey to the tooth fairy/tooth mouse.

- ***Do we need to brush milk teeth?***

Definitely yes. Your child should brush twice daily or as a parent you should brush his / her teeth when they are too young to do it themselves

- ***What is baby bottle caries?***

Baby bottle caries exist when we have carious/decayed teeth because of teeth being exposed for long periods (especially at night time) to the contents of a bottle, where sugar is usually the main ingredient. This results in extensive decay which is especially visible on the front top teeth. It is advisable that a child should be weaned off from a bottle at the age of two.

- ***How often should my child visit the dentist?***

At least every six months.

- ***What are fissure sealants?***

Fissures or grooves on the biting (occlusal) surfaces of molars (back chewing teeth) are sealed to prevent caries/decay.

- ***Can milk teeth be saved or should they be removed when they've developed a cavity?***

Procedures like fillings and the removal of a tooth's nerve (pulpotomy) can be done on milk teeth in order to save them and is advisable as discussed earlier.

- ***What is the ideal age to consider having braces done?***

It all depends on the malocclusion (jaw relationship) of the child. Most of the time braces (fixed banding) are only considered when all the permanent teeth are present. But various orthodontic appliances (plates) can be considered to stimulate or alter the growth at an early age already or even to correct a minor malocclusion.

- ***Should i give my child fluoride supplements?***

We advise that children should not receive any fluoride supplements before their permanent front teeth have erupted. The amount of fluoride intake is difficult to determine (there is fluoride in food, water and toothpaste), and excessive intake can result in visible white spots on the teeth. In severe cases these spots may turn brown. Adhering to the above practises and setting a good example from an early age, should prevent a traumatic experience for your child at the dentist and guarantee healthy teeth for longer.

## **PERIODONTOLOGY**

The periodontium involves all the supporting tissues around the teeth, ie the gingiva (gum) and the alveolar bone (the bone supporting the teeth). It speaks for itself that the periodontal tissues should be cared for as well as the teeth themselves, because without the support of a healthy periodontium the teeth will be unstable, will eventually become loose and can even fall out! While there are many ways of restoring lost tooth structure, there are very few ways of successfully restoring lost periodontal structure. Periodontal disease is a (normally) painless bacterial infection of the bone and gingiva. These bacteria are normally present in the (healthy) mouth. The actual infection occurs when these bacteria are allowed to multiply out of control - something which is bound to happen if the teeth and gums are not cleaned correctly, or not cleaned at all. Plaque, which contains lots of bacteria, then forms on the tooth surface and will start infecting the gum around the teeth (as well as causing decalcification of the teeth and tooth decay).

Bleeding of the gums (including bleeding during brushing and flossing) is the first sign that there is a periodontal problem. Bleeding should never be ignored!

## **Gingivitis**

The very first stage of periodontal disease is gingivitis. Only the gingiva (gum) is infected at this stage, and the disease is still reversible with the right treatment. The signs and symptoms of gingivitis include:

- gums that bleed easily
- gums that are red, swollen and tender
- bad breath

## **Periodontitis**

When gingivitis progresses, it also starts destroying the bone around the teeth. This is then called periodontitis or periodontal disease. Remember it is normally a painless disease, so it can sometimes be far advanced before it is detected. As more and more bone gets destroyed, the teeth can become mobile. Where there is too much bone loss, the teeth will eventually be lost. A bone that has been destroyed around the teeth can never grow back. Regeneration of bone around teeth by surgical means has very limited success. The result is invariably an appearance of "long teeth" with dark spaces between them where bone and gum has been lost.

Although periodontitis is normally the result of long-standing neglect of proper care (and therefore plaque accumulation), not everybody is equally susceptible to periodontitis.

Everyone has a different immune response to the development of periodontal disease.

Some of the risk factors are:

- diabetes;
- hormonal changes;
- smoking;
- alcohol;
- family history;
- certain medications;
- grinding or clenching;
- age;
- stress; and
- foreign objects such as removable dentures.

## **Periodontal diseases may increase one's risk for some conditions, including:**

- stroke and cardiovascular disease;
- diabetes; and
- respiratory diseases.

## **Detecting Periodontitis**

It is vital to visit a dentist or an oral hygienist every six months for scaling of all plaque and calculus (hard deposits) on the tooth surfaces and below the gum level. This will greatly diminish the chances for gingivitis or periodontitis. The pockets between the gum and the teeth should regularly be measured and charted to give an indication of the

amount and progression of bone loss, if any. Regular x-rays will also give an indication of any bone loss or other bony defects.

## **Treating Periodontitis**

The best treatment is to prevent periodontal diseases from starting! The correct brushing method and daily flossing is absolutely essential, as is visiting an oral hygienist twice a year (or more often, in certain cases) for scaling, polishing, and early detection of any possible infection. It is also vital to eliminate as many of the risk factors for periodontitis as possible. The negative effect that especially smoking has on the periodontal status cannot be stressed enough. When gingivitis or periodontitis is already present, flossing, brushing and regular professional cleaning is still the most effective way of controlling the disease. Bone loss around teeth is permanent and will never grow back, but the disease can be controlled. In some cases more intensive procedures may be needed (see below) and sometimes antimicrobial treatment may be prescribed.

## **Some Periodontal Procedures:**

Deep scaling or curettage: where there is already necrotic tissue and bone, it may be necessary to anaesthetize the gum and do a deep clean from time to time around the teeth in order to help stabilize the process and re-establish the attachment between bone, gum and tooth.

Periodontal surgery: in more advanced cases the gum gets anaesthetized, and lifted surgically for re-contouring of necrotic bone and gum. After disinfecting of the bone, the gum gets sutured back in place to form a new attachment. Teeth that cannot be rescued will also be removed so the mouth can have the best chance of getting healthy again.

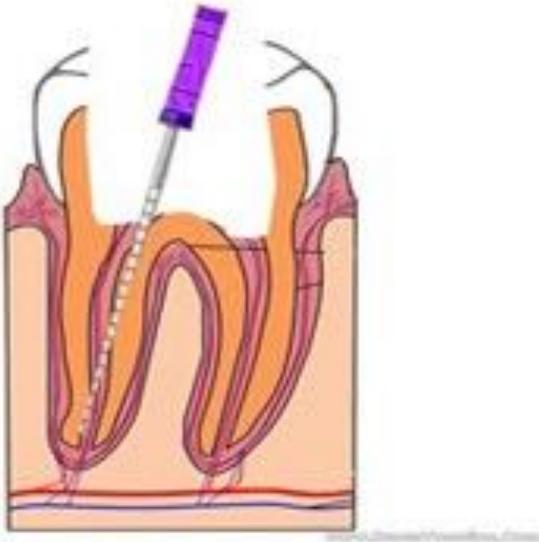
Bone regeneration: in case of certain bone lesions due to a periodontic problem or loss of teeth, a bone regeneration procedure can be attempted to improve the amount and quality of the available bone, either to help stabilize the local periodontal situation or to provide bone for placement of implants.

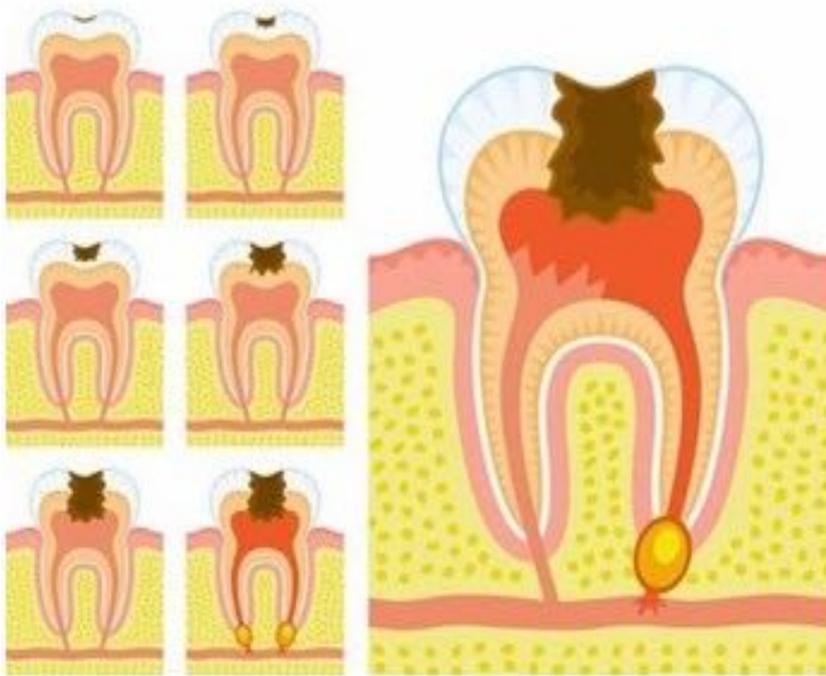
## **Care of the supporting tissue around the teeth**

In summary, it is often possible to restore teeth, but very difficult to restore damaged periodontal tissue (bone and gum). Flossing, brushing and professional cleaning strengthens periodontal tissues. Removable dentures should be kept clean meticulously and removed regularly for proper cleaning of the remaining teeth. Eliminating smoking and controlling diseases such as diabetes will also improve the periodontal status.



**Don't Put Off That Filling!** A small cavity today can be easily repaired with a low cost filling. If you wait the cavity grows larger and deeper and will eventually grow into the nerve causing you to spend a lot more money for a root canal and crown. If you cannot afford a root canal and a crown, then you will end up paying to have the tooth removed





While doing the Root Canal Treatment of tooth, the dentist will numb the tooth and gain access to nerve of tooth. After this dentist will clean the infection in the pulp of canals and fill the canals with sterile filling material and do the filling on top of tooth.

During a root canal, the dentist numbs the affected area, and then creates a small hole in the tooth from where the infected material is extracted.

### **NEED FOR DENTAL CROWN AFTER ROOT CANAL TREATMENT**

Teeth (especially the molars) are subjected to high masticatory forces or chewing forces. A root canal treated tooth without dental crown can break easily by chewing forces. During the preparation of access cavity, tooth may become weakened. Tooth also becomes brittle due to loss of fluid substance of the tooth during root canal procedure. Amount of stresses on edges of the tooth are tremendous which can cause root canal treated tooth without dental crown to fracture. If a tooth is fractured after root canal treatment, then it becomes more difficult to repair the tooth. That is why dental crown is recommended after root canal treatment. If dental crown is not given after root canal treatment and the tooth is fractured, then tooth extraction may also be required. After the root canal treatment, tooth may also become discolored because it becomes non-vital. (Pulp of the tooth is removed in case of root canal treatment which is responsible for vitality of the tooth). Discoloration occurs because of entry of hemosiderin pigment which is formed from hemoglobin into the dentinal tubules. Discolored tooth is not aesthetically acceptable especially if it is a front tooth and dental crown can be given to provide esthetics.

In a nut shell, it can be said that Dental Crowns are given after Root Canal Treatment:

1. To provide strength to the weak and brittle root canal treated tooth

2. To hide the discoloration that may occur at times after root canal treatment So dental crown after root canal treatment should not be neglected. After root canal treatment, porcelain/ceramic dental crowns or porcelain fused to metal dental crown can be given to the patient for the front teeth and for back teeth, porcelain fused to metal or metallic dental crowns can be given to the patient.

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### **Cost of Root Canal Treatment and Dental Crown?**

Patient can get root canal treatment done from an endodontist or can get it done from a general dentist. Cost of root canal treatment varies from \$500-\$1000 depending on the type of the tooth and whether root canal procedure is performed by a general dentist or an endodontist. Cost varies from place to place and dentist to dentist. If the patient has got the root canal treatment done from an endodontist, then he can refer to a general dentist to get a dental crown. Cost of dental crown varies on the basis of type of dental crown which is given to the patient. Dental crown can cost \$600-\$1200 to the patient. Cost of dental crown varies according to the type of dental crown which is given. All porcelain/ ceramic dental crowns are most expensive and porcelain fused to metal crowns are cheaper as compared to all porcelain crown. Both root canal treatment and dental crowns are covered by dental insurance companies.

