

FAQS About Root Canals

What is a Root Canal?

A root canal is a treatment used to repair and save a tooth that is badly decayed or becomes infected. During a root canal procedure, the nerve and pulp are removed and the inside of the tooth is cleaned and sealed. Without treatment, the tissue surrounding the tooth will become infected and abscesses may form.

"Root canal" is the term used to describe the natural cavity within the center of the tooth. The pulp or pulp chamber is the soft area within the root canal. The tooth's nerve lies within the root canal.

A tooth's nerve is not vitally important to a tooth's health and function after the tooth has emerged through the gums. Its only function is sensory -- to provide the sensation of hot or cold. The presence or absence of a nerve will not affect the day-to-day functioning of the tooth.

Why Does Tooth Pulp Need to Be Removed?

When a tooth's nerve tissue or pulp is damaged, it breaks down and bacteria begin to multiply within the pulp chamber. The bacteria and other decayed debris can cause an infection or abscessed tooth. An abscess is a pus-filled pocket that forms at the end of the roots of the tooth. An abscess occurs when the infection spreads all the way past the ends of the roots of the tooth. In addition to an abscess, an infection in the root canal of a tooth can cause:

- Swelling that may spread to other areas of the face, neck, or head
- Bone loss around the tip of the root
- Drainage problems extending outward from the root. A hole can occur through the side of the tooth with drainage into the gums or through the cheek with drainage into the skin.

What Damages a Tooth's Nerve and Pulp in the First Place?

A tooth's nerve and pulp can become irritated, inflamed, and infected due to deep decay, repeated dental procedures on a tooth, and/or large fillings, a crack or chip in the tooth, or trauma to the face.

What Are the Signs That a Root Canal Is Needed?

Sometimes no symptoms are present; however, signs you may need a root canal include:

- Severe toothache pain upon chewing or application of pressure
- Prolonged sensitivity/pain to heat or cold temperatures (after the hot or cold has been removed)
- Discoloration (a darkening) of the tooth

- Swelling and tenderness in the nearby gums
- A persistent or recurring pimple on the gums

What Happens During a Root Canal?

A root canal requires one or more office visits and can be performed by a dentist or endodontist. An endodontist is a dentist who specializes in the causes, diagnosis, prevention, and treatment of diseases and injuries of the human dental pulp or the nerve of the tooth. The choice of which type of dentist to use depends to some degree on the difficulty of the root canal procedure needed in your particular tooth and the general dentist's comfort level in working on your tooth. Your dentist will discuss who might be best suited to perform the work in your particular case.

The first step in the procedure is to take an X-ray to see the shape of the root canals and determine if there are any signs of infection in a surrounding bone. Your dentist or endodontist will then use local anesthesia to numb the area near the tooth. Anesthesia may not be necessary, since the nerve is dead, but most dentists still anesthetize the area to make the patient more relaxed and at ease.

Next, to keep the area dry and free of saliva during treatment, your dentist will place a rubber dam (a sheet of rubber) around the tooth.

An access hole will then be drilled into the tooth. The pulp along with bacteria, the decayed nerve tissue and related debris is removed from the tooth. The cleaning out process is accomplished using root canal files. A series of these files of increasing diameter are each subsequently placed into the access hole and worked down the full length of the tooth to scrape and scrub the sides of the root canals. Water or sodium is used periodically to flush away the debris.

Once the tooth is thoroughly cleaned, it is sealed. Some dentists like to wait a week before sealing the tooth. For instance, if there is an infection, your dentist may put a medication inside the tooth to clear it up. Others may choose to seal the tooth the same day it is cleaned out. If the root canal is not completed on the same day, a temporary filling is placed in the exterior hole in the tooth to keep out contaminants -- like saliva and food -- out between appointments.

At the next appointment, to fill the interior of the tooth, a sealer paste and a rubber compound called gutta percha is placed into the tooth's root canal. To fill the exterior access hole created at the beginning of treatment, a filling is placed.

The final step may involve further restoration of the tooth. Because a tooth that needs a root canal often is one that has a large filling or extensive decay or other weakness, a crown, crown and post, or other restoration often needs to be placed on the tooth to protect it, prevent it from breaking, and restore it to full function. Your dentist will discuss the need for any additional dental work with you.

How Painful Is a Root Canal?

Root canal procedures have the reputation of being painful. Actually, most people report that the procedure itself is no more painful than having a filling placed.

What Should One Expect After the Root Canal?

For the first few days following the completion of a root canal, the tooth may feel sensitive due to natural tissue inflammation, especially if there was pain or infection before the procedure. This

sensitivity or discomfort usually can be controlled with over-the-counter pain medications such as ibuprofen (Advil, Motrin) or naproxen (Aleve). Most patients can return to their normal activities the next day.

Until your root canal procedure is completely finished -- that is to say, the permanent filling is in place and/or the crown, it's wise to minimize chewing on the tooth under repair. This step will help avoid recontamination of the interior of the tooth and also may prevent a fragile tooth from breaking before the tooth can be fully restored.

As far as oral health care is concerned, brush and floss as you regularly would and see your dentist at normally scheduled intervals.

How Successful Are Root Canals?

Root canal treatment is highly successful; the procedure has more than a 95% success rate. Many teeth fixed with a root canal can last a lifetime.

Also, because the final step of the root canal procedure is application of a restoration such as a crown or a filling, it will not be obvious to onlookers that a root canal was performed.

Complications of a Root Canal

Despite your dentist's best efforts to clean and seal a tooth, new infections might emerge after a root canal. Among the likely reasons for this include:

- More than the normally anticipated number of root canals in a tooth (leaving one of them uncleaned)
- An undetected crack in the root of a tooth
- A defective or inadequate dental restoration that has allowed bacteria to get past the restoration into the inner aspects of the tooth and recontamination the area
- A breakdown of the inner sealing material over time, allowing bacteria to recontamination the inner aspects of the tooth

Sometimes retreatment can be successful, other times endodontic surgery must be tried in order to save the tooth. The most common endodontic surgical procedure is an apicoectomy or root-end resection. This procedure relieves the inflammation or infection in the bony area around the end of your tooth that continues after endodontic treatment. In this procedure, the gum tissue is opened, the infected tissue is removed, and sometimes the very end of the root is removed. A small filling may be placed to seal the root canal.

Cost of a Root Canal

The cost varies depending on how severe the problem is and the tooth affected. Many dental insurance policies cover endodontic treatment. A ballpark estimate for the root canal treatment itself (not

including a dental restoration following the procedure) performed by a general dentist could range from \$390 to \$500 for an incisor and \$520 to \$800 for a molar.

Alternatives to a Root Canal

Saving your natural teeth is the very best option, if possible. Your natural teeth allow you to eat a wide variety of foods necessary to maintain proper nutrition. The root canal procedure is the treatment of choice.

The only alternative to a root canal procedure is having the tooth extracted and replaced with a bridge, implant, or removable partial denture to restore chewing function and prevent adjacent teeth from shifting. These alternatives not only are more expensive than a root canal procedure but require more treatment time and additional procedures to adjacent teeth and supporting tissues.

Root Canal Prevention

Since some of the reasons why the nerve of a tooth and its pulp become inflamed and infected are due to deep decay, repeated dental procedures on a tooth and/or large fillings, following good oral hygiene practices (brushing twice a day, flossing at least once a day, and scheduling regular dental visits) may reduce the need for a root canal procedure. Trauma resulting from a sports-related injury can be reduced by wearing a mouth guard.