

Overview - Root canal treatment

Root canal treatment (endodontics) is a dental procedure used to treat infection at the centre of a tooth.

Root canal treatment is not painful and can save a tooth that might otherwise have to be removed completely.

Why it's needed

The infection at the centre of a tooth (the root canal) is caused by bacteria that live in the mouth and invade the tooth.

This can happen after:

- Tooth decay
- leaky fillings
- damage to teeth as a result of trauma, such as a fall

Tooth structure

A tooth is made up of 2 parts. The crown is the top part of the tooth that's visible in the mouth.

The root extends into the bone of the jaw, anchoring the tooth in position.

Teeth also consist of:

- enamel – the hard outer coating
- dentine – a softer material that supports the enamel and forms most of the tooth
- cementum – a hard material that coats the root's surface
- dental pulp – the soft tissue at the centre of the tooth

The root canal system contains the dental pulp and extends from the crown of the tooth to the end of the root.

A single tooth can have more than 1 root canal.

When root canal treatment is needed

Root canal treatment may be needed when dental xrays show that the pulp has been damaged by a bacterial infection.

The pulp may become inflamed if it's infected by bacteria, allowing the bacteria to multiply and spread.

The symptoms of a pulp infection include:

- pain when eating or drinking hot or cold food and drink
- pain when biting or chewing
- a loose tooth

As the infection progresses, these symptoms often disappear as the pulp dies.

Your tooth then appears to have healed, but the infection has in fact spread through the root canal system.

You eventually get further symptoms such as:

- pain when biting or chewing returning
- swelling of the gum near the affected tooth
- pus oozing from the affected tooth
- a swollen cheek or jaw
- the tooth becoming a darker colour

It's important to see your dentist if you develop toothache. If your tooth is infected, the pulp cannot heal by itself.

Leaving the infected tooth in your mouth may make it worse.

There may also be less chance of the root canal treatment working if the infection within your tooth becomes established. Antibiotics are a type of medicine used to treat bacterial infections, but they are not effective in treating root canal infections. They can though help to treat infection that spreads beyond the root and causes swelling.

How root canal treatment is done

To treat the infection in the root canal, the bacteria need to be removed.

This can be done by either:

- removing the bacteria from the root canal system (root canal treatment) with fine hand and rotary instruments, and cleaning with disinfectants within the canal structure. This is usually undertaken with a rubber (non latex) sheet, called a rubber dam attached over the tooth to keep it clean from entry of bacteria, and the protection of the patients throat when using very small instruments.
- removing the tooth (extraction)

But removing the tooth is not usually recommended as it's better to keep as many of your natural teeth as possible.

Before having root canal treatment, you'll usually be given a local anaesthetic.

This means the procedure should be painless and no more unpleasant than having a filling.

After the bacteria have been removed, the root canal is filled and the tooth sealed with a filling or crown.

In most cases the inflamed tissue near the tooth will heal naturally. When treating a tooth on occasions due the shape of the root it is possible that the roots cannot be cleaned effectively, or due to tortuous canals instruments used for the cleaning can break within the tooth. This may lead to the extraction of the tooth, as the instruments cannot generally be removed out of the canal once broken.

Root canal treatment is usually successful. In about 9 out of 10 cases a tooth can survive for up to 10 years after root canal treatment. If the treatment fails extraction may be necessary.

Recovering from root canal treatment

It's important to look after your teeth when recovering from root canal treatment.

You should avoid biting on hard foods until your treatment is complete.

After your final treatment, your restored tooth should no longer be painful, although it may feel sore for a few days.

You can take over-the-counter painkillers, such as paracetamol or ibuprofen to relieve any discomfort.

Return to your dentist if you still have pain or swelling after using painkillers.

In most cases it's possible to prevent the need for complex dental treatment by:

Keeping your teeth clean, maintaining a healthy diet with minimal snacking, avoiding smoking and alcohol, and seeing your dentist for regular examinations.