

ROOT CANAL THERAPY



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Damaged teeth – should we save or extract?

Broken teeth are painful. Teeth are living structures that need to be cared for, just like any other body part. The canal that runs in the centre of the tooth contains the nerves and blood vessels that keep the tooth alive. Together the structures in the canal are called the pulp.

If the tooth breaks, for example whilst chewing a bone, the pulp is exposed and the tooth is considered open. Bacteria and debris can then enter the canal, and a painful inflammation called *pulpitis* develops. As a result of the swelling and inflammation, the nerves and blood vessels of the pulp eventually die (*pulp necrosis*). Infection-causing bacteria are then free to move down the canal and then out of the root apex. If the bone surrounding the root becomes infected – *apical periodontitis* – a very painful tooth root abscess results. Infection can even travel through the bone to affect the roots of neighbouring teeth. The initial tooth fracture may be very small and difficult to see, but the consequences can be extremely painful for the animal. Dental xrays are needed to assess the whole root and the effects on the surrounding bone structure.

It makes sense then that any fractured tooth with pulp exposure should be treated as soon as possible. Root canal therapy is a way of saving the tooth and its function, whilst relieving the pain and preventing infection. If root canal therapy isn't suitable for that tooth, extraction is necessary.



The sensitive pulp is exposed in this fractured tooth.

If this happens to us humans, it would be treated as a dental emergency.



What are the benefits of root canal therapy?

Root canal therapy:

- is less invasive than extraction, and usually less painful
- in most cases, saves the tooth for the rest of the dog's life
- necessitates minimal diet change after surgery

Extraction:

- of a broken tooth with good periodontal support requires soft tissue surgery, and potentially bone removal. Incisions are made in the gum to access the supporting bone, which may need to be removed to free the root(s) of the tooth. Sutures are then placed to close the surgical wound.
- requires a modified (soft) diet for around two weeks to allow the surgery site to heal. There may be some associated discomfort during the healing period. Chewing behaviour may need to be modified in that time - especially if the dog is a ball, stick or toy chewer.

Can you “wait and see”?

- Broken teeth are painful and leaving them without treatment is not fair on the dog.
- Dog will continue to eat and drink without complaining about their severe pain, since they cannot ask their owners to have the tooth treated.
- The signs of pulpitis and apical necrosis may be subtle or invisible to the naked eye; to “wait and see” what happens is not a feasible way to manage these teeth. Dental xrays are required to make a proper assessment of the tooth and surrounding bone.

Which teeth are worth saving?



Dog canine

The upper and lower canines provide significant support to the jaw and help keep the tongue in its correct position.



Cat canine

Cat canines are particularly important for maintaining the shape of the mouth, grooming, eating and self-defence.



Dog carnassial

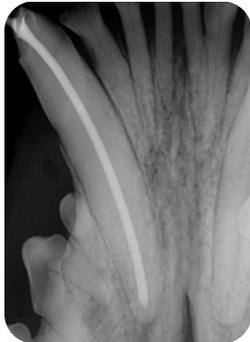
These large premolars are the dog's main chewing teeth, used for holding, carrying and breaking food into small pieces.

There are **8 teeth** in the dog's mouth and **4 teeth** in the cat's mouth that are very important for function. These are worth saving wherever possible. The remaining teeth are still important, but less essential to daily life.



What is root canal therapy?

Root canal therapy is a treatment that involves removing infected or diseased pulp from the tooth's root canal, through an access point in the crown. The canal is cleaned and sterilised, and shaped and dried. It's then filled with an inert material, and finally, a filling (restoration) is placed in the crown of the tooth. This prevents bacteria from further accessing the root canal and protects the tooth from infection.



The pulp cavity of this lower canine has been filled with a biocompatible material.



Once the canal has been replaced, the crown is restored with a filling, to keep the tooth sealed.



Standard root canal therapy preserves the structural integrity of the tooth. This allows the pet to keep the tooth and the function of the tooth is maintained.

Post operative care

Immediately after the surgery pain relief and antibiotics are often used. The procedure is performed under general anaesthesia, so your pet will need to be supervised and kept warm and quiet when discharged from hospital. You can offer your pet their preferred food, although it's a good idea for this to be softened for the first 2-3 days. There will usually be:

- a post op check in 7-10 days
- repeat xrays every 12 months to monitor for potential failure – there should be a yearly oral examination and clean.

The cause of the original damage to the tooth must be removed, or the newly repaired tooth – not to mention the other teeth in the mouth – are at risk of repeat trauma. The complication rate is around 5-8% and in some cases, the repaired tooth may still need to be extracted.

Most animals will have a normal life with a fully functional tooth that is pain free.



Other things to note

- Costs vary from case to case, but root canal therapy is usually only a little more expensive than removing the tooth and is a lot less invasive.
- Not all tooth fractures are amenable to root canal therapy. If there is extensive tooth damage, including to the tooth below the gum line, root canal therapy may not be suitable, and extraction will be recommended.
- After root canal therapy, remember to restrict access to very hard toys and treats. This also applies to normal teeth - they break more easily than you might think! A general rule of thumb is that if you cannot break it or bend it yourself, then it's too hard for the dog. This applies particularly to
 - deer antler
 - hooves
 - stones
 - hard timbers
 - hard plastic balls
 - bones
- Whilst root canal therapy might sound "excessive" or "over the top" for animals, remember that it is less painful than surgical extraction, allows the pet to keep their functional tooth, and prevents infection from spreading through the root of the damaged tooth to the surrounding structures.

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