



DENTAL DISEASE IN CATS

Dental disease is a very common condition of cats both young and old. As many as 85% of cats aged 3 years or more have some degree of dental disease.

Dental disease tends to be more common and more severe as cats get older, just like with people. It is commonly associated with the accumulation of **dental plaque** (as a result of bacteria in the mouth) and tartar formation, which can result in **periodontal disease** – disease affecting the teeth and the structures that support the teeth and keep them healthy.

PLAQUE

Plaque is a complex BIOFILM OF BACTERIA that develops on the surface of the teeth. It is not initially easily visible, but can be demonstrated by using a disclosing solution to stain the plaque film. As the plaque layer becomes thicker, it can often be seen as a soft grey or white film on the tooth surface. Plaque is the most common underlying cause of dental disease, so it is important to take measures to help reduce its development. Plaque can be removed with **tooth-brushing**, helping to keep the gums healthy.

TARTAR

If plaque is left undisturbed, it can become hardened due to deposition of substances such as calcium within the plaque layer. Hard calcified plaque is known as **TARTAR or CALCULUS**.

Tartar is clearly visible as a cream/yellow or brown hard deposit on the tooth surface. Simple measures such as tooth brushing cannot usually remove tartar as it is too hard, so dental scaling performed by your vet under a general anaesthetic is usually required to remove it.

PREDISPOSING FACTORS FOR DENTAL DISEASE

TOOTH ALIGNMENT

Abnormally positioned teeth (**malaligned**) are more likely to accumulate plaque and tartar than those which are correctly positioned. This is because the natural abrasion that occurs during chewing is not present.

- **BREED** – very short-nosed breeds (**Brachycephalics**) such as Persians, Chinchillas and British Shorthairs, almost invariably have abnormally positioned teeth, sometimes severely. Their jawbones are often too small to accommodate the teeth, resulting in overcrowding and misalignment.
- **DECIDUOUS TOOTH RETENTION** – In some cats, deciduous teeth (“baby / milk teeth”) may be retained after the permanent teeth have erupted. This can cause the adult tooth to grow at an abnormal angle, resulting in permanent misalignment.



- **TRAUMA or CONGENITAL ABNORMALITIES** – Sometimes a cat’s jaw may be abnormally shaped either because the cat has a congenital abnormality (abnormality present from birth), such as an undershot or overshot jaw, or perhaps resulting from trauma, such as a healed fractured jaw. These factors can also cause tooth misalignment.

DIET

Diet is thought to play some role in the progression of dental disease in some cats. It is thought that feeding only wet food provides little abrasive action against the teeth when chewing, offering little to prevent plaque formation, and may also encourage bacteria and plaque formation if food accumulates on or around the teeth. Dry foods tend to encourage chewing and are more abrasive, but the relationship between food and dental disease is complex, and the **structure of the chunks of food** is actually probably more important than whether it is a wet or dry diet.

Some specialised diets are available that are specifically aimed to help prevent plaque and tartar formation. They are designed so that the kibble or wet chunks increase tooth penetration to provide a more abrasive action against the tooth to reduce tartar accumulation.

INFECTIOUS DISEASE

Some infectious diseases are associated with gingivitis, such as **FELINE IMMUNODEFICIENCY VIRUS (FIV)**, **FELINE LEUKAEMIA VIRUS (FeLV)** and **FELINE CALICIVIRUS (FCV)**. FIV and FeLV can cause immunosuppression, predisposing to periodontal disease and gingivitis, whereas persistent FCV may also be associated with some cases of chronic gingivitis or stomatitis (inflammation of the gums or mouth). Your vet may advise tests to screen for such viruses.

Other predisposing factors include:

- **ORAL DENTAL CARE** – lack of any home dental care.
- **CHEMISTRY IN THE MOUTH** – the bacteria and other local changes in the mouth will have an important effect.
- **GENETICS** – some cats are probably genetically more predisposed to developing dental disease than others.

GINGIVITIS

Gingivitis refers to inflammation of the gums, and is extremely common, found in cats of all ages, and can vary wildly in severity.

- **MILD GINGIVITIS** – very common in cats of all ages, occurring as quickly as 48 hours after cleaning as plaque formation may have begun. Mild gingivitis does not affect the tooth root and dental homecare such as tooth-brushing, may easily reverse most cases.
- **MODERATE GINGIVITIS** – also very common. If plaque accumulates on the teeth, the gingiva (gums) will become more inflamed over time and gum recession may be seen at this stage. **Gingival pockets** may also be evident, where the gum has started to separate away from the tooth, providing an ideal site for food, bacteria, plaque and tartar accumulation. If calculus has not already formed, many cases of moderate gingivitis may also be reversed with good regular dental homecare, however gingival pocket formation is difficult to reverse.
- **SEVERE GINGIVITIS** – this can be very painful for the cat, who may show signs such as **salivation, halitosis (bad breath), pawing at the mouth, difficulty eating, and sometimes obvious bleeding from the mouth (or blood in saliva)**. Severe gingivitis is common in cats that have a lot of plaque and calculus on the teeth. Gum recession is also common in these cases, but may not be obvious as the gums are so inflamed, and gingival pockets are usually deeper than with moderate gingivitis. This stage of gingivitis cannot usually be reversed with tooth-brushing, and the mouth is often too sore to brush. A general anaesthetic will usually be necessary to scale and polish the teeth, and extractions may be needed if gum recession has resulted in tooth root exposure.

JUVENILE CATS around 5 months of age frequently develop gingivitis, and you may notice an obvious smell to your cat's breath. This usually occurs due to the adult teeth erupting through the gums causing some disturbance and inflammation. You might even notice the odd tooth lying around on the floor – this is completely normal and should settle down in 4-6 weeks, though any obvious signs of discomfort should warrant a check-up by your vet.

PERIODONTITIS

PERIODONTITIS is gum disease at an advanced stage, more commonly associated with older cats. The gums are usually very inflamed with recession, and large amounts of calculus are usually present on the teeth. The ligaments that surround and support the tooth become diseased and break down, exposing the tooth root so that the tooth becomes unstable in the socket. **Bacterial infection** is common, and pus may be seen surrounding the tooth. Clinical signs will be similar to that of severe gingivitis, and at this stage, extraction of affected teeth is the only treatment option.



STOMATITIS

STOMATITIS IS INFLAMMATION OF THE ORAL CAVITY. **Lymphocytic Plasmacytic Gingivostomatitis Complex (LPGC)** or **Chronic Gingivostomatitis** is a disease where the inflammation spreads from the gums to other areas of the mouth as well. This most commonly happens at the back of the mouth, though the inflammation can extend virtually anywhere within the oral cavity.

The exact cause of this disease is not completely clear, but some cases are associated with viral infections such as **Feline Calici Virus (FCV)** and **Feline Immunodeficiency Virus (FIV)**. However, while plaque and some calculus may be present, the amount of gingivitis seen in this condition is quite disproportionate, and it is believed that some immune dysregulation is involved, causing the cat's immune system to respond too aggressively to bacteria or other infectious agents in the mouth.

Stomatitis is an **extremely painful disease**, with affected cats often having **difficulty eating, hypersalivation, pawing at the mouth**, and potentially other signs of oral pain. They may also lose weight due to a reduced appetite.

Various treatments may be used including scaling and polishing the teeth under general anaesthetic, with follow-up home care, antibiotics and anti-inflammatory medications. The response to therapy can be very variable between patients, and many will require steroids to control the inflammation, and sometimes immunosuppressive drugs may be used. In severely affected cats, **extraction of all of the cheek teeth** can help with long-term control as it removes the site of persistent bacteria within the mouth.

TOOTH RESORPTION

TOOTH RESORPTION (TR), previously also termed **Feline Odontoclastic Resorptive Lesions (FORLs); Resorptive Lesions; or Neck Lesions** – is very common in cats of all ages, with an estimated **70% OF CATS OVER 5 YEARS HAVING AT LEAST ONE TOOTH RESORPTION.**

A tooth resorption is an erosion of the tooth, frequently formed at the gum line, but can also be found below the gumline in the tooth root. The cause of tooth erosion is not fully understood, but cells called **odontoclasts** are found in these erosions which break down the tooth substance.

Tooth resorptions can be difficult to identify in conscious cats, and a dental explorer probe will often be utilised to feel for the lesions on the tooth surface whilst your cat is under general anaesthetic – these lesions are **very sensitive** and can cause a lot of pain due to the exposed nerves within the affected tooth, so a probe cannot ethically be used on a conscious patient, even if they were to allow such an invasion of their mouth! When visible, the lesion will look like a **pink fleshy piece of gum** growing out of the tooth – this is granulation tissue produced to try to “fill in” the cavity from the erosion. If tooth resorptions are left, then they cause gradual erosion of the tooth to the point where the crown will fracture off leaving the root behind. The cavities that are produced during tooth resorption are not due to decay as with human and canine dental cavities, so filling them is not a viable option, and affected teeth need to be extracted. Dental x-rays may also be advised by your vet to investigate for tooth resorptions in the tooth roots.

FRACTURED TEETH

FRACTURED TEETH will need to be assessed individually to decide if tooth extraction is necessary.

Generally speaking, teeth that have fractured through to the **DENTINE** or **PULP CAVITY** (blood and nerve supply within the tooth), are likely to need extraction as the tooth will be painful and at risk of developing an infection and tooth-root abscess. If only the tip of a crown is fractured without exposure of dentine or pulp, then extraction may not be necessary. However, the enamel covering of cat's teeth is so thin compared to dogs, that the majority of fractured teeth will require extraction.

Cats with a fractured tooth may show signs such as **pawing at the mouth, salivation, and favouring one side of the mouth when eating.**

DENTAL PROCEDURES

Unlike humans, our animal patients will not sit still to allow dental work to be performed (as they cannot understand what we are trying to do!), so this must always be carried out under a **GENERAL ANAESTHETIC**. There have been recent reports of some pet-care companies such as groomers, performing so-called “*anaesthesia-free dentistry*” on cats, and more commonly dogs, whereby the teeth are scaled and polished with the patient fully conscious. These procedures are **NOT IN ANYWAY ADVOCATED BY VETERINARY PROFESSIONALS**, as not only are they unethical to the animal, but also probably cause more harm than good to the teeth, and a complete oral examination and cleaning of all surfaces of the teeth (including under the gumline), cannot be obtained.

Dental disease is an easy condition to overlook in our pets, as the teeth are not all obviously visible to us. Dental conditions can also be frequently ignored even when the problem has been brought to the owner's attention, as many cats will not show obvious signs of pain or discomfort associated with dental disease, until the problem has become very severe – cats are “*masters of disguise*” – they are programmed as **self-sufficient survivalists**, meaning that their natural survival instincts causes them to hide such signs of vulnerability.

Although anaesthetising a cat can be worrying, the longer diseased teeth are left ignored, then the longer the anaesthetic and dental procedure will ultimately take due to the advancement of disease. There is also evidence in humans that dental disease can have a knock-on **systemic effect** to other vital organs such as the **heart and kidneys**, and this is likely to occur in our cats also.

Measures such as **pre-anaesthetic blood profiles** can be performed to check your cat's general health before undergoing dental procedures, along with **intravenous fluids** throughout the anaesthetic period to help support your cat's circulation and blood pressure – such measures are especially recommended for older cats or those with concurrent illnesses such as kidney disease.

Dental procedures are often seen as an expensive procedure for cats to undergo, as it can be difficult to appreciate the work involved when compared to our own dentistry needs. The first thing to appreciate is that your cat is having to undergo a general anaesthetic. Not only does this mean additional drugs, but the whole process of administering anaesthesia to a patient requires an additional person (i.e. anaesthetist) for monitoring your pet throughout the entire procedure – before, during, and after the actual dental, and also specialist equipment for actually administering general anaesthesia and ensuring your cat can breathe safely, whilst removing waste products, along with specialist monitoring equipment.

Dental procedures also take a great deal of time – **every tooth must be examined individually and charted**, then each tooth must be scaled and polished on all accessible surfaces. **Dental radiographs (x-rays)** may also be performed, followed by extraction of problem teeth as previously described. If your cat is insured, then it is important to speak with your individual pet insurance provider, to see if they will cover for dental procedures, as unfortunately many do not unless under specific circumstances, such as a fractured tooth.

Remember, DENTAL DISEASE IS THE MOST COMMON CONDITION we see affecting pet cats, and although cats are “master of disguise” and therefore excellent at hiding pain and discomfort – dental disease can be a VERY PAINFUL CONDITION to live with affecting your cat’s quality of life – think about any tooth ache you may have experienced!

