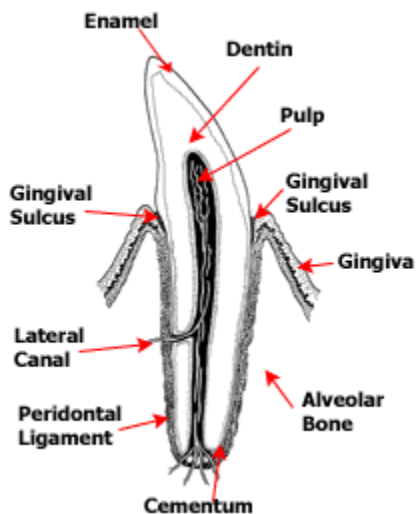


PERIODONTAL DISEASE



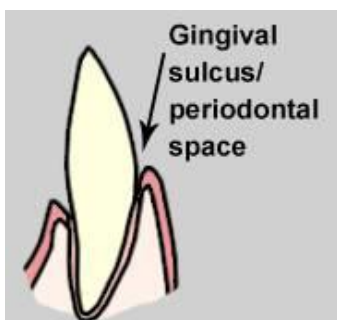
“Perio” means around, “dental” means tooth: Periodontal disease is disease around the outside of the tooth.

The Tooth, the Whole Tooth and Nothing but the Tooth

In this picture we see the crown of the tooth (the part we see when looking in the mouth), the root of the tooth (the part we do not see), and the attachment of the tooth to the bone. The tooth sits in a socket and is held there by periodontal ligaments. The tooth receives nutrients from blood vessels inside the pulp chamber of the tooth. Periodontal disease takes place inside the socket in which the tooth is seated.

Out of all the members of your family, the chances are it will not be difficult to guess who has the worst dental hygiene: the pets. They do not brush their teeth nor do they floss and this goes on for years. If you are ever curious as to what happens if teeth go for years without brushing (or you want to show your children what will become of their teeth should they fail to brush regularly), you have only to look at your pet's teeth and smell your pet's breath.

A full 85% of pets have periodontal disease by age 3 years.

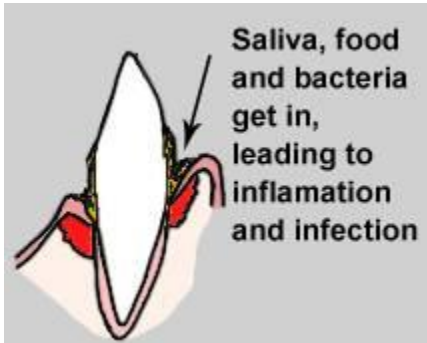


The space between the tooth and gum is the gingival sulcus or periodontal space. (Graphic by MarVistaVet)

Normal mouth in a young dog. (Graphic by MarVistaVet)

In a normal mouth, the teeth are clean and white and the gums attach smoothly to the tooth. There is no redness or tartar. The tooth is bathed in saliva, bacteria and food particles (plaque) but if this is brushed away, it never mineralizes into tartar.

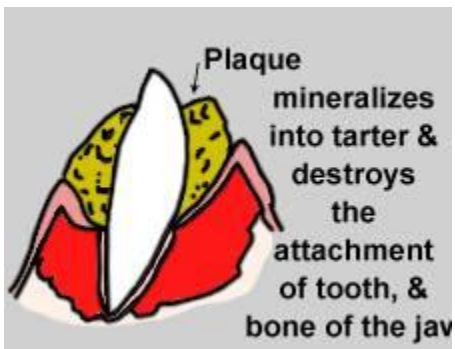
GINGIVITIS



Saliva, food & bacteria (all of which collectively form plaque) collect in the gingival sulcus leading to inflammation and infection. (Graphic by MarVistaVet)



If we do not regularly disinfect our mouths and brush away the plaque, the plaque will mineralize into tartar (also called calculus – gritty material that the dental hygienist scrapes away). Tartar, being solid and gritty, blocks oxygen from bathing the outer tooth and thus changes the nature of the bacteria that can live around the tooth. Inflammation and tenderness result in the gingival sulcus, also known as **gingivitis**



Tartar builds up covering most of the crown of the tooth as well as the attachment of the tooth root below the gum. (Graphic by MarVistaVet)



Worse still, the bacteria of the mouth can seed other areas in the body, leading to infection in the heart, liver, kidney or virtually anywhere the bloodstream carries them. **Periodontal disease** will shorten your pet's life expectancy and reduce their quality of life due to chronic infection and pain.

In short, if regular home care is not performed on teeth, plaque will mineralize in the gingival sulcus, accumulate and destroy the tooth's attachment. The tooth will be lost and the jaw bone can potentially break or even disintegrate (a serious problem in very small dogs).

Gingivitis is reversible. Bone loss, once it starts, is not reversible.

What to do About Periodontal Disease

Fortunately, there is a lot we can do to prevent periodontal disease and the rules are basically the same whether the teeth belong to a pet or to a human: Professional cleaning and home care. Expect your pet to need a professional teeth cleaning every 6 to 12 months and expect general anesthesia to be necessary so that each tooth will receive proper attention and care. Home care is ideally a daily part of tooth maintenance, but even brushing just twice a week can remove most plaque before it can mineralize into tartar. Not every pet is amenable to hands-on oral care and not every person's schedule is amenable to it either, so there are some lower maintenance options which we will review as well.

It is a good idea to become comfortable opening your pet's mouth and looking inside. Lift the lip and look at the teeth, especially the back teeth. Open the mouth and look at the inside of the teeth and at the tongue. If you have pets of different ages, compare what you see inside. Many pet owners have never looked at their pet's teeth and are surprised at what they see. If your pet is cooperative, get used to working with your pet's mouth as this will be central to home care and will help you assess your pet's oral situation.

Be sure to look at the back teeth as this is where tartar is usually the heaviest. If you see tartar deposits, it is probably time for a professional teeth cleaning.

Regular Professional Cleaning

It should not be surprising that dental health requires periodic professional cleaning regardless of whether the mouth in question belongs to a person, a dog, a cat, a horse, or some other animal. Home care of the teeth is never perfect and periodically tartar must be properly removed and the tooth surface properly polished and disinfected. The professional cleaning performed at the veterinarian's office is similar to what a person receives at their dentist's office

More delicate tartar deposits are removed from the gum line with other dental instruments. Periodontal sockets are probed and measured to assess periodontal disease.

The roots are planed, meaning tartar is scraped from below the gum line, until the roots are smooth again.

The enamel is polished to remove any unevenness left by tartar removal.

The mouth is rinsed and possibly treated with a fluoride sealer or plaque repellent.

Professional notes are taken on a dental chart, noting abnormalities on each of a dog's 42 teeth or a cat's 30 teeth.

Important

It is important to note that "non-anesthetic" teeth cleaning is not comparable to the above service. It is not possible to perform the multi-step cleaning in a pet without general anesthesia. Cosmetic cleanings do not address periodontal disease where it occurs: under the gum line.

Home Care and Products

Toothpaste and Brushing

Just as with your own teeth, nothing beats brushing. The fibers of the toothbrush are able to reach between teeth and under gums to pick out tiny deposits of food. A toothbrush acts as a tiny scrub brush for the closest possible cleaning.

Notice the shape of the canine and feline brushes and how they conform to a pet's mouth. You can use a human toothbrush but you will probably find it difficult to manipulate in the pet's mouth. Never use a human toothpaste for a pet as these contain sudsing agents (people like to see foam when they brush their teeth) which are not meant to be swallowed in quantity. Animal toothpastes come in pet-approved flavors (chicken, seafood, and malt) in addition to the more human-appreciated mint, and all are expected to be swallowed.

Finger brushes are available and are smaller for puppies and kittens.

Studies have shown that brushing three times a week was adequate to maintain healthy teeth and gums but daily brushing was needed to control existing gingivitis.

Do's and Don'ts of Brushing Your Pet's Teeth

DON'T USE A HUMAN TOOTHPASTE ON YOUR PET.

DON'T ATTEMPT TO CLEAN THE INNER SURFACE OF YOUR PET'S TEETH. NATURAL SALIVA CLEANS THIS SURFACE ON ITS OWN.

DON'T PERFORM DENTAL HOME CARE DURING THE FIRST WEEK AFTER A FULL DENTISTRY IN THE HOSPITAL AS YOUR PET'S GUMS MAY BE TENDER.

DON'T CONSIDER DENTAL HOME CARE AS AN ALTERNATIVE TO FULL DENTAL CLEANING IF YOUR PET HAS MORE ADVANCED DENTAL DISEASE.

DO START SLOWLY, GIVE TREATS AT THE END OF EACH SESSION, MAKE IT ENJOYABLE, PRAISE HIGHLY

DO USE A TOOTHBRUSH WITHOUT ANY PASTE AT FIRST SO THAT YOUR PET MAY GET USED TO THE OBJECT IN THE MOUTH BEFORE HAVING TO CONTEND WITH FLAVOR.

DO TRY TO PERFORM DENTAL HOME CARE AT LEAST ONCE DAILY.

Dental Wipes, Rinses and Pads

Some animals, especially those with tender gums, will not tolerate brushing but are more amenable to disinfecting wipes or pads. These products will wipe off plaque deposits from the surface of the tooth and, though they lack the ability to pick food particles out of the gum socket, they are probably the next best thing to brushing and, like brushing, these products are best used daily.

Dental Treats

For many people, doing anything inside their pet's mouth on a regular basis is simply never going to happen. Fortunately, all is not lost: chewing on a proper dental chew daily can substantially reduce plaque and tartar by up to 69%. Chews should be used daily in order to achieve these results; occasional use is not going to be helpful and the dog must actually chew on the treat.

Dental chews must be the proper size for the dog in question to avoid a choking hazard and can have sophisticated additional ingredients. Examples include ingredients to prevent mineralization of plaque (i.e. hexametaphosphate in C.E.T. Dentahex chews) or to prevent future plaque attachment after current plaque is rubbed off (delmopinol in **Oravet** brand chews), and green chlorophyll to help with bad breath. The Greenie is a green chew treat for dogs, found effective in removing plaque and is generally found highly palatable to dogs. The Greenie has been reformulated using soy instead of wheat but still seems as irresistible as ever. The canine Greenie is flexible while the feline Greenie is crunchy. Both have been approved by the Veterinary Oral Health Council and daily use is needed to realize meaningful results.

Dental Diets

There is a common misconception that simply feeding a kibbled diet will protect the teeth from dental disease. Consider what it would be like to attempt to replace brushing your own teeth with eating crunchy foods and it is easy to see how ineffective this method would be. When it comes to pet foods, much of the kibble is swallowed whole and not chewed at all.

Clearly, there must be more to a dental diet than simple kibbling and in fact there is. Dental diets on the market today use several techniques to help reduce plaque. The first is that the kibbles are very large, which means the pet must chew them before swallowing them. These diets are high in fiber, which means the kibbles do not shatter when chewed but instead the tooth sinks into the kibble allowing plaque to be essentially scrubbed away. The large kibbles may pose an acceptance problem for the pet, leading the owner to use them as treats or mixed with other kibbles. The smaller the percentage of the diet these kibbles represent, the less benefit will be reaped. It is also important to realize that these diets are helpful only in cleaning the molars and premolars (i.e. the chewing teeth) and do not help the fangs or incisors.

What is the Veterinary Oral Health Council?

The Veterinary Oral Health Council evaluates dental products made for pets to be sure they actually do what they say they are going to do with regard to plaque and tartar control. If a product passes their evaluation protocol, it is awarded the VOHC Seal of Approval. See their website for a [list of products](#) that have merited this award.

Use your judgment with chew toys. A chew can be readily swallowed in a large chunk and lead to intestinal obstruction. A pet with diseased teeth may break teeth on a hard chew.

COW HOOVES AND BONES ARE NOT APPROPRIATE CHEW TOYS AS THEY ARE TOO HARD AND READILY BREAK TEETH.

Pig ears are well loved by most dogs and have been known to have bacterial contamination. Dogs with sensitive stomachs often do not tolerate the smokey flavor. No studies have been performed regarding prevention of dental disease using pig ear chews.

Feline Oral Resorptive Lesions (FORLs)



A common feline oral malady is tooth resorption (TR). Greater than half of all cats older than three years old will have at least one tooth affected by resorption; it affects dogs less frequently. These tooth defects have been called cavities, neck lesions, external or internal root resorptions, feline odontoclastic resorption lesions (FORLs), and cervical line erosions.

Tooth resorptions are usually found on the outside of the tooth where the gum meets the dental surface. The lower jaw premolars are mostly affected, however tooth resorption can be found on any tooth.

The cause is unknown, but theories supporting an autoimmune response, calicivirus, and metabolic imbalances relating to calcium regulation have been proposed. Commonly the resorption starts at the gum line and progresses, eroding sensitive dentin. Some affected cats show pain and jaw spasms whenever the lesion is touched. Others show increased salivation, oral bleeding, or difficulty eating. Most times it is up to the veterinarian or astute owner to diagnose tooth resorption.

There are five recognized stages of tooth resorption. Initially in stage 1 only an enamel defect is noted. The lesion is usually minimally sensitive because it has not entered the dentin. In stage 2, the lesion penetrates enamel and dentin. When resorption progresses into the pulp chamber (nerve) stage 3 has occurred. In stage 4, large amounts of the tooth's hard structure have been destroyed. By the time stage 5 has occurred, most of the tooth has been resorbed, leaving only a bump covered by gum tissue.

Intraoral x-rays are essential to evaluate all the teeth to determine the best course of therapy. Depending on what is seen in those intraoral x-rays, treatment for tooth resorption involves either extraction of the entire tooth and roots, or a partial tooth extraction. In cats affected by stage 5 without inflammation, treatment is not necessary.