



Complete Oral Health Assessment and Treatment (COHAT)

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The Standard of
Veterinary Excellence

Complete Oral Health Assessment and Treatment (COHAT)

What is COHAT?

It is an assessment of your pet's whole mouth conducted through an oral exam and dental x-rays while under anesthesia. A COHAT always includes a professional dental prophylaxis (the cleaning and polishing of teeth). Your veterinarian will use the findings to develop a treatment plan specifically created for any problems that were found.

Does my pet need COHAT? Why?

Yes. A dental cleaning alone does very little for your pet's oral health; it simply makes the teeth look nice and takes care of "doggy breath" on a temporary basis. A dental cleaning does not treat any issues below the gum-line. COHAT includes a dental cleaning and polishing plus x-rays – which are a very important part of the procedure. Without dental x-rays, you just see the tip of the iceberg. In dogs and cats, more than 50 % of the tooth is below the gum-line.

COHAT can prevent **periodontal disease**, which, in turn, can be a risk factor for internal organ damage. Oral health affects the entire body; COHAT can help your veterinarian find and treat dental problems before they begin to affect your pet's jaw, sinuses and organs.

What is Periodontal Disease and why should I be concerned?

Periodontal disease is one of the most **preventable** common conditions affecting dogs and cats.

Gingivitis is the early stage of **Periodontal disease**. Periodontal disease is an inflammation of the tissues that surround your pet's teeth and is caused by a buildup of plaque.

Approximately 80% of dogs show signs of gum disease by age three.
Periodontal disease has been linked as a risk factor to heart, kidney, and liver problems in dogs.



Stage 1: Gingivitis



Stage 2: Early periodontal disease



Stage 3: Moderate periodontal disease



Stage 4: Advanced periodontal disease

Image credit: southhyland.com

How do I know that my dog or cat has periodontal disease?

Here are some signs:

- Red/bleeding gums

- Blood on a chew toy
- Vocalizing when yawning or eating
- Loose teeth
- Bad breath
- Lumps or bumps in the mouth
- Ropy or bloody saliva
- Head shyness (your pet does not want you to touch his/her head)
- Drooling
- Difficulty or refusing to eat/dropping food

Please note that you may not be able to see the extent of the disease as plaque and calculus spreads **under** the gum line.

So how does periodontal disease begin?

Bacteria in the mouth forms a substance called plaque that sticks to the surface of the teeth. Minerals in the saliva harden the plaque into dental calculus (tartar) after 48 hours, which then firmly attaches to the teeth. You can see tartar above the gum line but that is not the cause of the disease, it's what's under the gumline that is most important.

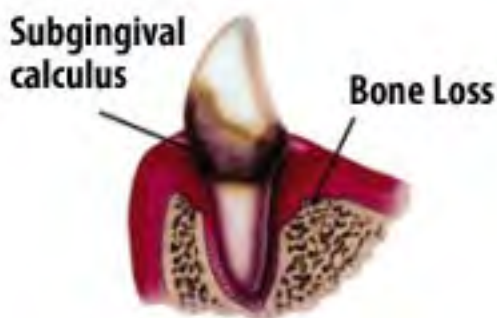


Figure 1 Credit: *Aspengrove Veterinary Hospital*

Once plaque and calculus start spreading under the gum line – that is where the real problems begin. Bacteria in this 'sub-gingival' plaque begin a cycle of damage to the supporting tissues around the tooth. If left untreated further tissue damage will occur and the tooth will become mobile or the roots will become exposed, making your pet either uncomfortable or painful.

What is gingivitis?

Gingiva is the medical term for gums. Gingivitis is the inflammation of the gingiva/gums. This inflammation is a result of plaque bacteria that is 100 times more resistant to antibiotics than any other bacteria to be found in the body. Unlike other stages of periodontal disease, **gingivitis is reversible if treated promptly!**

Left untreated, gingivitis advances to periodontitis which affects the bone and tissues, eventually leading to tooth loss.

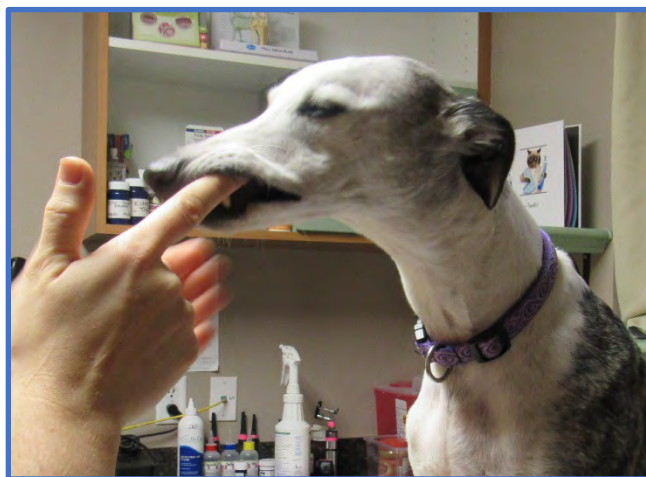
Also, **inflammation = pain**. Pets can go for years with painful gingivitis or even severe tooth root abscess without showing any signs.

- Bad breath is often the first thing you will notice. That odor is from bacteria, food particles and saliva accumulating at the gum line which in turn forms plaque on the teeth.
- Tartar encourages further bacterial growth, causing the gingiva (gums) to regress and pockets to form.
- The pockets further trap bacteria.
- Infection from the trapped bacteria weakens the tooth's support and exposes its roots.
- Eventually, the tooth loosens and falls out

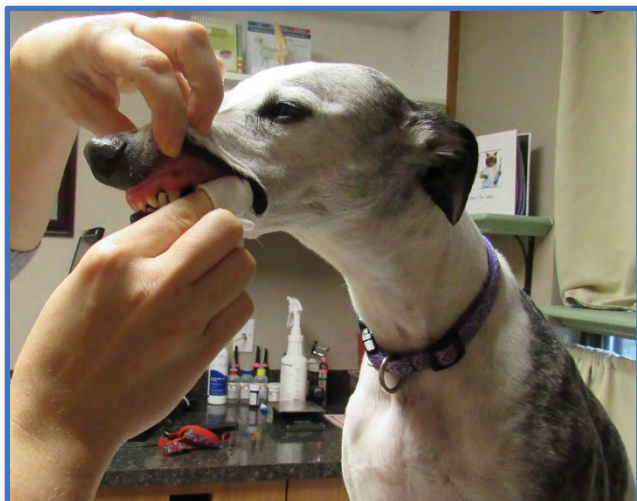
What can I do to prevent this from happening?

- Regularly brushing your pet's teeth. Daily is best but a minimum brushing every 48 hours will also be effective.
- Dental diet-approved kibble and treats
- Tooth friendly bendable/flexible toys that are not hard
- Dental wipes like Ora-Clens Dental Wipes for Dogs or Kissable Dental Wipes for Dogs
- Water additive like Oxyfresh Pet Water Additive
- COHAT

Brushing Your Pet's Teeth – 5 Easy Steps!



Step 1: Train your pet to become comfortable with you putting things in his/her mouth. Example: try dipping your finger in beef bouillon. Call your pet with a voice that means "treat" and let him/her lick the liquid off your finger. Then rub your soaked finger gently over his/her gums and teeth. After a few sessions, your pet should look forward to this and you can move on.



Step 2: Place gauze around your finger (you can again dip it in some bouillon). Gently rub the teeth in a circular motion with your gauzed finger. Repeat this for the number of sessions it takes to feel comfortable with this procedure. Remember to praise him/her and keep an upbeat attitude.



Step 3: After your pet is used to having the flavored gauze in his/her mouth, you are ready to start with a toothbrush, dental sponge, or pad. You need to get him/her used to the consistency of these items, especially the bristles on a brush. So, let him/her lick something tasty off the brush or pad so he/she gets used to the texture.



Step 4: Once your pet is comfortable with the cleaning item you are using, you can now add the toothpaste. Pet toothpastes either have poultry, malt, or some other flavor so hopefully your pet will find a taste that they like. To get your pet used to the flavor and consistency of the toothpaste, let him/her lick some off your finger and then apply a small amount to your pet's gum line with your finger. Always praise your pet afterward.



teeth you are brushing.

Step 5: Once your pet is used to the toothbrush and toothpaste you are ready to start brushing daily. Always talk to him/her in a happy voice during the process and remember to praise him/her at the end. At first, you may just want to brush one or both upper canine teeth (the large ones in the front of the mouth). These are the easiest teeth for you to get at and will give you some practice. When your pet accepts having several teeth brushed, slowly increase the number of

Some Oral Product Recommendations from Us



We recommend VOHC (Veterinary Oral Health Council) accepted products. The VOHC requires assurance by a company that a product awarded the VOHC Seal is safe and meets all applicable regulatory requirements and requires the company to inform VOHC of any problems with the product following issuance of the VOHC Seal.



CET® Enzymatic Toothpaste for Dogs & Cats: The number of products available to help keep your pet's teeth clean and healthy is astounding. Even with all the products currently on the market, daily brushing combined with regular professional cleaning and scaling remains the best method for maintaining oral health.

CET® Enzymatic Toothpaste for Dogs & Cats is available in poultry or malt flavor. This Dual-Enzyme system, formulated for dogs and cats, provides natural antibacterial action. Palatable and safe when swallowed by your pet, this toothpaste acts quickly to help neutralize mouth odors.



Oxyfresh Pet Gel: Oxyfresh's Pet Gel is a soothing blend of Oxygene with Aloe Vera to heal, condition, and deodorize your pet's mouth. The exclusive Oxygene formula neutralizes the germs that cause bad breath with a powerful, non-toxic oxidization process that works like nothing else to eliminate odors at their source.



Oxyfresh Pet Oral Hygiene Solution with Oxygene®: We all love our pets, but let's face it, their breath is sometimes downright unpleasant. Did you know that the microorganisms that cause both bad breath and periodontal disease can also shorten your dog or cat's lifespan? It's true. So, just add a capful of Oxyfresh Pet Oral Hygiene Solution with Oxygene® into your pet's water bowl for 'up close' fresh breath every day!



Tartar Shield Soft Rawhide Chews: These chews are clinically proven to significantly reduce plaque, tartar, gingivitis and doggie breath (Indiana University School of Dentistry independent research study). Studies showed that dogs given one chew a day had significant reductions in tartar, plaque, gingivitis and unpleasant odors.



Tartar Shield Cat Treats: For cleaner, healthier teeth and gums reward your cat with Tartar Shield Cat Treats. Each tasty morsel contains malic acid, a naturally occurring ingredient found in citrus fruits. The patented formula is clinically proven to help clean teeth, freshen breath, reduce bacteria, and prevent plaque and tartar buildup.



Maxi/Guard Gel: This product is very effective in helping reduce gingival inflammation, reducing the deposition of plaque and neutralizing offensive mouth odors. Considered a "professional strength" product, this gel is highly concentrated. Maxi/Guard Gel is recommended for severe oral problems such as advanced periodontal cases, post oral surgery and pre and post dental cleaning. Gel may be applied directly from the bottle applicator tip or with some pets, especially cats, finger brushing, or swab application may be the best application method.



Maxi Guard Cleansing Wipes: These wipes are an effective pet oral product and applicator all in one. Cleansing the oral cavity of pets is much faster and easier since the wipes are infused with a unique zinc formulation. This taste free compound neutralizes offensive mouth odors, helps reduce the deposition of plaque and aids in gingival inflammation. The wipes are textured to assist in the mechanical removal of plaque, but not so rough as to cause damage to the gums.



Enzadent Chews: Enzadent chews for dogs and cats combine enzymes found naturally in your pet's saliva with an abrading action to help remove food debris. The enzymes in the chew discourages plaque formation. Please note that all chew toys/chewies should be supervised to prevent ingestion of too large a piece that could cause intestinal upset or blockage.

Treats and foods: Royal Canin Veterinary Diet Dental and Hills Prescription Diet t/d Dental Care are two brands that Pet Care recommends as they are specifically formulated for the nutritional management of dogs and cats with dental disease. Their special fiber matrix scrubs the exposed tooth surface like an edible toothbrush, reducing bacteria-laden plaque. Please note that special food is helpful but not a cure-all – plaque may be decreased by 15 to 30%.

What Happens During A COHAT?

Before the actual procedure:

1. You and your pet will be taken to an exam room where a thorough patient history plus your pet's age, breed and sex is documented. You will also be asked about the home care you provide plus your pet's chewing habits. All of this will be documented in your pet's records.
2. The doctor will then give your pet both a thorough general examination and an oral examination.
3. Preanesthetic diagnostic tests, including a complete blood count, a serum chemistry profile and a urinalysis, will be performed. Your doctor may also recommend other tests based on your pet's health and age. The purpose of all of this is to make sure that your pet is healthy enough to undergo anesthesia.
4. You will be given an estimate of costs. You will then schedule a procedure date.
5. Questions? Please ask! We know that many people are concerned about anesthesia and the effects it may have on your pet.

Our anesthesia protocols:

Who performs and monitors the anesthesia process?

Your pet is monitored under anesthesia by one of our trained veterinary technicians who will monitor his/her blood pressure, blood oxygen saturation, end tidal carbon dioxide, electrocardiogram, respiratory rate and body temperature.

Intravenous fluids will be administered throughout the procedure to help maintain your pet's blood pressure and provide intravenous access for additional drugs if they are needed. Your pet will be kept warm with warming blankets during the procedure.

The night before the procedure:

- Make sure you do not give your pet food at least eight hours prior to the scheduled appointment.
- To avoid dehydration - please give your pet access to water until the morning of the procedure.

The day of the procedure:

On your pet's scheduled day, you will briefly meet with the doctor who is performing the COHAT. He/she will give your pet a brief physical exam just to make sure that no new issues have popped up. He/she will also give you a tentative discharge time so that you will have an idea of when to expect a phone call from us. During this time your vet will also answer any

questions you may have. The veterinary assistant will then take your pet back to the treatment area where he/she will be made comfortable.

The COHAT Procedure:

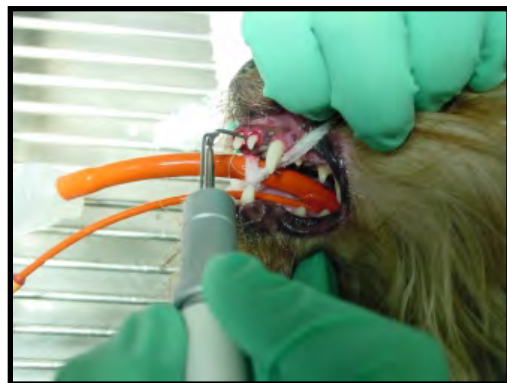


Sedated and ready for the endotracheal tube to be placed in the throat. This tube helps protect the lungs from aerosolized bacteria.

Your pet will be constantly monitored – blood oxygen saturation, end-tidal carbon dioxide, electrocardiography, respiration monitors, blood pressure and temperature-by the dentistry team.

External warming of your pet by a Bair Hugger.

Your pet will be given a complete intra oral assessment through visual assessment, entire mouth digital dental radiography, periodontal probing and charting.



Supragingival cleaning: this is where the area above the gumline is cleaned. Tartar is removed by ultra-sonic scaling. Using ultra-sonic scaling increases the speed in which the cleaning can be performed and decreases the time your pet is under anesthesia.



Subgingival cleaning: this is where we clean the area under the gumline. This is an extremely important step as subgingival plaque and calculus found there are what cause periodontal disease. This is the reason for anesthesia – cleaning the tooth surface alone only makes the teeth look good; does absolutely nothing with regards to removing plaque and calculus.



Polishing: smooths and decreases the adhesive ability of future plaque formation.



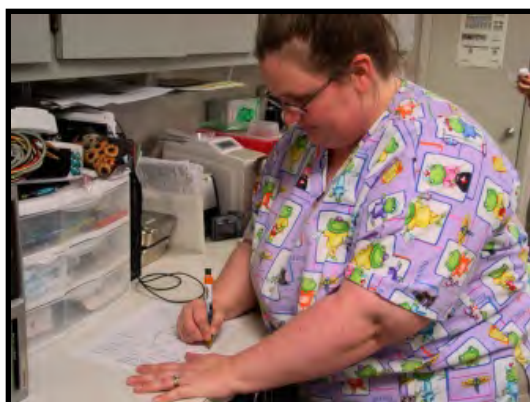
Subgingival/Sulcal Lavage: scaling and polishing of the teeth can cause a lot of debris to become trapped under the gums. This will cause local inflammation, as well as increase the chance of future periodontal disease. For this reason, we gently flush the gingiva with an antibacterial solution.



A very important step - dental radiographs: taken to determine the grade of periodontal disease. Using the radiographs, we measure the amount of bone loss around each tooth. Your doctor will also evaluate the tooth for pulp canal health, tooth root abscesses, resorptive lesions below the gum line, and overall tooth and jawbone health.



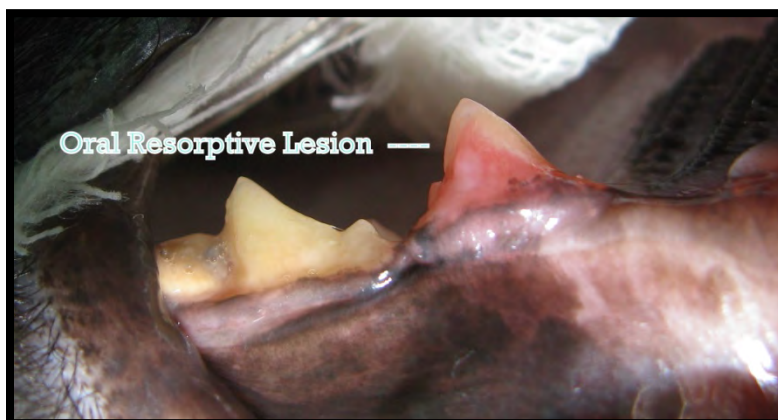
Treatment planning: the teeth and entire oral cavity are evaluated using a periodontal probe to determine if there are significant gaps or spaces between the gum and tooth root known as periodontal pockets. A plan is developed (with your input) to re-establish your pet's oral health.



Discharge: includes an overview of the oral assessment and any treatment that was performed on your pet. Further home care instructions regarding diet, medications and allowed activities will be explained to you. Also, a medical progress exam appointment will be scheduled at this time.

These are the steps we follow to ensure that each pet leaves with a clean mouth. However, dental care does not end here. Following up at home with regular brushing, **Sanos® sealant**, **MaxiGard Wipes®**, **Tartar Shield Chews®**, dental diets, and water additives will help to minimize dental tartar and the progression of periodontal disease. Together we can work to keep your pet's oral cavity clean and free of disease. This will not only improve oral comfort but will also extend the quality of your pet's life!

Tooth Resorption



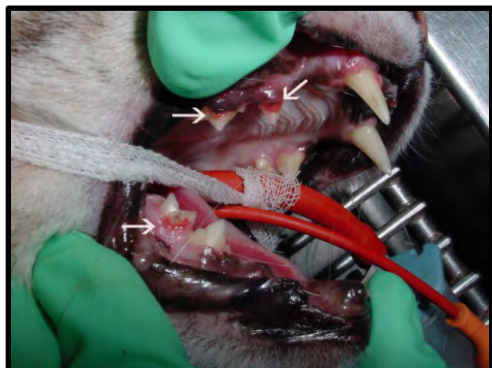
Tooth resorption is a common and painful condition in domestic cats. The teeth become functionally destroyed as sections of tooth are resorbed, leaving areas of exposed tooth tissue below the enamel and weakened roots. These lesions were originally called feline "neck lesions" or cat "cavities" because the tooth damage was typically observed in the "neck" region of the tooth where the tooth meets the gum line.

Resorptive lesions can appear as areas of reddened tissue at the tooth-gum interface almost as if the gingival (gum) tissue is growing into the tooth or is covering over the base of the tooth as shown in photo above. In some cases, there appears to be a "hole" or concavity in the tooth. In fact, many of these lesions are not clinically apparent until dental radiographs are taken. This is a major reason why we include dental radiographs with all dental cleanings.

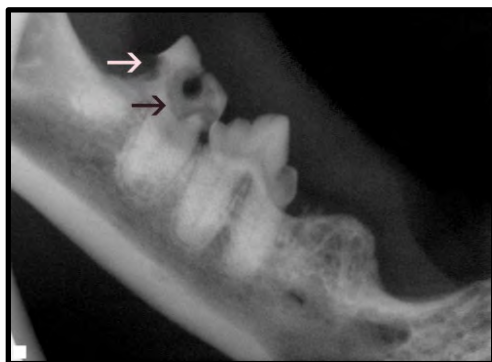
The exact cause of tooth resorption has not been definitively established, but we do know that the bacteria found in the oral cavity will make these lesions worse. Therefore, maintenance of good oral hygiene will help discourage progression. It has been reported that 60% of cats over 6 years of age have at least one of these resorptive lesions and once diagnosed will very likely develop additional lesions in the future. For this reason, annual dental exams, cleanings and radiographs are essential to monitor these cats to allow for early diagnosis and treatment.

Since bacteria in the mouth worsen the inflammation and pain associated with resorptive lesions it is ideal to manage oral hygiene through brushing your cat's teeth daily or three times weekly at a minimum. This is your opportunity to observe your cat's oral health. Watch for the gum tissue growing onto or into tooth resorption defects. Also observe for excess drooling, gums that bleed easily when brushed, gingival inflammation and reluctance to chew

hard foods. If brushing is not possible see our section on other products that can be used in the maintenance of oral health.



The mouth of this 12-year-old cat shows what are known as resorptive lesions or cervical neck lesions. This occurs when the hard tissues of the root surface are destroyed by dental “clean up cells”. The destruction eventually spreads to the tooth enamel along the gum line and the enamel here is either resorbed or chips off creating these painful exposed cavities (see white arrows on picture).



This dental x-ray demonstrates the appearance of these resorptive lesions. Note the obvious cavitated lesions (see white and black arrows on picture).



The cause of these feline resorptive neck lesions is unknown but the chances of them appearing does increase with age. Recently, excessive dietary Vitamin D has been blamed, but this has not been definitively proven as the cause. The only treatment is to extract the painful tooth. A high-speed dental drill is used to remove bone around the tooth roots in order to make extraction easier.



The tooth socket is sutured closed after extraction. Within a week affected cats are feeling much better. You will see that their appetites and attitudes improve!