



One of the most common problems we identify in our feline patients is dental disease. We estimate that 70% of all cats over the age of 3 years have significant dental and periodontal disease. Many cat owners are not aware that their cats are subject to the same dental concerns as they themselves are, and like their owners, could benefit greatly from care. When left unattended, dental disease can lead to discomfort and tooth loss, and may affect your cat's quality of life. Cats use their mouths for many essential and recreational functions much more than we humans do. It follows that a cat with a sore mouth faces both physical and emotional challenges.

Fortunately we can prevent and treat many dental problems. With routine home care, regular veterinary examinations, and thorough dental cleanings we can keep your cat's mouth healthy and comfortable.

### **What Causes Dental Disease?**

Oral bacteria cause plaque and calculus buildup and can lead to gingivitis, periodontal disease, pain, and tooth loss. Plaque is a barely visible film composed of bacteria, saliva, and food particles, which adhere to the teeth and fill the small pocket between the tooth and the gums. Left undisturbed, plaque rapidly collects minerals from the saliva to form the yellowish-brown, rock-like deposits known as tartar or calculus. By brushing or rubbing the teeth daily, you reduce the plaque and so the tartar builds more slowly.

When plaque has built up enough, the gums become irritated and inflamed. This is called gingivitis and is accompanied by bad breath. The gingivitis can be seen as excessive redness to the gums, most prominent at the margin with the teeth. Unchecked, gingivitis advances to painful swelling of the gums and irreversible separation of the gum tissue from the teeth. Separation of the gum tissue is an indication of a shrinking bone mass and loss of ligament support of the teeth referred to as periodontal disease.

Tooth roots can then become infected by bacteria and form an abscess. The infected gums are believed to be a source of bacteria that can enter into your cat's bloodstream. With time, there is reasonable concern that this constant barrage of bacteria into the bloodstream could lead to problems in other areas of the body. Among the diseases that have been documented as associated with periodontal disease are kidney infection, liver infection, heart valve infection, and arthritis.

Cats also can develop cavity-like lesions, called neck lesions or resorptive lesions. The technical term for these lesions is FORLS which stands for Feline Odontoclastic Resorptive Lesions. FORLS are a frequent cause of serious mouth pain but can be difficult to diagnose at early stages because they occur just under the gum line. Only when a skillfully done dental exam, cleaning, and x-rays are utilized can these lesions be clearly identified and treated properly.

What can you do about dental disease?

- Learn how to look in your cat's mouth
- Routine veterinary examinations
- Routine home dental care
- Routine professional teeth cleanings and when necessary, oral surgery

### **What to Watch For at Home:**

The most common sign of dental disease is bad breath. If it is bad enough for you to notice, it is worth looking into. Keep in mind that cats usually do an amazing job at hiding the discomfort of dental pain. This makes perfect sense from an evolutionary standpoint. In the wild there is a strong benefit to animals that can tolerate pain and avoid showing weakness. The evaluation of pain can be a bit more subtle than we are used to with our own species. In our practice we have learned this by observing the amazing responses that can occur after the pain is relieved through dental surgery. With more severe disease, you may observe more obvious signs such as a change of preference from dry to soft food, loss of appetite, weight loss, painful chewing activity and dropping food, bleeding from mouth or excessive salivation. If you notice any of these signs please schedule an examination for your cat as soon as possible.

### **Home Dental Care:**

**Dietary Measures:** By feeding specially formulated dental diets and treats, we believe that we can decrease the rate of calculus accumulation in some cats. *Prescription Diet Hills Feline t/d* and *Royal Canin Veterinary Dental Diet* are prescription diets that have shown some evidence that they help reduce dental calculus. The theory is that this kibble doesn't shatter as easily when chewed and effectively "wipes" food accumulations from the tooth's surface. Both of these diets provide complete nutrition for adult cats. Feeding these dental diets is not recommended if your cat has cavities (FORLS) or severe gum disease due to its potential to cause pain. Please ask us for a sample of these diets if you would like to try them out.

**C.E.T. Intellident Cat Bites** are crunchy and flavorful and work with a cat's natural chewing action to reduce plaque and tartar buildup. No artificial preservatives and they are low in fat.

**Mechanical Tooth Cleaning** or brushing with veterinary toothpastes provides effective removal and chemical inhibition of plaque-forming bacteria. Flavored veterinary toothpastes are quite acceptable to many cats. Mechanical methods for cleaning your cat's teeth include using your finger, cotton swabs, or one of a variety of specialty toothbrushes. The best device depends on your skills and your cat's reaction. The technique involves gently lifting the upper lip and gently brushing or rubbing along the gums and teeth just hard enough to disrupt the plaque. We recommend you focus on just the outer surfaces of the teeth, which is where most of the calculus build-up occurs in

cats. The ideal goal is to brush your cat's teeth at least once daily. The Cornell Feline Health Center has an online video, "Brushing Your Cat's Teeth," [felinevideos.vet.cornell.edu](http://felinevideos.vet.cornell.edu). This instructional video features a gradual four-week training program. In week one you allow your cat to become familiar with the smell and taste of flavored toothpastes. In week two you train your cat to accept putting toothpaste in its mouth. In week three your cat will learn to accept a toothbrush in its mouth. In week four you begin to brush your cat's teeth. With each step of the program you follow sessions with a reward, usually a tasty treat works best. The goal of this program is to make tooth brushing an enjoyable and rewarding routine for both you and your cat.

A special note about kittens: because of oral pain caused by teething, we advise that you wait until all of the permanent teeth have erupted after 6 months of age before starting to use a toothbrush. Otherwise, it is actually a good idea to familiarize your kitten with toothpastes as long as you do so very gently. The Cat Doctor recommends *C.E.T. Toothpastes* in poultry, seafood and malt flavors. These toothpastes contain an extremely effective enzyme dentifrice.

**CAUTION: Do not use human toothpaste products or baking soda because these can be harmful to your cat's health.**

**Oratene Brushless OralGel and Oratene Oral Hygiene Gel** are effective oral hygiene compounds that guard against plaque build-up without having to brush your cat's teeth. These products are simple to apply and unlike brushing, are less likely to irritate sore gums. Used on a daily to weekly basis, these products can have a seriously positive impact on oral health and prevent future tooth loss.

### **Regular Veterinary Examinations:**

A twice-yearly comprehensive physical examination will give us a chance to carefully examine your cat's teeth and discover dental problems before they become severe.

### **Professional Dental Cleanings:**

At your cat's twice-yearly physical examinations we will carefully check the mouth, gums and teeth and let you know if a dental cleaning is needed. We understand that the decision to pursue a dental cleaning is a serious one and we will only make this recommendation when we feel that the benefit greatly outweighs any risks.

The only way to properly carry out dental procedures on cats is with them safely anesthetized. Fortunately, the drugs and knowledge available today make the anesthetic risk lower than the risk of ignoring dental disease.

### **What exactly is "a dental"?**

Unfortunately, in this profession there is nothing in the way of legal standards when it comes to dentistry. You can appreciate that if you have ever tried to compare prices on

this procedure. You will find veterinarians claiming to do dental for an amazingly wide range of prices. This makes a logical comparison impossible for the average cat owner. We feel that our procedures follow the highest of safety standards, as set by our profession's leading dental experts in the American Veterinary Dental College (AVDC) under whose guidance we have obtained our knowledge and training. We believe that keeping to the highest standards are necessary to achieve the best possible outcomes for our patients.

A proper dental procedure is a general surgery requiring thoughtful, careful general anesthesia. From years of training and experience, we believe that there is no reason to try to cut corners during this type of procedure. The first steps to any general surgical procedure are a complete physical exam and age-appropriate pre-anesthetic blood and urine testing. These need to be done just prior to an anesthetic procedure. Pre-anesthetic evaluation assesses the patient's risk factors such as subclinical disease states and the ability to safely handle the anesthetic drugs.

Prior to the induction of anesthesia, your cat will have a sedative administered to start the process of relaxation and pain receptor blockage. An intravenous (IV) catheter placed, through which sterile fluids are administered. Intravenous fluids are one of the most essential protections one can have during anesthesia. The reason for this is that even the best anesthetic drugs will lower a patient's blood pressure. Intravenous fluid therapy allows the anesthetist to support normal blood pressure levels, thus ensuring proper blood flow to vital organs. Anesthesia is induced using a safe dissociative or hypnotic drug, and a breathing tube called an endotracheal tube is gently placed in your cat's airway. This tube ensures the delivery of fresh oxygen and our Sevoflurane gas anesthesia directly to the cat's lungs, and also protects the sensitive airways from aspiration of water or debris during the cleaning.

After the cat is safely anesthetized, the teeth are examined by the veterinarian, and the patient's vital signs including heart and respiratory rates, blood pressure, pulse-oximetry, end-tidal CO<sub>2</sub>, temperature, anesthetic depth and oxygen levels are charted every 5-10 minutes by a trained and licensed veterinary technician. The veterinarian charts the teeth and determines the order of the procedures needed. The technician will then set about the task of removing the calculus from both the teeth and subgingivally with the help of an ultrasonic dental scaler. We then will use a plaque-revealing stain to make sure we have removed everything before performing a high-speed polishing of the teeth. Careful, high-speed polishing reduces future plaque and calculus formation by providing a smoother tooth surface, making it harder for bacteria to adhere to the teeth.

A full set of digital dental x-rays are included with every dental procedure. This is because 50% or more of each tooth is beneath the gum line. It is very common for cats to have serious disease affecting only the neck and root of the tooth without showing any disease on the visible portion of it. If teeth are not evaluated radiographically, they are not really properly evaluated.

### **What about extractions?**

After your cat's teeth are cleaned, polished, and evaluated, any teeth that are beyond any hope of healing are surgically extracted. As it is with anesthetic procedures, tooth extraction is a term used to describe a wide variety of procedures, some of which are extremely out-dated, and would never qualify as acceptable by the experts in the field of Veterinary Dentistry.

The most important consideration with any dental surgery is pain prevention. Our approach to pain management also follows the highest standards in the profession. This process was begun with the use of narcotic pain medications given prior to the induction of anesthesia. This is referred to as "Pre-Emptive Analgesia". Pre-emptive analgesia is not only better at preventing and reducing pain, it is known to improve the safety of the general anesthesia, by allowing lower amounts of it to accomplish the needed effects. The next steps involve the use of local anesthetic nerve blocks using drugs such as lidocaine and bupivacaine, similar to what is done in human dentistry. The gum tissue is then gently surgically flapped away from the tooth to expose the often-infected bone. A high-speed dental drill is used to section the multi-rooted teeth, remove the infected bone and facilitate gentle elevation and extraction of the tooth. The edges of the tooth socket are then smoothed over, and the gingiva is sutured with absorbable sutures to cover the socket hole. For larger teeth such as the canines and large pre-molars, the socket may be filled with surgical bone matrix, which improves bone healing. Post-operatively, the cat is monitored closely by doctor and technician until the patient is extubated and safely recovered. If there were extractions, post-operative pain-relief medications will usually be sent home with the patient.

Most extraction sites will heal quickly in about two week's time. The sutures we use in the mouth are not only tiny; they will dissolve on their own when the healing process is finished. After our dental procedures, we recommend a follow-up appointment 10 to 14 days after the surgery, to make sure that healing is going as expected. Post-operative follow-up examination costs are included in all of our dental procedures.

If you have any questions regarding our statements or recommendations please do not hesitate to let us know. We want to work with our clients and do our best to maintain and improve the comfort of our beloved feline companions.