

Emphasizing oral health care

Biannual exams serve as a tool for preventing periodontal disease.



Larry Bredthauer, DVM

Every veterinarian understands the need to examine a Pet on a frequent basis. The veterinary profession advocates biannual examinations and many new programs are in development to educate clients on the benefits of preventive care for their Pets. Biannual examinations provide the only means to identify disease at an early stage and prevent progression—periodontal disease being one of the best examples. As a profession, we know periodontal disease can contribute to other health problems in Pets.

According to the American Veterinary Dental Society, more than 80 percent of dogs and 70 percent of cats develop periodontal disease by 3 years of age. This is an overwhelming statistic and provides a tremendous opportunity to talk with clients about prevention. Oral health problems are easy to identify in the early stages of development during a biannual exam.

The Banfield Clinical Database reveals a direct correlation between biannual examinations and the early detection of periodontal disease in dogs. The data show that the disease is identified at a much higher rate in

dogs that receive biannual preventive care exams than dogs that receive sporadic exams in response to illness (see “Medical data—numbers that add up to better care,” page 20).

Just as human dentists have done, veterinarians must adopt a proactive approach to maintaining our patients’ oral health. There is sufficient evidence in both human and veterinary medicine that periodontal disease can affect systemic health.¹ Only when we explain this to Pet owners will they understand the seriousness of periodontal disease and comply with our recommendations for prevention and treatment.

More than just bad breath

Though halitosis is just the tip of the iceberg when it comes to periodontal disease, it may motivate owners to bring their Pets into your office. If periodontal disease is advanced, clients may notice other clinical signs, such as:

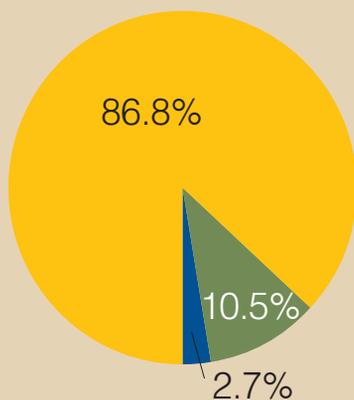
- Bloody saliva
- Persistent drooling
- Nasal discharge (unilateral or bilateral)
- Facial swelling
- Draining maxillary tracts
- Weight loss

Figure 1

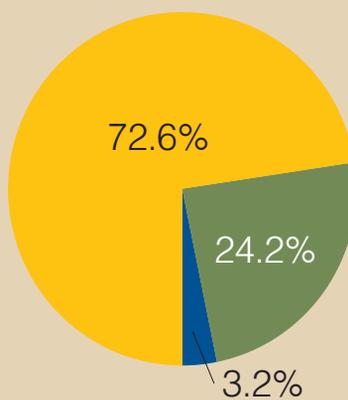
Breed-Specific Periodontal Disease

Banfield recently conducted a study that examined the development of periodontal disease in specific dog breeds. In the study, 341 Shih Tzus and Yorkshire terriers ages 3 years or younger were identified as having some form of periodontal disease. The charts below show how advanced the dental disease was in these young dogs. This illustrates that these breeds are very susceptible to periodontal disease and require early intervention and consistent client education to prevent the disease from progressing.

Stages of disease in 3-year-old Shih Tzus



Stages of disease in 3-year-old Yorkshire terriers



■ Stage 1
 ■ Stage 2
 ■ Stage 3

- Food falling out of the Pet's mouth
- The Pet's rejection of dry diets in favor of canned food.

Many factors affect the progression and severity of periodontal disease, including breed, age, immune status, and the presence of malocclusion (*Figure 1*). While an in-depth discussion of periodontal disease development is beyond the scope of this article, it's appropriate to discuss the general progression of the disease.

Disease progression

Plaque forms when bacteria incorporate into pellicle—the proteins and glycoproteins found in saliva. Bacteria commonly associated with periodontal disease include *Fusobacterium*, *Klebsiella*, *Bacteroides*, and *Actinobacillus* species and spirochetes. Supragingival plaque primarily contains gram-positive aerobic bacteria, while subgingival plaque contains gram-negative anaerobic bacteria. Both types of plaque are

critical components in periodontal disease development. The gram-negative bacteria found in plaque, in periodontal pockets, and on the tongue are most likely responsible for halitosis. These bacteria produce volatile sulfur compounds, which are the primary causes of malodor and may also contribute to periodontal disease. Any treatment that decreases bacteria will reduce malodor. Other causes of halitosis and periodontal disease include hair, food, and foreign bodies (*e.g.*, foxtails) lodged in the mouth.

Calculus develops as plaque mineralizes on the teeth. Gingivitis occurs when plaque accumulates at the gingival margin. Fortunately, gingivitis is reversible if plaque is

Partnerships between doctors and clients lead to the best outcomes for Pets, and a strong relationship is especially important when you're discussing anesthesia.

removed. As periodontal disease progresses, pocket depth increases as connective tissue deteriorates. In more advanced disease, roots and furcations are exposed, which can cause tooth mobility and subsequent loss.

Periodontal disease is typically classified in four stages (*Figure 2*, page 32; *Table 1*, page 34). Pets with early gingivitis often do not require sedation during oral exams. Inflammation and pain increase as periodontal disease progresses, so these patients may require sedation or anesthesia for oral exams. When periodontal disease reaches stages 3 and 4, the Pet is most likely in considerable pain. Caring owners don't want to see their Pets in pain, yet pain can be hard to identify in Pets because they hide it so well.

Many clients have had oral health problems themselves and can relate to

their Pet's condition. In addition, Pet owners will better understand disease progression if you probe the subgingival pockets in their presence. This is also the time to convey that treatment will reduce or eliminate the Pet's discomfort while preventing disease progression.

Connecting with clients

The quality of professional dental care and long-term home care often hinges on whether clients are ready to commit time and money. You must form a partnership with the client to help the Pet and agree on a treatment plan that is feasible for all parties. If an agreement cannot be reached, you may need to modify the plan to include extractions, which will safeguard the Pet's health. Ask yourself the following questions:

- Does the client understand the importance of dental prophylaxis to their family?
- Does the client truly understand the seriousness of the problem?
- Is the client willing to pay for the initial treatment and the necessary home care and follow-up visits?
- Does the client have the desire and ability to perform necessary home care?
- Does the Pet have a temperament that will allow the owner to perform home care?
- Is the Pet healthy enough to tolerate repeated anesthetic procedures if indicated?

Biannual examinations provide a great opportunity to discuss dental care and prevention with clients and allow the veterinary team to keep clients informed of disease progression. Clients are more receptive to recommended procedures if they're allowed to budget appropriately. This can be critical, especially with cases that require multiple procedures and follow-up visits.

Partnerships between doctors and clients

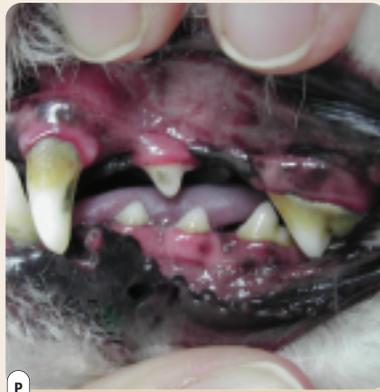
Figure 2

The Four Stages of Periodontal Disease



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Stage 1 gingivitis involves gingival inflammation at the free gingival margin; it is caused by supragingival plaque and is reversible with proper care. When gingivitis progresses into advanced gingivitis, it appears as gingival redness, edema, and bleeding upon probing. Advanced gingivitis is limited to the epithelium and gingival connective tissue. There is no tooth mobility or bone loss.



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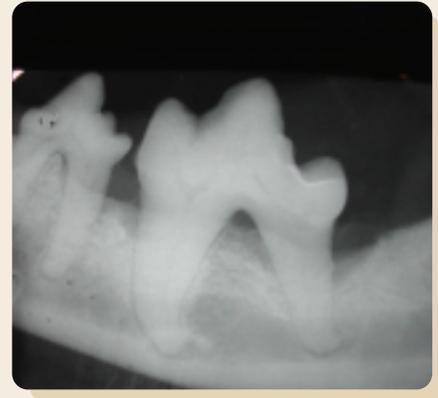
Stage 2 (early periodontitis) involves apical migration of the junctional epithelium, resulting in a deeper sulcus (pocket). In stage 2 periodontitis, up to 25% attachment loss has occurred.



lead to the best outcomes for Pets, and a strong relationship is especially important when you're discussing anesthesia. Many owners have concerns about anesthetic risks, but if you take a proactive approach and explain how anesthesia enables you to provide clients with high-quality care, you

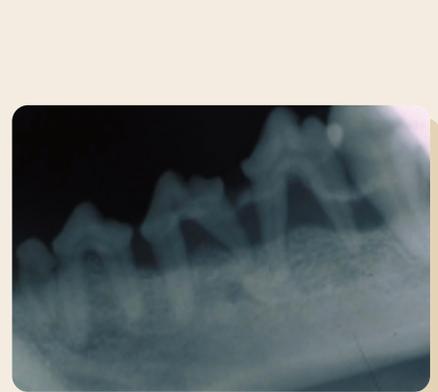
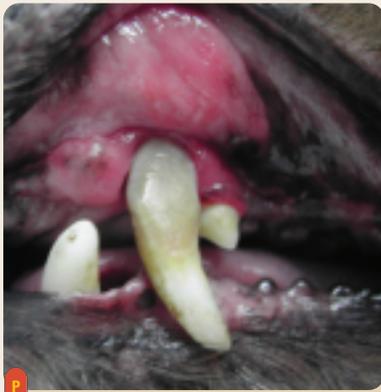
can do much to allay these concerns.

Explain how anesthesia allows you to perform dental cleanings. Discuss your pre-anesthetic testing and how it helps identify conditions that may increase risks to the patient. Careful anesthesia monitoring also allows immediate treatment should perfu-



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Stage 3 (established periodontitis) involves 25% to 50% attachment loss. Single-rooted teeth may be slightly mobile. Furcation exposure or gingival recession may be present. Although the surfaces of the teeth and gums show little progression from stage 2, note the changes in the bone below the gum line in the radiograph. This is a good example of why radiographs are necessary as a diagnostic tool.



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Stage 4 (advanced periodontitis) involves marked (>50%) attachment loss and it can appear as gingival recession, tooth mobility, deep pockets, furcation exposure, or abscess formation. Note the severe bone loss below the gum line.

sion parameters decline intraoperatively.

Using appropriate anesthesia protocols dramatically decreases risks, and a properly tailored combination of injectable and inhalant agents will decrease complications, result in better outcomes, and make owners comfortable with these proce-

dures.² Clients appreciate this type of information and forethought because it shows you care about the overall well-being of their Pet. Plus, you avoid any miscommunication down the road.

Clients need to understand that the risk of not doing the procedure under anesthe-

Table 1: Stages of Periodontal Disease and Recommended Treatment

	Clinical Signs	Treatment	Home Care
Stage 1	<p>Acute gingival inflammation</p> <p>No loss of gingival attachment; involves only the gingival margin</p>	<p>Prophylaxis every six to 12 months as needed</p>	<p>Client education regarding prevention techniques: daily brushing, dental treats, and enzymatic chews</p>
Stage 2	<p>Chronic gingivitis for more than six months</p> <p>Up to 25% attachment loss or alveolar bone loss</p> <p>Periodontal pockets may exist</p>	<p>Thorough oral exam every six months</p> <p>Prophylaxis as needed</p> <p>Doxirobe treatment</p> <p>Antibiotic pulse therapy for life</p> <p>Pain relief treatment</p>	<p>Chlorhexidine therapy once or twice daily</p> <p>Daily brushing</p> <p>Dental chews and treats</p>
Stage 3	<p>Up to 50% attachment loss or alveolar bone loss (1-3 mm) with periodontal pockets</p> <p>Possible furcation exposure or involvement</p> <p>Possible gingival recession and root exposure</p>	<p>Prophylaxis every four to six months as needed</p> <p>Antibiotic therapy:</p> <ul style="list-style-type: none"> • Amoxicillin-clavulanic acid (10-13 mg/kg PO twice daily), or • Clindamycin (5.5-11 mg/kg PO twice daily)* <p>Use antibiotics for two to three weeks and then re-evaluate</p> <p>Pain relief treatment</p>	<p>Continue with above home care therapy; may require clients to return to hospital for training until they feel comfortable</p> <p>Chlorhexidine therapy once or twice daily</p>
Stage 4	<p>More than 50% attachment and alveolar bone loss</p> <p>Pocket depths of more than 3 mm</p> <p>Furcation involvement</p> <p>Tooth mobility</p>	<p>Treat with above antibiotics for three to four days before prophylaxis</p> <p>Prophylaxis with emphasis on subgingival cleaning, curettage, and root planing; gingival flaps if indicated</p> <p>Splint or extract mobile teeth</p> <p>Administer above antibiotic therapy at same dosage and re-evaluate after two to three weeks</p> <p>Follow-up oral exam in two to four weeks:</p> <ul style="list-style-type: none"> • Continue with antibiotics if infection still present • Evaluate tooth mobility and flaps <p>Another prophylaxis one to three months later and then evaluate for new cleaning schedule</p> <p>Pain relief treatment</p>	<p>Continue with above home care therapy; long-term brushing with C.E.T.[®] toothpaste</p> <p>Long-term chlorhexidine therapy</p> <p>Education of clients regarding pain indicators</p> <p>Pet might exhibit</p>

* If used longer than 30 days, monitor liver and kidney values.

sia is greater to the Pet in the long run than the anesthetic risk, which has been greatly minimized with new advances in veterinary anesthesia.

Clients need to understand that the risk of not doing the procedure under anesthesia is greater to the Pet in the long run than the anesthetic risk.

Performing a thorough exam

To prevent overlooking subtle signs of oral disease, always use a systematic approach when performing oral exams. Here are some guidelines to remember:

- **Observe the Pet's face.** Are there any areas of obvious swelling or pain? Are the eyes equal in size? Is there swelling under the eyes? Does the Pet demonstrate pain when opening or closing the mouth?

- **Examine the Pet's teeth.** Is plaque, calculus, or gingivitis present? If the Pet's periodontal disease has progressed beyond stage 1, sedation or anesthesia may be necessary in order to perform a complete oral examination. In addition to probing pocket depth, taking intraoral radiographs provides valuable information for diagnosis, prognosis, and treatment plans. It is vital to chart the condition of each tooth during each examination to indicate whether the disease is progressing. This information will be useful in developing a treatment plan.

- **Perform a thorough prophylaxis.** After inducing anesthesia, remove supragingival and subgingival plaque and calculus using appropriate equipment and techniques, such as ultrasonic and hand scaling, root planing, doxycycline gel (Doxirobe Gel–Pfizer), subgingival curettage, polish-

ing, irrigation, and fluoride treatments. Doxirobe is applied into periodontal pockets after a prophylaxis. It releases doxycycline slowly to help control infection and help pockets heal. Be sure to note all findings in the dental record.

- **Examine each tooth individually.** After removing calculus, check for tooth mobility and probe pocket depths. Periodontal pockets deeper than 5 mm require surgery to address subsequent infection, bone loss, and tooth loss. Measure the four quadrants for each tooth. Chart your exam, noting any missing, fractured, mobile, or discolored teeth; resorptive lesions in cats; gingival pathology; and vertical or horizontal alveolar bone loss. Try to prevent extractions when possible with prescribed therapies such as Doxirobe treatments.

Adopting a proactive approach

Not all veterinarians want to perform complicated dental procedures, but it's imperative that we as a profession recognize how periodontal disease impacts our patients' health, life expectancy, and quality of life. Train yourself and your team to perform thorough prophylaxes, probe pocket depths, and accurately diagnose and treat periodontal disease.

Clients must actively be recruited to provide adequate and consistent home care. Brushing, oral rinses such as chlorhexidine, enzymatic chews, and dental treats are all part of the home care arsenal that helps control existing disease and prevent progression. Make it a point to provide your clients with a report card on the condition of their Pet's teeth so they gain a solid understanding of why regular veterinary and home care are important to the overall health of the Pet.

Failure to educate clients on these preventive measures raises ethical concerns and opens the door for possible lawsuits.

If you feel you lack the knowledge or expertise to do more than routine cleanings, take advantage of the many continuing education opportunities available at state and national conventions. Or sign up for other private courses and wet labs that provide hands-on experience. If you have no interest in veterinary dentistry, refer your complicated dental cases to a practitioner who does so your patients will receive proper oral health care. Performing routine dental care frequently and competently should be a part of every practice that is truly dedicated to Pet health.

Our clients expect and deserve quality dental care for their Pets. With dentistry, we can make an incredible difference in the lives of our patients while solidifying the human-Pet bond. That's why diagnosing and treating periodontal disease can be one of the most gratifying aspects of veterinary medicine. 

Larry Bredthauer, DVM, owned his own practice for 25 years in San Marcos, Texas. He recently became a partner at the Banfield Hospital of Round Rock. He enjoys small Pet practice and has a special interest in dentistry.

Medical illustrations by Allison Wright. Radiographs provided by Gary Goldstein, DVM, DACVD.

References

1. The systemic effects of periodontal disease, AAFP winter 2001 meeting. Linda J. DeBowes, DVM, MS, DACVIM (Internal Medicine), AVDC.
2. Anesthesia for the Pet Practitioner®, Banfield, The Pet Hospital, 2003, 2005. Will Novak, DVM, MBA, DABVP.

Action Plan

Start with These Steps

Now that you have learned some new approaches to managing periodontal disease, put your knowledge to work in your own practice. Use the following action steps as a guide to see how your practice measures up in offering preventive oral health care.

- **Review your last 10 dental cases.** What stage of periodontal disease was diagnosed in the Pet? If it was greater than stage 2, when was the last time the Pet was in for an exam? How detailed are the medical notes in regard to the physical exam? Did your team discuss the benefits of preventive oral health care with the clients? Does the Pet receive routine dental cleanings?

- **Review 10 Pet medical records.** See if any notes were made about dental care. Was the Pet in only for a specific medical problem? Was a wellness exam performed on the Pet? Check to see if any notes were made on the condition of the Pet's teeth.

- **Develop a client education program that focuses on the need for biannual exams.** Pets need to see their veterinarian on a regular basis to monitor any changes in their health, especially when it comes to oral health. Periodontal disease is a good anchor for the veterinary team to use to draw clients to the hospital for routine care. Try developing a program that specifically targets twice-yearly dental care to promote biannual visits.

Once you've analyzed your records, use the information to establish new programs and ideas to provide better care for Pets. Measure your results over a three- and six-month period. You will be surprised to see how using this evidence will not only increase the quality of care you offer but also add to your bottom line. Small changes can produce big results.