

DENTISTRY

Periodontal Disease in Dogs: Staging and Treatment

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Proper decision making for therapy of periodontally diseased teeth can be challenging. Clinical factors that help determine the best therapy for a particular tooth include pocket depth in millimeters, percentage of bone attachment loss, furcation exposure (**BOX 1**), and mobility (**BOX 2**). These factors must be determined via periodontal probing and diagnostic imaging (intraoral dental radiology with or without cone beam computed tomography) performed while the patient is under anesthesia.

The whole clinical picture must be evaluated for each tooth. For example, healthy mandibular incisors often have apparent bone loss and mobility despite normal gingival attachment (<3 mm sulcal depth in dogs).²⁻⁴

When to Perform Flap Surgery

Pocket depth and furcation involvement dictate the need to perform advanced periodontal flap surgery

(**FIGURE 1**). Furcation 1 teeth can be cleaned without a flap (closed); however, cleaning furcation 2 (F2) and 3 (F3) teeth requires direct root visualization (flap).^{5,6} Periodontal flap surgery is also required when treating pockets deeper than 6 mm.⁴⁻¹⁰ If periodontal flap surgery is not performed in these cases, subgingival plaque, calculus, and granulation tissue will persist and the tooth will continue to have progressive disease until the next cleaning, as clients cannot effectively clean the hidden root surfaces at home.

When to Perform Extraction

Some teeth, particularly F3 teeth, cannot be preserved even with flap surgery and excellent home care. Based on the focal infection theory, periodontal inflammation creates both local and systemic effects.^{11,12} Thus, even if an F3 tooth with mild bone loss appears otherwise healthy and is cleaned with advanced therapies, periodontal inflammation will persist and progress with time (**FIGURE 2**). Likewise, F3 teeth with

BOX 1

Furcation Involvement Stages¹

- **Stage 1 (F1):** Less than halfway under the crown in any direction of a multirooted tooth with attachment loss
- **Stage 2 (F2):** More than halfway under the crown of a multirooted tooth with attachment loss but not through and through
- **Stage 3 (F3):** Under the crown of a multirooted tooth, through and through from 1 side of the furcation and out the other

BOX 2

Mobility Stages¹

- **Stage 0 (M0):** Physiologic mobility up to 0.2 mm
- **Stage 1 (M1):** Mobility is increased in any direction other than axial over a distance between 0.2 mm and 0.5 mm
- **Stage 2 (M2):** Mobility is increased in any direction other than axial over a distance between 0.5 mm and 1 mm
- **Stage 3 (M3):** Mobility is increased in any direction other than axial over a distance greater than 1 mm or any axial movement

horizontal bone loss cannot be reliably returned to normal periodontal health, even with guided tissue repair.¹³⁻¹⁵ Bony repair can only happen in infrabony pockets and F2 teeth because bone grows laterally, not vertically. In the author's opinion, all F3 teeth with bone loss should be extracted. Patients with severe disease and safety concerns or owners who wish to pursue preservation should be referred to a board-certified veterinary dentist.

Additional factors must also be considered. For example, is the client willing to perform home care? Does the patient have comorbidities that contraindicate future anesthesia? If home care will not be performed or the patient is an unsuitable candidate for additional anesthetic procedures, extraction should be recommended.

Preventive Cleaning and Maintenance

Regardless of outward gingival appearance, most patients should have their teeth cleaned annually.¹⁶ Smaller-breed dogs or dogs and cats with increased plaque sensitivity that are more susceptible to periodontal disease, or animals that have received



FIGURE 1. Maxillary fourth premolar with stage 2 furcation. This tooth cannot be effectively cleaned without a periodontal flap but has a very good prognosis with periodontal flap surgery and guided tissue regeneration. If referral is not an option, extraction is recommended.



FIGURE 2. A premolar (307) with stage 3 furcation (through and through; **arrow**). This tooth should be extracted regardless of the fact that it has minimal bone loss.

advanced periodontal flap procedures, may need anesthetized professional dental cleanings more frequently.



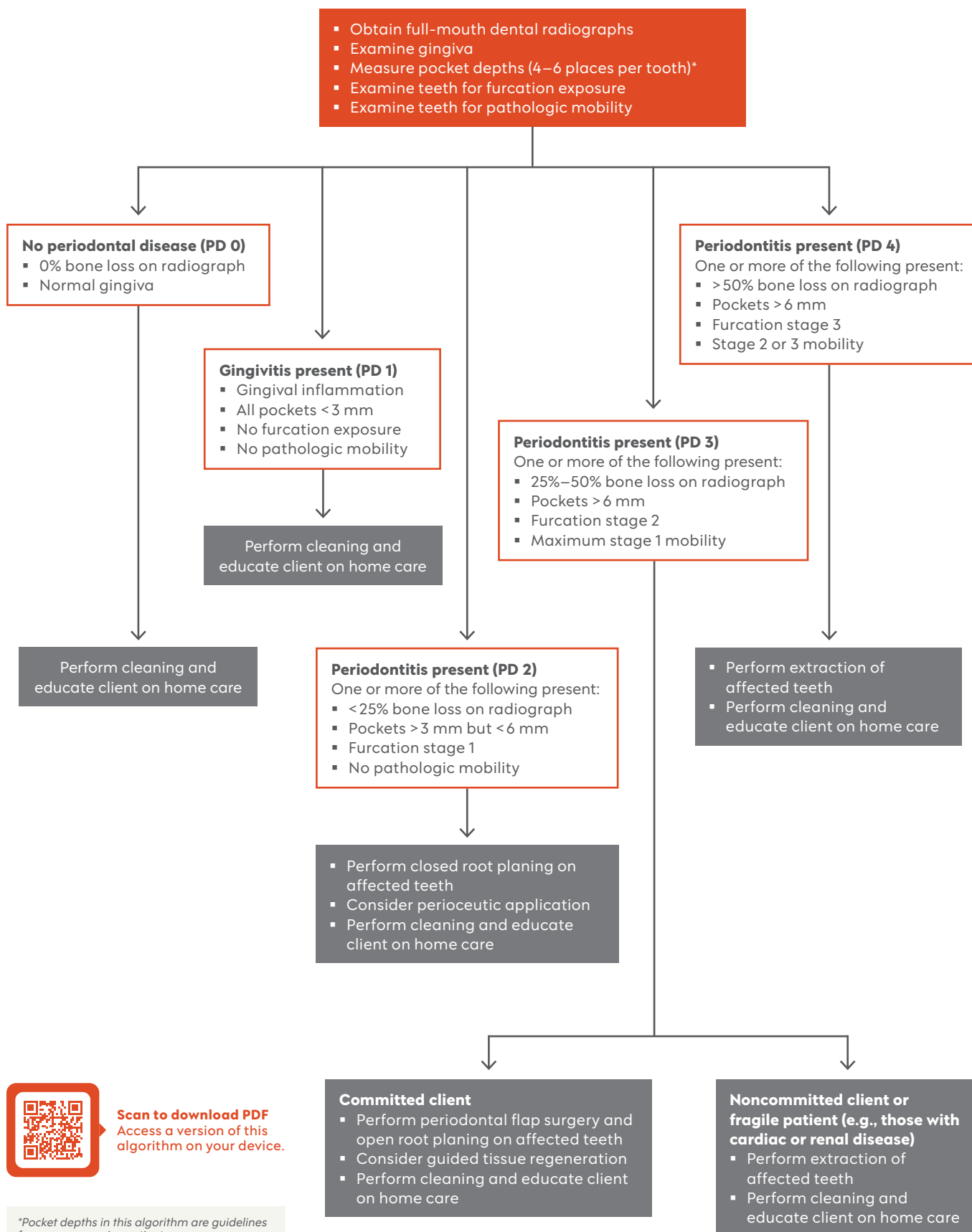
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**Pocket depths in this algorithm are guidelines for an average-size patient.*

References

1. AVDC nomenclature. American Veterinary Dental College. Accessed August 13, 2026. <https://avdc.org/avdc-nomenclature>
2. Niemiec BA. Professional teeth cleaning. *J Vet Dent*. 2003;20(3):175-180.
3. Niemiec B, Gawor J, Nemec A, et al. World Small Animal Veterinary Association Global Dental Guidelines. *J Small Anim Pract*. 2020;61(7):E36-E161. doi:10.1111/jsap.13113
4. Stepaniuk K. Periodontology. In: Lobprise HB, Dodd JR, eds. *Wiggs's Veterinary Dentistry*. 2nd ed. Wiley-Blackwell; 2019:81-108. doi:10.1002/9781118816219
5. Theuns P. Furcation involvement and treatment. In: Niemiec BA, ed. *Veterinary Periodontology*. Wiley-Blackwell; 2013:289-295. doi:10.1002/9781118705018
6. Huynh-Ba G, Kuonen P, Hofer D, Schmid J, Lang NP, Salvi GE. The effect of periodontal therapy on the survival rate and incidence of complications of multirooted teeth with furcation involvement after an observation period of at least 5 years: a systematic review. *J Clin Periodontol*. 2009;36(2):164-176. doi:10.1111/j.1600-051X.2008.01358.x
7. Cobb CM. Non-surgical pocket therapy: mechanical. *Ann Periodontol*. 1996;1(1):443-490. doi:10.1902/annals.1996.1.1.443
8. Niemiec BA. Advanced non-surgical therapy. In: Niemiec BA, ed. *Veterinary Periodontology*. Wiley-Blackwell; 2013:154-169. doi:10.1002/9781118705018
9. Sanz M, Herrera D, Kebschull M, et al. Treatment of stage I-III periodontitis: the EFP S3 level clinical practice guideline. *J Clin Periodontol*. 2020;47 Suppl 22:4-60. doi:10.1111/jcpe.13290
10. Zetner K, Rothmueller G. Treatment of periodontal pockets with doxycycline in beagles. *Vet Ther*. 2002;3(4):441-452.
11. Niemiec BA. Local and regional consequences of periodontal disease. In: Niemiec BA, ed. *Veterinary Periodontology*. Wiley-Blackwell; 2013:69-80. doi:10.1002/9781118705018
12. Niemiec BA. Systemic manifestations of periodontal disease. In: Niemiec BA, ed. *Veterinary Periodontology*. Wiley-Blackwell; 2013:81-90. doi:10.1002/9781118705018
13. Lobprise HB, Stepaniuk K. Oral surgery – periodontal surgery. In: Lobprise HB, Dodd JR, eds. *Wiggs's Veterinary Dentistry*. 2nd ed. Wiley-Blackwell; 2019:193-228. doi:10.1002/9781118816219
14. Bezerra B. Pocket reduction therapy—resective approach. In: Newman MG, Klokkevold PR, Elangovan S, Kapila Y, eds. *Newman and Carranza's Clinical Periodontology*. 14th ed. Elsevier; 2024:756-765.
15. Froum SJ, Weinberg MA, Rosenberg E, Tarnow D. A comparative study utilizing open flap debridement with and without enamel matrix derivative in the treatment of periodontal intrabony defects: a 12-month re-entry study. *J Periodontol*. 2001;72(1):25-34. doi:10.1902/jop.2001.72.1.25
16. Niemiec BA. The complete dental cleaning. In: Niemiec BA, ed. *Veterinary Periodontology*. Wiley-Blackwell; 2013:129-153. doi:10.1002/9781118705018

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Requester Publications Only (Required by 39 USC 3685)

1. Publication Title: Today's Veterinary Practice. 2. Publication No. 2162-3872. 3. Filing Date: 9/18/26. 4. Issue Frequency: Bi-monthly. 5. No of Issues Published Annually: 6. Annual Subscription Price: N/A. 7. Complete Mailing Address of Known Office of Publication: 5144 S. Orange Ave, Orlando, FL 32809. Contact Person: Michelle Doster. Telephone: 352-415-4371. 8. Complete Mailing Address of Headquarters or General Business Office of Publisher: 5144 S. Orange Ave, Orlando, FL 32809. 9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: Publisher: Doreen Carpenter, 5144 S. Orange Ave, Orlando, FL 32809. Editor: Simon R. Platt, MRCVS, U of GA CVM, 501 Brooks Drive, Athens, GA 30602. Managing Editor: Michelle Doster, 5144 S. Orange Ave, Orlando, FL 32809. 10. Owner: Eastern States Veterinary Association, dba NAVC, 5144 S. Orange Ave, Orlando, FL 32809. 11. Known Bondholders, Mortgagees, and Other Security Holders: None. 12. Tax Status: (for completion by nonprofit organizations authorized to mail at special rates): Has Not Changed During Preceding 12 Months. 13. Publication Title: Today's Veterinary Practice. 14. Issue Date for Circulation Data Below: September/October 2026. 15a: Total Number of Copies: 54,933 (Sep/Oct 2026: 53,400). b. Paid and/or Requested Circulation: (1) Outside County Paid/Requested Mail Subscriptions: 45,819 (Sep/Oct 2026: 44,885). c. Total Paid and/or Requested Circulation: 45,819 (Sep/Oct 2026: 44,885). d. Non-requested Distribution: (1) Outside County Non-requested Copies: 8,536 (Sep/Oct 2026: 7,893). (4) Non-requested Copies Distributed Outside the Mail: 0 (Sep/Oct 2026: 0). e. Total Non-requested Distribution: 8,536 (Sep/Oct 2026: 7,893). f. Total Distribution: 54,355 (Sep/Oct 2026: 52,778). g. Copies Not Distributed: 578 (Sep/Oct 2026: 622). h. Total: 54,355 (Sep/Oct 2026: 52,778). i. Percent Paid and/or Requested Circulation: 84.30% (Sep/Oct 2026: 85.04%).