



# Pet Periodontal Health Kits

Early detection, precise evaluation, and protection of pet oral health

## Clinical Significance of the Periodontal Health Kit

Helps pets detect periodontal issues earlier, faster, more accurately, efficiently, and scientifically

### Accurate Diagnosis of Periodontal Disease

Studies show that over 80% of dogs older than 3 years suffer from periodontal disease—one of the most common pet illnesses. Volatile sulfur compounds (VSCs) such as thiols are closely correlated with disease severity and can serve as effective diagnostic indicators.

### Scientific Evaluation of Periodontal Condition

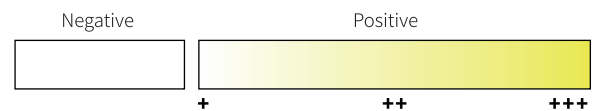
According to the 2013 AAHA Dental Care Guidelines for Dogs and Cats, thiol testing combined with visual inspection is recommended as part of routine oral health examinations.

### Earlier Screening for Periodontal Disease

By detecting thiol concentration, the kit helps identify early signs of periodontal disease, enabling pet owners to take preventive actions sooner.

### Quick Result Acquisition

Color change appears within 10 seconds, assisting veterinarians in making rapid clinical assessments.



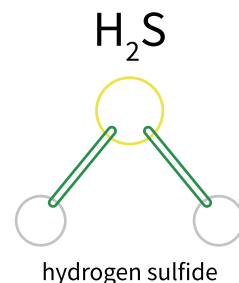
### Non-invasive and More Efficient

No anesthesia required, reducing pet stress and improving examination efficiency and safety.



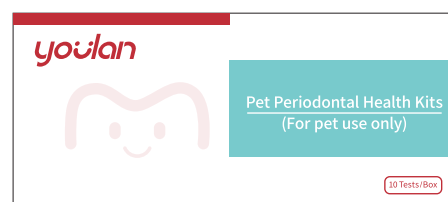
# Principle of the Periodontal Health Kit

The principle of the Periodontal Health Kit is based on a chemical color reaction. The kit contains specific reagents that react with sulfides in gingival crevicular fluid, producing a visible color change. These sulfides—such as hydrogen sulfide (H<sub>2</sub>S) and methyl mercaptan (CH<sub>3</sub>SH)—are volatile sulfur compounds (VSCs) generated by bacterial metabolism during periodontal disease. When the kit contacts these compounds, the color changes depending on concentration, which can be compared with a reference scale to indirectly assess periodontal tissue health.



# Product Information of the Periodontal Health Kit

<b>Product Name</b>	<b>Pet Periodontal Health Kits</b>
<b>Packaging</b>	<b>10 Tests / Box</b>
<b>Storage</b>	<b>room temperature</b>
<b>Shelf Life</b>	<b>24 months</b>



## References

### Oral-Fluid Thiol-Detection Test Identifies Underlying Active Periodontal Disease Not Detected by the Visual Awake Examination

Katherine E. Cvek, Dawn, FAVD, Angela Chapman, Leslie J. Herzog, Tamara Shel-Martin, Anthony Burgess-Cassler, PhD, George David McClure, PhD

**ABSTRACT**  
Periodontal disease in dogs is highly prevalent but can only be accurately diagnosed by performing an anesthetized oral examination with periodontal probing and dental radiography. In this study, 114 dogs had a visual awake examination of the oral cavity and were administered an oral-fluid thiol-detection test prior to undergoing a full-mouth anesthetized oral examination and digital dental radiographs. The results show the visual awake examination underestimated the presence and severity of active periodontal disease. The thiol-detection test was superior to the visual awake examination at detecting the presence and severity of active periodontal disease and was an indicator of progression toward alveolar bone loss. The thiol-detection test detected active periodontal disease at early stages of development, before any visual cues were present, indicating the need for intervention to prevent periodontal bone loss. Early detection is important because without intervention, dogs with gingivitis/active periodontal disease progress to irreversible periodontal bone loss (stage 2). As suggested in the current AAHA guidelines, a thiol-detection test administered in conjunction with the visual awake examination during routine wellness examinations facilitates veterinarian-client communication and mitigates under-diagnosis of periodontal disease and underutilization of dental services. The thiol-detection test can be used to monitor the periodontal health status of the conscious patient during follow-up examinations based on disease severity. *J Am Anim Hosp Assoc* 2018; 54: 548-554. DOI: 10.5326/JAAHA-MS-6807

**Introduction**  
Periodontal disease involves an infection of the gingiva that, left untreated, leads to alveolar bone loss and loss of the periodontal ligaments that attach to the tooth.<sup>1-4</sup> The structures destroyed by periodontal infection cause the lysis of the bony support of the periodontal teeth. In humans, the disease is characterized by gingivitis, periodontitis, and bone loss.<sup>5</sup> Routine prophylaxis, treatment, and home care are critically important to prevent the integrity of periodontal structures and maintain the overall health of the animal.<sup>6</sup> Periodontal disease has a direct effect on the oral health of the animal and has been linked to many systemic diseases including but not limited to cardiovascular, renal, and hepatic disease.<sup>7-10</sup>

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From the Canadian Animal Hospital and Dental Clinic, P.A., Charlton, North Carolina (K.E.C.); and FHN, Mitchell, Lexington, Kentucky (A.C., L.H., T.S.M., A.B.-C., G.D.M.).  
Correspondence: kge@cat.com (K.E.C.).

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ORIGINAL STUDIES

Original Study

### Evaluation of a Thiol-Detection Test to Assess Tooth Brushing Efficacy in Dogs

Korolina Brunius Elund, DVM, PhD, Nadja Rahunen, RVN, Sofia Thelander, RVN and Lena Olsén, PhD

**ABSTRACT**  
Periodontal disease affects more than 80% of dogs over 3 years of age, making it the most common disease in dogs seen in veterinary clinics. Gingivitis, the early-stage of periodontal disease, may be reversible with tooth brushing. Thiol, a sulfur compound, has previously been shown to correlate with the degree of periodontal disease. In this study, a thiol-detection test was used to investigate daily tooth brushing efficacy in dogs. Twenty-two beagle dogs were subjected to daily tooth brushing for 2 weeks. Gingival index (GI), plaque index (PI), calculus index (CI) and thiol were assessed before treatment (day 1), after 1 week (day 7), after last treatment (day 14), and 2 weeks after treatment finished (day 29). Degree of stress was also assessed using a fear, anxiety and stress (FAS) scale. Both 7 and 14 days of daily tooth brushing showed an improvement in oral health. Thiol decreased significantly at GI and PI improved significantly after 1 and 2 weeks of brushing. No significant improvement in CI was shown. After an additional 2 weeks without brushing, GI and PI had returned to baseline levels. Stress levels decreased from day 1 to day 14. This study suggests that a thiol-detection test can be used to assess tooth brushing efficacy. Tooth brushing has a positive effect on the oral health in dogs as soon as 7 days after commencement.

**Keywords:** dental health, calculus, FAS, gingivitis, periodontal disease, dental home care, plaque

**Introduction**

The most common disease in small animal veterinary practice is periodontal disease, and it is also considered to be underdiagnosed.<sup>1</sup> Approximately 80% of dogs have signs of periodontal disease after 3 years of age.<sup>2</sup> Untreated periodontal disease can cause discomfort and has also been associated with cardiac, hepatic and renal disease.<sup>3-5</sup> Periodontal disease is divided into 2 stages, gingivitis and periodontitis. Gingivitis is reversible with dental home care while periodontitis involves tissue loss and is generally considered to be irreversible.<sup>6-8</sup> Even with tooth brushing, periodontal disease may still develop, just as in humans. Other dental problems, not preventable by tooth brushing, may also be present. Therefore, the recommendation is that dog owners regularly visit a veterinary clinic for examination of their dog's teeth.<sup>9</sup>

Periodontal disease is initiated by dental plaque, a biofilm consisting mainly of bacteria constantly covering the tooth surface in the absence of daily tooth brushing.<sup>10</sup> During active periodontal disease, toxins are formed by periodontal pathogens.<sup>11</sup> These are foul-smelling organic sulfur compounds, and a common cause of halitosis.<sup>12</sup> The thiol-detection test used in the present study has been shown to correlate with degree of periodontal disease, and it can also detect earlier signs of periodontal disease not detected by visual awake examination.<sup>13,14</sup> Although anecdotal, it is necessary for full examination of dental status, signs of periodontal disease (e.g., gingivitis)

## Article

### Pilot evaluation of a novel test strip for the assessment of dissolved thiol levels, as an indicator of canine gingival health and periodontal status

Sandra Marín Marrieta, Maureen Leesman, Anthony Burgess-Cassler, G. David McClure Jr., Mary Buelow, Misty Finn

**ABSTRACT**  
This study evaluated a novel test strip designed to assess thiol levels as they relate to gingival/periodontal health in dogs. The strip, in the form of a pH test strip, provides a colorimetric signal which estimates the level of thiol dissolved in oral fluid. Among several oral sites tested (left and right buccal vestibules, lower buccal vestibule, and upper buccal gingival margin), fluid from the rostral gingival margin gave results with the best dynamic range, and its thiol levels correlated well with overall oral health parameters (Pearson coefficients between 0.55 and 0.84; P < 0.001), especially those relating directly to the gingiva. The strip, which can be used on animals which are awake, may be useful as a quick, objective assessment of periodontal health, potentially enhancing compliance for thorough examinations, and promoting earlier and less-costly treatment programs.

**Résumé**  
On a évalué une bandelette de test nouvelle pour évaluer les taux de thiol dissous dans le liquide buccal. Parmi plusieurs sites buccaux testés (vestibule buccal inférieur et droit, vestibule buccal inférieur et bord marginal de la gencive buccale supérieure), le liquide du bord marginal de la gencive buccale supérieure a donné les résultats avec le meilleur écart dynamique et ses taux de thiol corrélèrent bien à plusieurs paramètres de l'état buccal (coefficients de Pearson entre 0,55 et 0,84; P < 0,001), particulièrement ceux se rapportant directement à la gencive. La bandelette, qui peut être utilisée sur les animaux lorsqu'ils sont réveillés, pourra être utile comme évaluation objective rapide de l'état buccal, et qui encouragera potentiellement l'observance pour des examens complets et fera la promotion de programmes de traitement moins coûteux que sans adhésion plus tôt.

(Traduit par Isabelle Valois)

Can Vet J 2015; 192: 1330-1335

**Introduction**

A dog's age, breed and sex are the predominant factors of periodontal disease, with clinical attachment loss being observed in > 80% of individuals over 3 years of age.<sup>1</sup> In order to perform thorough assessments of canine periodontal health, anesthesia is needed for dental radiographs (D). In the patient that is awake, the pet owner must rely on the veterinarian's decision relating to subsequent assessment and treatment.

The evidence continues to support linking dental health and systemic health (S) in dogs and humans, the need for diagnostic techniques which can quickly and easily provide results correlated to oral health parameters is becoming more critical. The purpose of this study was to determine the most appropriate sample collection site, and then testing that can maximize correlation between the test results (thiol levels) and a number of clinical parameters germane to canine periodontal health.

**Materials and methods**

Seventy-one dogs were included in the study. Fifty-two of the dogs received thorough periodontal examinations, including radiographs, and measurements of gingival index, probing depth,

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Pilot evaluation of a novel test strip for the assessment of dissolved thiol levels, as an indicator of canine gingival health and periodontal status



**Shenzhen Youlan Medical Technology Co., Ltd**  
Add: 516, Building 4, Baoyunda Logistics Center, Fuhua Community Xixiang Street, Bao'an District, Shenzhen, Guangdong Province, China  
Official Website: www.ylvet.com Email:sales@ylvet.com

