

**Dental/Oral Health Disorders**

# GINGIVITIS & PERIODONTITIS IN DOGS AND CATS



Periodontal disease is one of the most common diseases in dogs and cats.<sup>1,2</sup> It is caused by the body's inflammatory response to the deposition of plaque on the teeth, both above and below the gum line.

Periodontal disease is categorized by degree of severity:

- Gingivitis occurs first with inflammation limited to the gum tissue. With appropriate and ongoing management, the disease is regarded as reversible at this point.<sup>3-5</sup>
- However, if gingivitis is not treated, it may progress to periodontitis. At this stage, destruction of the periodontal ligament attachment and adjacent alveolar bone (the supporting connective tissue and bone) occurs. Tooth loss may eventually result. Periodontitis is not reversible but may be controlled.<sup>3-5</sup>

Reduction of plaque and tartar buildup is key to prevention and management of periodontal disease.<sup>3,5</sup> Comprehensive lifelong management of dental hygiene includes mechanical means, such as tooth brushing and regular professional teeth scaling and polishing, and non-mechanical means, both of which can include a nutritional component.<sup>3,5</sup>

**Key Messages**

- Research has shown that specially formulated dental diets and chews can reduce plaque and tartar in dogs and cats.<sup>6-14</sup> Dental diets and chews may utilize mechanical and/or non-mechanical mechanisms of action:
  - While any dry pet food will reduce plaque and tartar compared to wet foods,<sup>15,16</sup> specially formulated dental diets and chews are even more effective.<sup>6,7</sup> The size, surface area, shape, texture, and/or density of dental kibble and chews are enhanced to prolong chewing times and increase contact with the teeth and gums, scraping off plaque and tartar as the pet chews.<sup>6-10,12,14</sup> For example, kibble size may be larger, and dental chews may have ridges for increased contact with the teeth and gingiva; and fiber may be included to extend chewing time.<sup>8,10,17</sup>
  - The VOHC (Veterinary Oral Health Council) Seal of Acceptance on a dental diet or chew indicates the product has met VOHC's standards for inhibiting the buildup of plaque and tartar when used as directed.<sup>17</sup>
  - Although some research suggested that chewing bones helps remove plaque and tartar,<sup>18,19</sup> other research demonstrated potential risks when bones are fed, such as broken teeth, choking due to an esophageal foreign body, or perforation.<sup>20-23</sup> Pathogenic bacteria may contaminate raw bones and diets, a risk to the pet and humans in the household.<sup>24-26</sup> Hence, bones should be avoided.

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## Key Messages (continued)

- Dental foods and chews may utilize non-mechanical means of reducing or preventing plaque and tartar accumulation with the following ingredients:<sup>7,9,27</sup>
  - Inorganic phosphate salts, e.g., pyrophosphates and sodium tripolyphosphate, chelate calcium to inhibit mineralization of plaque to form tartar.<sup>7,9,27</sup>
  - Soluble zinc salts, e.g., zinc ascorbate, are antimicrobial and may inhibit the growth of bacteria in plaque.<sup>9,10,14,27</sup>
- Research identifying the differences in plaque bacterial populations in health versus various stages of periodontal disease is ongoing in dogs and cats.<sup>28–33</sup> Initial studies exploring whether probiotics can alter the composition of the oral microbiome in dogs and cats have shown mixed results.<sup>34–36</sup> Additional research is needed to determine whether probiotics or prebiotics can inhibit plaque and tartar accumulation through effects on the periodontopathogens.
- Although plaque deposition is an important cause of periodontal disease, nutritional inadequacies or imbalances, especially in puppies and kittens and with regards to calcium; phosphorus; vitamins A, C, and D; B vitamins; and protein, may also negatively affect the health of periodontal tissues, e.g., causing alveolar bone resorption. Complete and balanced nutrition is vital for oral health development and maintenance.<sup>10</sup>
- Since periodontal disease may be painful, periodontal disease should be ruled out in pets with a reduced appetite.

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