


NUTRITIONAL SUPPORT FOR ORAL HEALTH

DIET AND THE RIGHT SUPPLEMENTS CAN MAKE A BIG
DIFFERENCE IN KEEPING YOUR DOG'S MOUTH HEALTHY.



Katie Kangas DVM CVA CVCP owns and operates Integrative Veterinary Care (intvetcare.com), a private holistic and integrative practice in San Diego, California. In addition to her CVA from the Chi Institute in 2008, Dr Kangas has training in Advanced Acupuncture, Food Therapy, Herbal Medicine and Veerinary Orthopedic Manipulation (VOM). She has authored several articles published in veterinary journals and pet magazines and lectures nationally and internationally. Dr Kangas was the Medical Director of the San Diego Humane Society & SPCA from 2002 to 2007.



THE BEST APPROACH TO PLAQUE REMOVAL IS WITH REGULAR TOOTH BRUSHING AT HOME. BRUSHING YOUR DOG'S TEETH ON A DAILY BASIS MAY SEEM LIKE A DAUNTING TASK, BUT REGULAR DENTAL HYGIENE PROVIDES AN ENORMOUS HEALTH BENEFIT FOR YOUR DOG.

It's well known that oral and dental health significantly affect overall health in both animals and humans. Simply put, chronic disease in the mouth affects the rest of the body as a constant source of inflammation as well as bacterial burden. Dental disease also happens to be the most common medical problem seen in dogs. Despite this fact, oral disease is often overlooked by many veterinarians when addressing chronic disease conditions in their patients. Oral and dental health should also be considered vital in promoting preventative health and wellness. A proactive approach can keep your dog thriving better throughout his lifetime.

Dental disease starts with inflammation of the gums from plaque bacteria. If gingivitis isn't treated or resolved, it develops into periodontitis, which is infection and inflammation damaging the deeper structures in the mouth such as the attachments of the teeth to the jawbone and the jawbone itself. This disease process doesn't only affect the tissues and structures in the mouth and jaw, but also allows the spread of bacteria and inflammation through the bloodstream into the rest of the body and organ systems.

As always, nutrition and diet are the foundation for good health for the entire body, including the oral tissues. Of course, the type of diet that dogs eat will play a huge role in their oral health, but there are also some very specific nutrients and nutritional supplements that support healthy teeth and gums.

DIET AND NUTRITION

Diet and nutrition choices are paramount to overall health, including dental health. Although most of us were taught to believe that dry pet foods were beneficial to dental health, this has been disproven by specific studies (Harvey CE, Shofer FS, Laster L; *Correlation of diet, other chewing activities, and periodontal disease in North American Client-owned dogs*. J Vet Dent. 13: 101-5, 1996). In fact, most kibble is too small to require any chewing action, and even when chewed it provides minimal cleaning of calculus (tartar) and only on the incisal tips of the teeth. In other words, chewing kibble doesn't promote cleaner teeth at the gum line, where it really matters. This myth

stemmed from the belief that tartar was the best indicator of oral disease. However, it's now known that gingival inflammation (or gingivitis) is a more accurate indicator for the level of oral infection. Beyond the fact that dry foods don't provide a mechanical "cleaning" benefit, these foods are also heavily processed via extrusion methods involving high heat and pressure. These methods create AGEs (Advanced Glycation End Products) and HCAs (Heterocyclic Amines) which are known to be pro-inflammatory and even carcinogenic. As a result, dry kibble and other heavily processed foods actually fuel inflammation and disease in the body, including the mouth and oral tissues.

This means that minimally-processed species-appropriate diets can be a critical part of overall wellness in addition to oral health and general resistance to chronic inflammation. There's speculation that raw food diets contain natural enzymes that help resist bacterial plaque, though this hasn't yet been proven in specific studies. However, many veterinarians and pet owners have seen healthier teeth and gums in dogs eating raw food diets. Indeed, raw meaty bones do provide an active chewing and gum cleaning advantage. In contrast, cooked bones are more brittle, creating the potential for splintering when chewed. That's why cooked bones are associated with the risk of damage to the tissues in the intestinal tract. Another concern about dogs chewing bones is the risk of damaged or broken teeth. Veterinary dentists report that large types of raw bones, such as marrowbones, rarely cause broken teeth. This is in contrast to small and thin long bones and similar shaped objects which are common culprits in damaging teeth. This has to do with canine oral anatomy and the physics of chewing as the dog's teeth are positioned against the object being chewed. Larger, bulky objects aren't chewed with the same angle and force on the large teeth at the back of the cheek and mouth, compared to smaller and longer objects. In fact, common items known to break dogs' teeth are nylon bones, cooked bones, antlers, hooves and bully sticks.

In addition to the impact that the type of diet has on oral health, various nutrients and nutraceuticals can affect the teeth and gums and help to decrease inflammation.

"IN FACT, PROPER EQUILIBRIUM BETWEEN FREE RADICALS AND ANTIOXIDANTS IS NOW THOUGHT TO BE THE MAIN PREREQUISITE FOR HEALTHY PERIODONTAL TISSUES. AS SUCH, ANTIOXIDANTS CAN PLAY AN IMPORTANT ROLE IN PERIODONTAL HEALTH AND OFFER PROTECTIVE BENEFITS."



ANTIOXIDANTS

Recent studies, including Dahiya, P et al's 2011 study *Oxidative stress in chronic periodontitis*, have linked chronic oxidative stress with periodontal disease. Oxidative stress is defined as free-radical damage to the body's cells and tissues. In fact, proper equilibrium between free radicals and antioxidants is now thought to be the main prerequisite for healthy periodontal tissues. This means antioxidants can play an important role in periodontal health and offer protective benefits.

There are numerous nutritional products available to increase antioxidant capacity. These range from vitamin supplementation (such as vitamins C and E), preferably from food-based sources rather than synthetic vitamins, to specific products providing a more effective increase in total antioxidant capacity. In regard to systemically increasing antioxidant capacity, many recent studies have evaluated the Nrf2 pathway and its tremendous benefits to overall health (discussed in my article *Managing Chronic Inflammation* in the January 2018 issue of *Dogs Naturally*). Nrf2 is a messenger protein that triggers a natural pathway in the body to stimulate the body's own antioxidant production. These indirect internally produced antioxidants (vs direct, food-based, externally sourced antioxidants) are very powerful enzymes such as glutathione, superoxide dismutase (SOD) and catalase; they are known to be highly protective against free radicals and in reducing oxidative stress. Stimulating the NRF2 pathway to create increased production of powerful antioxidants such as glutathione and SOD also has benefits for periodontal disease. Indirect antioxidants can't be well absorbed by the gut and must be produced by the body. LifeVantage makes a natural, plant-based product with a canine-specific formulation that can effectively increase the body's production of indirect antioxidants.

Low levels of the antioxidant Coenzyme Q10 (CoQ10) have been linked to periodontal disease in humans, and beneficial effects on periodontal health have been reported after supplementation of CoQ10 in the diet and with topical application onto the gums. Ubiquinol is the bioactive form of CoQ10 and is therefore the preferred form for a dietary supplement. Folic acid is another nutrient studied for its effects on oral health, such as preserving gum tissue and reducing the incidence of gingivitis and periodontitis. Organ meats contain folate and CoQ10, and CoQ10 is also in fatty fish. Many holistic veterinarians recommend 1mg of CoQ10 per pound of body weight daily, which is much higher than the typical recommended dose of 15 to 30 mg per dog per day.

FATTY ACIDS

Fatty acid supplements can also help manage periodontal inflammation. The anti-inflammatory action of omega-3 fatty acids (found in fish oil, krill oil, calamari oil, algae, etc) are widely known for their joint benefits, but they have also been shown to support oral health and periodontal tissues, as well as heart, kidney and brain health too. The high penetration ability of fatty acids also makes topical application very useful in treating oral inflammatory diseases, including periodontitis.

A unique fatty acid called 1-Tetradecanol complex is an esterified fatty acid that inhibits inflammation of the gingival tissue. It works best when applied topically onto the gums and offers a proactive approach to support the resilience of the gum tissue to inflammation and therefore minimizes the progression of periodontal disease. Elite Science's 1-TDC product is generally quite palatable for dogs. It's worth noting that 1-Tetradecanol Complex also has a high affinity for joint, muscle, tendon and ligament tissues so it can also support joint health.

PROBIOTICS

Probiotics are gaining a lot of recognition for both gastrointestinal health and overall immune system function. The mouth and oral cavity are, of course, the initial sections of the gastrointestinal tract. The body's microbiome plays a critical role in systemic immune system function and in chronic inflammation. Probiotics provide oral health benefits when taken orally or applied directly onto the gums. Applying probiotics onto the gums allows these beneficial bacteria to form colonies to create a healthier biofilm in the mouth. These helpful bacteria then work to crowd out the harmful bacteria that are responsible for causing the inflammation that leads to periodontal disease. Giving a daily oral dose of probiotics and rubbing some on the gums can help improve oral health. To apply to the gums, use a gel or liquid or a powdered probiotic (you can also empty out capsules) and simply rub it on the gums.

OTHER NUTRITIONAL SUPPORT

Standard Process Biodent (available through your veterinarian) contains a combination of cold-pressed ground bone, minerals, adrenal gland and other organ meats to support strong and healthy teeth, jawbone, connective tissues and immune system function. Connective tissues in the mouth include the periodontal ligament, which plays the important role of attaching the teeth to the jawbone.

ACTIVE PLAQUE REMOVAL

The best approach to plaque removal is with regular tooth brushing at home. Brushing your dog's teeth daily may seem like a daunting task, but regular dental hygiene provides an enormous health benefit for your dog. This is especially true for small breed dogs, who are more prone to significant levels of dental disease. It's also important to note that the product used on the toothbrush is actually not as important as the mechanical action of disrupting, or wiping away, the plaque biofilm.

**"MINIMALLY-PROCESSED
SPECIES-APPROPRIATE DIETS
CAN BE A CRITICAL PART
OF OVERALL WELLNESS IN
ADDITION TO ORAL HEALTH
AND GENERAL RESISTANCE TO
CHRONIC INFLAMMATION."**

That said, a few natural products that can be helpful when applied directly onto the gums or used on a toothbrush include coconut oil with a drop or two of properly diluted essential oils

(EOs). Coconut oil not only tastes good, but it's rich in medium chain fatty acids (MCTs) and lauric acid, giving it antimicrobial properties. It's also been shown to help draw out toxins when used on the gums. Many essential oils (EOs) are antimicrobial, anti-inflammatory, pain relieving or beneficial for oral tissues and mucous membranes. Some that have been studied in the treatment of oral diseases include clove, lemon, peppermint, orange, basil, myrrh and copaiba. Use caution in choosing your essential oil supplier, buying only pure therapeutic oils. There are several essential oil-based oral sprays and rinses on the market specifically for dogs. Dog Breath™ (available at animaleo.info and formulated by Melissa Shelton DVM) is a good EO blend specifically for dogs, containing fractionated coconut oil, copaiba, peppermint, helichrysum and myrrh.

Brushing your dog's teeth at home helps minimize dental disease and reduce the need for veterinary dental cleanings. There are now options for anesthesia-free cleanings; but unfortunately the most effective way to remove plaque is with the patient under general anesthesia. It's estimated that 60 percent of oral pathology is located under the gum line, which means an awake exam (or attempt at cleaning) will miss most of the disease problems.

In summary, maintaining a healthy mouth is a vital component in overall health and wellness for your dog. Regular oral hygiene or brushing is helpful, but you can also make a tremendous impact by selecting low-processed or raw diet options and giving some key nutrients and supplements that benefit oral health. The efforts you make to proactively support healthy teeth and gums for your dog will ultimately improve his quality of life, vitality and resilience to disease. 🌿

Healthy Bath

**CLEAN INGREDIENTS
CLEAN PLANET
CLEAN DOG!**



www.4-Legger.com

CERTIFIED ORGANIC DOG SHAMPOO

