Dental Disease in Dogs

By Dr. Cindy Kneebone

When it comes to caring for the forty-eight adult teeth in our canine pets there are really only three ways to adequately maintain them. The hallmarks for proper upkeep are nutritional, brushing and appropriate veterinary dental cleaning.

Some dental issues require veterinary attention such as crowding as seen in the brachycephalic dogs (such as Boston Terriers, Boxers, Bulldogs, Pekingese, Pug, Shih Tzu), delayed dentition which may result in retained baby teeth, poor calcification of the enamel and trauma causing pulpitis or broken teeth. If your pet has a set of healthy teeth, how do you keep them that way?

Signs of poor dental health are not specific but include some of the following:

- Halitosis
- Salivation
- Broken or discoloured teeth
- Bleeding gums usually noticed on a chew toy after play
- Tartar (calcium) buildup
- Rubbing or pawing at the face
- Facial swelling often just under the eye area
- Nasal discharges or chronic sneezing
- Weight loss from food refusal
- Dropping of food from the mouth

Canine dental diseases are similar to those found in our own mouths, and we often share the same bacterial populations. Conditions such as caries, plaque, calculus, gingivitis and periodontal disease are preventable diseases but for our canine friends, if a situation arises, require commitment on our part to maintain the dental health. Plaque induced disease is the main cause of tooth loss and synthetic illness. Chronic dental disease is a smouldering low grade inflammatory illness that affects the whole body through the release of inflammatory cytokines that can affect the joints, heart, kidneys, liver and spleen. Healthy salivary pH in the dog varies from 7.34 to 7.8. Plaque and calculus is formed on the tooth surface by interactions between the saliva, food and bacteria present in the mouth. The formation of plaque is called a biofilm disease, something studied extensively in humans and only recently being recognized and

studied in animals. This bacterial biofilm allows for the buildup of tartar on the tooth and under the gum or gingival area and locally results in an alteration of the pH toward an acidic environment and an oxygen depleted milieu.

Oral Hygiene

Tooth brushing is important for dental hygiene but is not always easy to perform with some dogs. Starting at a young age in a relaxed environment is ideal; but, an older animal can be trained to accept the brushing if done correctly and without stress and anxiety by the human handler. If attempts are made and the animal insists on biting your fingers, then an alternative needs to be used. Bites from dogs with plaque disease can result in serious infections in humans. The first case of human pasteurellosis was from a dog bite.

Begin with a soft bristled tooth brush. It can be a small child's brush or one provided by your veterinarian. Alternatively, you can use a clean sponge that has not been impregnated with cleaning agents. Apply an appropriate dentifrice and angle the bristle 45 degrees to the gum line and brush in a gentle circular motion. There are a number of veterinary dental pastes available. Some include enzymes to dissolve plaque and are often flavoured with poultry, beef or malt which is more acceptable to the pet. My favourite natural dentifrice is a paste made from baking soda; a 50:50 dilution of 3% hydrogen peroxide with water and a drop of one of the essential oils such as lavender, eucalyptus or rosemary and you can add a few drops of concentrated beef stock or the water from a can of fish. This paste addresses the acidic pH, the bacterial population and provides some oxygen to the anaerobic environment under the plaque and gum line. There are aerobic oxygen products available which provide stable oxygen attached to a chlorine molecule and these can be used in place of hydrogen peroxide. The desire to use human pastes as they are inexpensive should be avoided. There are some excellent human pastes—some that contain lactoferrin which is very beneficial to gum health—however, these human pastes, as excellent as they may be, can be harmful for our canine companions. Although human studies have shown that the addition of xylitol helps control bacteria and is added to most pastes, it is important to note that xylitol can be toxic to some dogs, affecting their liver and causing a drop in blood glucose. There is also too much fluoride in human pastes and this is a toxic halogen. Even in human dentistry, the jury is still undecided on whether fluoride is of any benefit to preventing dental caries. These pastes have not been studied in animals so for now should be avoided.

After the brushing, open a capsule of your favourite probiotic containing lactobacillus and place some on your finger and rub the gums. This may provide some normal flora to compete with the plaque promoting bacteria to reduce their numbers in the mouth. If the teeth are clean and healthy, you can brush the teeth three times a week. If there is dental disease, daily brushing is recommended.

There are some herbal spray products which if used daily, can help reduce the plaque forming bacterial populations. Using a concentrated solution of green tea as a mouth wash has been shown to reduce bacteria and contains catechins and polyphenols which are antioxidants which improve gum health. Green tea also has the added benefit of relaxing a pet and is an ingredient used in some natural anti-anxiety supplements.

Chlorhexidene gluconate or acetate is a mouth wash proven to decrease plaque, but tastes bitter and with constant use can stain the teeth brown. Soluble zinc ascorbate or gluconate in a gel to rub on the gums or as drops to add to the water is a better alternative to Chlorhexidene.

Diet's Role in Dental Hygiene

The best food to feed is a raw meat and ground bone and vegetable fibre diet. The addition of soft young bones allows the teeth to be used in a manner they were designed to be used and aids in maintaining clean healthy teeth. You need to find a veterinarian who agrees with raw feeding to guide you on how to go about preparing food and how to avoid infecting yourself with pathogenic bacteria from the improper handling or preparation of the meat. This diet, on its own, can prevent dental disease. Bones need to be introduced under your strict supervision and should be immature bones from veal, lamb or chicken feet to avoid breaking of the larger back molars and proper chewing to avoid choking injuries. You can leave meat on the bone for their added enjoyment. I often advise people to boil water and submerge the meaty bone for 5 to 10 seconds before feeding. This kills off some bacteria without changing the protein matrix of the bone.

Of course, not everyone can feed a raw diet for a number of reasons. Dental commercial diets are available in a couple of forms. Dry food shatters at the tip of the tooth so the plaque near the gum line never gets cleaned. Dental diets have added long fibres woven or embedded in the pellet. These fibres stick to the tooth and aid in removing some of the tartar nearer the gum line.

Other dry diets have an added chemical, hexametaphosphate (HMP), to the surface coating. Studies have shown that feeding HMP diets can reduce, but not fully prevent, the formation of calculus on the tooth.

There are also a wide variety of chew sticks and devices on the market. One point to remember, if there is some discomfort on one side of the mouth, the dog will not chew on that side. You may have to hold the chew stick and encourage chewing on both sides in order for the stick to be effective.

Some Useful Natural Therapies to Consider

These therapies have not been studied, but are used by integrative veterinarians to help control or treat dental disease.

The complete 12 Shuessler tissue salts are used to encourage proper tooth maturation and calcification. You can use an individual salt but I prefer to use all of them so the body has available all the physiological mineral elements required for tooth building.

Dental abscesses may respond to homeopathics such as hepar sulf, pyrogenium, thiosinamonum, silica and gun powder. Try mercurius solubis for foul odour from the mouth. Red inflamed or bleeding gums may respond to arsenicum album or phosphorus. For painful teeth try aconite, belladonna, bryonia, chamomile or hypericum. Use the homeopathic three or more times a day. If the gums are bleeding, dose every few minutes and stop once the bleeding stops.

Natural herbal washes applied with a cotton ball are my preferred antibacterial therapies. These are very important to use as antibiotic resistance is increasing around the world and it is known that resistance develops quickly in a biofilm disease. Herbs such as Coptis, Neem, Fennel and Chamomile can be applied to a cotton ball in a dilution of 1 to 2 drops of herbal to 50 drops water and dabbed onto the sore gums. Honey is also an effective antimicrobial. These herbals must be used several times daily to be effective.

Antioxidants have been studied and found to be helpful for gingival disease in humans. No studies have been done in animals. However, Vitamin C such as the scorbatate form can improve collagen production for improved gum health. Cracked cell wall chlorophyll can help clean the

mouth and reduce odours. Coenzyme Q_{10} reduces gingival disease in a number of human studies and can benefit dogs as well.

The Bach Flower remedy to cleanse the teeth is Crab Apple. Apply it using a cotton ball diluted with water to reduce plaque forming bacteria.

The best way to encourage dental health is through brushing and diets. Veterinary information is important to pick up poor dental health early. Generally, it is recommended to have a professional cleaning once every 12 to 18 months if the teeth are healthy and every 6 to 12 months if there is ongoing dental disease.