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DENTISTRY MATTERS

The following is an excerpt from the book "Work Wonders: Feed Your Dog Raw Meaty Bones," written by Tom Lonsdale and reprinted with permission



Imagine eating nothing but canned stew or kibble every day of your life without ever brushing your teeth—or perhaps once in a while having a toothbrush thrust in your mouth by a concerned friend. Can you imagine your dentist selling cans of stew and bags of kibble? Telling you that the products are the best and most scientific that money can buy. Would human dentists promote carrot-shaped chews and plastic apples as tooth cleaning aids for children and adults? For dogs, it's part of their reality in the modern artificial pet-food world; except of course, the dental chews and plastic toys sold by doggy dentists, veterinarians, are bone-shaped.

A dog's reality is worse still when you consider that the majority of veterinarians not only push artificial bones but simultaneously demonize the real thing. According to a 2003 British Small Animal Veterinary Association 'health-care' booklet:

"Puppies and dogs love chewing bones, but sadly they often lead to a trip to the vet's surgery, because the dog has swallowed a sharp fragment, cut his mouth or broken a tooth. A better idea is to give your pet manufactured nutritional chews, or a chew toy, instead."

Clearly then, dogs need friends who understand the essential connection between dogs and bones. And, for the foreseeable future, dogs need owners to wrest back control of their dog's dental care.

Please use this article to 'bone up' on dentistry for dogs. You don't need to pass exams, become accredited or buy expensive dental equipment; just learn some basic anatomy, dental disease prevention and control.

ANATOMY

Compare the size and shape of the average dog's jaws with your own and straightaway, you notice big differences. Relative to the size of its head, a dog's jaws are much larger than a human's jaws.

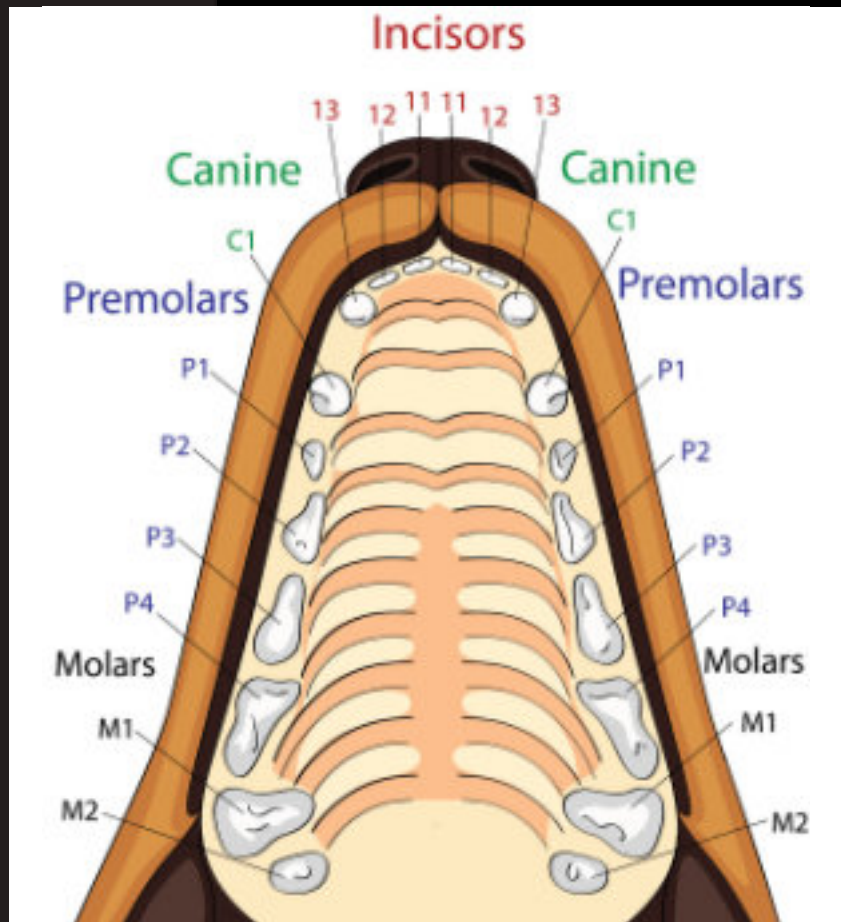
A dog's jaws extend in front of the eyes and are covered by lip-like elastic curtains. When the lips are pulled back and the jaws open wide you can see the tools of trade of the carnivore, 42 specialized teeth. Some small, some large and very different from our own.

Twelve incisor teeth nestle in two rows between the four large, dagger-shaped canine teeth. Incisors are used for tugging and nibbling at meat on bone, for holding food, for self-grooming and chasing fleas through the hair coat. Dog snarl and display canine teeth as a useful reminder of the harm they can inflict; occasionally the teeth are used in a fight.

Triangular, knife-like teeth, the premolars, are firmly set with gum spaces between. Premolars slice through hide, tendons and meat and shear bones in a scissor-like action. A dog's flat molar teeth are located at the back of the mouth, close to the jaw hinge where, like a nutcracker, maximum forces act to crush meat and bone. Jaws chomp up and down, never side to side like the chewing and grinding action of humans and herbivores such as cows and sheep.

Like humans, dogs have a deciduous set of teeth followed by a permanent set. Human deciduous or milk teeth erupt slowly one or two at a time between 6 months and two years of age. Equally slowly, we replace our baby teeth with permanent teeth starting at five and a half years of age and ending when we cut our wisdom teeth as young adults. By comparison, puppies cut their full set of deciduous teeth between three and six weeks of age. Between four and six months of age, deciduous teeth are shed and simultaneously a new set of permanent teeth appears.

At times of teething massive upheavals occur in the gums of



dogs. No wonder that puppies like to chew on hard objects to help soothe inflamed gums. And for them, the ideal 'teething ring' is provided by nature—raw meaty bones. Once adult teeth fully erupt, they cease to grow. Despite their tough job, they resist wear and tear and last a lifetime. Minerals in saliva maintain and repair shiny tooth surfaces.

NORMAL INHABITANTS OF THE MOUTH

More than 600 species of bacteria are known to live in the mouths of humans. No one knows for sure how many species live in a dog's mouth, although you can bet it's a lot. We do know that approximately 300 million individual microbes live in one milligram of dental plaque. Some plaque bacteria, aerobes, need oxygen and live at the surface of

the plaque. Others, anaerobes, hide from oxygen and live deeper in the plaque. Communities of aerobes and anaerobes cooperate, the waste products of one community being food for the other.

From the beginning of life on earth, over three billion years ago, microbes at first clung on to the environment and later changed the environment to suit their purposes. It's the same in the mouths of carnivores (and other animals). The warm, wet environment of the mouth provides specialized niches where bacteria cling—crevices of the tongue, gums and tooth surfaces. If bacteria are left undisturbed, they proliferate and set about changing the oral environment to better suit themselves. That's when trouble starts.

GUM DISEASE

In human mouths, a build-up of bacteria on teeth surfaces may lead to development of dental caries. Fortunately, dogs seldom suffer from caries. They do, however, suffer the ravages of periodontal disease—the foul-smelling disease of the gums and supporting structures of the teeth. Put simply, anything that facilitates the development of bacteria on teeth and gums facilitates the development of periodontal disease.

Minutes after being cleaned from the surface of a tooth, plaque bacteria return. The first arrivals attach sticky glue. More bacteria arrive and soon a sophisticated community develops called a 'biofilm'. Biofilm bacteria live in distinct 'neighborhoods' linked by communication and distribution channels enveloped in protective slime—like the slime on shower curtains and rocks at the seashore.

Within 24 to 48 hours, plaque biofilm hardens as minerals in saliva are formed into a tough, protective coating we call calculus or tartar. Living in and on the calculus, biofilm bacteria produce many different chemicals, some potent enough to dissolve living bone and the collagen (tough protein) attachments of teeth. At the line where tooth meets gum, a small natural crevice, the gingival sulcus, opens up under the effect of the bacterial colonization. Bacteria, particularly anaerobes, move deeper and deeper into the crevice between tooth and gum.

The body's second line of defense, the immune system, becomes aware of the bacterial invasion and counter attacks with chemical warfare. Damage escalates; gums become red and swollen; body chemicals designed to destroy bacteria

damage gum tissue creating further opportunities for the plaque biofilm.

Trapped hair, food debris, misshapen mouths and tooth and gum injuries further assist the invading plaque. It's a vicious cycle. As chemicals and bacteria from diseased gums enter the blood circulation, other organs and systems become affected; for instance, the kidneys, liver and immune system. Diseased kidneys, liver and immune system contribute to worsening gum disease.

Rotting gums give off the characteristic 'dog breath,' but otherwise, the septic oozing mess tends to be hidden from view. Dogs with large teeth relative to thin jaws seem especially susceptible. Their gums first swell then recede, the jaw bones dissolve and their teeth fall out.

PREVENTION

The bad news is that periodontal disease can be hard to detect, even for trained experts. Human dentists refer their patients to specialist periodontists for diagnosis and treatment, and that's for patients who sit still and open wide.

The good news is that you don't need specialist knowledge

or training to prevent canine periodontal disease. 'Use it or lose it,' the saying goes. If your dog's teeth are used as Nature intended, at every feeding session, and from a young age, they get the wash, scrub and polish necessary to keep plaque bacteria at bay.

As a note of caution: self-cleaning of teeth occurs best in breeds with mouths resembling those of wolves and dingoes. If dogs' mouths are misshapen, for instance in some toy breeds, flat faced breeds or those with unusually long narrow faces, then the cleaning process may be inadequate. If teeth are painful or missing or if food is fed ground or in small pieces, then the cleaning process will be less effective. Diagnosis and treatment may be required.

DIAGNOSIS

Have a sniff. Does your dog's breath smell fresh, smell rancid or are you not sure? Take care, and without getting bitten, practice sniffing the breath of friendly dogs. Good diagnosticians practice to make perfect.

Visual diagnostic clues range from the subtle to the extreme. Are gums red or swollen? Have gums shrunken from their



original line revealing the roots? If your dog has difficulty eating, paws at his mouth and drools saliva, he may have a broken tooth, loose teeth or severe periodontal disease. On closer inspection, is there a build-up of tartar on teeth, or hair or debris stuck in the crevice between teeth and gums?

If in doubt, and at routine veterinary examinations, be sure to ask your vet to make a thorough check. If he/she is in doubt, request an examination under general anesthetic. I don't want to be melodramatic about this but most dogs have bad breath and 80% or more of dogs over three years of age have periodontal disease at a level requiring treatment. Vets become so used to seeing oral disease, they either don't notice or they think oral disease is 'normal.'

An extreme example of veterinary oversight involved a 10-year-old Labrador owned by Guide Dogs for the Blind. As a companion dog for elderly people, she had regular check-ups at a prestigious veterinary hospital. At the last check-up, the vet wrote in the health record book: 'All OK except some tartar developing.' But things were far from okay. In fact, both upper and lower jaws were rotting and when I was called in four months later, 21 teeth needed extraction. If your vet lacks experience or, for any reason, appears uncertain, it may be wise to seek referral to a specialist veterinary dentist.

TREATMENT

Tooth cleaning and tooth removal are the two essentials of dental treatment. Very often, tooth cleaning is all that's required. Human dentists recommend that patients with bleeding gums spend extra time brushing the teeth and gums. After a week, the gums are usually



healed. It's the same with dogs.

If your dog is relatively young and does not have broken teeth, then a few days using Nature's toothbrush, raw carcasses or raw meaty bones, may be the only treatment necessary. If, for any reason, a change of diet is insufficient to solve the problem, then examination and treatment under anesthesia is the next step.

Anesthetics are relatively safe these days, but nonetheless are costly and best avoided. Before giving the OK to your vet, it's best to reach an agreement as to what will happen in the event teeth are found to be loose or seriously diseased and in need of extraction. If possible, try to schedule all procedures to be performed under one anesthetic.

'Treat the patient, not the tooth,' is my motto when deciding whether to clean or extract a tooth. If, by cleaning, a tooth can continue to serve a useful purpose, then I clean it. But if a tooth and surrounding gum are likely to be a constant source of periodontal disease poisons and pain for the patient, then I remove the tooth. I recommend that you reach a similar agreement with your vet prior to the commencement of dental treatment.

This point is worth emphasizing because too many veterinarians and veterinary technicians devote effort to polishing dead and diseased teeth that, whilst they may look good immediately after dental treatment, continue to poison the patient, even if the patient is fed a tough, chewy natural diet.

After the patient returns home, in nearly every case, a tough chewy diet pummels and massages sore gums back to good health. Soft diets don't soothe sore gums. In fact, they prolong the healing process.

BROKEN TEETH

Teeth break for a variety of reasons and contrary to the scare stories, it's seldom due to eating a natural diet. Dogs' canine teeth clash in fights and snap on impact with other hard surfaces. Sometimes premolar and molar teeth split when dogs gnaw 'recreational' bones (large beef marrow bones). Chewing on tennis balls and bricks may expose the pulp cavity. Dogs that constantly chew at the hair coat, mostly as a result of diet-induced skin disease, may abrade teeth down to the pulp cavity too.

Open root canals funnel infection directly into the blood

stream. Delaying treatment is not an option. And in my opinion root canal therapy is not a valid option either. Root canal therapy involves plugging and sealing the tooth and can be counted on to store up trouble. Many root canal treated teeth develop abscesses at the roots and give rise to discomfort and pain. Even treated teeth that remain pain free are likely to continue discharging toxins from the bacteria trapped in the dentine tubules. If a tooth is broken and the pulp cavity is exposed, I recommend, in the best interests of the patient, that the tooth should be extracted.

PUPPIES

Puppies fed processed food often have septic, foul smelling mouths. Deciduous teeth, which should be shed with ease, hang by shreds of inflamed gum. Happily, most puppies quickly take to a healing diet of carcasses or raw meaty bones. Occasionally, deciduous canine teeth persist, firmly anchored in the gums, past the time for shedding at six months of age. If your pup's deciduous canines persist past seven months of age, then it's best to have them removed.

OLDER DOGS

When owners consult me about problems affecting their dogs, I seek to provide answers for their specific concerns. But, consistent with the motto 'treat the patient, not the ailment', I include discussion of dietary and dental needs. Ailments are often temporary or of a minor nature; dietary and dental needs are paramount and permanent.

Older dogs frequently suffer from moderate to severe periodontal disease. Once a diagnosis is made, the question often arises: Is the patient too old to undergo treatment? It's here that medical, emotional and

ethical values can collide. Each case needs to be judged on its merits. The following check list may help you with difficult decisions:

- How severe is the dental disease?
- What investigations need to be performed to obtain fuller information?
- What other medical and surgical conditions affect the patient?
- How much pain/discomfort/suffering is being endured by the patient?
- If untreated, how much longer can the patient be expected to live?
- What is the anesthetic risk?
- What monetary costs are involved?
- What other implications arise if the diseased mouth is left untreated?
- Do you need a second or specialist opinion before taking decisions?

Sometimes, to relieve suffering, it's kindest to administer an overdose of anesthetic and, humanely, euthanize the patient. But in my experience, I generally find it's kindest, even in very old dogs, to remove diseased teeth, clean up the mouth and give the patient a new lease of life.



**TOOTHBRUSHES,
DENTAL CHEWS AND
PRESCRIPTION DIETS**

Canine teeth, which don't get used for gnawing on bones, sometimes accumulate plaque and tartar. Tooth brushing can help. Use a soft human toothbrush or moistened rag in a circular action at the gum margin. Hard deposits may first need to be removed with a dental scraper or other metal instrument. (You may need to consult your vet.)

Sometimes, in dogs with misshapen mouths or missing teeth, tooth brushing can

provide an additional aid to teeth cleaning. In general, toothbrushes and dental chews represent failed artificial solutions for artificially created problems. Unfortunately, too many owners gain a false sense of security by believing the marketing hype. Their pets suffer in silence.

So called recreational bones are frequently promoted by proponents of packaged raw foods. And frequently this adds further injury to insult. Not only do hard indigestible bones fail to clean teeth but oftentimes, they also break teeth and therefore are

best avoided.

Do you believe that anyone would seriously consider cleaning their teeth and gums with biscuits? Of course not and it's best not to believe the marketing hype about prescription kibble for dogs either. Insofar as those products remove tartar, it's the tartar on the crowns of the teeth that gets abraded. Down at the gum line, where the bacteria do the damage, the kibble turns to sludge and further feeds the bacteria. By contrast, raw meaty bones scrape, squeegee and polish teeth and gums clean. 🦷



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TOM LONSDALE graduated from the Royal Veterinary College, University of London in 1972. After a period as a volunteer in Kenya and work in farm, zoo and small animal veterinary practices, he opened his own group of clinics in Sidney, Australia. He admits he was slow to recognize the diet and dental disease connection affecting his patients. In 1991, he gained recognition as the Whistle-blower Vet, championing a raw meaty bones diet for dogs and cats. In 1993, the University of Sidney commissioned him to write the definitive article, "Preventative Dentistry" and in 2018, he was commissioned to write the paper, "Raw Meaty Bones Essentials." His three books in the Raw Meaty Bones Trilogy are available at Amazon in paperback, e-Book and audiobook. For more information visit: www.ThePetFoodCon.com