



## Library Article

---

### Why you should look your beardie in the mouth Linda Aronson, DVM

#### Getting to know you

Dogs' teeth are arranged in facing upper and lower arches. The lower arch is narrower than the upper. The roots of the upper teeth are embedded in the incisive bone (incisors) and maxillary bones. The lower teeth roots embed in the mandible. The dog's teeth and jaws are specialized for grasping and consuming animal prey. The four canine teeth are long and pointy and dig in to establish the dog's grip while the prey species weakens and expires. Behind the canines are the cheek teeth - premolars and molars – which are shorter and wider, with cutting edges to chew and grind the food. The first lower molar and the fourth upper premolar are called Carnassial teeth, and their shearing action is particularly important for a flesh eating mammal. There is one more molar tooth in each mandible than in the corresponding maxilla. The incisors are separated from the canine teeth by a distinct gap. These small thin teeth are used primarily for gnawing flesh from bone (or chewing at itches). When the jaws are closed the incisors, fourth premolar and molars meet the teeth of the opposite arch. The incisors come together optimally in a scissor or < like configuration, although a straight bite is acceptable in the breed. The first three premolars normally fail to meet and the opening formed is called the first premolar carrying space. In longer muzzled dogs spaces will appear between teeth, and sometimes supernumerary (extra) teeth may be present. Extra or missing teeth are not a fault in beardies.

Dogs have two sets of teeth during their lifetime. There are 28 deciduous or baby teeth and 42 adult or permanent teeth.

#### **Dental formula permanent teeth**

	<i>Incisor</i>	<i>Canine</i>	<i>Premolar</i>	<i>Molar</i>	
<i>Upper</i>	<u>3</u>	<u>1</u>	<u>4</u>	<u>2</u>	= <u>10</u> <i>Left and right</i>
<i>Lower</i>	3	1	4	3	
<i>Dental formula deciduous teeth</i>					
<i>Upper</i>	<u>3</u>	<u>1</u>	<u>3</u>		= <u>7</u>
<i>Lower</i>	3	1	3		

Usually puppies are not born with teeth, and they start to erupt between 2 and 3 weeks of age, and they are usually all in place by the time the puppy is 6 weeks old – although there can be considerable variation. Puppies do not have molars. Puppy teeth are softer and thinner than permanent teeth and needle sharp. Disease and nutritional deficiency can cause permanent



## Library Article

---

damage to puppy tooth enamel. Distemper, hepatitis and leptospirosis can all damage tooth enamel leaving it pitted and discolored. Certain antibiotics, most notably tetracycline, can have the same effect whether given to bitch or puppy. The puppy teeth start to loosen and fall out between 12 and 14 weeks of age with the adult teeth coming in from front to back. The puppy teeth are loosened by the pressure of the much larger permanent teeth coming in from below except in the case of the canines. Permanent canines erupt beside the puppy ones and they can coexist for some time before the puppy teeth fall out.

Removal of the puppy teeth is normally not advisable as you can damage the root and enamel of the permanent teeth in the process. Teething puppies often have sore and swollen gums and will chew on anything to relieve the pain. Cold can be helpful, so putting appropriate chew toys in the fridge or freezer may be helpful. Chewing will also help loosen the baby teeth and aid in normal jaw development. Permanent teeth are usually all in between six and seven months. Jaws grow independently of each other; usually the upper jaw grows ahead of the lower. Owners should not rush for orthodontia, or worry about the dog's bite or lower canines growing into the upper palate. These usually come right once both jaws have completed their development.

Each tooth has a crown (the visible part of the tooth) and one or more roots which embed in the jaw bone. The neck of the tooth joins the root and crown. Incisors and canines have a single root, as do the first pre-molars. The upper second and third premolars have two roots each, and the fourth premolars and molars have three roots each. The rest of the lower premolars and molars each have two roots, except for the third molar which has just one.

### Common Dental Problems

The most common dental problem in dogs is periodontal disease. Plaque – a mixture of bacteria, food debris and mucus forms a fine, white film on the teeth and gums. Eighty percent of plaque is bacteria, and four hundred different species of bacteria have been found in animal mouths. The plaque gets under the gum line into the periodontal pockets – the spaces whose depth dentists human and veterinary measure at the base of each tooth. From there the bacteria erode the bone holding the teeth – resorption. This causes the teeth to loosen. In the mouth itself, the plaque mixes with saliva to form tartar, the yellowish brown cement like substance that sticks to



## Library Article

---

teeth. Tartar generally forms faster in dogs than in humans. The tartar pushes on the gums causing them to recede further from the teeth, and providing further opportunity for the bacteria in the plaque to attack the bone, enter the root canals causing endodontal disease – disease inside the tooth. Bacteria can also enter the bloodstream causing systemic disease – sore throats, but more seriously heart, kidney and other problems. Gingivitis is superficial inflammation of the gums. Without appropriate dental care though, it will progress to periodontal disease.

The second most common dental problem for dogs is tooth fracture. This is often the result of hard objects sliding off the edge of the tooth. Fractures may expose tooth pulp, which contains the nerves of the tooth, so they are painful; this also exposes the interior of the tooth to invasion by bacteria – further increasing the risk of endodontal disease.

Dogs are prone to all the dental problems humans get. As well as those already mentioned these can include tooth root abscess, tumors of the gums and teeth and cavities. Dogs are however, far less likely to get cavities than are people. When they do occur they are usually seen as black marks on the tooth close to the gumline. They can be filled in many cases.

### Prevention

It is important that from an early age your puppy becomes used to you handling his mouth and teeth. With a young puppy wrap a washrag or piece of gauze over your finger and rub it back and forth over his teeth and gums. Do this once or twice a day, and when he is tolerating it well (Hint: it's usually easiest when he is sleepy). You can take a soft child's toothbrush and accustom him to that.

Once the permanent teeth are present tooth cleaning should begin in earnest. Eliminating plaque before it becomes tartar is clearly a good idea, and this is best achieved mechanically with a brush. Optimally, dog teeth should be brushed every day, just like ours; failing that try to do it as often as possible, at least twice a week.

It is important to use a dog toothpaste with enzymes for added action against plaque. Avoid toothpastes with baking soda, detergent and/or salt, as dogs swallow the paste and don't spit it out like humans. Fluoride is present in some pet toothpastes to help control bacteria. The best toothbrush for a bearded collie has a long handle with an angled head to make it



## Library Article

---

easier to get all the way to the back teeth. The bristles should be soft to aid penetration between the teeth, and into the spaces below the gum line. Some people prefer a finger brush that fits on the finger tip. The bristles are usually somewhat larger than on a regular brush, and less likely to do a good job of cleaning below the gumline.

Place the brush loaded with paste (if possible work the paste down between the bristles before you begin) at an angle of 45° at the junction of tooth and gum. Move it in an oval pattern working it between the teeth and under the gums about ten times and covering three or four teeth, and then move to the next area. Most plaque and tartar forms on the outside of the upper teeth; and this is the area which should receive the bulk of your attention. While dental diets and chews can help remove tartar and plaque from the exposed areas of the teeth, only brushing will get beneath the gum line. Your vet may also recommend the use of a canine mouthwash to help kill bacteria and heal damage to the gums. When you have finished brushing your dog's teeth, get in the habit of doing a quick visual inspection for fractures – especially of the carnassial and canine teeth, discoloration of the teeth, and narrowing of the necks of the teeth. Look for sticks and other objects caught between his teeth or under his tongue. Regular tooth cleaning will not only help prevent tooth problems but should leave your dog's breath smelling sweet, and make his kisses much more enjoyable. If after cleaning there is still an off odor to your dog's mouth take him to your vet as it likely indicates systemic disease elsewhere in his body.

### Professional care

Even with regular hand cleaning, professional dental prophylaxis is often necessary to keep your dog in the best dental health. Dogs need to be anesthetized for this, and in order for anesthesia to be safe you must run a complete blood count and biochemical profile to ensure your dog is in good health. (If not problems need to be addressed before dentistry can be performed.) Under anesthesia the tartar will be scaled from the teeth above and below the gumline using both hand and ultrasonic instruments. The teeth are then polished to remove the microscopic grooves introduced by scaling which could make it easier for tartar to stick to the tooth. Fluoride will often be applied to the teeth to slow the return of plaque and tartar. It is wise to have X-rays taken of your dog's mouth, just as you would of your own, to make sure that there are no problems developing in the tooth roots and jaw bones. While dental technicians may do teeth cleaning in some states, this is a surgical procedure, and it is better if a veterinarian performs



## Library Article

---

both the cleaning and examination. More complex cases should be referred to dental specialists, many of whom are board certified by the American Veterinary Dental College (AVDC).

Sometimes though, less can be more. Periodontal disease has been related to diseases throughout the body, but any oral surgery will introduce bacteria into the blood stream. This is why your dog should receive antibiotics before and after his tooth cleaning. In humans though, evidence is mounting that saving teeth at all costs is not a very wise choice. You cannot sterilize a dead tooth and root canals – which are becoming increasingly popular in dogs – are basically preserving a dead tooth in the mouth. They serve as a source of bacteria, viruses and fungi as well as necrotic break down products such as endotoxins, and other highly poisonous substances – hydrogen sulfide products and methyl mercaptans. These organisms and poisons can travel the body in the blood or lymph, and also along nerve fibers and into the brain. Acute or chronic septicemia, slow, progressive shrinking of normal tissue within the organs, and its replacement with inactive fibrous tissue, infections within the organs, and allergic and immune disorders can all be triggered, see table below. Perhaps it is better to remove dead teeth rather than trying to salvage them. Dogs are less vain about their looks and provided there is a canine remaining on each side of their face their tongues tend to stay in their mouths and not loll out.

With regular care your dog should be able to keep his teeth for life and that life can be long and healthy if we avoid letting oral organisms enter the body to wreak their havoc there. It's amazing that we can gain so much from a few minutes well spent with a tooth brush each day. What is sad is that so rarely do we do so. We often read in these pages that a judge has found dirty teeth on an otherwise beautifully groomed and turned out bearded collie, and yet, poor dental care will have a far more profound and serious effect on our dog's health than any mat.