

# Malocclusion, Malalignment, Malposition of Teeth; Persistent (“Retained”) Deciduous Teeth

## ABOUT THE DIAGNOSIS

There are two basic causes for “crooked bite” problems, or tooth misalignment, in pets. The jaw itself may be the culprit—the upper and lower jaws may be of disproportionate lengths—or the bones may be unevenly formed. Alternatively, individual teeth may be out of position in a jaw that is normal.

Some of the varieties of head shapes that have been selected for in dog breeds demonstrate disproportionate jaw lengths. In the “normal” skull shape (*mesaticephalic* breeds, such as a beagle), the small front teeth (incisors) of the upper and lower jaw align with each other exactly. The upper canine teeth (the “fang” teeth) fit into a space just behind the lower canines. In dogs with long, narrow skulls (*dolichocephalic* breeds, such as collies), the upper incisors tend to be in front of the lower incisors, and the upper canines may collide with the lower canines. This is called an overshot jaw. Dogs with short noses (*brachycephalic* breeds, such as bulldogs), have undershot jaws. The lower jaw is longer than the upper jaw, with the lower incisors protruding beyond the upper incisors. Although this type of jaw misalignment can occur in cats as well as dogs, it is much less common since cats have not been bred for the extremes of skull shapes seen in dog breeds.

Another bite problem involving jaw shape is *wry bite*. Here, only part of the dental arcade does not align correctly with the opposite jaw. This is caused by uneven growth of the jaws; the shape of the skull is also not symmetric. Wry bite can be a result of trauma to a young, growing animal or may be a genetically inherited trait.

Misalignment or malposition of individual teeth can occur with undershot or overshot jaws due to the collision of teeth in the upper and lower arcades. In normal jaws, persistent deciduous teeth (“retained baby teeth”) can force the permanent teeth out of their normal positions. This is a common condition in puppies and is not unusual in kittens. When the deciduous tooth is not shed as the permanent tooth begins to emerge (erupt), most teeth are forced closer to the midline of the mouth. If this happens with the lower canine tooth, it may hit the roof of the mouth rather than fitting in the space between the upper incisors and the upper canine tooth. An exception is the upper canine tooth, which is pushed further forward in the jaw by a persistent deciduous tooth. This can cause the upper canine tooth to hit the lower canine, since its normal position is just behind the lower canine. Therefore, baby teeth that are not shed naturally should be extracted to reduce the risk of such problems.

## LIVING WITH THE DIAGNOSIS

Dogs or cats with malocclusion are more prone to periodontal disease than those with normal occlusion. That is, the process of dental plaque and tartar accumulation, leading to gingivitis, gingival resorption, and possibly deep-seated infection around the tooth, is more likely to occur if dental alignment is poor. Therefore, correcting malocclusion (or preventing it from happening when possible) is an important and useful preventive measure that can spare a dog or cat lifelong discomfort of the mouth.

A home dental cleaning program and regular dental cleanings by your veterinarian will help to keep periodontal disease in check. Definitive approaches involve determining whether the problem is minor, in which case no treatment may be required, or whether the problem is significant and likely to lead to long-term damage

of the teeth, difficulty eating, and so on. If this is the case, treatment (usually dental surgery) will be recommended. A complete examination of the mouth and teeth by your veterinarian should answer these questions; occasionally, x-rays are needed to assess the jaws and teeth, and in dogs and cats, these must be performed under general anesthesia.

## TREATMENT

Adult pets with problems involving the shape of the jaws and symmetry of the teeth may be able to accommodate well without intervention. Extra attention should be paid to routine dental care in these pets because they are more susceptible to periodontal disease than those with normal teeth alignment. Teeth that rub against other teeth in the opposite jaw sometimes become so severely worn that the pulp canal of the tooth becomes exposed. Since the pulp canal contains blood vessels and nerves that supply the tooth, a tooth with an exposed pulp canal first becomes painful and then ultimately dies. The open pulp canal becomes a route for bacteria in the mouth to reach the bone of the jaw, which is a serious problem. These teeth should be treated either with a root canal or by removal (extracted). Malpositioned teeth can also cause trauma to the soft tissues of the mouth, as in the case of the lower canine tooth mentioned above which hits the roof of the mouth after being displaced inward by a persistent (“retained”) baby tooth. A veterinarian experienced in veterinary dentistry can relieve the pet’s pain by one of several surgical procedures to correct these problems; the earlier the intervention, generally the better the long-term outcome. You should discuss referral to a veterinary dental specialist (directory: [www.avdc.org](http://www.avdc.org)) with your veterinarian for a second opinion, if necessary.

Puppies and kittens should have their mouths examined carefully for problems with malocclusion or persistent deciduous teeth. Sometimes extraction of some deciduous teeth can prevent severe bite malformations that would otherwise occur later on. The most common problem is persistent canine deciduous teeth. If the tip of the permanent tooth can be seen breaking through the gum and the deciduous tooth is still present, the deciduous tooth should be extracted. A short period of general anesthesia will be needed to do this, and removal of these persistent deciduous teeth will prevent the development of serious malalignments of the permanent teeth. This may seem trivial, but removal of persistent deciduous teeth is a prime example of preventive medicine: it is a simple way of avoiding longstanding, potentially painful, potentially expensive problems in the future. A dog’s or cat’s “baby” (deciduous) teeth should all be gone by age 4 months.

For more severe malocclusion or malalignment problems in kittens and puppies, the help of a veterinary dentist should be sought.

## DOs

- Check your puppy or kitten for normal jaw and tooth alignment; watch for baby teeth that persist when the permanent teeth begin to erupt.
- Institute a dental care program for your pet; your veterinarian can offer suggestions and guidance.
- If teeth are striking other teeth or the roof of the mouth, consult a veterinary dentist.

## **WHEN TO CALL YOUR VETERINARIAN**

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- If your kitten or puppy has persistent baby teeth or is developing an abnormal bite.
- If your pet has difficulty eating or seems to have mouth pain (food falling out of the mouth, bloody saliva at the lips, discomfort when chewing, etc.).

## **ADDITIONAL INFORMATION**

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- Conditions such as undershot jaw, overshot jaw, and wry bite are inherited genetically; animals with these problems should not be bred.

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