

# MALOCCLUSION, MALALIGNMENT, MALPOSITION OF TEETH, RETAINED DECIDUOUS TEETH

## About the Diagnosis

There are two basic causes for "bad 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 (mesocephalic 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 (such as collies, dolichocephalic breeds), 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, such as bulldogs (brachycephalic breeds), 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 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, retained baby (deciduous) 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 baby 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 retained 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 need to 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. 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 (these require general anesthesia) to assess the jaws and teeth.

## 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 jaws. Teeth that rub against other teeth in the opposite jaw sometimes become so severely worn that the pulp canal of the tooth becomes exposed. 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 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.

Puppies and kittens should have their mouths examined carefully for problems with malocclusion or retained deciduous teeth. Sometimes extraction of some baby teeth can prevent severe bite malformations that would

otherwise occur later on. The most common problem is retained canine deciduous teeth. If the tip of the permanent tooth can be seen breaking through the gum and the baby tooth is still present, the baby tooth should be extracted. A short period of anesthesia will be needed to do this, and removal of these retained teeth will prevent the development of serious malalignments of the permanent teeth. 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. Often the use of "braces" for a short while can prevent permanent problems with the bite.

## DOs

- Check your puppy or kitten for normal jaw and tooth alignment; watch for baby teeth that are retained 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 veterinarian who has advanced training in veterinary dentistry.

## When to Call Your Veterinarian

- If your kitten or puppy has retained 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

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