

Malocclusions (abnormal bites) occur when there is abnormal tooth-to-tooth or tooth-to-soft tissue contact. The malocclusion can involve one or many teeth, and can be due to retained primary teeth, genetic causes, trauma, tumors or infections that cause teeth to erupt abnormally. Breed differences in skull shape or changes in jaw length can lead to crowding and rotation of teeth that are common for a breed, but cause damage to the teeth and soft tissue. When malocclusions are caused by skeletal deformity and abnormal jaw length, this is considered genetic, and affected animals should not be bred.

Correction of malocclusion depends on many factors and may include extraction, orthodontic appliances**, oral surgery or endodontic treatment. Sometimes the occlusion can be corrected to normal, but our main goal is always to have a pet with a comfortable and functional bite, even if the occlusion is not normal.

When the malocclusion is present in young puppies or kittens with all primary teeth, interceptive orthodontics can be performed. This is the selective extraction of the primary teeth in abnormal occlusion to allow the maximum amount of growth genetically possible. Extraction of the teeth may not completely correct the problem, but it will alleviate the pain associated with abnormal contact until the permanent teeth erupt.

Retained primary (deciduous) teeth: This is the most common cause of malocclusion. Primary teeth should shed when the permanent teeth erupt. The primary teeth cause abnormal crowding, forcing the permanent teeth into abnormal positions. It is especially important to monitor permanent tooth eruption from age 4-7 months. Remember: “No two teeth should occupy the same space at the same time”!

Mandibular distocclusion (class 2 malocclusion): the lower jaw (mandible) is too short. This is a genetic skeletal deformity. The short jaw can cause the mandibular canine teeth or incisors to traumatize the palate and gum tissue of the maxilla (upper jaw), causing pain and damaging the teeth.

Mandibular mesiocclusion (class 3 malocclusion): the upper jaw is too short. This genetic skeletal condition may be normal for some breeds such as Boxers and Bulldogs, however it can cause abnormal contact of the maxillary incisors against the gum tissue of the mandibular

incisors, and wear on the canine teeth and or incisors making abnormal contact and cause damage to the teeth and gums. The short maxilla also often results in crowded and rotated teeth, which can cause abnormal wear as well as rapid onset of periodontal disease.

Base Narrow canines (linguoversion): The mandibular canines are erupting too close to the tongue, hitting the gum tissue of the maxilla or hard palate. This can be due to a tooth or jaw problem.

The tooth problem occurs with a normal jaw, and can be caused by retained primary lower canines. This is due to the fact that the adult canines erupt lingual (closer to the tongue) to the primary canines. The retained primary tooth will cause the adult canines to deviate inwards.

If there are retained primary canines or the patient still has all primary teeth and is base narrow, extraction of the primary teeth (interceptive orthodontics) should be performed as soon as possible to try to correct the problem. The lingual deviation of the adult canines will usually cause trauma to the hard palate and pain, and correction is necessary.

The jaw variety is due to a genetically narrow jaw. There are two ways to treat this condition. If the malocclusion is slight (usually a tooth problem), then an inclined plane, crown extension or other orthodontic correction can push the teeth outward into more normal occlusion. If the problem is moderate to severe, or there is interlock with the upper canines, then crown amputation and pulp capping is usually the best choice

A wry bite, where the two halves of a jaw don't grow at the same rate can also cause this problem, and crown amputation is indicated to relieve soft tissue trauma.

Rostroverted (Lance) canines: the maxillary (upper) canine teeth have erupted horizontally, causing the tip of the crown to point forward rather than down.

Rostrally displaced upper canines can be caused by a retained primary upper canine or can be genetic. This is mostly commonly seen in Shetland sheepdogs. It can cause periodontal disease, as well as abnormal wear from striking the lower teeth. This can be corrected by extraction of the tooth, amputation and pulp capping, or by orthodontic movement. If this is genetic, the patient should be neutered prior to performing orthodontic correction.

Anterior crossbite: the upper incisors erupt behind the lower incisors instead of in front of the lowers. This creates a "reverse scissors" bite but is usually comfortable. If it is due to a tooth problem, it can be corrected by an **orthodontic appliance** if necessary. If it is a jaw problem, correction should only be attempted if there is pain or damage to teeth or soft tissues. Orthodontic correction may be a lengthy and involved process, and animals with genetic causes should be neutered.

Posterior cross bite: the maxillary fourth premolar occludes inside the lower first molar. This is most common in collies. Correction of this defect is very difficult and is usually not necessary as the teeth function properly in their new alignment.

****An important note about orthodontic correction. **** Movement of teeth is a procedure that requires proper materials and a degree of expertise in dentistry. Improperly applied orthodontic devices can cause more harm than benefit, and permanently damage the teeth and gums. Orthodontic correction should never be undertaken without a thorough bite evaluation and an understanding of the type of tooth movement and appliance being used.