

Overbites in the Greater Swiss Mountain Dog

By Anna Hansen, MARS' Swissies

The way teeth align with one another is termed *occlusion*. Normal occlusion, in most breeds of dogs, consists of the upper (maxillary) incisors just overlapping and touching the lower (mandibular) incisors (scissor bite). Like most breeds, our breed standard dictates that “the teeth meet in a scissors bite”.

Our breed standard is not as strict regarding teeth and placement as some breeds; however, as breeders we should be aware of, and breed toward, good basic canine mouth structure. Canines have four types of teeth. Incisors are the smaller front teeth, located between the canines on both the upper and lower jaws. The canines (cuspids) are located on the sides of the incisors with two on both the top and bottom. Premolars (bicuspid) are located behind the canine teeth. The molars are the teeth furthest back in the mouth. Ideally the GSMD should have forty-two correctly placed adult teeth: 22 in the lower, 20 in the upper jaw.

The most common malocclusion (abnormal tooth alignment) seen in the GSMD is an overbite. Overbite (also known as parrot mouth, overshot, class two, mandibular brachygnathism) occurs when the upper jaw is longer than the lower. Usually there is a gap between the upper and lower incisor teeth when the mouth is closed. Usually the upper premolars are displaced at least twenty-five percent toward the front, when compared to the lower premolars.

According to Merck Veterinary Manual:

Puppies are born with “overshot” maxillas (brachygnathia), which allow the neonate to nurse. As the animal grows and the transition from the mother’s milk to solid food occurs, the mandible goes through a growth spurt, nearly catching up to its relative adult percentage of jaw length. If this spurt does not occur and the deciduous dentition erupts, the mandibular canines will most likely be distal to behind the maxillary canines. This creates a malocclusion that can prevent the mandible from developing to its proper length. If this occlusal pattern is noticed in a puppy, the best therapy is to remove the mandibular canine teeth (cautiously so as not to damage the permanent tooth bud). If the mandibular incisors are excessive in length and occluded behind the dental papilla, they should be extracted using the same care. As a result, the mandible will have the opportunity to reach its genetic potential, thus averting problems with the permanent dentition. If the animal is genetically predetermined to have a significant overbite, this therapy will not affect the outcome.

Preventing major problems with early intervention is essential! Extraction, by a veterinarian, of the lower canine deciduous (baby) teeth at an early age (6-8 weeks) is ideal. Many breeders follow a different option of clipping and/or filing the lower canine deciduous teeth (tips) to afford the GSMD puppy every opportunity for self-correction without the risk of anesthesia. It should be noted that clipping down the lower canines, exposing the inner portion of the teeth, does pose a slight risk of bacteria traveling to the jaw bone. Breeders should consult their veterinarians prior to performing any procedures.

In the GSMD, overbites can range from the nearly correct bite to the severely overshot, in which the lower jaw is an inch (or more) shorter than the upper. Two variations of overbites are seen in the GSMD. In the first type, the lower jaw width is appropriate for the dog and with early intervention self-correction can be achieved. The second type of overbite is usually the most severe and often associated with a shallow, narrow lower jaw. In this type of overbite, self-correction is rare, as the lower jaw is too narrow for the dog. The tips of the lower incisors and canines may rub against,

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form holes and cause sores in the upper palate and lips. The tips of the upper canines and the upper incisors may be visible when the mouth is closed.

Some puppies with overshot bites can experience difficulties when their permanent teeth break through. The permanent teeth are larger than the deciduous teeth. As the new teeth come in, they can damage the soft parts of the mouth, particularly the soft palate. For this reason, GSMDs with overbites should be watched closely. Treatment options for the adult GSMD include:

- 1) Extraction of problem teeth (usually lower canines);
- 2) Crown reduction (portion of the tooth with enamel) with vital pulpotomy and restoration;
- 3) Orthodontic movement including braces, bands and retainers.

Overbites in GSMDs will rarely change after ten months of age.

Most canine veterinarians can perform extractions in their office with the dog under general anesthesia. On rare occasions a lower canine extraction can cause a fracture crack to the lower jaw. Some veterinarians refer severe overbites to veterinary orthodontic specialists. The practice of these specialists includes treating canines with irregularities of the teeth and malocclusions. Canine orthodontic specialists usually perform a crown reduction followed by vital pulpotomy and restoration (similar to a root canal and crown for a human) on offensive canine teeth and extract any incisors. The restoration leaves dogs with shorter canine teeth that do not damage the upper palate. This process can often be expensive, however, it allows a dog to retain most of the tooth and avoid the damage to the soft parts of its mouth.

Overall GSMD health does not seem to be at any greater risk when an overbite is present. Some owners have reported that their GSMD with overbites are sloppier drinkers at the water bowl and can have more difficulty holding an obedience dumbbell.

Other malocclusions that can be seen in canines, (not as often in the GSMD as the overbite) include: underbite (undershot, reverse scissor bite, class 3, prognathism) anterior and posterior crossbite, wry mouth or bite.

GSMD occlusion is determined by genetics, nutrition, environment, and by the interlocking of both the upper and lower teeth. Overbites have been proven to be genetically influenced. Many genetic malocclusions do not appear in each litter because they are passed on recessively. Breeding quality Greater Swiss Mountain Dogs requires a selective breeding program that includes pairing mates that have correct occlusion. A mark of a reputable breeder includes disclosure of a puppy's malocclusion to the prospective buyer.