

Form equals function. This applies to many species we see on earth and certainly applies to our domestic rabbit population when it comes to their dentition and the way their teeth are arranged. This article takes a look at normal anatomy, which will help address pathology (disease) of the teeth and mouth of rabbits.

The rabbit's dentition is truly adapted to a diet that is derived from fiber. Beginning at the front of the mouth, two prominent maxillary (upper jaw) incisors are present with two smaller incisors immediately behind them. These are referred to as the peg teeth and are a unique characteristic that is seen in the lagomorph species, which includes rabbits, hares, and pikas. Two mandibular (lower jaw) incisors sit just behind the maxillary incisors. When a rabbit closes its mouth, the maxillary incisors should cover the front of the mandibular incisors. Rabbits do not have canine teeth like dogs, cats, and other mammals. Behind the incisors is an area called the diastema, which is a space that is devoid of teeth. This area is of clinical importance because it is relatively simple to administer oral medication through the side of the mouth in this space.

The cheek teeth are composed in a row of pre-molars and molars behind the diastema. These teeth are designed to cut and grind food into smaller pieces before they are swallowed. The maxilla has three pre-molars and three molars while the mandible has two pre-molars and three molars. Adding this up there are 28 total teeth in the rabbit's mouth. Exceptions to the rule are common and may include absence of peg teeth, missing cheek teeth, extra teeth, or misshapen teeth. Cavies have a total of 20 teeth.

Rabbits are elodonts, which means all teeth in the mouth are open, rooted and erupt (grow) continuously throughout life. How fast does this growth occur? Approximately 2-2.4 mm per week. The teeth are maintained between a balance of growth, attrition, and abrasion. Attrition is the loss of tooth and occurs when the two sides of teeth come in contact during the process of chewing or mastication. Occasionally rabbits will grind their teeth at rest, which is also part of the balance between eruption and attrition. It is important to note that rabbits will do this when they are relaxed and is usually not heard. The teeth grinding that occurs when rabbits are in pain is generally audible and is not a part of the process of maintaining the relative

length of teeth. The chisel shape of the front incisors is also maintained via this grinding process.

As mentioned before, mastication is the process of chewing and eating. Rabbits use a combination of crushing and shearing when they ingest a piece of food. Crushing is more common when rabbits eat foods like carrots, shearing is more common when hay is consumed, and a combination of crushing and shearing is more common when rabbits eat pellets.

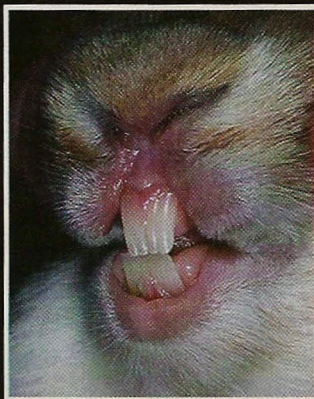
Malocclusion is simply incorrect alignment of the teeth.

Incisor malocclusion is the most common dental abnormality observed by the rabbit breeder since the inspection of the mouth is limited to the front six teeth. Skeletal abnormalities and previous injury are the two leading causes we see that result in malocclusion. Two forms of incisor malocclusion are observed. The less severe "butting" of teeth occurs when the maxillary incisors meet the mandibular incisors instead of overlapping the lower jaw like a normal rabbit would. In general, butting teeth are considered a pathologic problem but do not result in

a decreased quality of life for the rabbit. This is important to keep in mind for those rabbits that are pets and likely will not have a show career.

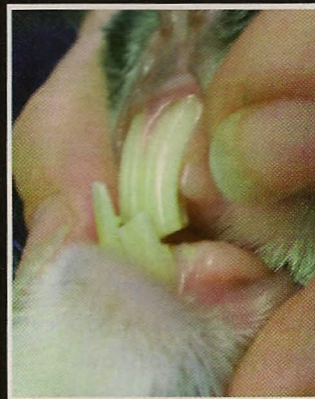
As noted previously, rabbits' teeth erupt continuously throughout life. The mouth is aligned in a way that permits even wear of the maxillary and mandibular teeth to prevent either side from growing out of check. When the teeth are worn abnormally or displaced in a manner that causes them to grow without any risk of attrition, the tooth is free to grow continuously unchecked. When this occurs in the incisors, we call this "wolf teeth" which is the more severe of the two forms of incisor malocclusion. Advanced forms of wolf teeth result in mandibular incisors often growing back into the roof of the mouth and puncturing the hard palate. The teeth can also grow over the maxillary incisors and puncture the upper lip. This can lead to significant pain, infection, and causes the rabbit major problems when attempting to eat. The process can be equally troublesome in the

Incisor malocclusion is the most common dental abnormality observed..



Correct Teeth

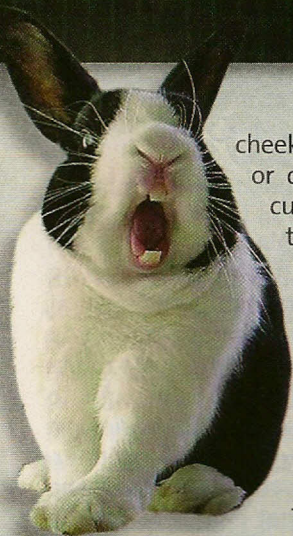
When a rabbit closes its mouth, the maxillary (upper) incisors should cover the front of the mandibular (lower) incisors.



Malocclusion

(Incorrect alignment of the teeth) Skeletal abnormalities & previous injury are the two leading causes that result in malocclusion.

Recognizing Dental Problems in your rabbits



cheek teeth. Uneven wear of the cheek teeth or displacement due to injury will cause cusps or points to form on either side of the tooth. These sharp points can rub against the cheek or tongue and cause painful oral ulcers. Rabbits that grind their teeth due to pain can be easily heard and may also drool excessively from the mouth.

Malocclusion is a lifelong problem because the teeth will never cease to grow. This should be a consideration for any rabbit in a breeding program as the condition can have genetic components to it and it will be disqualified from competition. For pet rabbits, this condition can be managed at home if you feel comfortable enough or with a veterinarian who is competent with rabbits. Trimming or cutting incisor teeth is a common way to manage malocclusion at home and will provide the rabbit with relief and restore the ability to have relatively normal eating behavior. In a perfect world, rabbits should be heavily sedated and a dermal cutting device used to cleanly trim the teeth. The procedure, however, can be done at home as long as it's done with a steady hand and you are aware of possible complications. My preferred tool for this is a small wire cutter that you can purchase at a hardware store. I approach the mouth from the side and secure the rabbit in a cradling position with your dominant hand trimming the tooth. Having an extra set of hands is tremendous help. In general, you want to leave approximately 8-10 mm of tooth exposed from the gum line. Complications occur most often when the rabbit is not properly restrained. This may include splitting of the tooth down to the gum line, extracting the entire incisor if the rabbit moves, or lacerating another anatomic structure such as the gum or tongue.

The teeth of a rabbit are a characteristic that makes it unique and also causes major frustration for the rabbit breeder and pet owner. It is important to understand the normal anatomy of a rabbit's mouth, check the teeth regularly for signs of dental disease, and recognize when a problem is occurring. As mentioned earlier, breeding animals with severe malocclusion should not be included in your program since heredity is a component. Pet rabbits, however, can lead relatively normal lives with malocclusion present.

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