

## Dental Challenges

Dental problems are not unusual in rabbits and they are certainly the most common problem in my household. Molar spurs and other dental problems are among the more common underlying causes of GI stasis, so it is important to recognize symptoms as early as possible. As with most ailments, early identification and treatment of minor dental problems is the key to preventing more serious problems.

### Your Rabbit's Teeth

A basic understanding of your rabbit's dental structure is the first step in understanding the variety of dental problems that rabbits can have. Rabbits shed their fetal teeth around the time they are born and develop their 28 permanent teeth during the first five weeks after birth. These teeth are made up of:

- Six incisors (front teeth): two large upper and two large lower incisors, plus two much smaller "peg" teeth that are often completely hidden behind the larger upper incisors
- Ten premolars: six upper and four lower
- Twelve molars: six upper and six lower

Premolars and molars are indistinguishable from each other. You may hear them referred to collectively as "cheek" teeth or simply as "molars." A rabbit's lower jaw (mandible) is narrower than the maxilla (upper jaw) and when the jaws are closed, the lower cheek teeth lie inside the upper ones. There is a noticeable gap, called the diastema, between the incisors and the premolars. This gap may be large enough for you to slip your little finger between without feeling teeth (not something I recommend trying with **most** rabbits).

We're all familiar with a rabbit's characteristic incisors, but many rabbit caretakers are not consciously aware that rabbits have cheek teeth until they have a rabbit with dental problems. Incisors and cheek teeth serve two distinct functions: Incisors are used to grip, nip, and slice food; cheek teeth are used to crush and grind food using a relatively horizontal motion when compared with human chewing.

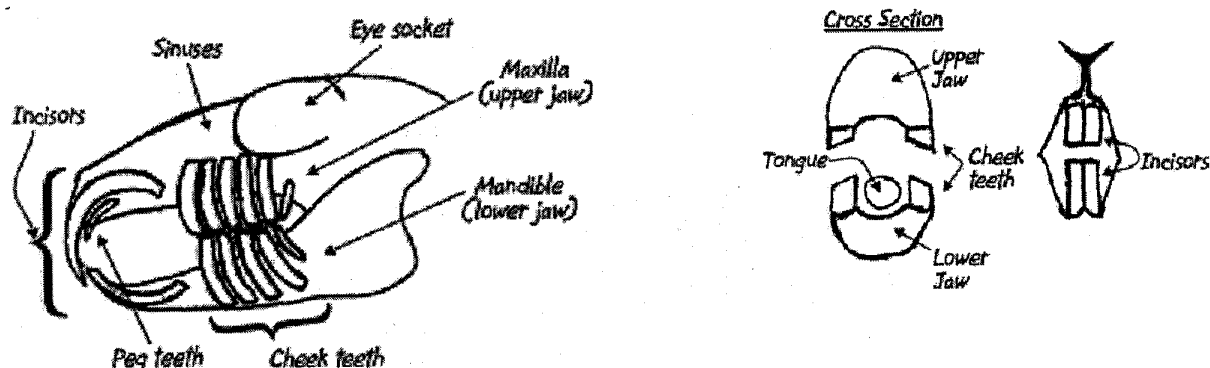


Figure 1: Normal Rabbit Teeth (courtesy Sari Kanfer, DVM and Zooh Corner Rabbit Rescue)

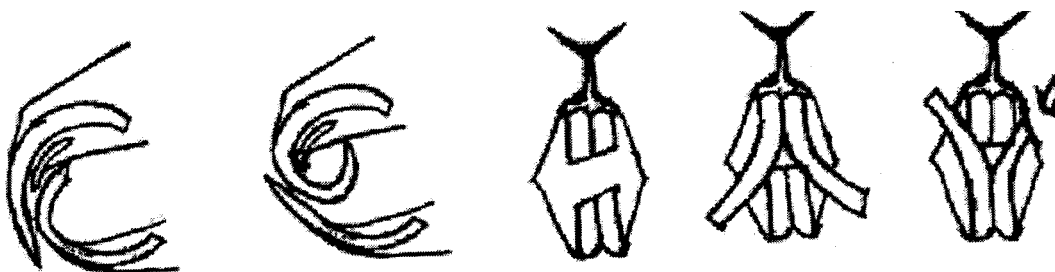
Wild rabbits (including the European rabbit from which our pet rabbits have descended) "graze" almost continuously in order to absorb sufficient nutrients from grass and other plants. Rabbit teeth have evolved to withstand this constant wear. A rabbit's teeth grow continuously throughout his life; however, not all teeth grow at the same rate. Incisors grow faster than cheek teeth and lower cheek teeth grow faster than upper ones. Diet affects the rate of both growth and wear on the teeth. Diets that are high in roughage and coarse fibrous vegetation may help keep teeth worn down which may help **prevent** dental problems from occurring. Dr. Sari Kanfer (who graciously allowed me to use the drawings from her article *Dental*

*Problems in Rabbits*) now recommends a wide **variety** of grass hays and fresh grasses (instead of timothy hay **only**) because the different textures require different chewing mechanics, which in turn help teeth wear more evenly. She also recommends offering safe twigs (available from Zooh Corner Rabbit Rescue and other bunny-friendly suppliers listed in the *Resources* section) as another way to keep cheek teeth worn down.

### **Types of Dental Problems**

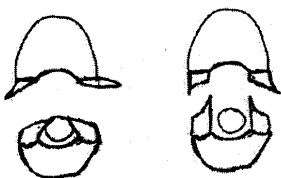
Malocclusion (teeth misalignment) is the most common dental problem in rabbits. Malocclusion can occur in the incisors, cheek teeth, or both. If all of your rabbit's teeth come together properly, the act of chewing will probably keep your rabbit's teeth at the proper length despite their continuous growth. However, few rabbits have perfect teeth, and because the upper and lower jaws have different numbers of teeth, a problem with a single tooth in one jaw can affect up to 3 teeth from the opposing jaw.

The most noticeable form of malocclusion is when the incisors don't come together properly. Top or bottom teeth may stick out of the mouth. If they grow inward and remain unnoticed, bottom teeth may poke into the roof of the mouth. Top teeth may actually curl around, forming a circle, and grow back into the gums. Rabbits with this type of malocclusion almost always have difficulty eating hard foods such as carrots and broccoli unless they are cut into small bites.



*Figure 2: Maloccluded Incisors* (courtesy Sari Kanfer, DVM and Zooh Corner Rabbit Rescue)

Molar spurs are another fairly common dental problem. Since molars grow more slowly than incisors, molar problems may show up in older rabbits who have not previously had problems with their teeth. Spurs can occur if cheek teeth are maloccluded, if your rabbit's diet has insufficient roughage to keep the teeth sufficiently worn down, or if his lateral chewing pattern is disturbed for other reasons, such as tooth or ear pain. Spurs on lower teeth most often point toward the tongue, eventually causing either bruising or laceration. Spurs on upper teeth more often point outward, lacerating or bruising the inside of the cheek. However, it is **possible** for points or spurs to be found on **either** side of both upper and lower cheek teeth.



*Figure 3: Molar Spurs* (courtesy Sari Kanfer, DVM and Zooh Corner Rabbit Rescue)

Maloccluded teeth that continue to grow **can** eventually lead to more serious dental problems. Maloccluded teeth will sometimes develop elongated roots which can penetrate deeper into the jawbones, sometimes causing a tooth root or bone abscess. Elongated tooth roots in the upper jaw can also press on the adjacent tear duct, thus contributing to eye discharge problems.

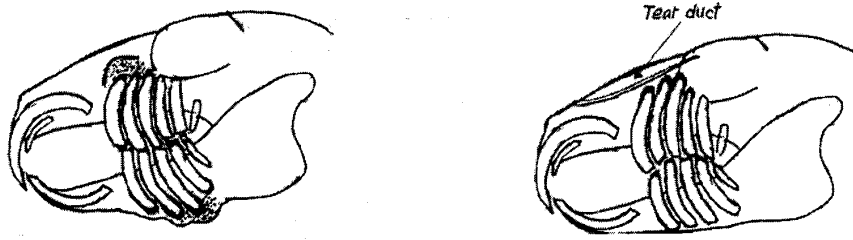


Figure 4: *Elongated tooth roots* (courtesy Sari Kanfer, DVM and Zooh Corner Rabbit Rescue)

### **Causes of Dental Problems**

As mentioned earlier, diet can play an important role in preventing dental problems. Diet is especially important during prenatal development and during the first five weeks of life when permanent teeth are developing and emerging for the first time. However, it is never too late to work on improving your rabbit's diet! Pellets alone do not require sufficient crushing/grinding to keep cheek teeth worn evenly. Hay plays an important role in keeping your rabbit's teeth healthy. **If** your rabbit's GI system tolerates leafy greens (without causing recurrent episodes of gas or stasis), these can also help keep teeth worn down.

While diet plays a major role in many dental problems, genetics are also an important factor. Some rabbits are born with obvious dental problems such as an overbite or underbite. Others have teeth that appear normal at birth but seem to have a genetic predisposition for problems later in life. Dental problems are more common in certain breeds of rabbits — specifically the Netherland Dwarf and many lops, especially those with “flat” faces. Pure breed rabbits seem to have more dental problems than mixed breeds, perhaps because of inbreeding. Some veterinarians who neuter and spay rabbits for shelters and rescue groups are routinely check teeth while they have the rabbit under anesthesia. If you adopt from such a group, ask whether a dental exam was done and make a note of any problems found during the exam.

Temporomandibular joint problems (TMJ) can also sometimes result in malocclusion. Chiropractic adjustments can often be helpful in relieving the discomfort of TMJ, though residual dental problems may persist. Physical trauma that results in broken or injured teeth can also lead to malocclusion.

### **Diagnosis and Treatment**

With the exception of incisor malocclusion, which is often quite noticeable, the early signs of most dental problems are subtle enough that even a perceptive caretaker may fail to notice that anything is wrong. Each rabbit has a different tolerance for discomfort. Some rabbits, like Murray and Stormy, will stop eating when molar spurs are minor. Others may continue to eat until there is a severe laceration on the cheek or tongue. To help catch dental problems early, pay attention to normal eating habits and food preferences for each of your rabbits and periodically feel along the outside of the jaw line with your fingers to detect any swelling or sensitive areas. Schedule a dental exam immediately for your rabbit if you notice any of the following:

- Sudden avoidance of “hard” foods such as carrots and broccoli
- **Any** noticeable shift in preferred foods
- Decreased appetite
- Weight loss
- Wetness and/or hair loss on underside of chin (often a symptom of excessive salivation)

- Accumulation of food on the underside of the chin or front paws
- Unpleasant odor to the breath
- Noticeable lump either on the outer cheek below the eye or on the underside of the lower jaw

Remember, however, that some rabbits can have dental problems with minimal or even no clinical signs!

Your rabbit's dental exam will probably begin with your veterinarian checking your rabbit's cheek teeth using an otoscope and visually inspecting his incisors. Depending on the results of this initial exam as well as your rabbit's medical and dental history, clinical signs, and any risk factors (such as age, breed, or siblings with dental problems), your veterinarian may want to anesthetize your rabbit since it is impossible to do a **complete** exam of a rabbit's mouth and teeth without anesthesia. Even under anesthesia, points are not always visible. Stormy had razor-sharp spurs once that Dr. Allan could detect only when she ran her finger between the teeth and cheek!

While your rabbit is under anesthesia, your veterinarian will normally check general anatomy/alignment and examine carefully for loose or discolored teeth and areas of infection. She may suggest skull x-rays to further identify molars that need to be watched carefully and to check for elongated tooth roots and/or tooth root abscesses. These x-rays are nearly always done while your rabbit is under anesthesia since it is important for his head to be kept still.

## **Treatments**

Maloccluded incisors need to be ground down or trimmed periodically, as often as every two to three weeks or as infrequently as every six months. Most rabbits do not need to be sedated for this procedure. Although I personally recommend having a veterinarian trim incisors, some caretakers I know have had their veterinarian show them how to do this at home, are comfortable doing it, and feel it is less stressful for their rabbit. Sometimes the teeth will improve gradually with regular trimming, allowing trimmings to be needed less frequently. Smokey's incisors originally required trimming every three to four weeks. His teeth gradually improved and within a couple of years we were trimming them only two or three times a year.

If your rabbit's incisors require trimming frequently and show no signs of improving, or if veterinarian visits are very stressful to your rabbit, you may want to talk to your veterinarian about removing the incisors surgically. Incisor extraction is a relatively major procedure since the roots of a rabbit's incisors are quite deep, and occasionally, even with a very skilled surgeon, the incisors will grow back. However, most rabbits who have had their incisors removed do quite well, and for many their quality of life improves without the problematic teeth. Lauren came to us with no upper incisors and lower ones that grew out of her mouth toward her nose. Her incisors required trimming every three to four weeks, and because of the complete absence of opposing teeth, there was no possibility this would ever improve. She has been much happier since having them removed. She is able to eat hay and pellets with no trouble and does well with diced carrots and greens torn into small pieces.

Your veterinarian will treat molar spurs by trimming the spurs and/or filing the teeth until the surface is flat and smooth. If cheek teeth are unusually long or of uneven lengths, your veterinarian will probably try to file them to a uniform length to encourage them to wear more evenly. Veterinarians who do a lot of rabbit teeth often use special dental tools, including a device to hold the mouth open, freeing both hands for working on the teeth.

Molar filing is almost always done while your rabbit is under anesthesia. Many veterinarians use isoflurane (or other gas anesthesia) for this procedure while a few prefer injectable anesthesia. The

advantage to isoflurane is that your rabbit wakes up more quickly and will probably have fewer side-effects from the anesthesia. There are a few veterinarians who do molar filing using a mouth gag and **no** anesthesia. You should consider this option **only** if your veterinarian is **completely** comfortable with the procedure **and** you both agree that your rabbit's temperament is suitable for such a procedure. For most rabbits, the risk of using anesthesia is less than the risk of stress caused by being awake during this procedure!

Treatment for tooth or tooth root infections/abscesses usually involves systemic antibiotic therapy and, as with all infections, I recommend doing a culture/sensitivity to ensure that the antibiotic chosen will be effective against the infection. Depending on the severity and extent of the infection, your veterinarian may need to flush the area and/or surgically remove the abscess or infected tooth. She may also pack the area with antibiotic beads to provide continuing antibiotic therapy. **Note:** Cheek teeth should **not** be extracted unless they are loose, infected, or have abscessed roots. Molars must be extracted very carefully, even if they are loose, to avoid breaking the rabbit's jaw.

With the exception of simple incisor trimming, most of the dental procedures, including molar filings, have the potential to cause some lingering pain or discomfort. Some rabbits begin eating immediately after having their molars filed while others may take up to a week before they are eating normally. If your rabbit seems to have a low threshold for discomfort or is slow to resume eating, ask your veterinarian about prescribing pain medication and/or Reglan®, which both stimulates GI motility and helps alleviate nausea.

### **Long Term Implications**

Many rabbits with dental problems have ongoing problems and require close monitoring by their caretaker and veterinarian. If your rabbit has molar spurs, your veterinarian will probably recommend scheduling periodic checkups to catch problems **before** they affect your rabbit clinically. The frequency of rechecks will be different for each rabbit and may change for an individual rabbit over time. Some rabbits need their molars filed as often as every other week for a while — this was true for Murray at one point, although now we are able to go five to ten weeks between filings. Other rabbits may never require molar filing more than once or twice a year. And if you are lucky you may have a rabbit like my Dante who had a single episode of spurs two years ago and has not yet had a recurrence.

If your rabbit has dental problems of any sort, it is a good idea to discuss diet with your veterinarian. Most rabbits adapt quite well to dental problems once their caretakers find the right diet for them. Hay is an important part of your rabbit's diet, but some rabbits with either incisor or molar malocclusion have great difficulty eating hay. Many times I have watched Murray pick up a strand of hay, try for several minutes to eat it, and become completely frustrated! If pellets are the easiest food for your rabbit to eat, discuss the options with your veterinarian. A few people who have rabbits with chronic molar problems have reported slight improvement (increased time between filings) when they began feeding Kaytee Rainbow Exact. It is **possible** that either the larger pieces or the fact that this is an extruded (vs. pelleted) food may help increase tooth wear. Rabbits with more severe molar problems (including loss of many teeth) may only be able to eat soft foods. Many rabbits, including my friend Kristy's Hemi, do quite well on a diet of baby food, canned pumpkin, and softened pellets!

Rabbits with dental problems can make **wonderful** house pets. They are often (though not always) **unable** to chew through phone and electrical cords, rip up carpet, or gnaw woodwork and furniture. You may save more than enough in "home repair" costs to pay for those extra veterinarian visits!