Munch, Munch... An Overview of Rabbits’ Teeth

By Sarah Yasutake

One of the many delights about rabbits is the way they can pick up long pieces of hay and make them disappear one nibble at a time. Munch, munch, munch...what could be cuter? While it’s fun for us to watch, this method of eating hay is actually a crucial component of maintaining a rabbit’s dental health. Good dental health is linked to good overall health, so it’s important to keep a close eye on your rabbit’s teeth and seek prompt treatment for any problems that arise.

Rabbits have a total of 28 teeth. The ones we see most often are the four incisors in the front of the mouth. Behind the top incisors are two smaller incisors known as “peg teeth.” The 22 remaining teeth are molars and premolars and are known as “cheek teeth.” Rabbits use their incisors to slice food, while the molars grind it down. This system helps rabbits digest tough, fibrous plant foods.

The act of chewing tough plant materials also wears down the teeth. To compensate for this constant wearing down, rabbits’ teeth grow continuously. As a result, it’s important to maintain a balance between tooth growth and wearing. The best way to do this is to provide plenty of grass hay in the diet. When rabbits don’t eat enough hay—for example, when they are fed an all-pellet diet—they are at greater risk of developing dental problems. Rabbits do not chew pellets the same way they do hay, and pellets do not wear teeth down properly.

Dental problems in rabbits include jaw abscesses, tooth fractures, incisor and molar malocclusion (misalignment), and molar spurs and spikes. These problems can be congenital (hereditary), or they may result from injury, changes in jaw formation, or bacterial infection. Overgrown teeth are more prone to fracture, and molars that are not worn down properly are prone to spurs, spikes and malocclusion. The problems can be serious and painful, and they can lead to other health problems.

Because rabbits are prey animals, they are good at hiding injury and illness. Dental problems can become serious before a rabbit shows outward signs of a problem. Therefore, it’s important to have your rabbit’s teeth checked regularly.

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By Cindy Faulk

The easiest way to understand this dental issue is to understand how a rabbit’s teeth are designed to function. Rabbits have 16 deciduous teeth and 28 permanent (secondary) teeth. They only have incisor teeth (front teeth) and cheek teeth; they do not have canine teeth, like a dog or a cat. In a healthy adult rabbit, there are six incisors, or front teeth: four on top and two on the bottom. When you look directly at a rabbit’s front teeth, you will only see two teeth, and the other two front teeth are located immediately behind the two longer front teeth.

Rabbits’ teeth are “open rooted” and grow continuously, like fingernails; and they are worn down during the normal course of eating, as well as just grinding their teeth when they are content, sometimes referred to as “tooth purring”. When the teeth constantly grind together, this is called the occlusal relationship of the teeth. If the upper and lower teeth do not meet opposing teeth to wear down the teeth, there is nothing to keep the teeth from becoming overgrown. The overgrown teeth are referred to as “Malocclusion,” or misaligned. While this is generally initially observed in the incisors, malocclusion of the cheek teeth is often either the cause of or the result of the malocclusion of the incisors.

What are the symptoms?
Indirect symptoms can include:
- refusal of food or approaching food eagerly but unable to eat
- dropping bits of food while eating
- dribbling, wet dewlap
- reduction in size of droppings or excess of soft droppings
- weepy eyes
- runny nose
- excessive tooth grinding

However, rabbits who eat pellets exclusively can develop overgrown teeth because they eat a smaller volume of food and because the pellets don’t need enough chewing to keep the teeth ground down. If your rabbit’s teeth tend to overgrow, the general recommendation is to remove pellets from his diet and feed him hay and fresh vegetables instead.

What are the causes?
Generally, there are three main causes of malocclusion:
1. Hereditary or congenital defect: The rabbit was born with some sort of malformation that results in misalignment of the teeth. This is a common concern with “short faced” breeds such as dwarfs and lop-eared breeds.
2. Facial trauma: If a rabbit has sustained an injury to the face resulting in abnormal growth of the teeth. Also, prolonged tugging at the bars of its cage can lead to misalignment of the front teeth.
3. Infection: Bacterial infection of the tooth roots can modify the direction in which the tooth grows.

Non-treatment of malocclusions only allows worsening of the condition, and further pain for your bunny. Once your rabbit is diagnosed, it likely will require ongoing and regular treatment for life.
examined by a rabbit-savvy veterinarian at least once a year. Between veterinary appointments, you can do weekly mouth inspections (see sidebar). Also look out for signs that your rabbit isn’t feeling well, such as drooling, changes in food preferences and other changes in eating habits, weight loss, bad breath, grinding teeth (not in a happy way), and eye or nasal discharge.

Not all dental problems are preventable, but many are. To give your rabbit the best chance of keeping her chompers healthy, make hay a big part of her diet and limit access to pellets. Give her plenty of safe chew toys, and make sure she has time to play outside of her pen so she isn’t tempted to chew the metal frame. Don’t wait to seek veterinary care for dental issues—prompt treatment can prevent serious illness.

**Catch your rabbit’s dental problems before they start…**

**How to perform an at-home rabbit dental exam**

Give your rabbit weekly dental exams, and you might catch problems before they become serious. First, feel along the sides of your rabbit’s face and under his jaw. The sides should be symmetrical, with no bumps or swollen spots. Note whether your rabbit flinches when you touch a particular spot—it could mean it’s tender (though many rabbits are ticklish beneath the chin).

Next, check the incisor teeth by gently lifting your rabbit’s upper lip. Gums should be pink, not red or purple. If the teeth have an overbite, underbite, or other misalignment, have your rabbit checked by a veterinarian. Malocclusion will not go away by itself.

Dr. Esther van Pragg, owner, operator and webmaster for MediRabbit, cautions against going further than gently lifting the rabbit’s upper lip. She says she has seen rabbit owners try to pry open the mouths of their rabbits to try to look inside the oral cavity. “This action can bring severe damage to the temporo-mandibular articulation (which joins the lower jaw to the skull),” Dr. Van Pragg says. This articulation is particularly delicate in rabbits and any examination of the molars should be left to a veterinarian.

(Editor’s Note: this information was adapted from “Oral Health in Rabbits” by Carolyn Harvey, DVM, available at rabbit.org.)
An Overview of Rabbit Dental Disease

By Mark Burgess, DVM

Rabbits are prone to a variety of dental problems. They have constantly growing, open-rooted incisors, premolars and molars. The causes of rabbit dental pathology are variable. Malocclusion often gets the blame, but rabbit dental disease sometimes has little to do with malocclusion.

1) DISEASES OF THE INCISORS

Normally incisors are self-wearing and never need trimming. Gnawing on hard objects is also unnecessary and may cause tooth damage. Normal incisor wear occurs via abrading against the opposing teeth, not by gnawing on objects such as wood. Rabbit incisors vary from ¼ to ½ inches long depending on body size, and upper teeth are the same length as the lowers. There are 2 ‘peg teeth’ which are small second incisors behind the main uppers; these are relatively unimportant. Incisor problems include overgrowth or infections.

A. INCISOR OVERGROWTH occurs for two reasons. The more common is incisor malocclusion, wherein the teeth are rotated in their sockets, or erupting at an abnormal angle, or otherwise failing to occlude with the opposing incisors. Some malocclusion is congenital. More often it appears later in life, and possible factors might include genetic predisposition, low-grade root infection, trauma to the incisors such as cage biting or fracture, or malnutrition.

Malocclusion results in rapid overgrowth, necessitating trimming every 3-6 weeks or incisor extraction. Extraction is the more permanent solution, but if complications such as post-extraction facial abscesses occur they are potentially dangerous. I have seen a number of these “disaster” cases as second opinion referrals. Also, some patients may be poor surgical candidates due to financial constraints or concurrent disease such as pneumonia. For these reasons, and because of the ease and safety of incisor trimming when done properly, I recommend trimming for many patients, especially if the attending practitioner is not experienced with rabbit and rodent dentistry.

The second cause for incisor overgrowth is cheek tooth overgrowth. Diseases of the molars/premolars can result in overgrown cheek teeth, which forces the mouth open; the incisors then overgrow to maintain occlusion. In these cases the incisors are not maloccluded and have a normal sharp wear pattern at the tip. In some cases there will be a side-to-side angulation to the wear pattern, such as the left upper incisor being longer than the right. This also suggests molar/premolar overgrowth, which inhibits the normal chewing range of motion and alters the wear of the incisors. Trimming the incisors alone does not solve the problem, and actually can create an incisor malocclusion which worsens the ability to eat. In this case the cheek teeth must be trimmed along with the incisors in order to maintain incisor occlusion.

B. INCISOR ABSCESSSES can occur. Signs may include unilateral nasal discharge (upper incisor abscess), mandibular swelling (lower incisors), facial swelling, difficulty breathing, pus at the tooth base, an incisor which is loose, dark, or missing, or an incisor that is slowly becoming shorter due to tooth death and lack of new growth. In my experience most abscesses of the head region forward of the angle of the mandible (jawbone) derive from a tooth infection. Lower incisor roots are long and extend under the more anterior cheek teeth; an abscess at mid-mandible can easily be of incisor origin. X-rays will give some information and careful oral exam and probing of teeth are essential. The bacteria involved are variable. Some bacteria may be resistant to commonly used antibiotics, so it is important to get a culture of the bacteria and perform a sensitivity test to determine which antibiotic is appropriate.

Treatment includes removal of infected teeth, and incision/drainage of any visible abscess masses. A side note: extraction of one incisor will not typically cause overgrowth of the opposing tooth; one incisor can wear both opposing teeth adequately unless malocclusion exists.

2. DISEASES OF THE MOLARS AND PREMOLARS

Cheek teeth grow constantly as well, although much more slowly than incisors. Normal teeth are worn down by chewing fibrous food (especially grass hay and hay-based pellets), and by abrasion against opposing teeth. Cheek tooth disease tends to fall into two general categories of lesions: infection, and tooth overgrowth. These problems are sometimes linked

A. CHEEK TOOTH INFECTION causes signs including salivation, a wet or matted chin, oral odor, difficulty eating, facial swelling, abscess of the upper or lower jawbone regions, or retrobulbar abscess (swelling behind the eye). The oral exam may reveal loose, missing, or fragmented teeth, often with visible deep pockets and pus. X-rays may help characterize the nature of the lesion, and careful probing is often required to identify which teeth need extraction. Infection may extend to adjacent tooth roots, sometimes resulting in the loss of an entire group of teeth. Most cases can be cured if caught early; treatment methods are similar to those for incisor abscesses.

B. MOLAR & PREMOLAR OVERGROWTH has multiple causes and is often unrelated to malocclusion. Single cheek teeth may occasionally develop a true malocclusion (misalignment), and overgrow into the tongue (lower teeth) or into the cheek (upper teeth); I have even seen a molar growing down the throat of a rabbit. These are true malocclusions, and the affected tooth should be extracted. Causes could include infection, tooth trauma, genetic factors, nutrition and others.

Very common are overgrowths of multiple teeth due to alteration of chewing mechanics. When at rest, normal check...
teeth do not completely overlap. Normal wear of cheek teeth relies on a rotary or side-to-side chewing motion which allows the rows of teeth to overlap and grind food. Abrasive food materials such as timothy hay and high-fiber pelleted feed may aid cheek tooth wear. ANY pathology which inhibits jaw movement, OR inhibits willingness to chew aggressively (i.e. pain) may result in overgrowth of cheek teeth, often the entire row of teeth. Overgrown teeth often curve as they elongate, mimicking malocclusion. However, when trimmed to normal length, these teeth appear to erupt from the gums at a normal angle. Barring a mandibular fracture or dislocation, there is no known disease which would likely cause an entire row of cheek teeth to rapidly become “maloccluded.” Other factors are usually responsible for the overgrowth; when these factors are corrected, the overgrowth often ceases.

**Factors which may inhibit mandibular mobility** and hence normal chewing motion include incisor malocclusion that causes the teeth to lock, jaw joint disease, or a single maloccluded / overgrown cheek tooth which interlocks with the opposing arcade. I have seen three cases of muscle disease in guinea pigs which inhibited chewing and caused tooth overgrowth.

**Factors which may produce oral pain and inhibit normal chewing** behavior include loose or infected teeth, an overgrown tooth resulting in cheek or tongue laceration, jaw joint disease, foreign body or oral cancer. Chronic anorexia due to other illness might also promote overgrowth of cheek teeth from lack of chewing.

Approach cheek tooth overgrowths logically. If incisors are overgrown and interlocking, trim them back. Evaluate the jaw joints and overall health status for clues to the oral disease. X-rays and careful oral exam are essential. If only one or two cheek teeth appear badly overgrown or maloccluded, extraction may be in order. If most teeth on one side of the mouth are long, look for a source of pain on that side of the mouth, usually an infected tooth. Be suspicious of a normal-length tooth surrounded by overgrown teeth; the short tooth may be infected and nonviable. If many teeth on both sides of the mouth are long, look for infected teeth, jaw joint disease, incisor interlock, chronic anorexia, or any other source of poor chewing function. Grinding down overgrown teeth may reduce problems for a while, but unless the underlying cause is discovered the problem may return, often within six to 12 weeks. Many cases of molar and premolar overgrowth can be cured permanently if the underlying cause is found and corrected.

A side note: open-rooted cheek teeth are usually narrow, so extraction creates only a small gap in the arcade. The extreme range of chewing motion allows adjacent teeth to replace the function of the lost tooth; extraction of one or even two adjacent cheek teeth often results in little detectable overgrowth of the opposing arcade.

**CONCLUSION:** There is no way to prevent dental disease in all rabbits. Provide a high fiber diet consisting of timothy or oat hay, timothy-based pellets, and (optionally) a few leafy greens. Prevent repetitive chewing on wood, metal or other hard objects. Safer chew toys include pieces of paper or cardboard (without ink). Remember, rabbits don’t have to gnaw on anything to keep incisors worn down. There is no need for routine dental ‘cleanings’ as with dogs or humans. With a little luck, many rabbits live their entire lives without significant dental pathology.

*Note: Dr. Mark Burgess opened Southwest Animal Hospital in 1995 and has focused on exotic pets (including rabbits) since he graduated from Oregon State University’s veterinary school in 1986. Southwest Animal Hospital sees more exotic pets than any other veterinary practice in the state of Oregon. He is a published author of articles in medical journals, text books and even works of fiction, including a novel about a veterinary school student called “Dog Daze and Cat Naps.” Learn more about Dr. Burgess’ practice through his website at www.swanimalhospital.net.*

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**KUDOS**

**RABBIT CHAMPION**
Larry Kurtz
Lorraine Bushek Studio, in appreciation of Joan Gilbert

**RABBIT BENEFCTOR**
Elizabeth and Keith Olson, in memory of Suzie, Bandit and Amelia and in appreciation of Mary and Dave Marvin
Bob and Marie Sherman, in memory of Penny Anne Bunny
Anna DeThomas
Kevin Hawkins
Sydney Thompson

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Lynn Kampfen
Glen Levy
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Doreen Ernst
Gary Smith, in memory of Veronica
Barbara Ray
Troy and Stacy Johnson
Kathleen Kromm
Kathryn Fox
Patricia Murphy

**FOREVER RABBIT HELPER**
Nick Buono, for setting up a recurring gift through PayPal
Supreme Pet Foods for their gift of rabbit food
Hello, everyone. My name is Mary Marvin and for this year I am pleased to serve as the president of the Rabbit Advocate board of directors. I am grateful and humbled to be serving in this capacity and will be relying on the Board’s newly elected and also seasoned members to help make this new year one full of good decisions and exciting changes.

The new Board for 2017 is also comprised of Vice President Lora Skelton, Secretary Krista LeRoux, and Treasurer Rob Benedict. The Board welcomes all newcomers and thanks others profusely for the service of those whose roles are changing: Karen Anderson (2016 acting President and Board member)—Karen will remain on the Board and continues to be the Foster Coordinator, although her personal focus is achieving her Vet Tech certification; Joan Gilbert (continuing Board member); Allen Anderson (leaving the Board after working hard on Bunnypalooza); Kem Sypher (RA Treasurer for the past 14 years and now retiring for a well-earned respite from his bookkeeping responsibilities, though he will remain on the Board); and Mary Huey (one of the founders of RA, without whom we would all be lost; we are delighted she will remain on the board).

To all of our past and present Board members, thank you from the bottoms of our hearts! You have made our organization stronger with each passing year. It’s now up to the rest of us to continue that forward momentum.

Thank you to all the volunteers we have in our organization. Without you, what we do would not be possible. Every Board meeting is open to the public, so please consider coming to a meeting to see how they are conducted. If you have information to share or comments to make at a meeting, please let the President know of your intentions a week before the meeting so a time for you can be set aside. Seating is limited, but we will try to accommodate everyone who wants to attend. The meeting schedule will soon be posted on the Rabbit Advocates web site; we also plan to make the current agenda available as well as past meeting minutes.

Thank you again to everyone.

Mary Marvin
RA President and Volunteer
Rabbit Advocate Events

Rabbit Advocates sponsors educational events featuring rabbits and volunteers with tips on handling rabbits, their diet, housing, health and general care. These are well-attended events and provide an important outreach function of the organization, as well as important services to the public. We always need volunteers. Learn more on the Rabbit Advocate website at www.rabbitadvocates.org.

Bunny Spa Days

Experienced volunteers provide grooming and nail trimming services for rabbits. (Suggested donations of $5 for nail trims and $5 for light grooming are appreciated.) Spa Days are held from Noon–3pm the second Sunday of the month at Tigard PetSmart, 7501 SW Dartmouth Street, Tigard.

2017

APR 9  SEP 10
MAY 14  OCT 8
JUN 11  NOV 12
JUL 9  DEC 10
AUG 13  

Adoption Outreaches

Come meet foster rabbits available for adoption, or come with your questions for experienced volunteers. Rabbit Advocate volunteers are on hand at these adoption outreaches in the Portland metro area:

**The Personal Beast**
8119 SE Stark Street, Portland, Oregon
10am–1pm the third Saturday of every other month.

2017

MAY 20
JUL 15
SEP 16
NOV 18

**Pets on Broadway**
2752 NE Broadway Street, Portland, Oregon
Noon-3 p.m. the fourth Saturday of the month.

Please see the Rabbit Advocate website for specific dates. www.rabbitadvocates.org

Naomi’s Organic Farm Supply
3454 SE Powell Blvd, Portland, Oregon
Noon–3pm, the first Sunday of every other month.

2017

MAY 7  SEP 3
JUL 2  NOV 5

**Help Wanted:**

Special event coordinator needed to lead a team of volunteers for Bunnypalooza 2017. This well-attended, fun event needs a leader and chief coordinator. If you are interested, please contact Rabbit Advocate board member Joan Gilbert at lopbunny88@aol.com.
Upcoming Meetings & Events 2017

GENERAL MEETINGS

3rd Sunday of the month
3:30 pm – 5:30 pm

Location: Bunnies in Baskets, 201 N. Alberta St., Portland, OR

Meetings begin with a “Bunny Basics” Q & A session where weinvite your questions about anyaspect of rabbit care. The publicis welcome!

2017
APR 16
MAY 21
JUN 18

*B Location to be determined.

Rabbit Advocates will not be holding amonthly meeting during the months ofJuly and August. Check our website formore information.

BUNNY’S BEST BITES

Hay Packing Parties
Volunteers blend and bag different types of hayto create Bunny’s Best Bites, our own customblend of hay. For more information aboutthe hay parties, see the Rabbit Advocate website atwww.rabbitadvocates.org

NEW Location:
Alpenrose Dairy
6149 SW Shattuck Road
Portland, OR

2017
MAY 6  SEP 2
JUN 3  OCT 7
JUL 1  NOV 4
AUG 5  DEC 2

SPECIAL EVENTS

See page 7 for details on all thespecial events Rabbit Advocates hasput together for you!

www.rabbitadvocates.org

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