

Warren Peace



Newsletter of the House Rabbit Society of Miami

Winter 2003

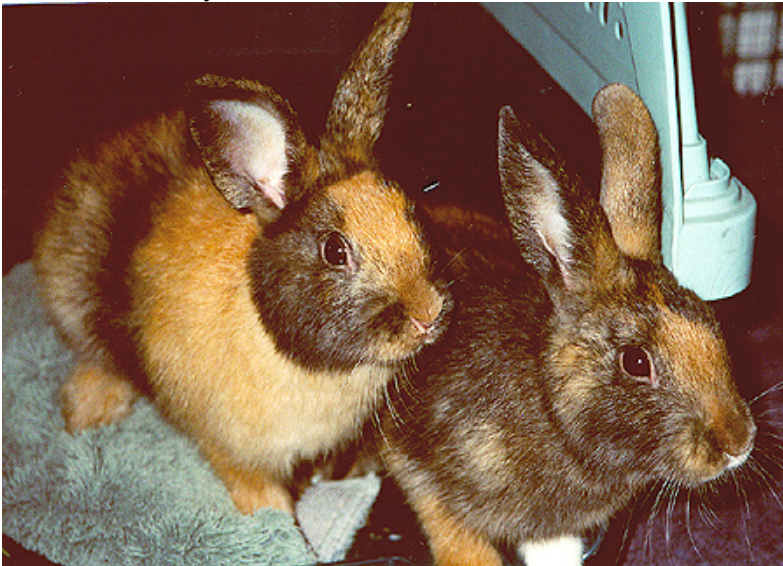
Poops of Mystery:

Your Bunny's Litterbox Leavings are a Clue to His Health - by Dana Krempels

Rabbits, like all lagomorphs, produce two types of droppings: fecal pellets and cecotropes. Fecal pellets are the round ones you see in the litterbox (or wherever). Cecotropes are not often seen, since under normal circumstances, your bunny will snatch them warm from the "oven" and reingest them for their nutritional value and healthy bacterial flora. Cecotropes are produced in a portion of the rabbit's digestive tract called the cecum. The cecum contains a natural "brew" of bacteria, archaeobacteria and fungi that are beneficial and essential to your bunny's good health. This cecal ecosystem of microorganisms produces essential nutrients (e.g., fatty acids and vitamins) that a rabbit cannot produce on her own. A rabbit eating a cecotrope is engaging in cecotrophy—the eating of cecotropes.

Anyone who's seen a bunny enjoying a nice, warm cecotrope can tell you that a bunny doesn't find the process disgusting. That blissful, soft-eyed face and the Butt Twitch of Ecstasy tells you that this is a most delightful snack, and that all is well with the world. Cecotropes are not feces; they are nutrient-packed dietary items vital to your rabbit's well-being.

A rabbit usually produces cecotropes at a characteristic time of the day, which may vary from rabbit to rabbit. Some produce cecotropes in the late morning, some in the late afternoon, and some at night. In any case, they usually do this when you're not watching, which might be why some people refer to cecotropes as "night droppings." When things go wrong with your bunny's health, however, some of the first signs might show up as abnormal cecotropes that are mushy, extra-pungent, and sometimes even stuck to the bunny's bum.



Bright-eyed Eriya and Naria have healthy intestines, and no sign of cecal dysbiosis.

I. Normal Intestinal Products

If you live with a bunny, you know what a **fecal pellet** looks like. These are the round, brown "cocoa puffs" that we all hope end up mostly in the litterbox. They are round, relatively dry and friable, and composed mostly of undigested fiber. Rabbits do not ordinarily re-ingest fecal pellets, though a few bunnies seem to enjoy an occasional fecal pellet hors d'oeuvre. This isn't harmful.

A normal **cecotrope** resembles a dark mulberry, or tightly bunched grapes. It is composed of small, soft, shiny pellets, each coated with a layer of rubbery mucus, and pressed into an elongate mass. The normal cecotrope has a rather.

pungent odor, as it contains a high density of beneficial cecal microorganisms. When the bunny ingests the cecotrope, the mucous coat protects the bacteria as they pass through the stomach, then re-establish in the cecum

II. Abnormal Intestinal Products: A Sign of Deeper Problems

A. Diarrhea

True diarrhea (unformed, watery feces) is relatively rare in adult rabbits. It can be caused by intestinal parasites such as coccidia (*Eimeria* spp.), roundworms, tapeworms, or anything that inflames the intestinal lining. Your rabbit-experienced veterinarian will be able to examine a fresh fecal sample (you should both fecal and cecal samples, if possible) to examine them for signs of parasitic infection.

True diarrhea is more common in baby rabbits, and should be considered an emergency. One of the most common causes is coccidiosis, and if you see runny stool in your baby rabbit, you must get him to the vet as soon as possible for treatment. The dehydration caused by diarrhea in a baby rabbit can rapidly result in death. Treatment should not be delayed!

B. Unformed Cecotropes (Mushy or Runny Stool)

The cecum is a delicately balanced ecosystem. If the intestine is moving too slowly, or if the rabbit is getting a diet too rich in digestible carbohydrates and too low in crude fiber, the normal relative population densities of the various species of bacteria in the cecum can become "unbalanced." This condition is known as **cecal dysbiosis**. Cecal dysbiosis results when beneficial bacteria (e.g., *Bacteroides* spp. and a variety of others) are outnumbered by less desirable inhabitants such as yeast (a fungus, usually *Saccharomyces* spp.) or even very toxic bacteria such as *Clostridium* spp., related to the ones that cause tetanus and botulism.

A rabbit suffering from cecal dysbiosis will produce cecotropes that are mushy, pasty or even liquid. They are usually quite foul-smelling, and often stick to the bunny's back end in great, nasty clumps. Unformed cecotropes are not generally a primary disorder, however. They are often a symptom of a health problem somewhere in the bunny's system, and not necessarily in the intestinal tract. In order to solve the runny stool problem, the underlying cause must be identified and treated.

III. Common Causes of Runny Stool in Baby Rabbits

A. Weaning Too Young

If a bunny suffering from runny stool is younger than eight weeks and not nursing, his runny stool problem may be due to his being weaned too young. Although it is illegal in Florida to sell a mammal younger than eight weeks of age, this law is difficult to enforce. Many pet stores—especially around the holidays—will sell baby rabbits younger than eight weeks of age, and sometimes as young as four weeks! Baby rabbits are "cute" at this age, and much more apt to be purchased on a whim. Sadly, many of these babies will succumb to intestinal disorders because of their tender, pre-weaning age.

Unlike most mammals, baby rabbits have a sterile lower intestine until they begin to eat solid food at the age of three to four weeks. It is during this time that their intestines are the most vulnerable to infection and inflammation. To help the babies survive the critical weaning period, mother's milk—which changes pH and provides vital antibodies that help the baby gradually adjust to his changing intestinal environment—is essential. Without mother's milk, a baby starting to eat solid food is highly susceptible to enteritis (inflammation of the intestinal lining), which can cause fatal diarrhea.

A baby rabbit showing any sign of runny stool should be taken to a rabbit-experienced veterinarian immediately. (If you don't already have one, you can use the referral list linked to www.rabbit.org/vets to locate a good vet in your area.) Treatment for diarrhea in baby rabbits may include subcutaneous fluid therapy, and administration of oral probiotics. Though its efficacy is controversial, many suspect that *Lactobacillus acidophilus* (not a normal inhabitant of the rabbit intestine, but not harmful if ingested) can help temporarily promote a somewhat acidic cecal environment that may help normal beneficial bacteria re-establish their populations.

If a sick bunny will accept powdered *L. acidophilus* suspended in clean drinking water without being stressed, it might help, and it won't hurt to administer it. (Do NOT administer yogurt, which contains bovine milk sugars and proteins that might make the problem worse, not better.) A very small amount of a kaolin clay-based product (e.g., Kaopectate can help solidify the stool, and soothe inflammation. Note, however, that none of these treatments is a cure-all home remedy, and are *not a substitute for prompt diagnosis and treatment from an experienced rabbit veterinarian!*

B. Intestinal Parasites

Coccidiosis (symptomatic infection with *Eimeria* parasites) is common in some areas, and especially in places where baby rabbits are raised under less-than-optimal conditions. Babies exposed to other rabbits carrying coccidia are easily infected. Some vets will simply treat a baby rabbit's diarrhea as coccidiosis, even without a fecal test. Common drugs used to treat coccidia include sulfadimethoxine (Albon) and/or trimethoprim sulfa (various brand names).

IV. Common Causes of Runny Stool in Adult Rabbits

One of the most common questions I receive at health@rabbit.org is how to cure an adult bunny suffering from "messy bottom." This term describes cecotropes sticking to the bunny's bum, but treatment of the problem can be as varied as its causes.

A. Mechanical Problems

Sometimes the cecotropes are normal, but they are smashed onto the bunny's behind because the bunny is suffering from a physical condition that limits her mobility.

1. Obesity

Is the bunny with mushy stool stuck to his bottom overweight? If so, the cecotropes could be normal, but he can't reach them as they are produced, and so smears them all over his bum in trying to reach them. Calorie reduction (first step: remove commercial pellet food and any starchy treats, replacing them with fresh, fragrant herbs) and more exercise are in order.

2. Arthritis or other skeletal problems

Similarly, a rabbit suffering from degenerative joint problems in the spine, hips, or other areas, may not be able to reach his cecotropes easily. He ends up sitting on some of them, and squashing them into his fur. Arthritis can be treated by your veterinarian, who may prescribe a non-steroidal anti-inflammatory drug (NSAID) such as Rimadyl (carprofen) or Meloxicam, though all the usual cautions for use of NSAIDS apply.

B. Dietary Problems

1. Starch-rich Diet

Rabbits, like horses and cattle, are strict herbivores. The rabbit intestine--and its normal bacterial flora--has evolved to process grass and herbs almost exclusively. Like any animal, including humans, individual rabbits may have different tolerances for dietary starch. I've known a rabbit who stole and devoured a half a bag of raisins and never had a problem, and others who seem to develop runny stool just from *looking* at a raisin.

Does your messy-bottom rabbit get starchy treats such as oatmeal, crackers, bread or sweets? If so, that's the first thing to omit from the diet, replacing them with fresh herbs and other healthy treats. Some rabbits with very sensitive intestines may get runny stool even from commercial pellets. Fruit, as healthy as it is for humans, can be too much of a good thing for sensitive rabbits. A diet too rich in digestible starch is one of the most common causes of runny cecotropes in companion rabbits.

2. Fiber-poor Diet

A rabbit should be fed unlimited *grass* hay, such as timothy, brome, wheat or oat. Alfalfa hay is too rich in calories and protein to be used as a dietary staple, and because it also can harbor dangerous

fungal toxins, we simply avoid giving it to our bunnies at all. The intestinal muscles of a rabbit who does not get unlimited grass hay to nibble on throughout the day, will not get enough exercise. Peristalsis—the muscular movements that push food through the gut—may become sluggish, and passage of food through the cecum may be too slow to properly "flush" the bacterial populations out of the intestine. Cecal dysbiosis can result.

The high fiber content of grass hay also helps to "dilute" the starch of other dietary items, and helps to provide a healthy intestinal environment. In preventing and curing a runny stool problem, it is very important to provide a complete and healthy diet including unlimited, fresh grass hay.

C. Hidden Health Problems

When a rabbit is ill, in pain, or is suffering from emotional stress, a very common physiological response is a slowing of the normal peristaltic movements of the intestine. This results in cecal dysbiosis, with all the accompanying problems of runny stool, and possible inflammation of the intestinal lining (enteritis).

Some of the most common causes of intestinal slowdown (and hence, cecal dysbiosis) in rabbits include

- * Dental Problems (see www.bio.miami.edu/hare/dental.html)
- * Urinary tract disorders (see www.bio.miami.edu/hare/urinary.html)
- * Upper respiratory infections (see www.bio.miami.edu/hare/sneezing.html)
- * Torticollis, or "head tilt" (see www.bio.miami.edu/hare/tilt.html)

...among others. Conditions such as these are best diagnosed and treated by a veterinarian who is familiar with such problems in rabbits, and is experienced in successfully dealing with them. When cecal dysbiosis is caused by an underlying health problem, the only way to solve the runny stool problem is to address the cryptic disorder. Some problems are simple to find (molar spurs are a prime candidate in every "mystery" case of cecal dysbiosis), and others may require some detective work on the part of your vet. But even if such detective work requires that your vet take blood for a complete blood chemistry and blood count, or a sample of infected material for culture and sensitivity testing, the results will be well worth the time, trouble and money.

Once the "unrelated" health problem is treated, the runny stool symptoms often resolve on their own. If the causative condition is not treated, however, cecal dysbiosis can progress to something worse, and eventually result in a potentially life-threatening condition, **ileus** (www.bio.miami.edu/hare/ileus.html and www.bio.miami.edu/hare/ileus.pdf), in which the intestines stop completely, the bunny stops eating and stops producing any fecal pellets or normal cecotropes.

V. Keeping Bunny Comfortable in the Meantime

While you follow your veterinarian's instructions in treating the problem(s) that caused the runny stool, it's still important to keep your bunny clean and comfortable. Dried cecotropes stuck to the behind are not only smelly and uncomfortable, they also can attract flies which may lay eggs on the soiled fur and cause life-threatening fly strike.

To prevent this, be sure to learn how to give your bunny a SAFE "butt bath." Instructions for both dry bath (highly preferable) and wet bath (to be avoided if at all possible) can be found in an accompanying article in this newsletter (page 6).

The appearance of runny or mushy stool in a rabbit is not always a simple matter. It may require dietary changes, extra-careful husbandry, and sometimes extensive diagnostic work and treatment by your veterinarian. But it will all be worth it for a long life filled with happy, healthy, nose-wiggling love.

Miami's Most Adoptable Rabbits

Our rescued rabbits come in just about every shape, size and temperament, and only a few of them are pictured here. We can tell you who's with us and more about their individual personalities when you call, but they all have one thing in common: the need for a loving, permanent indoor home. Please call (305) 666-BUNN or email dana@miami.edu for more information

Rupert is a big, beautiful golden bunny with the softest fur you've ever touched. He's loving and outgoing, young, athletic, and healthy. He's an Alpha Bunny who likes to have his own way, but since his "way" is dancing and loving, that shouldn't be a problem! Will you be the lucky one to take home this handsome boy?



Leopold was left at Dade County Animal Control when his "mom" was taken to a nursing home that would not allow her to take him. He's an adorable dwarf mix, white with black spots. His litterbox habits are absolutely impeccable. He's also a total "moosh," and will lie for hours to be petted and loved. He even likes to be held! A most unusual and wonderful bunny, indeed.

Twenty-One Carrot Salutes!

We could not do all the rescue and adoptions we do without the help of our wonderful veterinarians. **Dr. Susan Kelleher**, owner of **Broward Avian and Exotic Animal Hospital** has been a phenomenal fosterer and adopter, and deserves a medal for all her expert veterinary care of our rescues. She has been the driving force of House Rabbit Society of Miami! To set up an appointment to visit Dr. Kelleher's fosters, please call her hospital at (954) 968-7171.

We also thank **Dr. Will Chavez** who always is ready with a helping hand, and treats our bunnies like royalty. We never forget how fortunate we are to have such wonderful professionals to make sure all our bunnies are always in tip top shape!

The **Wildlife Care Center** in Fort Lauderdale has been an invaluable ally in the uphill struggle to educate people about the loving, intelligent nature of rabbits as companions and friends. They are housing nearly 100 rescues, and if you are thinking about adopting a rabbit or six, now's the time. You can call the WCC to set up an adoption visit at (954) 524-4302.

Bathing a Rabbit's Messy Bottom

By Dana Krempels

If your rabbit has a messy bottom due to runny stool or urine leakage, the most important thing to do is to determine the source of the problem, starting with a full exam by your rabbit-experienced veterinarian. Be sure to ask for a full dental examination (including molars!) and blood chemistry and cell counts, if the vet deems it necessary.

A messy bottom is both uncomfortable and unsanitary, inviting worse problems such as skin scalding and even fly strike. While your vet does the detective work, it's up to you to keep the bunny comfortable. One way is with a careful, gentle "butt bath" to keep caustic bodily fluids away from the skin. There are two methods one can safely use to clean a messy bunny, and of the two, a DRY BATH is preferable. If the bunny is extremely soiled and very smelly, a wet bath may be necessary. Instructions for this procedure follow those of the Dry Bath.

Dry Bath Procedure

1. Buy a container of Baby Cornstarch Powder (DO NOT use Baby Powder or any sort of powder that contains talc, a carcinogenic respiratory irritant). Unscented or scented powders are fine. DO NOT use commercial bath or flea powders or other pesticides on your bunny. Use only baby-safe cornstarch powder for best, safest results.
2. Place bunny in a comfortable position so that the soiled parts are easily accessible. Cradling him in your lap on his back works well, if he's calm. Use a clean towel for additional cushion.
3. Liberally apply the cornstarch to the soiled areas, and gently work the powder down into the fur, around messy poops, and down to the skin.
4. Gently work the powder around any stubborn clumps of debris. As the cornstarch coats the mess, it will slide away easily.
5. Once the largest chunks (ew!) have been removed, use a soft-tipped brush or flea comb to *gently* loosen any remaining soil.
6. Pat the powdered areas well to remove loose powder. Avoid getting too much near bun's nose!

Bunny should be clean and fragrant in just a few minutes! Rabbits generally enjoy a dry bath, and will sit quietly as the soothing powder takes away the sting of urine burn. If your bunny's bum is very messy, wet, and smelly, it may be necessary to give his back end a wet bath. Here's how to do it:

Wet Bath Procedure

1. Purchase hypoallergenic, non-medicated pet shampoo from your veterinarian or pet supply store. Hy-Lyte is a good choice, but any similar product will work as well. DO NOT USE ANY TYPE OF HUMAN SHAMPOO ON YOUR RABBIT. Rabbit skin is far more delicate and sensitive than human skin. Even baby shampoo is too harsh, and can make the problem worse, not better.
2. Fill a bathroom sink to about 2.5" depth with lukewarm water.
3. Mix in about a tablespoon of shampoo, and stir well.
4. Being firm and gentle so that the bunny cannot jump and injure himself, lower his rear end into the lukewarm shampoo/water, and gently lather the solution onto only the soiled areas (DO NOT wet the bunny's entire body!) until they are clean. If the bunny is very messy, you may have to change the water and do this several times.
5. Rinse with lukewarm, clear running water very thoroughly, leaving NO shampoo residue.
6. Towel dry carefully, being sure not to rub too hard against irritated skin.

7. Blow dry on *low*, keeping your hand close to bunny's skin so that you can tell if the air flow is too hot. The last thing you want to do is burn already inflamed skin!

8. When bunny is fluffy-dry, carefully clip away the fur on the areas where the skin is irritated. If you can't see the skin, or are doubtful where skin ends and fur begins, then *do not clip!* Rabbit skin is very thin and stretchy, and even a small wound can expand to alarming proportions!

9. Apply a thin layer of soothing balm, such as Calendula (from the Health Food Store) or triple antibiotic ointment (Avoid Neosporin "Plus", which contains lidocaine, and is not recommended).

10. Repeat as necessary, but do not continue if rabbit seems unduly stressed by the experience. Whenever you handle a bunny, it's important to be firm, gentle and ready to release the bunny *at ground level* if she starts to struggle violently. As you probably know, one good kick can dislocate or even fracture the spine. Always keep the bunny's safety first in mind if you attempt a bath!

Obie says: "Don't even think of coming near me with that sponge! I can keep myself quite clean and tidy, thank you very much."



WE NEED BUNNY-LOVING VOLUNTEERS!

The House Rabbit Society of Miami is in desperate need of volunteers to help with our rescue efforts and organization. We're especially interested in folks who can help with:

We need volunteers in Dade, Broward, and Palm Beach counties, as we're dealing with rescued rabbits and trying to reach Rabbit People in all three areas. If you would like to help, or would like more information about any of the above (or other areas in which you have expertise), please email dana@miami.edu or phone our HOPLINE at (305) 666-2866.

House Rabbit Society of Miami

Warren Peace is published by H.A.R.E. (Houserabbit Adoption Rescue and Education), an official Chapter of the House Rabbit Society, an all-volunteer, non-profit organization dedicated to the rescue and welfare of domestic rabbits.

The H.A.R.E. Hotline is **(305) 666-BUNN**.

Visit our web site at www.bio.miami.edu/hare

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Your contribution helps defray the costs of spay/neuter, medical care and maintenance of rescued rabbits. Make checks payable to The House Rabbit Society of Miami, and save your cancelled check as a record of your tax deductible donation. Mail completed form and check or money order (no cash, please) to: House Rabbit Society of Miami, c/o Dana Krempels University of Miami Biology Department Coral Gables, FL 33124.

For more information, please call (305) 666-BUNN or email dana@miami.edu

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