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How to Raise a Healthy Rabbit

Written by Dr. Deanna Becker

Rabbits make wonderful, intelligent, friendly and quiet house pets. The average life span for a bunny is 7 years with records being reported up to 15 years of age. The following information is designed to help you take the best care of your pet and enjoy a happy, healthy life with him or her.

Food and Water

- Rabbit Pellets:** A good quality pellet should be offered daily but in limited quantities. The uncontrolled feeding of a pellet diet can lead to obesity with concurrent heat and liver disease, chronic diarrhea, and kidney disease from the high calcium levels in some pellets. Make sure that you buy pellets high in fiber (18% or more), and that you buy small quantities and keep it refrigerated or cool and dry to prevent spoilage. Old, rancid pellets can contribute to a rabbit that stops eating. If you must buy more than two months of pellets at a time, freeze them. The following chart shows DAILY AMOUNTS to be fed to your bunny. (Do not refill the bowl even if the pellets are all eaten before the next day.)
 - 2-4 lb of body weight: ¼ cu of pellets daily
 - 5-7 lb of body weight: ½ cup of pellets daily
 - 8-10 lb of body weight: ¾ cup of pellets daily
 - 11-15 lb of body weight: 1 cup of pellets daily
- Loose Timothy Hay:** Timothy hay or grass hay should be offered daily in unlimited amounts. We prefer the loose, long strands of hay, as opposed to the pressed cubes. The hay fiber in the hay is extremely important in promoting normal digestion and for the prevention of hairballs. These products also contain proteins and other nutrients essential to the good health of your pet. We no longer recommend the use of alfalfa hay, as it has been shown to be too high in calcium and carbohydrates, which may lead to serious health problems and digestive upsets.
- Fresh and Treat Foods:** These foods should be given in limited quantities, as excessive amounts may lead to digestive upsets. Feed more than one treat food a day to get the pet used to variety so that if changes have to be made, they are tolerated more easily. **Any major change in the types of food fed to your pet can lead to serious digestive upsets.**
Introduce one new food every three days and keep a watch on the stools. It is rare for a rabbit that has been on a hay diet first, to have any problems using this method, but if you note softer stools that persist over a couple of days, then you might want to remove that food from your bunny's diet.

IMPORTANT: Before introducing any fresh foods to a rabbit it is best if he has been eating grass hay for a minimum of 2 weeks. The grass hay will help to get his GI tract motility and flora in good working order so that he will be able to accept new foods more easily. When introducing new fresh foods to any rabbit's diet it is best to go slowly to allow the gastrointestinal tract and all its important microorganisms to adjust. Introduce one new food every three days and keep a watch on the stools. It is rare for a rabbit that has been on a hay diet first, to have any problems using this method, but if you note softer stools that

persist over a couple of days, then you might want to remove that food from your bunny's diet. Keep a list as you go of the foods that your rabbit has successfully eaten; you will then have a handy shopping list when you go to the store!

Susan A. Brown, DVM

Housing

Rabbits are crepuscular, which means that generally they sleep during the day and during the night but are ready to play at dawn and at twilight. Be sure to let them out during the evening when you are home, and if possible, in the morning while you get ready for work.

However, once your rabbit is familiar with your home, once you know what your rabbit does, and once your house has been fully bunny proofed, there's no reason that he or she can't have run of your home even when you're not there.

Rabbits were not designed to live on wire floors—they're hard on their feet

Bigger is better! A rabbit's home should be at least 4-6 times the size of your bunny when he's entirely stretched out—more if he is confined for a large amount of the day. Enclosure sizes also should be decided in conjunction with the amount of exercise time and space the rabbit has. One guideline to go by is at least 8 square feet of enclosure space combined with at least 24 square feet of exercise space, for 1-2 rabbits, in which the rabbit(s) can run and play at least 5 hours per day. You can build or buy your rabbit a two-story "condo" with the floors connected by a ramp—they love this!

An untrained rabbit probably should be kept in an enclosure while you're not home to supervise and at night when you sleep.

Grooming

Rabbits can act as if they're hardy creatures, but they are, in fact, extremely delicate—from their skin to their spines to their external systems. Care must be taken to maintain their good health. The following basics are necessary to know in order to groom rabbits safely and to help keep them healthy. For information specifically geared towards the caring for long-haired rabbits, see the reprint of the *House Rabbit Journal* article, "The Well-Groomed Rabbit."

Shedding

Rabbits shed every three months. Every alternate time they'll have a light shedding that may not be very noticeable. Next they'll have a heavy shedding that you will not be able to escape.

Rabbits are fastidious groomers. They insist on being clean and tidy and will lick themselves like cats, and like cats, they can get hairballs if they ingest too much hair. Unlike cats however, rabbits cannot vomit. If hairballs are allowed to form they can become gigantic masses of tangled hair and food and will block the stomach exit, causing the rabbit to starve to death while his stomach appears to be very fat.

Rabbits need to be brushed at least weekly. In addition to removing any loose hair, this weekly brushing session helps prepare them for the multiple daily brushings that they must undergo when their heavy shedding begins. Rabbits will shed in different ways. Some rabbits will take a couple of weeks or more to lose their old coat of fur. Other rabbits will be ready to get rid of their old coats all in one day and these rabbits are the ones that cannot be neglected once they start shedding. You can often remove a very large percentage of hair by just pulling it out with your hand. But, however you remove it, remove it as soon as possible or your rabbit will do it during grooming.

Bald spots on rabbits are quite common when they are shedding. I have one Angora rabbit for instance, that gets totally naked except for her face and feet. But, short haired rabbits can do the same thing. If these bald spots occur from shedding, they will begin to grow back within a week or two.

Long-Haired Rabbits

These types of rabbits are truly wonderful to look at, but require a lot more attention than their short haired cousins. We recommend that you use your scissors and keep their hair trimmed to one inch or less, otherwise you may be fighting hairballs most of the time.

EXPERT HELP: If you are not comfortable with the above you can have someone, maybe your veterinarian, show you how to do all of the above tasks.

Fleas and Mites

Safe treatments to prevent and kill fleas on rabbits include **Advantage** (imidocloprid), **Program** (lufenuron) and **Revolution** (selamectin). (Note: Advantage has been known, rarely, to irritate the skin of certain rabbits.) The latter is

preferred, as it is also effective against various types of mites that cause symptoms of mange, ear canker, and “dandruff” (which is often caused by fur mites in the genus *Cheyletiella*). These products are available from your rabbit-savvy veterinarian. We use 0.4ml per rabbit of Advantage. For Revolution, we use the kitten dose and apply it between the shoulder blades once a month for at least three doses. Revolution is usually dosed at 6mg/kg. If you have the 60mg/ml solution (i.e. the kitten solution), use 0.1cc per kg of body weight (1kg = 2.2lb). If you have the 120mg/ml solution, use 0.05cc per kg of body weight. You’ll need a tuberculin syringe (no needle!) from your vet to measure such a small quantity of liquid. Apply to the back of the neck or other area where the bunny can’t readily groom it off. It is essential to thoroughly clean your rabbit’s cage and exercise areas after each treatment to control reinfestation, since fur and dander in the environment may contain mite eggs.

A flea comb is a non-toxic device that takes more patience, but is both physically and psychologically rewarding. Most rabbits learn to love the attention of being flea combed, and it can be used as a supplement to your main flea-control program.

The following products should NOT be used on rabbits:

- Frontline (fipronil) has been linked to neurological damage and death in rabbits, although this product is apparently safe for dogs and cats. The manufacturer (Merial) has placed a warning on the Frontline label stating that ***Frontline should never be used on rabbits.***
- Flea powders, even those considered safe for cats and kittens or advertised as “rabbit safe”, are not recommended for use on rabbits.
- Flea shampoos, even those considered safe for cats and kittens or advertised as “rabbit safe”, are not recommended for use on rabbits. Bathing of rabbits, in general, is strongly discouraged because the stress of the bath itself can cause serious health problems, and has in some cases been linked to the death of the rabbit. Flea baths or dips are NOT recommended for this reason.
- For environmental flea control, sprays and “bombs” are not recommended, as they may leave harmful residue that the rabbit can ingest. Safer alternatives include borax and diatomaceous earth, worked into the carpet where fleas leave their eggs.

Baths

Although a rare bunny may grow up swimming in the family pool and going on camping trips where she paddles around in the lake, the vast majority of rabbits, like their ancestors, do not relish getting wet. Even an occasional bath is quite stressful to the average rabbit, and is not recommended.

NEVER—unless your veterinarian advises it to bring down a fever—should you give a sick rabbit a bath. Because seemingly healthy rabbits can have undiagnosed problems, it’s best not to subject them to the stress of a bath. If your rabbit is very badly infested with fleas, there’s a good chance that he is already compromised and may go into shock when bathed. There are many safe alternatives to flea control (see these under “Fleas,” above). Also, a thoroughly wet rabbit takes a very long time to dry, so spot cleaning the dirty area with an application of baby cornstarch (available at any supermarket in the baby section) (do not use talcum, as it is carcinogenic) and then gently combing out the dirt with a fine flea comb is better than a wet bath.

A wet rabbit can quickly become hypothermic. If your rabbit is wet to the skin for any reason, be sure to thoroughly blow dry the bunny until even the undercoat is dry and fluffy. Normal rabbit body temperature ranges from 101°F – 103°F. Because rabbit skin is very delicate, and rabbits are sensitive to heat, never use a blow dryer on a setting higher than “warm,” and constantly monitor the temperature of the air on the bunny’s skin by placing your hand in its path.

Mats

Rabbit skin is delicate and highly susceptible to cuts, so mats should not be cut off with scissors. Instead, use a mat splitter or mat rake to take the mass apart. Bunny fur usually requires a finer blade than most cats and dogs.

Skin

Scratchy, flaky skin with bald patches is usually a symptom of mites or, more rarely, an allergic reaction to fleas. Products described under “Fleas” will usually clear up such problems. A veterinarian should be consulted for such conditions as open sores, or chronic skin inflammation.

Scent Glands

Rabbits have scent glands both under their chin (that’s what they use to mark items (and people!) when they chin things), and around their anus. When the anus scent glands build up, the rabbit often has an unpleasant odor. It’s simple to clean the glands, however. Simply dip a Q-tip into some warm water and hold your rabbit in a safe hold that gives you access to the genitals. Locate the two slits on either side of the rabbit’s genitals. Take the Q-tip and carefully swab away the brown buildup. It should just take you a second and you’re done!

Feet

House rabbits who spend all of their time in homes with carpeting and linoleum periodically need to have their toenails trimmed, in the same way as dogs and cats.

Because of risk of infection, declawing is definitely NOT recommended for rabbits.

If excessive digging or scratching is a problem, then a large box of hay or straw, where bunny can pursue these activities, may help.

If the padding (fur) on the feet is worn down, exposing inflamed or callused skin, then soft dry resting pads (rugs) should be provided. Exposed skin that becomes urine burned or broken is very likely to infect. Take extra care that rugs and litterboxes are kept clean and dry.

Incontinence

A rabbit with a urinary infection or a disabled older rabbit may not be able to project urine away from the body. The result may be saturated fur around the hindquarters. For milder cases, shave the areas that get wet so the skin can dry (remember, rabbit fur takes a long time to dry), rinse the affected areas daily, and follow up with a dusting of baby powder or corn starch. For more infirm cases, disposable baby diapers-turned backwards so the tabs are up-do wonders for keeping the moisture away from the skin. (Huggies Step 2 work well for an 8 pound rabbit.)

Ears

Ear wax can be lifted out with a cotton swab, being careful not to push on wax in the canal, or you can try a mild ear cleaner containing Chlorhexadine, such as Nolvasan Otic. For ear mite infestation, apply a topical medication such as Mitox. The veterinarian may also prescribe Ivermectin.

Teeth

Rabbits teeth grow continuously and must be checked to ensure that they are wearing down properly. While you're brushing your rabbit or clipping his nails also look at his teeth to make sure there is not a problem.

Bunnies with straight teeth will keep them worn down with everyday gnawing and chewing. Buns with malocclusions, or crooked teeth, will need to have their teeth kept trimmed with guillotine-type clippers. If this occurs and is left untreated, the rabbit will not be able to eat and could starve to death. Your veterinarian can show you how to clip a rabbits teeth or they can clip them for you.

Nails

Rabbits nails can grow to be very long and sharp and will be uncomfortable for the rabbit. If the rabbit has light colored nails they are very easy to trim. You can see the blood inside the nail and you clip just before that point. The dark colored nails are harder to see where they should be clipped but it is still visible.

People are often afraid to clip nails for fear that they will cause the rabbit to bleed. You can purchase a product called Kwik Stop to keep on hand for this problem, but I've found that just holding pressure with a cotton ball works better for me. Your veterinarian will also clip nails for you. They should be checked every 6-8 weeks.

Eyes

Watery eyes or and eye discharge needs to be diagnosed by a vet. In addition to any medications or eye drops, the cheek needs to be kept dry and clean so the area will not become chafed nor the fur peel off. Clean tissues will absorb mild wetness.

Ophthalmic saline solution (what people use with their contacts) carefully poured onto the cheek will crystallize the tears so that they can be removed with a clean flea comb. A touch of prescription anesthetic powder on a finger can be applied to the area if there are painful lesions.

Compiled with the assistance of Dr.Carolynn Harvey, DVM

CHEWING

Why does your rabbit chew things other than her meals? Chewing is a normal, natural, necessary (and highly enjoyable) activity for rabbits. Here is an outline of some considerations to help you understand the why of chewing, as well as the how of preventing destruction of your favorite wicker furniture.

What are the psychological factors of chewing?

Sex. Females often have a stronger urge to burrow than males, although this is not the only reason rabbits chew. The hormone/age factors below also apply to males. Both males and females can and should be spayed or neutered as soon as they are sexually mature (4 to 6 mos. old). Make sure they are chewing the right things-hay, non-treated grass mats, etc. Their teeth are always growing, so they need hard things to chew on to keep their teeth trimmed. Provide plenty of fresh hay, hard cardboard boxes, etc.

Hormone/age. Is she spayed?

If young (under 2 yr..) & unspayed, spay her.

If young & spayed, her chewing will lessen with time.

If mature (over 2 yrs.) & unspayed, spay her but get a checkup first.

If mature & spayed, her behavior isn't governed by hormones.

Remember, a spayed rabbit will chew less and less as she matures. It may be just a matter of riding out a high energy stage of your bunny's life.

Personality. Chewers are often intelligent, outgoing, affectionate individuals who like to be in charge and get lots of attention. Does she chew to get attention? Would a companion alleviate boredom? Anything that would entertain her/make her happier might lessen her chewing.

What are the environmental factors of chewing?

Diversions: keep trying to find something harmless she enjoys doing. What kind of "burrow" (such as a cardboard box stuffed with hay), can you provide for her?

Protecting the environment: A box or wire basket can go over a group of wires. Browse a large hardware store for products to use for bunnyproofing. Hardware stores make the black wire covers that go easily over your home wires.

Confinement (to a cage or room). This simply buys you time, while you bunny-proof, get her spayed, or wait for her to mature.

Should I give the rabbit items to chew?

Yes. You can give rabbits pieces of the thing they want to chew: their own small towel, for example, providing they **aren't** ingesting it. Give your rabbit plenty of fresh hay—oat hay, timothy, orchard grass hay, and replace two times or more a day.

Here are some items that are OK for rabbits to chew on:

apple, willow, aspen branches; hay!

pine firewood;

cotton towels

untreated fresh pine lumber attached to cage so it doesn't move—piece of molding, 1"x2"s, or 2"x4"s;

basket with hay in it—let the bun chew the basket as well as the hay;

compressed alfalfa cubes

Aren't some woods toxic?

Fruit tree branches, such as, apricot and peach are toxic while attached to the tree but not after they're cut and dried (a month or more). Lisa McSherry and Rusty Fayter, who package The Busy Bunny baskets, share this research. Another tip they offer for your bunny's safety is to keep your purchases of imported baskets limited to willow, the only basket material not sprayed with pesticide.

Does chewing carpet hurt the rabbit?

Yes, if then ingest the fiber. Since swallowing indigestible such as carpet presents a health hazard to your bunny, follow up excessive chewing incidents with a petroleum laxative such as Petromalt or Laxatone (sold at pet-supply stores).

Should I give the rabbit items to dig?

Yes. For digging, build a "tunnel" (top isn't needed, just bottom, high sides, and end. Cover the bottom with a bit of carpet or something similar. Bunnies LOVE to dig at the end of tunnels. (Same thing can be accomplished by putting a board with carpet tacked on between two pieces of heavy furniture against the wall...just be sure the board can't move or the bun will be digging the carpet beneath where the board was meant to be.

Can I discipline my rabbit not to chew?

Discipline (clapping hands, saying "no") has a small role in stopping chewing behavior. Most people report that it's easy to make their bunnies understand them, but difficult to make them stop the behavior through the use of discipline only, especially if the bunnies are left alone for periods of time. Section 7 of this FAQ covers general companion rabbit training techniques. Replace the bad things with good things—hay, grass mats.

Spay and Neuter

Altered rabbits are healthier and live longer than unaltered rabbits. The risk of reproductive cancers (ovarian, uterine, mammary) for an unspayed female rabbit stands at is virtually eliminated by spaying your female rabbit. Your neutered male rabbit will live longer as well, given that he won't be tempted to fight with other animals (rabbits, cats, etc.) due to his sexual aggression.

Altered rabbits make better companions. They are calmer, more loving, and dependable once the undeniable urge to mate has been removed. In addition, rabbits are less prone to destructive (chewing, digging) and aggressive (biting, lunging, circling, growling) behavior after surgery.

Avoidance of obnoxious behavior. Unneutered male rabbits spray, and both males and females are much easier to litter train, and much more reliably trained, after they have been altered.

Altered rabbits won't contribute to the problem of overpopulation of rabbits. Over 7 million adorable dogs, cats, and rabbits are killed in animal shelters in this country every year. In addition, unwanted rabbits are often abandoned in fields, parks, or on city streets to fend for themselves, where they suffer from starvation, sickness, and are easy prey to other animals or traffic accidents. Those rabbits who are sold to pet stores don't necessarily fare any better, as pet stores sell pets to anyone with the money to buy, and don't check on what kind of home they will go to. Many of these rabbits will be sold as snake food, or as a pet for a small child who will soon "outgrow" the rabbit.

Altered rabbits can safely have a friend to play with. Rabbits are social animals and enjoy the company of other rabbits. But unless your rabbit is altered, he or she cannot have a friend, either of the opposite sex, or the same sex, due to sexual and aggressive behaviors triggered by hormones.

Spaying and neutering for rabbits has become a safe procedure when performed by experienced rabbit veterinarians. The House Rabbit Society has had over 1000 rabbits spayed or neutered with approximately .1% mortality due to anesthesia. A knowledgeable rabbit veterinarian can spay or neuter your rabbit with very little risk to a healthy rabbit. Don't allow a veterinarian with little or no experience with rabbits to spay or neuter your rabbit.

Is surgery safe on rabbits?

Surgery can be as safe on rabbits as on any animal. Unfortunately, the vast majority of veterinarians aren't experienced with safe rabbit surgery techniques. Don't allow a veterinarian with little or no experience with rabbits spay or neuter your rabbit. Using isoflurane as the anesthetic and appropriate surgical and after-surgery techniques, spaying and neutering of rabbits is as safe as for any other animal.

At what age should rabbits be spayed or neutered?

Females can be spayed as soon as they sexually mature, usually around 4 months of age, but many veterinarians prefer to wait until they are 6 months old, as surgery is riskier on a younger rabbit.

Males can be neutered as soon as the testicles descend, usually around 3-1/2 months of age.

When is a rabbit too old to be spayed or neutered?

Veterinarians will have their own opinions on this, but in general, after a rabbit is 6 years old, anesthetics and surgery become more risky, but that doesn't mean it can't be done. Simply consult your veterinarian regarding your rabbit's health and circumstances, and opt for pre-surgical blood work.

It is always a good idea, in a rabbit over 2 years of age, to have a very thorough health check done, including full blood work. This may be more expensive than the surgery, but it will help detect any condition that could make the surgery more risky. This is especially important if anesthetics other than isofluorene are used.

Can you tell if a female rabbit has already been spayed?

The probability is very high that she hasn't.

One can shave the tummy and look for a spay scar. However, when veterinarians use certain stitching techniques, there is no scar whatsoever. Hopefully, these veterinarians will tattoo the tummy to indicate the spay has been done, but otherwise, the only way of knowing is to proceed with the surgery.

What does the surgery cost?

Spay/neuter costs vary tremendously in different areas of the country. The low end of the range can be as inexpensive as \$50-75 (often in spay/neuter clinics), while vets in major metropolitan areas, where rents and labor costs are very high, often charge several hundred dollars. The average around the country is about \$250.

How can I find a veterinarian that can do the surgery safely?

See our veterinary listings.

What kinds of questions should I ask the vet?

About how many rabbit clients does the veterinarian see in a year?

How many spays/neuters OF RABBITS has the veterinarian has done in the past year?

What was the success rate? 90% success is way too low. Every doctor, whether for animals or humans will occasionally lose a patient, usually because of an undiagnosed problem. Veterinarians across the country who spay and neuter rabbits for the House Rabbit Society have lost on average less than 1/2 of 1%.

If any were lost, what was the cause?

Does the veterinarian remove both the uterus and ovaries? (they should)

Does the veterinarian do "open" or "closed" neuters? (Closed is preferable—let your veterinarian explain the difference.)

Is entry to the testicles made through the scrotum or the abdomen? (Entry via the abdomen unnecessarily increases the trauma for male rabbits.)

Does the veterinarian require withholding of food and water prior to surgery in rabbits? (Do not do this—rabbits can't vomit, so there is no risk of that during surgery, and rabbits should never be allowed to get empty digestive tracts.)

What anesthetics are used? Some veterinarians are quite successful with anesthetics other than isoflurane, but the bunny is "hung over" after surgery, which increases the probability that s/he will be slow to start eating again, which can lead to serious problems if not dealt with.

Review the procedure (op and immediate post-op) with your vet. Ask how problems will be detected: how often will they (the veterinarian and the techs) look in on your rabbit and what will they look for? What will they do pre-op to find any potential problems? How will they support your bun in the hours after surgery: oxygen, warmth, quiet (barking dogs and yowling cats in the next cage are probably not helpful), and stimulation? What are they going to do to make it come out right?! Ask questions! That will get your veterinarian's attention. Let them know you're concerned and that you'll be paying attention.

What pre- and post-operative care should one give?

Some rabbit people give their rabbit acidophilus for a couple of days prior to surgery, just to be certain that the digestive system is functioning in fine form. But don't change the diet in any way during this time.

After the surgery, ask your veterinarian for pain medication, especially for a spay. If you choose, continue giving acidophilus until the appetite has returned to normal.

Inspect the incision morning and evening. After a neuter, the scrotum may swell with fluids. Warm compresses will help, but it is nothing to be overly concerned about. With any sign of infection, take the rabbit to the veterinarian immediately. After surgery, keep the environment quiet so the rabbit doesn't startle or panic, don't do anything to encourage acrobatics, but let the rabbit move around at her own pace— she knows what hurts and what doesn't

Some veterinarians keep rabbits overnight. If your veterinarian lets you bring your bunny home the first night, note the following:

Most males come home after being neutered looking for "supper"— be sure they have pellets, water, and some good hay (good, fresh alfalfa is a good way to tempt them to nibble a bit)

Most females want to be left alone, are not interested in eating at all, and will sit quietly in a back corner of the cage (or wherever in the house they feel they will be bothered the least). Try not to pick up or bother her much for the first 4 days. Females take it harder.

The following morning, or at latest by the next evening, it is important for the rabbit to be nibbling something. It doesn't matter what or how much, as long as she is taking in something, so the digestive tract won't shut down. If she isn't, tempt her with everything possible, and as a last resort, make a mush of rabbit pellets (1 part pellets, 2 parts water, run through blender thoroughly, add acidophilus, and feed in pea-sized bits with a feeding syringe through the side of the mouth with them sitting upright). But this should not be necessary if you give them their favorite Italian parsley, a piece of banana, dandelion green, cold, fresh greens, washed, and you hold it for them. They should start nibbling on it.

Occasionally a female will pull out her stitches. Get her stitched up again, and then belly-band her by wrapping a dish towel around her whole middle and binding that with an elastic bandage wrapped snugly over it. If she can breathe normally, it isn't too tight.



Brant Ward / The Chronicle