

HOUSE RABBIT SOCIETY
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RABBIT CARE GUIDELINES

Rabbits are wonderful house pets. They are highly social and friendly and live an average of 8 to 12 years. They require as much attention as a cat or dog. Because rabbits are bred for appearance and not personality, all breeds can make wonderful companions; chose a rabbit based on her individual personality. The information in this handout is designed to help you and your rabbit enjoy a happy life together.

HOUSING

Environment. Rabbits are most active in the morning and evening and sleep during the day and at night; hence, their schedule fits with those of active families. Bunny should be given only as much freedom as she can handle; some bunnies can be outside their cage all day, but many need greater limits. Bunny needs 3-6 hr exercise daily outside her cage; remaining time is spent napping in a cage or attached playpen area. Bunnies are curious and need social interactions. Place the cage where you are active—family room, kitchen—rabbits enjoy listening to people and will often position themselves to watch you. If bunny is kept in a very active area (e.g. den or rec room), a small “cave” should be added so bunny has a safe place to lounge when stressed or tired; cardboard boxes with a hole cut in one end, paper bags, and upturned milk crates all work well. Never keep bunny outdoors; there are too many predators (two- and four-legged) that can directly or indirectly kill a rabbit, plus many insects carry diseases (myxomycosis, botfly, maggots, fleas, mites, etc) that easily infect an outdoor rabbit. Outdoor rabbits also suffer from undetected illnesses and loneliness. If you let your rabbit outside during the day, make sure she is confined in a sturdy wire enclosure, protected from the weather, and safe from predators, on feet and wings.

Temperature is also a concern; rabbits are susceptible to heat stroke and will succumb to temperatures in the 80's. Keep bunny in a cool room (60-70 F); on hot days run the air conditioner or place a plastic soda container filled with frozen water in the cage with a fan. Sadly, we have seen many rabbits with missing ears caused by exposure to a Wisconsin winter. Rabbits belong indoors with your family.

Cage. A good *minimum* cage size is 24"x30"x18" (DxLxH); bigger is always better. Wire cages are fine; do not use aquariums or solid walls as these trap heat, reduce circulation, and prevent bunny from watching her people. A wire mesh of 14 gauge and with 1" X ½" openings is adequate. Another great choice are multi-level hutches connected with carpeted ramps (www.Leithpetworks.com). Cages of exceptional value can be ordered from Klubertranz (800-237-3899; Edgerton WI) or KW Cages (800-447-CAGE). A wire-bottom cage is fine, as long as there are solid surfaces (rugs, litterpans) to protect the feet. We do not recommend cages with solid plastic bottoms, because their slick surface can lead to hip problems.

Cage additions. Place a throw rug, carpet square, or other washable surface on the cage floor to protect feet from wire damage (sore hocks) or add a solid floor; inexpensive throw rugs work well and are readily washed. For bunnies who like to chew their rugs, try woven grass mat squares (Pier One). Metal urine guards (Farm & Fleet, Klubertranz) help keep hay, poops, etc inside the cage. Place a removable litterpan (metal or plastic) beneath the cage to catch hay and debris. Place a smaller litterpan inside the cage (atop the wire) in a back corner for bunny to use; most rabbits will use this litterpan rather than the larger tray, making cage cleaning easier. Use a litterpan of sufficient size; many rabbits like to lounge and sleep in this pan. Change toys frequently to prevent boredom. Hang a filled hayrack on the cage exterior

so she can nibble all day; place the hayrack over the litterpan to enforce litter training.

Bunny-Proofing Your Home has three goals: (1) preventing destruction of your home; (2) protecting bunny from harm; and (3) providing safe chewing alternatives. Electrical cords look like branches and taste sweet; wrap these with spiral wrap plastic tubing (Radio Shack) or pre-slit tubing (hardware supply stores). Tack loose wires to walls or molding, or bundle them into tubing or hard PVC pipes. Most houseplants should be considered toxic and should be kept from bunny's reach; the *House Rabbit Handbook* (M. Harriman, Drollery Press) has a list of poisonous plants. Corners that are irresistible for chewing can be covered with furniture, throw rugs, woven grass mats or a hay tub. If bunny likes to burrow beneath furniture, block it off with a scrap lumber frame or staple hardware cloth across the underside (especially for sofas and mattresses). Protect wood molding with a wood tacking strip or a strip of double-sided scotch tape. Apply lemon oil soaked with hot chili peppers to furniture or wood; products such as Bitter Apple don't work well for rabbits. Often bunnies chew furniture when they are bored or upset; provide lots of alternatives in the cage and outside (see toys below). It is often safest to keep bunny caged when you are asleep or not at home.

DIET

Hay. Bunnies need unlimited hay for optimal health. Hay provides entertainment, as well as an essential fiber source for proper digestion. Its long strands help propel ingested fur through the intestinal tract. Grass hays (ex: timothy, orchard, brome, oat, marsh) are preferred because they are lower in calcium and protein. Alfalfa and clover hays are fine for dairy cows, but are too rich in protein and calcium for house bunnies and can cause health problems. However, any hay is better than no hay! Loose hay is better than pressed blocks because the long strands helps propel fur through the gut. WI-HRS sells local-grown grass hay at reasonable cost (608-232-7044 to arrange a pick-up time); or call a local stable to locate a source. Hay in a litterpan also encourages good toilet training (see below).

Pellets. Unless you are prepared to feed your rabbit at least 5 different vegetables every day, pellets are a good complement to guarantee adequate nutrition. However, most pellets are designed for meat or breeding rabbits and are too rich for house rabbits. Choose a pellet that is high in fiber (>18%), and low in protein (<14%), calcium (<0.9%) and fat (<2%). Excellent choices include Purina's HF (PMI High-Fiber), Oxbow's Bunny Basics Timothy (BBT; www.oxbow.com), and American Pet Diner's Timmy Pellet (www.americanpetdiner.com). Some pellet mixes contain seeds, grains, dried corn, or dehydrated vegetables; these are dangerous for your rabbit because the seeds and grains are poorly digested. We have seen several rabbits who died from seed-induced intestinal blockage. These diets are too rich and are the equivalent of eating daily at McDonald's. For some sensitive rabbits, pellets can cause digestive upsets and should be omitted from their diet; feed hay and veggies instead. Sometimes rabbits become accustomed to a pellet and will stop eating if a new brand is tried; stay with a healthy choice. To switch pellets, gradually mix the new pellets in with the old.

Rabbits under 6 months old are still growing and should be fed unlimited hay and pellets and some vegetables; babies should not be fed vegetables. For adult rabbits, pellets should always be rationed because overfeeding can cause serious health problems. Smaller rabbits have a faster metabolism and less efficient digestion than do large rabbits; they may need to be fed more per pound than would a large rabbit. Angoras need more pellets per pound because of their fur; mini-rex rabbits have a tendency to plumpness and may need to be fed less. The following guidelines are suggested:

2-4 lb body weight	—	1/4 cup daily
4-7 lb body weight	—	1/2 cup daily
7-10 lb body weight	—	1/2 - 3/4 cup daily
11-15 lb body weight	—	3/4 - 1 cup daily

Vegetables. Fresh vegetables are an important part of a healthy rabbit's diet. Avoid vegetables that are rich in sugar and starches (peas, potatoes, corn), because they can cause intestinal problems. Experiment and see which veggies your bunny likes; offer them several times and give bunny a chance to taste them. Some veggies to try include cilantro, parsley (flat- and curly-leaved), carrot tops, beet tops, radish tops, broccoli, cauliflower, carrots, alfalfa sprouts, kale, spinach, unsprayed and washed dandelion

and violet leaves, dark green lettuce (never iceberg), collard greens, chopped celery. Depending on your bunny's size and how much pellets he eats, you can safely feed about ½ to 2 cups daily. Include at least 4-5 different types per meal to provide nutritional variety. Be aware that iceberg lettuce is mostly water and can cause diarrhea; carrots are sugar-rich and may cause intestinal problems in some rabbits.

Water. Bunnies need unlimited access to fresh water; it must be changed daily. We suggest offering water in a heavy crock, rather than a bottle, to encourage drinking. Water is necessary to flush excess calcium from the kidneys and bladder, and it is essential for healthy function of the gut and its bacteria.

Treats. Many pet stores sell treats disguised as “healthy” choices; most of these are fat- and sugar-rich and are not healthy at all. The best treats are inexpensive ones: apple slices, 2-3 raisins, a pistachio nut, a pinch of oatmeal, a dish of herbal tea or apple cider. Treats are a fun way to bond with your bunny, a good way to monitor appetite, and nice rewards when medicines have to be given.

Vitamins, salt or mineral block, rabbit supplements and “enhancers.” These are unnecessary if the rabbit is receiving a balanced diet. Rabbits that cannot consume their cecal pellets may require a vitamin and/or amino acid supplement (see gut stasis, below).

Laxative for hairballs. Like cats, rabbits wash themselves frequently, but unlike cats cannot regurgitate ingested fur. A flavored petroleum laxative can be helpful in the prevention of fur blockage. It coats and lubricates the fur, so that hay can propel the fur through the gut. *Laxative cannot substitute for hay.* Feed 1-2" twice weekly; most rabbits love the taste and it is a good way to assess appetite in the event of gut stasis. For the rare rabbit who doesn't like it, smear an inch on the front paws and let her lick it off. A common laxative is Petromalt™; the cat version is identical to the rabbit form and costs less.

Digestive enzymes. While formerly we recommended daily use of digestive enzymes, experience has shown that unlimited hay and occasional laxative are the best way to remove ingested fur and prevent gut stasis. Digestive enzymes are useful in the event of gut stasis; the enzymes break open the mucus holding fur together and make it easier to eliminate. Use fresh (not frozen) papaya or pineapple, a powdered enzyme such as Prozyme™ (available in pet stores). Papaya tablets are good as an occasional treat or to assess appetite, but are not strong enough to treat stasis; also, some papaya tablets are sugar-rich.

Litter-Training

The Basics. Rabbits litter-train easily if you understand bunny logic. The greatest key to success is to spay or neuter your bunny (see below); this reduces the hormone surges that drive territory marking. Rabbits are neat by nature and will choose only 1-2 spots to urinate in. They also prefer to eat and defecate in the same location; indeed, it's natural for bunnies to consume some of their hard pellets and all of their soft cecal pellets. You can use this natural behavior to encourage good litter habits: place hay inside of or hang it above bunny's litterpan. Keep a litterpan inside the cage and atop the wire floor in a favorite back corner; place one or two litterpans in a location that bunny selects outside the cage (generally a back corner). A throw rug beneath helps clean accidents. Cat litter pans without tops make good litter pans. Some bunnies prefer two litterpans in the cage, one for potty and one for sleeping. Change litter every 2-3 days to maintain good potty habits. Some rabbits prefer to defecate atop litter; others prefer wire. In our HRS foster home, we place inside the litterpan a rectangular plastic frame, made from PVC piping and covered with wire mesh, to keep bunny's feet clean. Clean litterbox stains with vinegar and let them soak overnight before scrubbing with a stiff brush. Rubber spatulas or cat litter scoops are great for emptying the litter pan, and rabbit manure will make your garden the envy of the neighborhood.

Litter. A variety of materials can absorb urine; some are safer than others. Good choices include compressed wood pellets (woodstove fuel or Feline Pine), hardwood shavings (i.e. aspen, birch), and recycled newspaper products. Do not use oat hulls or citrus peels if bunny likes to eat the litter, as these are calorie-rich. Never use cedar or pine shavings, because they give off natural toxins that can alter bunny's drug metabolism in the event of a medical emergency. Some bunnies are picky about their litter; you may need to experiment to discover her preferences. Most rabbits do not like the texture of cat litter, and it is dangerous if ingested. Never use clumping cat litter in the rabbit's litterpan.

When rabbits break litter training, search for a reason. Common ones include: urinary tract infection, new/disliked litter, infrequent changing of litter pan, family stress, too much freedom, injury or disease causing incontinence, or boredom. Rabbits with true incontinence are treated with medication; rabbits who have lost bladder control are easily diapered; contact your vet or www.rabbit.org for further information.

Toilet-Training to a New Home. To train bunny to her new litterpan, keep her inside the new cage for the first week and restrict outside cage time to 10-20 min at a time. Hay in and above the litterpan reinforces good habits. Gradually add space to her territory, one room at a time. Anticipate bunny, and if she backs up and lifts her tail, transfer her back to the cage litterpan immediately. It does no good to scold afterward, as bunny cannot link the behavior to punishment. For the first several days, bunny will naturally scatter poops everywhere to mark her new territory; if this doesn't stop in a neutered rabbit, then territory restriction and retraining may be necessary.

Toilet Accidents. Bunnies make up to 200-300 hard poops daily! A few are bound to escape. A small vacuum (Dust-Buster, Dirt Devil) makes cleaning these a cinch. To clean urine accidents, wipe immediately with water. Remove dried urine with vinegar; rabbit urine is rich in calcium salts and the vinegar readily dissolves this.

Cecal Pellets. Bunnies produce a second, soft poop, called a cecal pellet, that looks like a cluster of shiny grapes; you will seldom see these as bunnies reingest them immediately unless there is a diet problem (see Diet above). True diarrhea, a vet emergency, is very soft or runny and lacks the cluster appearance. Cecal pellets are rich in vitamins and amino acids; rabbits who cannot reach them (e.g. paralysis) should be fed them. Cecal pellets are usually produced twice daily, usually 4 hr or so after mealtime. Some rabbits will overproduce cecal pellets when fed a protein- or sugar-rich food; in these instances, reducing/removing pellets or treats, or feeding only clean straw for several days often resolves the problem.

SPAY/NEUTERING

To spay or neuter your rabbit is not cruel, but is one of the kindest gestures you can make. Bunny behavior is affected by hormonal compulsions to breed rapidly: males may spray and mount constantly, while females can be highly territorial and attack hands that enter cages. Female rabbits are highly susceptible to uterine cancer (adenocarcinoma), and we find the early warning signs in 60-80% of our fosters upon spaying, as early as 12 months old. This adenocarcinoma is aggressive and highly malignant; often by the time it is diagnosed, it has already spread to lungs, lymph and breast. We recommend spaying females at age 6-12 months and neutering males once the testicles have descended. Spay/neuter will remove behavioral problems but will not alter your bunny's basic sweet personality. Indeed, in our experience most "aggression" in rabbits is cured by spaying. We maintain a list of experienced rabbit vets in the state and nation (www.rabbit.org), and are happy to refer you to one nearest you.

TOYS

Rabbits are curious, inquisitive animals who require as much stimulation as a cat or dog. It is cruel to exile a rabbit to a backyard hutch. Toys are important to keep bunny occupied. Excellent toys include: a full hay rack mounted on the exterior cage wire, plastic Slinkies, wire balls to toss, hard plastic baby toys (keys, rattles), plastic whiffle balls, hanging parrot toys and bells, toilet paper tubes (empty or stuffed with hay), small towels or hay tubs for digging, woven grass mats, baskets and coasters, small paper cups to carry, a tub or box stuffed with wadded paper, old telephone books, concrete tube forms to serve as a tunnel, big Tonka trucks (especially dump trucks), toddler plastic play sets, cat playhouses, cardboard boxes with a tiny entry hole (for remodeling). Rotate toys to prevent boredom. Let bunny select a rabbit companion (see below). You're only limited by your imagination! One note of caution—be sure that bunny can't get her head or paw stuck in the toy, and won't choke on small pieces. Hard plastic is safe to chew, and soft plastic should be avoided; beware of plastics that contain lead-based pigments (e.g. electrical wiring, old paint, some ceramics).

HEALTH

Unlike cats or dogs, rabbits do not require regular shots or vaccinations. However, because they are prey animals, rabbits will hide signs of illness until it is too late. It is critical to examine bunny frequently for signs of illness. Symptoms include unusual lumps or bumps, fur loss, abnormally small feces, diarrhea, gas or gurgling in the gut, unable to defecate, hunched appearance, prolonged sitting in litter box, loud grinding of teeth. Any of these is a medical emergency and requires a veterinarian *immediately*.

HRS maintains a(n incomplete) list of veterinarians with rabbit expertise. We strongly recommend locating an experienced rabbit vet in advance, before an emergency occurs. It is also good to have a back-up vet. Don't be afraid to ask your vet questions: how many rabbits does s/he see each month? How many spay/neuters has s/he performed? Is s/he aware that not all antibiotics are suitable for rabbits?

Picking Up Bunny. Rabbits have surprisingly delicate bones. Combined with their strong hindlegs, it is easy for a rabbit to struggle when being handled and break its back with a single kick. Pick up bunny by scooping one hand beneath the chest and the other supporting the hindlegs and hips. Quickly bring bunny against your body and hold the rear-end firmly; bunny will struggle less if she feels secure. Another trick is to lift the front legs just before the hindlegs, as it reduces the rabbit's ability to steer and hop away. Never pick up bunny by the ears or neck scruff. Small children should never pick up or hold a rabbit. Most rabbits do not like to be picked up or cuddled; they prefer being petted on the floor or sofa next to you.

Gastrointestinal Problems. Rabbits often displace health problems to their intestinal tract, and when food stops moving through the gut, it rapidly becomes fatal. This is because rabbits get nutrient energy from bacterial digestion in a specialized gut compartment called the cecum. When food no longer moves through the gut (gut stasis), the wrong bacteria (e.g. *Clostridium botulinum*) will grow and can kill bunny within 24 hours. Cessation of gut motility is a medical emergency!

A second cause of gut stasis is fur ingestion; like cats, rabbits constantly groom themselves and ingest their fine fur; unlike cats, rabbits cannot vomit to remove the fur mass. This fur clumps in the stomach or cecum and can block the intestinal passage. Again, cessation of gut motility is a medical emergency. **Seek a vet immediately if your rabbit has a lack of appetite for more than 24 hours!**

Watch bunny's feces daily for any reduction of size or cessation of output. By the time the rabbit becomes lethargic, the condition has probably existed up to a week. If caught early, hefty doses of laxative (e.g. Petromalt) may propel the fur out; you will see this fur in elongated poops, or poops connected by strings of fur. However, more likely is that bunny needs a vet immediately. An experienced vet may treat this emergency with a combination of force-feedings, subcutaneous fluids (to rehydrate the gut), laxatives, and/or gut propulsants. Surgery is a last resort and is generally prescribed if the condition has been allowed to progress too far. The best treatment is prevention: unlimited hay and plenty of exercise.

Teeth. Rabbit teeth can grow an inch per month! Bunny must constantly wear down both incisors and molars. Hay, toys, branches, and untreated scrap wood are all good for keeping teeth short. Problems arise when teeth grow out of alignment. A veterinarian can trim the teeth to be even and prevent mouth sores; it may take 3-4 trips to bring the constantly-growing teeth back into alignment, but is well-worth the inconvenience. Some rabbits may need periodic trimming, but this is inexpensive and not painful. Broken incisors can grow back if the root is not damaged; if permanent damage has occurred due to accident or genetics, your veterinarian can help with surgical options. We know many rabbits who have lost their front incisors to malocclusion. None have problems with eating, because they can easily lap up pellets with the tongue; however, they may need their vegetables chopped into smaller pieces. Tooth problems should be suspected whenever appetite is reduced (e.g. rabbit stops eating hay, then veggies, then pellets), if the chin is continuously moist or there is mouth drooling, when there is excess water drinking, or if there are ocular or nasal discharges that don't respond to antibiotics.

Weepy Eye. Unlike most animals, rabbits have only one duct draining the eye, and this is easily blocked by infection or tear debris; this can result in a weepy eye and fur loss. The problem tends to

worsen under stressful conditions (heat, change in routine). Prompt veterinary care is necessary to keep the blockage from becoming permanent closed due to scarring, and treatment generally consists of flushing the duct under light anaesthesia followed by appropriate antibiotics.

Respiratory Illness. Rabbits, like all animals, harbor a variety of bacteria in their respiratory tract. While a majority of respiratory illnesses in rabbits are caused by bacteria, contrary to popular belief, most are *not* caused by *Pasturella*. If your rabbit exhibits a respiratory infection, we strongly recommend seeking a veterinarian, who will take a culture, identify the infecting agent, and prescribe the correct antibiotic for treatment. If left untreated, respiratory infections can worsen to pneumonia, head tilt, or abscesses in tissue or bone. Respiratory or ocular discharges are sometimes indicators of hidden molar or incisor problems, and tooth condition should always be checked as well.

Head-Tilt. As with respiratory illness, this infection of the inner ear is treatable with the correct antibiotic. A culture-and-sensitivity test must be performed to identify the correct antibiotic for treatment. Many rabbits have been successfully cured of head-tilt; patience is required as generally 4 wks of treatment is required to see an effect. Most rabbits recover with complete or near-complete restoration of balance; physical therapy may be helpful as well.

Antibiotics. Never use antibiotics on rabbits without supervision by an experienced rabbit vet. This is because the rabbit gastrointestinal tract depends on the right population of bacteria to digest the food for energy; the wrong antibiotic can wipe out these good bacteria and kill your rabbit in 24 hours! In particular, rabbits should never be given oral penicillins, such as Amoxicillin. We can recommend several experienced rabbit vets who are happy to consult with your vet on issues of proper medical care.

COMPANIONS

Most rabbit caregivers find their rabbits are happier with a companion. In our experience, rabbits have strong opinions about the choice of companion; therefore it is best to let the rabbit choose his or her friend. HRS maintains a “dating service,” where you can bring your bunny and let him/her meet eligible rabbits; we have extensive experience in uniting couples. Bunny *must* be spayed or neutered to prevent fighting. There is nothing cuter than two bunnies washing each other, or hanging out side by side, yin-yang style. Plus your rabbit will have a companion to share while you are asleep or at work. Two rabbits are no more work than one, and are definitely twice the fun!

Alternatively, rabbits interact with other animals; rabbit/guinea pig pairs are not uncommon. Rabbits and cats often get along well, provided the latter is an indoor cat; similarly, we have placed many rabbits in homes with well-trained dogs who accept bunny as part of the pack. Quite often it is the rabbit who becomes the boss of the house!

ADDITIONAL RESOURCES

If you have further questions, please call our Wisconsin hotline at (608) 232-7044. Or write to us at www.wisconsinhrs.org, or at the Wisconsin Chapter of the House Rabbit Society, P.O. Box 46473, Madison WI 53744-6473. We are available to answer your calls on evenings and weekends. Another good resource is our national website, www.rabbit.org, which contains huge amounts of information on rabbit health and behavior that you are welcome to download. It also has additional contact numbers and email addresses, and a list of rabbit-knowledgeable vets across the country. Our local website, www.wisconsinhrs.org contains additional information and photos of rabbits available for adoption. Finally, *The House Rabbit Handbook, 4rd ed.*, written by our founder Marinell Harriman, is filled with practical information on living with a house rabbit. It is available for \$9 from us or can be ordered at your local bookstore.

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