House Rabbit Connection's Rabbit Care Guide

An Overview of Indoor Rabbit Care

- Diet and health
- Cage set up
- Litter box training
- Bonding with another rabbit
- And much more!

THE HOUSE RABBIT HRC CONNECTION INC.

Who Are We?

The House Rabbit Connection, Inc. (HRC), incorporated in Massachusetts in 1997, is a 501(c)(3) nonprofit organization. It was founded by a committed group of individuals dedicated to the plight of abandoned rabbits. The mission of HRC includes three primary goals:

(1) To take in adoptable, abandoned rabbits from animal welfare organizations, animal control officers, and veterinarians, provide temporary foster care, get them spayed or neutered, and find permanent, quality indoor homes for them
(2) To educate the public and assist humane societies and shelters in teaching rabbit care to the public
(3) To reduce, primarily by public education, the number of rabbits discarded at shelters or turned loose when no longer wanted

HRC is made up entirely of volunteers—individuals who dedicate time, money, and energy to move HRC toward its goals. These individuals share a love of rabbits and the belief that rabbits should not be relegated to hutches in the backyard. Instead, rabbits should be inside the home, free to explore rabbit-proofed rooms, living in roomy cages (or cage free), playing with toys, and interacting with all members of the household (human and non-human).

HRC educates the public and its members through:

- Our HopLine via phone (413-439-7HRC) and email (info@hopline.org)
- Our Web site (www.hopline.org) and social media accounts (Facebook, Twitter, Instagram)
- Distribution of rabbit care information packets
- Our quarterly newsletter, *In Pursuit of Hoppiness*
- Our annual member meeting (open to the public)
- Educational events at local pet supply stores and animal-related events

The HopLine phone and email services are contacted hundreds of times per year. Callers and e-mailers are from numerous states. HRC's Web site receives thousands of visits per year.

The most rewarding results of HRC efforts relate to the hundreds of abandoned (and often neglected) rabbits that have been rescued and placed in permanent, loving homes since HRC's inception. Adoptable rabbits are taken from shelters, examined by one of the rabbit-savvy vets who work regularly with HRC, spayed/neutered if necessary, placed in a loving foster home where they are socialized, litter-trained, and prepared for a loving, permanent, indoor adoptive home. By adopting a rescued rabbit, individuals are giving a bunny a new "leap on life."

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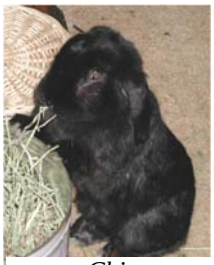
We have taken care in the preparation of this guide, but the information it contains is not intended as a substitute for the expertise and judgment of a qualified veterinary professional. You should consult your veterinarian about all health-care issues.

Why a Rabbit?

People who share their homes with rabbits quickly discover the value and potential of these charming animals as dear friends and cherished companions.



Chip

There are many reasons why you might consider sharing your home with a rabbit. First, rabbits are extremely intelligent. They quickly catch onto the household routines and interact well with humans, dogs, cats, guinea pigs and birds. They respond to their names and to other human language. Once a rabbit settles into his/her new home, he/she will come running for a pet, a kiss or a treat. Most rabbits savor being stroked, brushed and talked to. Some rabbits even enjoy being held. Each rabbit is a unique individual.

Baxter

Rabbits are clean and rarely, if ever, need bathing. They groom themselves thoroughly and constantly, instinctively wanting to keep themselves immaculate and scent-free. Though even litter box-trained rabbits may drop a pellet here or there on occasion, rabbit poop does not have an offensive smell, and it sweeps up easily. Wood stove pellets in the litter box absorb the smell of a rabbit's urine. Many rabbits even enjoy the privilege of sleeping in the beds of their humans due to their extreme cleanliness!

Cannoli and Strudel

Finally, rabbits are entertaining, keeping their humans amused with bunny dances (also known as binkies), sprints through rooms and hallways, purposeful "flops" onto the floor for a nap or to signal happiness, and long, luxurious stretches and yawns upon awakening. Rabbits enjoy playing with toys that they can toss, roll and flip, and they immerse themselves in time-consuming projects such as carving doors and windows into cardboard boxes. Bonded pairs of rabbits interact constantly with each other as they cuddle side by side or indulge in games of chase and tag.

Oliver

If you have a relatively quiet home with no small children, perhaps you might investigate why so many have chosen to adopt shelter rabbits as companions. Call the House Rabbit Connection today if you'd like to discuss whether a house rabbit might be the right companion for you!

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Vegetable and Fruit Lists

Vegetables— at least three per day

Alfalfa, radish & clover sprouts
Basil
* Beet greens (tops)
Bok choy
* Broccoli (mostly leaves/stem)
Brussels sprouts
* Carrot & carrot tops
Celery
Chard
Cilantro
Clover (no pesticides)
* Collard greens
* Dandelion greens & flowers (no pesticides)
* Endive
Escarole
Green pepper
!*Kale
Mint
* Mustard greens
* Parsley
* Pea pods (the flat edible kind)
Peppermint leaves
Radicchio
Radish tops
Raspberry leaves
* Romaine lettuce (no iceberg or light colored leaf)
!*Spinach
Turnip greens (tops only)
* Watercress
Wheat grass

!Use sparingly. High in either oxalates or goitrogens and may be toxic in accumulated quantities over a period of time.

**Indicates Vitamin A— feed at least one per day.*

Fruits/Treats

Small amounts totaling only 1-2 level tablespoons per 4 pounds of body weight (none if dieting):

Apples	Bananas
Blueberries	Melons
Papayas	Peaches
Pears	Pineapples
Plums	Raisins
Raspberries	Strawberries
Sweet potato	

Rooster enjoying his daily veggies

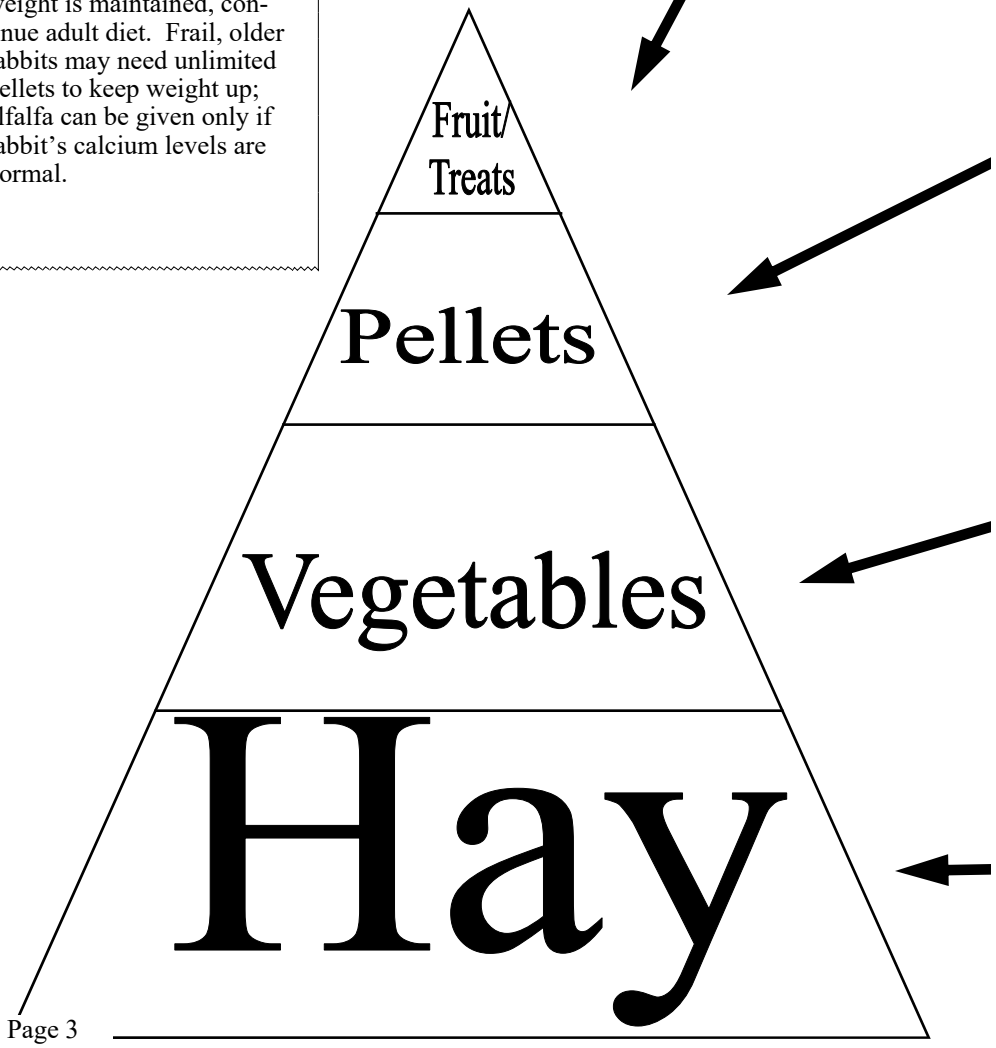
Never

The following should not be fed because of high starch and fat content. Do not feed human snacks to rabbits!!

Grains
Legumes
Nuts
Breakfast Cereals

- Amount: 1 to 2 tablespoons of fruit per 4 pounds of body weight
- Fruits can add to the vitamins and minerals your rabbit gets daily
- Fruits are a better choice for a treat than store-bought "treats"
- Avoid store-bought treats containing:
  - ◊ Dairy (causes bladder sludge)
  - ◊ Sugar (causes gastro-intestinal problems)
  - ◊ Starchy foods (causes gastro-intestinal problems)

Over 6 years: If sufficient weight is maintained, continue adult diet. Frail, older rabbits may need unlimited pellets to keep weight up; alfalfa can be given only if rabbit's calcium levels are normal.



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The Adult Rabbit Dietary Pyramid

- Type: Timothy only (alfalfa too high in calcium)
- Amount: Measure according to body weight. See chart on the right for amount to give each day.
- Pellets are not necessary for balanced nutrition, so if withholding pellets, increase vegetables.
- It's processed food – so it should NOT be the primary part of the diet. Avoid "gourmet" pellets with dried fruits, nuts and seeds.
- Look for nutritional content of pellets on the bag:
  - ◊ Fiber: 18% or more
  - ◊ Fat: 2.5% or less
  - ◊ Protein: 16% or less
  - ◊ Calcium: 1% or less

Body weight	Cups per day
Up to 4 lbs	1/8 cup
4 to 8 lbs	1/4 cup
8 to 12 lbs	3/4 cup
> 12 lbs	1 cup

Adult is defined as 1 year or older. For young and adolescent rabbit diet info turn to page 5.

- Amount: 1 cup vegetables per 4 pounds of body weight each day
  - ◊ 6-pound bunny gets 1.5 cups
  - ◊ 2-pound bunny gets one-half cup
- Provides vitamins and minerals
- Variety is key: at least 3 kinds each day
- Leafy greens are best, as well as veggies that require a lot of chewing
- See the chart of appropriate veggies on page 2
- See page 12 about the importance of twigs in the diet

- **<u>Amount: Unlimited hay, available all the time</u>**
- Most overlooked, yet **most important** part of the diet
- Provides fiber to keep the digestive system moving
- Use high quality and fresh (the greener the better)
- Good possibilities: timothy, oat, brome, prairie, meadow
- Avoid alfalfa if possible (too high in calcium); use only when nothing else is available

This diet is recommended for most adult rabbits, unless otherwise directed by a rabbit-savvy vet.

Very Young

Birth to 2 Weeks
Mother's milk

2 to 4 Weeks:
Mother's milk
Nibbles of alfalfa and pellets

4 to 7-8 Weeks:
Mother's milk, access to alfalfa and pellets

Attilla the Bun and Hannibal

7-8 Weeks to 8 Months

Grass Hay
Unlimited amounts
Alfalfa Hay
One handful per day

Pellets
Unlimited amounts of timothy or alfalfa pellets

Vegetables
Can be introduced after 12 weeks (one at a time, quantities under 1/2 oz.)
Treats
Should consist of vegetables or herbs

8 Months to 1 Year

Roger and Millie

Timothy, Oat and Grass Hays
Unlimited amounts

Pellets
1/2 cup of timothy pellets per 6 lbs. of body weight per day

Vegetables
Slowly increase the amounts

Alfalfa Hay and Pellets
Decrease to none or as treat only

Treats
Fruits can be introduced at 1 to 2 oz per 6 lb of body weight per day

After a rabbit is older than 1 year, follow the adult rabbit dietary pyramid.

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Rabbit Proofing

Rabbits have behaviors that don't always work well with our lifestyles. To keep them and your things protected, you should always rabbit proof no matter how "good" your bunny is.

Wood

Examples

Woodstock caught in the act

- **Molding**— Molding just seems to have the texture and taste rabbits love. It's the corners and hardness they like.
- **Table and chair legs**— Legs are especially susceptible if they are not rounded.
- **Doors**— The corner of the door is a favorite with many buns.

Prevention

- **Supervise**— When you allow your rabbits time out of their cage, make the effort to supervise their activities. As they behave themselves and learn what's OK and what's not, you will find you won't need to spend as much time observing their activities.
- **Restrict their area**— Never start rabbits with the full run of a large area, such as a living room. Use barriers to start them in a small space, and increase the area gradually.
- **Train your rabbit**— Yes, this can be done. In fact, rabbits are very easy to train. Remember, if you supervise and train in a small area, you'll be sure to notice if your rabbits go for a nibble of some unsuspecting chair leg! Yelling "No" when this happens will startle them. Clapping and stomping your feet are also effective. (**NEVER STRIKE YOUR RABBIT**.)
- **Soap often does the trick**— An **all-natural** soap rubbed on wood will usually prevent your rabbit from nibbling. The soap taste is undesirable, unlike the pepper and bitter apple sprays available in pet supply stores, which they love. (**DON'T USE BITTER APPLE OR PEPPER SPRAY—they don't work!**)
- Substitute— Provide acceptable items that will satisfy the desire to chew and wear down the teeth.

Continued on next page

Rugs & Carpets

Examples

- **Wall to wall**
- **Area rugs**

Prevention

Goldie and Murray taking it easy in a rabbit-proofed area

- **Supervise**— When you allow your rabbits time out of their cage, make the effort to supervise their activities. As they behave themselves and learn what's OK and what's not, you will find you won't need to spend as much time observing their activities.
- **Restrict their area**— Never start rabbits with the full run of a large area, such as a living room. Use barriers to start them in a small space, and increase the area gradually.
- **Cover the rug**— Corner spots seem to be the most susceptible. Covering a corner with linoleum, tile or even a litter box sometimes can make all the difference. Carpet samples and plastic covers for under the desk also work well.
- **Substitute something else for the rug**— A rabbit that likes to dig at carpet needs to dig at something, so offer something less pricey. Old phone books work great. Face the binding toward the rabbit so the rabbit can dig through the pages. Most rabbits will just shred the pages, but if you notice your rabbit eating the pages, do not use this method.

Clover letting her paws do the walking

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Wires & Cords

Examples

- **Electrical**— Cords are very dangerous and can kill your rabbit if they are chewed through.
- **Phone**— Although they don't pose the danger an electrical cord does, it can be frustrating when your phone suddenly stops working.
- **Cable TV and others**— Printer cables can be especially expensive to replace.

Prevention

You must remove and/or contain all wires/cords. Rabbits find it impossible to resist chewing wires and cords, because they look like vines. In the wild, rabbits clip through all vines to clear escape routes. Domestic rabbits still have this instinct. The only way to ensure your rabbit does not chew wires and cords is to make them inaccessible. Use:

- **Wire wrap**— from a hardware store, Home Depot, etc. This is a really great solution. The plastic wrap protects your rabbit from the wires and vice versa. You need to wrap several wires together to make a bundle thicker than a vine; that way, your rabbit won't instinctively clip it. Even so, CHECK YOUR WIRES REGULARLY.
- **PVC or plastic tubing**— Slice the PVC or tubing, and insert the wires.
- **Shower curtain rods**— Insert the wires.

Continued on next page

Examples

- **Furniture**
- **Bedding**
- **Towels**
- **Clothing**

Upholstery & Textiles

Prevention

Although normally rabbits choose to go through the QUIK-TUBE, Millie has taken the rooftop approach

- **Protect the backs** of sofas and chairs with cardboard QUIK-TUBES. This has the added benefit of protecting your rug as well. QUIK-TUBES are used for pouring cement posts and can be found at most hardware stores.
- **Block access** to underneath beds or behind pieces of furniture.
- **Keep folded towels and clothing off the floor** to keep them out of your rabbit's mouth.
- **Provide substitutes**— Have no use for old clothes or towels? Now you do!
- **Toys, toys, toys**— You like to play, I like to play, and so does your rabbit!

Louie and Elsa

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Toys

Rabbits are well-known for their mischievous antics. They love playing. Providing them with toys will not only alleviate "bad bunny" behavior, but also will make them happier. Rabbits' play is as varied as their personalities. A rabbit may like a certain type of toy, so try them all and see what your rabbit prefers.

Toys are broken down into four categories: Toss & Swat, Hide 'n' Seek 'n' Dig 'n' Climb, Grooming, and Chewing.

Ginger playing with her jingle toy

Toss & Swat

- Baby toys
  - Plastic keys
  - Plastic play sets
  - Plastic rattles
- Storemade toys for pets
  - Balls with bells
  - Jingle cubes
  - Busy ball
  - Wooden or plastic rings
- Homemade toys
  - Cardboard tubes (put hay inside and you'll have a nice treat for your rabbit)
  - Plastic covers from laundry detergent bottles (clean thoroughly in dishwasher and never use drain opener or bathroom cleaner bottle covers)

Continued on next page

Zena tossing a detergent cover

Toys (cont.)

Hide'n'Seek'n'Dig'n'Climb

- For hiding
  - Paper bags
  - Cardboard boxes
  - QUIK-TUBES (cardboard tubes for concrete pouring)
  - Kitty condos
- For digging
  - Old phone books
  - Shredded newspaper
- For climbing and hopping over
  - Stools
  - Ramps

A castle for a king (Toby)

Lucky and Honey find that old corrugated boxes make great places to hide and chew

<u>Important</u>: Make sure your rabbit doesn't EAT these!

Grooming

- Stuffed toy
- Pillow
- Hand towel (also for scrunching)

Kai

<u>Important</u>: Make sure your rabbit doesn't EAT these!

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Chewing

Shadow with a wicker ball

- Untreated willow baskets (instructions below for cleaning baskets made outside the U.S.)
- Grass mats
- Untreated wood **(no varnish, stain, paint, etc.)**
- Twigs and leaves help keep teeth healthy. Small and large twigs can serve different purposes--wearing down molar spurs and incisors. **Be sure trees have not been sprayed with insecticide, and avoid cherry, peach, apricot, plum, and redwood, all of which are poisonous.** Orange, lemon, apple, pear, and willow branches may be fed fresh or dried. You may want to rinse the branches in water, or place in the freezer overnight to kill any bugs. Maple, spruce, ash, birch, juniper, poplar, hazel, birch, hawthorn and pine branches should be dried for 3 months before feeding.
- Pine cones (look on page 13 for prep)

<u>Important</u>: Be sure to read the pages referenced above to make these toys safe for your rabbit to chew.

Making Baskets Safe

- Soak basket overnight in plain cold water.
- Air dry completely before use.

Continued on next page

Toys (cont.)

Making Pine Cones Safe

- **Solar power**— Wait for a 4-5 day sunny stretch and just lay them out in the sun until the flaps open.
- **Oven power**— Put them on a cookie sheet in the oven on low for 2-3 hours, but keep an eye on them!

Lily

Where to Find Toys

- **Tag (garage) sales**— Old baby toys are a wonderful and cheap option.
- **Consignment shops**— Many items at a discounted price
- **Online options**—Busy Bunny, Bunny Bytes, Bunny Bunch Boutique
- **Pet section**— In discount stores

Lulu after a hard day of playing

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Rabbits & Humans

Bringing a rabbit into your home allows for a friendship to develop as you become intrigued by his/her antics and your rabbit learns about you. Though they are thought to be social naturally, rabbits have been domesticated and bred to a point where some of these "natural" inclinations may be a little underdeveloped. Always be aware that from a rabbit's perspective, humans can seem very large, noisy, and unpredictable!

Veronica

Getting to Know You

While your rabbit is getting used to you:

- Try to keep things at eye level—get on the floor with your rabbit!
- Use a soft voice. Keep any other noises soft, too.
- Move slowly and predictably.
- Build routine into his/her life with your feedings, cleaning and other routines. Do the same thing at the same time each day.

Rusty

Continued on next page

Now that I Trust You

Handle your rabbits frequently so you can become well acquainted with each other. Pet and stroke their head, ears, and body. Many rabbits will show their pleasure by chattering their teeth as you pet them! Most rabbits are not "lap bunnies." They prefer to sit next to you while you pet them. While petting your rabbits:

- Check their ears.
- Feel their skin.
- Look at their teeth.
- Check their hindquarters.

In this way, you will not only build your relationship but also become aware if something has changed, often a sign of illness or injury.

Adults can find that rabbits are extremely interactive, have their own distinct personalities, and are able to communicate their needs and wants to anyone willing to learn. Stroking a rabbit is generally the way we want to express connection and most rabbits can learn to enjoy this. They seem to prefer strokes:

- To the top of the head
- Around the eyes
- On top of the nose
- Down the back

These are places where rabbits tend to groom each other. Rabbits appear to be tense and uncomfortable when people attempt to pet them under their chins.

Domino

In Order to Maintain that Trust

Rabbits know the comfort of the ground beneath their paws and when they are lifted or carried they may kick and struggle because they do not feel safe. Being carried is NOT something that rabbits get comfortable with over time, and this means that rabbits shouldn't be carried around like other pets. However, it makes sense to get your rabbit used to some lifting and carrying, for when it's absolutely necessary. Follow the directions on the next pages.

Bandit

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Lifting Properly

Step One

Lucinda

Gently restrain the rabbit. Sometimes it helps to cover the eyes if you have an extremely squirmy rabbit.

In order to do this, try to make the rabbit feel supported, using both hands and NEVER carry the rabbit by his/her ears or scruff of the neck. Though the ears are sometimes big, they can't safely support the weight of the rabbit.

Step Two

Support the rabbit under his/her chest and hind quarters.

Continued on next page

Step Three

Gently lift and bring bunny in close to body and hug. Always support rear quarters!

For really squirmy rabbits, covering the eyes may help keep them calm.

Never drop a rabbit! If the rabbit continues to struggle, maneuver yourself back down to the floor and release.

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Rabbits & Children

There are many things to consider in the interactions between children and rabbits. Before bringing a rabbit into the home, make sure that a rabbit can fit into the environment you will provide. A rabbit should never be used as an opportunity to teach children responsibility. This almost always fails with the parent surrendering the rabbit to a shelter. The only lesson there is, "If I decided I don't want to take care of someone, they are disposable." This is not the intended message.

Before Making the Decision

A rabbit may benefit from this kind of companionship in a home where children are:

- Easy-going
- Gentle
- Cooperative

Rusty

Takoda

A rabbit will be very stressed in a home where children are:

- Generally loud
- Extremely active
- Aggressive
- Very strong-willed and/or frequently challenge rules

Continued on next page

Things to Consider

Breed

A larger rabbit is very often a good choice for children not familiar with rabbits as they are somewhat less fragile, less likely to be "mistakenly" picked up and often more mellow in personality.

Netherland Dwarf	2 1/2 lbs.	Mini Lop	6 1/2 lbs.
Jersey Wooly	3 1/2 lbs.	Rex	9 lbs.
Holland Lop	4 lbs.	Palomino	10 lbs.
Mini Rex	4 1/2 lbs.	Satin	11 lbs.
Dutch	5 1/2 lbs.	New Zealand	11 lbs.
Havana	5 1/2 lbs.	French Lop	12 lbs.
Florida White	6 lbs.	Flemish Giant	13+ lbs.

Age

Rabbits are rarely a good choice as companion animals for children under seven years old. Children older than that should have a compatible personality style (as described on page 18), and should show an ability to maintain a level of responsibility beyond their needs and wants.

Infant to Toddler

- Provide supervised visits.
- Teach children gentle petting on the forehead.
- Teach children to avoid poking nose, eyes, and under chin.
- NEVER pick up the rabbit (an injury could occur otherwise).
- Do not teach a child to feed the rabbit since a toddler will not know the difference between good food and bad.

Wyatt

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Toddler to Ten Years

- Provide mostly supervised visits (the younger the child, more supervision will be required).
- Teach children gentle petting on the forehead.
- Teach children to avoid poking nose, eyes, and under chin.
- Teach to respect a rabbit's personal space: no chasing or going into the cage where the rabbit may choose to go to "get away."
- NEVER pick up rabbit (an injury could occur otherwise).
- Help with daily feeding.

Ten Years to Teenager

- Allow unsupervised visits.
- Pick up rabbit with adult supervision and teach the appropriate method.
- Help with daily feeding (an adult in the home should always supervise).
- Help with cleaning (again, adult supervision).

Allergies

Lily

The allergy status of ALL household members should be checked before bringing a rabbit into the home. Rabbit hair will become part of your household environment and is often given as a reason for abandoning rabbits in shelters. Allergies to hay should also be considered since hay will also be part of the environment.

Rabbits & Rabbits

Rabbits are gregarious animals that thrive on social interaction with humans and other species. In most cases, your rabbit would also enjoy the companionship of his/her same species. Introducing one rabbit to the companionship of another rabbit is known as bonding. This process requires commitment, time, and, most of all, patience, for the rabbits will determine their own timetable for becoming lifelong companions.

Ways to increase the success of your bond

Make sure that both rabbits have been spayed or neutered.

- Altering decreases aggressiveness.
- Altering prevents hormones from getting in the way (i.e., the reproductive urges).

Consider personality type— Some rabbits have very dominant personalities while other rabbits tend to be more submissive. It is very difficult to bond two rabbits with highly dominant personalities.

Consider gender— Male-female pairs are generally the easiest to bond; same sex pairs are also possible, but may require more effort.

Consider age— Older rabbits tend to be far less energetic than adolescent rabbits.

Use neutral territory— This will eliminate territorial behavior during bonding dates**.**

Be patient— Do not try to rush the bonding process. Your rabbits' body language will guide you through the steps.

Be consistent.

- Start with 20 minutes per day.
- Add 5 minutes each day.
- Skipping a day will bring you back to the beginning.
- Once bonded never separate a pair even when going to the vet.

Bonded rabbits (Lucky and Cinnamon) will often lie side by side

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Step One: The First Date

Work with a rabbit rescue group. Their volunteers often share their homes with foster rabbits and know each rabbit's distinct personality, and many are skilled at reading bunny body language during introductions. A rabbit rescue group can narrow a "herd" of possible choices down to a few likely candidates.

Emily and Wyatt

Positive signs to watch for include:

- Sniffing and snuggling (indicates the possibility of a love at first sight bond)
- One rabbit chasing and/or attempting to mount, and the other rabbit running away (indicates a dominant/submissive match, which is highly workable though the bonding process will need heavy supervision)
- Both rabbits pretending to have no interest in each other (indicates a personality "match" and the likelihood of an easy bond)

Warning signs of a difficult or impossible bond:

- Both rabbits attacking each other—choose another bonding candidate!
- One rabbit attempts to attack the other—a bond might be possible but plan on a lengthy and highly supervised bonding process.

Harry and Hermione

Continued on next page

Step Two: Getting Used to Each Other's Presence

This is a very important step in the bonding process. It allows the rabbits to get to know each other through indirect contact.

- Set up each rabbit's "home base" so the rabbits can be near each other with the wall of the crate, screen, or animal gate in between.
- Watch for positive signs:
  - Grooming
  - Lying side by side on opposite sides of the barrier
- This stage of the bonding process can be as short as a few days or as lengthy as several months.
- Do not move on to Step Three: Supervised Visits until you see the rabbits exhibiting the above positive behaviors!

Smudge and Blackberry are showing signs that a bond is imminent

Step Three: Supervised Visits

Neutral territory, where neither rabbit "owns" the space, will reduce the sense of territorialism that may result in aggressive behaviors. Use a hallway or other area that is "new" to both rabbits. Use a pen or close off bedroom doorways to make sure both rabbits stay close enough so that you can quickly intervene if necessary.

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Be as consistent as possible:

- Hold daily supervised visits.
- Begin with short dates of approximately 5 minutes.
- Increase the length of dates by 5 to 10 minutes daily.
- Always try to end a visit BEFORE a rabbit is nipped by the other, as rabbits can hold a grudge!

Cocoa and Jackson

Expect to see:

- Some mounting and/or chasing behaviors.
- Do not be alarmed if a little bit of fur flies, as the rabbit mounting the other may latch on by grabbing the scruff of the other rabbit with his/her teeth.
- Be vigilant to ensure that no actual fighting occurs!

Prepare to intervene quickly if necessary:

- Wear oven mitts or gardening gloves to protect your hands if you need to reach in between two excited rabbits.
- Separate your rabbits if they face off and begin biting (again, try to avoid this in the first place), begin circling each other with tails up, or if the passive rabbit cannot get away and becomes trapped.

Encourage grooming:

- If your supervised visits are lasting 30 to 40 minutes without grooming, encourage this behavior by putting a dab of banana or jarred baby food (such as peaches, pears, or applesauce) on the bridge of each rabbit's nose.
- You are ready to move on to Step Four once your rabbits begin grooming and snuggling during supervised visits.

Continued on next page

Step Four: Sharing Living Quarters

Your patience and vigilance is about to pay off. Your rabbits are almost bonded! The final step of the process requires just a little more of your time and supervision, though it is necessary to ensure that your bunnies accept their shared living arrangements.

- Set aside a 24-hour time period where you can work on projects, nap, or engage in some activity that allows you to remain close to your rabbits' new home base.
- Put the rabbits into the confined area you selected, whether an appropriately-sized dog crate, exercise pen, or even a specially-chosen room of the house. (Note: If you chose a male bonding companion for your female, we do not recommend choosing her original housing as the home base for the new couple due to the lingering sense of territoriality in females.)
- Remain in close range in case you need to intervene.
- Once your rabbits have spent a peaceful 24 hours together sharing space and enjoying each other's company, your work is done.
- Once bonded, never separate a pair even when going to a vet.
- Congratulations on the role you played in providing your rabbit with a lifelong companion!

Gabe and Izzy

Thoughts on Forced Bonding

Over the years we have learned that forced bonding techniques (such as taking rabbits on car rides, placing them together on washing machines during a spin cycle, or inventing other stressful situations that force two rabbits to come together in search of solace) are not as effective as gradual bonding. Forced bonds are quick to deteriorate when the dynamics of the pair's relationship changes, such as through the illness of the more dominant rabbit or when another animal or family member is added to the household. We believe that the best way to bond rabbits is to provide an appropriate environment, supervision, consistency, and most of all—patience—and allow the bond to occur naturally. Using the steps outlined in this section, most rabbit pairs will bond themselves over time. Some rabbit pairs will take longer if they need to overcome past experiences of insult or injury, but these long-term bonding processes are less common. Once again, we believe our role in the bonding process is one of patience, supervision, and respect for the individual personality of each rabbit involved.

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Rabbits & Dogs &/or Cats

Although rabbits are identified as prey animals, they often don't act it around the dogs and cats in many of our homes. A lot of people who are devoted to their rabbits are just as devoted to other species as well, and we find that rabbits can often get along quite well with some preparation, care and attention. There are many special considerations that need to be attended to when mixing species.

Introducing Dogs

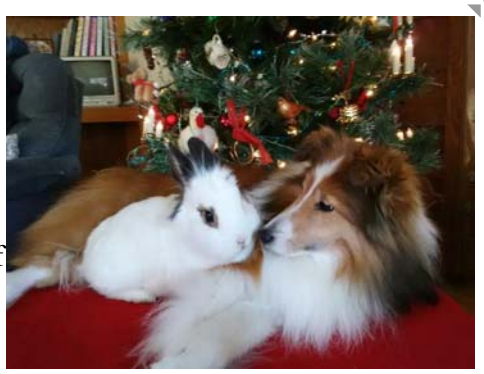
Consider the temperament of the dog or cat.

- Easy-going
- Gentle
- No hunter instincts

Consider the rabbit.

- Larger breeds tend to be less prey-like.
- Noise-sensitive rabbits are more likely to be frightened by a dog.

You must be very mindful of the power of your dog; even when merely playing he/she can cause serious injury to the more fragile structure of the rabbit. Dogs naturally chase and they generally weigh a lot more than rabbits. Pouncing on the rabbit at the end of a chase could result in an injury or worse. You need to teach your dog a command that will get him/her to move away from the rabbit and come to you. This is a safety precaution for all concerned.



Cosi and Sunshine

First contact:

- Introductions should always be gradual.
- The animals view each other without physical contact (cage, screen, animal gate).
- Excluding smell and sound could also make for a safer and calmer beginning.

Continued on next page

Supervised Contact

- Leash or pen the dog.
- Allow for a safe place for your rabbit to go to if he/she needs to escape.

Discontinue contact if:

- Your rabbit is thumping in fear.
- Your dog is over-excited.
- An injury has occurred.

Lucy and Tristan

Extended Contact

Precautions to consider for the long haul:

- Keep water and food products inaccessible between dog and rabbit.
- The food products for one are not intended for the other and can cause digestive problems that can cause illness.
- Keep waste away from each other.
- Never allow your dog to chase your rabbit–this can lead to serious injury or death.

Wyatt, Montana, and Emily

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Introducing Cats

Cats are even more popular then dogs in American households and many are now sharing their homes with rabbits of all breeds. Bringing cats and rabbits together safely will require special attention. Again, you must remember that cats are predators (as are dogs) so it may be unwise to leave them loose and unattended with your rabbit. However, most people with both rabbits and cats in their home have found they either get along or the rabbits rule the roost!

Mutt and Baxter

The Nose Knows

As cats are oriented strongly by scent, it is suggested that you introduce your rabbit to your cat first by way of scent.

- Try rubbing a clean cloth under your rabbits chin, the site of a scent gland; then place this near your cat.
- Let him/her sniff out the new scent; you can even rub the cloth on your cat's back and flanks.
- This is intended to transfer the scent to the cat, which should help him/her accept the rabbit more easily.

Nicky, Baxter, Heather, and Jackie Chan

Continued on next page

First Visual Contact

Allow each animal to get used to the other's presence by sight (cage, screen, animal gate).

- As cats generally are less responsive to commands than dogs, you will need to physically manage the space and safety between the two.
- Holding the rabbit while you let the cat explore will generally give you greater control.

Bandit and Spice

- Letting the rabbit down to wander while your cat is also loose should be done with you on the floor as well; this puts you on the same level and allows you to intercede quickly if necessary.

Discontinue contact if:

- The cat is chasing the rabbit.
- Your rabbit is thumping in fear.
- An injury has occurred.

For the Long Haul

Playing

- Discourage chasing.
- Keep cat's nails trimmed to avoid injuries.

Food/water and waste areas

- Food and water should never be shared.
- Litterboxes should never be shared—many cat litters are dangerous to rabbits.

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Rabbits & Guinea Pigs

Rabbits and guinea pigs can have a very special bond.

Considerations throughout the lifespan of your rabbit and guinea pig:

- Rabbits and guinea pigs can be safely housed together.
- Rabbits carry disease that, although of little risk to himself/herself, can be fatal to the guinea pig.
- Sharing water, food, and litter boxes is not a problem; however, guinea pigs have additional nutritional needs to those of rabbits.
- Always consult a vet when considering bonding a rabbit and a guinea pig.

Cinnamon and Pancake

Start with Indirect Contact

In these pairings it is more likely that the guinea pig will be dominated and thus more likely to be injured. **Rabbit and guinea pig should be introduced through indirect contact first.**

- Cage
- Screen
- Animal Gate

Continued on next page

Signs you're ready to go to the next level:
- Grooming through the gate
- Rabbit and guinea pig lying side by side

Signs you'll need to give it more time:
- Biting through the gate
- Lunging through the gate

Supervised Visits

Always supervise during the beginning stages of contact.

Find neutral territory.
Behaviors to discourage:
- Rabbit mounting guinea pig in his/her attempt to establish dominance
- Rabbit chasing guinea pig

Be patient.
- Bonds can take up to a year.
- Don't move to direct contact until the rabbit and guinea pig are ready.

Be consistent.
- Start with 20 minutes per day.
- Add 5 minutes per day.
- Skipping a day will bring you back to the beginning.
- Once bonded, never separate a pair even when going to the vet.

Marcy and Eddie

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Housing

Everyone is happier having a place of one's own, a place to rest when tired, to get food when hungry, to go when quiet moments are desired. So it is with rabbits. Each rabbit or bonded group of rabbits needs a place of their own. Home base is also a place where a rabbit can stay comfortably at times when you are not around or when another pet, who is not bonded to your rabbit, is enjoying the shared area. Having time away from home base is equally important for your rabbit. A rabbit needs an average of 6 to 8 hours per day of out time (outside a cage) to be healthy and happy.

Cinnamon

Size

Bigger is Better

Home base should be as large as possible, especially if you have a large rabbit or if out time needs to be limited on particular days. Sizes are listed below.

- 24"x24"x18" minimum for small rabbits
- 36"x24"x20" minimum for medium rabbits
- 42"x24"x20" minimum for large rabbits

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Where

Your rabbit's home base should be located in a quiet area of your home where your family spends the most time, so the rabbit isn't isolated.

The area should be free from any hazards.

- Fumes from cars
- Other pets (if the other pets and your rabbit aren't bonded)
- Dampness
- Boredom (rabbits kept in a child's room are likely to become bored since children rarely spend 6-8 hours of non-sleeping time in their rooms)

Tristan

Requirements

Solid surface for flooring

- Wire mesh floors are a health hazard—they cause sore, painful feet. They are also completely unnecessary for a litter-trained rabbit.
- Solid floors wipe clean in just a minute, making the rabbit's home infinitely easier to keep clean.

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Wire sides, open to the air—never use aquariums!

- Be sure the home doesn't have unfinished sharp edges or grates that injure feet/toes or cause sores.
- Avoid wire spacing that is large enough to permit your rabbit's head through.

Opens from the front rather than the top, so the rabbit can hop in and out.

- This allows the rabbit to come and go on his/her own terms.
- A cage that opens from the top in addition can be helpful during cleaning.

Isadora and Pennington

Types

Dog crates

Dog crates are a great option for rabbits. They are often less expensive than traditional rabbit cages and have more room and greater height. They also have solid floors.

Continued on next page

Dottie

Exercise pens
"Ex pens" (indoor fencing) can be used to create a large home base, or can be used to restrict access to areas in the house that aren't rabbit-proofed. Some rabbits are quite athletic and can get over sizable fences, particularly if there is an attraction on the other side. Four feet is usually a safe height. Rabbits learn how to move fence ends that are being used to block access to doors or hallways, so it's advisable to secure them well.

Rack and Stack
For creative, do-it-yourself people, this is the way to go. Buy these panels that can be connected to create anything from a simple rabbit home to a multilevel luxury condo. This is an economical way to create a custom home for your rabbit; you'll be able to shape your rabbit's home to fit exactly in the available space in your house. Wire coated panels can be purchased at Target and office supply stores.

Kala and Angel

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Litter Box Training

It is essential that you litter box train your rabbit. Thankfully, the task of training rabbits to use a litter box is a fairly easy one.

Tools

What you'll need

Litter pan

- Standard cat litter pan
- High back corner pan

Litter types to use

- Pellet stove wood (hardwood, no accelerant)
- Hay with newspaper liner
- Care Fresh (recycled newspaper)
- Yesterday's News (recycled newspaper)
- Aspen Litter

King Murray

Poops (droppings) are often a way for rabbits to mark territory. Leaving poops in front of the litter box is not unusual behavior. However, this may increase if people in the household invade the rabbit's perceived territory.

AVOID

Many litters are dangerous to your rabbit's health and well being. Be sure to avoid the following.

- **Clumping cat litter**— Can get stuck in his/her GI tract causing GI stasis and possibly death.
- **Clay cat litter**— Dusty and can cause respiratory problems.
- **Pine or cedar shavings**— There are phenols in the shavings that the rabbit's liver must work continually to remove from his/her system; thus the liver is compromised.

Continued on next page

***Note about shavings**: The phenols enter the rabbit's system through the lungs. So even if you have shavings under the cage, or at the bottom of a litter box with hay on top, it is still a danger.*

Set up the environment

In the cage

Rusty

- Place the litter box in a corner (preferably one they are using).
- Hay in the litter box can encourage good litter habits. Rabbits love munching while doing their business.

In the room

- It is most likely a rabbit will choose more than one place for pooping. Having multiple litter boxes may reduce your frustration of moving a single litter box from one corner to another in a room.
- Hay in the corner of each litter box provides the same encouragement out of the cage as it does inside the cage.
- Due to territorial issues, other rabbits may make things more difficult. It is common for the litter box habits of foster rabbits to change when they move into a new home and have a new territory to explore and claim for their own. The presence of other rabbits may complicate matters as the rabbits mark their areas through territorial "poop wars." The key is patience.

Harry in the hay

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Tricks of the trade

Buttercup

Rewards

Treats are a sure-fire way to get the most difficult rabbits to use the litter box. Raisins make a good reward system. Treats must be given immediately to be effective.

- Start with a single raisin every time your rabbit is sitting in the litter box (at this point whether or not he/she uses it is immaterial).
- Once your rabbit is hopping in the litter box on a regular basis, reward him/her with a treat only when he/she uses the litter box (look for signs of use: poops in the litter box or the tail extended up for peeing).
- Once your rabbit is well established in the use of his/her litter box, wean the treats to every other time and decrease the frequency of the treats until the behavior is learned and using the litter box is a regular behavior.

Reduce mishaps

It's never a good idea to use punishment. Instead, try correcting the behavior.

- Shoo your rabbit back to the litter box or cage if he/she starts to poop or pee.
- Along with the shooing, telling your bunny "No" in a stern voice (but not loud or scary). This should help reduce mistakes.

Trixie and Georgia

Reasons Not to Put Your Rabbit Outdoors

Although traditionally thought of as an outdoor pet, rabbits kept outdoors do not fare as well as those living indoors. Rabbits are very social and need to be around their family. In addition, being left outside with little or no protection against the weather or predators is in many cases cruel. If you cannot keep your rabbits indoors due to allergies, then the best thing to do is accept the fact that a rabbit is not a choice for you.

Understanding the rabbit psyche

Remington

- **Loneliness**— Rabbits live in warrens surrounded by an extended family with which they love to socialize, play and interact. Being completely by themselves for long periods is unnatural and stressful.
- **Your relationship**— Rabbits are very affectionate and will even follow their caregivers from room to room. It's very hard (nearly impossible) to develop a relationship with your rabbit if they are constantly outside alone.
- **Boredom**— Rabbits like to play. With no one and nothing to play with, boredom sets in quickly.
- **Fear**— Rabbits are at the mercy of their outdoor confinement; strange sounds, smells and sights can cause undue stress.

Benny sunning

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Providing a safe home environment

Shadow relaxed

Temperature

The ideal temperature for a rabbit's environment is between 60 and 70 degrees.

Winter hazards

- Outside temperatures get well below freezing. Outdoor wild rabbits have shelter from the cold underground, where the temperatures do not get so low.
- Rabbits can die of thirst if their water bowl freezes.
- Rabbits can get frostbite on their ears.
- Rabbits can freeze to death.

Summer hazards

Lady MacBeth doing binkies

- Outside temperatures get well above 70. Wild rabbits take shelter underground, where temperatures don't get so high. Inside a hutch, add 20 degrees in worst-case scenarios.
- Rabbits can die from heat exhaustion.
- Rabbits have no way to cool themselves down. They don't sweat.

Outdoor predators

- As prey animal, rabbits have no natural defenses. They flee to survive—but this is completely impossible to do in a hutch.
- Predators get into hutches and kill rabbits (including humans with ill intent).
- Predators try to get into hutches and rabbits die from fright even in a predator-proof hutch.

Ginger sneaking in the hay

Continued on next page

Insects and other pests

Unfortunately, there are no ways to protect your rabbit from outdoor parasites.

Roger caught in the act

- **Fleas**— Rabbits, like cats and dogs, can get fleas but cannot be treated the same way. DO NOT USE ANY OVER THE COUNTER REMEDY FOR FLEAS ON RABBITS, WITHOUT CONSULTING A VET. Fleas can cause flea anemia or myxomatosis in rabbits.
- **Ticks and mites**— Same as above. You must consult a vet.
- **Fly strike**— Flies lay their eggs in a rabbit's fur. When the eggs hatch, the maggots kill the rabbit. This is an extremely painful way to die.

Inadequate shelter

- Most hutches have wire flooring. As stated in the "Housing" section of this guide, wire floors cause foot sores.
- Bad weather can cause stress on your rabbit as well. Rain can leak through the tops of hutches.
- Lack of space is also a major concern for hutch rabbits. Like horses, they need to exercise to be healthy. For example, exercise keeps their digestive system moving.

Thumper napping

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Why Should I Spay or Neuter?

Health benefits

- Decrease the chance of cancer; female rabbits at the age of five have a 50% chance of getting cancer.
- Increase life span for males as well since they will not fight with other animals in the home (i.e., cats or dogs) due to sexual aggression.

Dusty and Ginger

Behavior benefits

Decrease unwanted behaviors (especially with males).

- Male behaviors that may decrease:
  - **Spraying**— Males spray to mark territory, including female rabbits (and sometimes humans).
  - **Biting**— Although not the nicest way to court a girl, males will bite.
- Female behaviors that may decrease:
  - **Cage aggression**— A female will defend her nest from real and perceived danger (e.g., a human hand changing the litter box).
  - **Lunging and growling**— Sometimes part cage aggression; sometimes anytime, anyplace.

Increase desirable behaviors.

- **Mellow disposition**— Altered rabbits tend to have a more mellow temperament and ultimately are more enjoyable.
- **Litter habits**— It's easier to litter train an altered rabbit.

Blackberry and Smudge

Prevent unwanted litters.

- Rabbits can have about six kits in a litter; finding homes for all may be an arduous task.
- Not all females take care of the young and babies starve to death (a devastating experience for the family).

Health Care

Many common medical disorders of domestic rabbits can be prevented by practicing proper husbandry. Rabbit caregivers should frequently seek the most current information concerning diet, exercise, housing, and preventative care. Many reliable sources are readily accessible, but caregivers should question the validity and wisdom of each recommendation before implementing it in their home. In addition, a complete and thorough annual physical examination by a knowledgeable rabbit veterinarian is essential. Rabbit caregivers should seek recommendations from local rabbit groups, other rabbit caregivers, or professional websites for reliable and knowledgeable rabbit veterinarians. Rabbit caregivers should familiarize themselves with the symptoms of common rabbit conditions in order to address problems earlier and to improve the chances of a successful outcome.

Cancer

As our pet rabbit population ages, cancer diagnoses are becoming more common although overall it is not as commonly found in rabbits as in other species. Do not ignore lumps in rabbits – there are no "good" lumps. Biopsies or excisions of the lump can reveal the cause and provide the options for the best available treatment. Alternative treatments are being developed for use in the rabbit in order to improve their survival and to prevent re-occurrences. Skin cancer and uterine cancer in unspayed females are the most common forms of cancer in rabbits. The high rate of uterine cancer in unspayed female rabbits underscores the importance of spaying.

Dental Disease

Dental disease is another common diagnosis in our aging pet rabbit population, but it can occur in younger rabbits as well. Often dental disease can be prevented with good dietary habits. A diet with indigestible fiber such as timothy hay and leafy vegetables provides wear necessary for the both the incisors and cheek teeth that grow throughout the rabbit's lifetime. A thorough dental examination should be performed at each veterinary visit and at least annually.

Incisor malocclusion is the misalignment of the incisor teeth. It can occur as a congenital malformation (especially in dwarf breeds) or a result of trauma, or as a consequence to other dental problems. Trimming of the incisors with a high speed dental burr can resolve the alignment of the incisors in case of trauma and can temporarily improve the alignment in other cases, but is rarely curative in cases of congenital malformation or malformations secondary to other dental disease. Extractions of the incisors and the peg teeth can be performed as a long term solution to incisor malocclusion if regular teeth trimming does not lead to the improvement of their alignment.

Molar points are sharp enamel points that form on the cheek teeth (premolars and molars) when there is abnormal wear of the teeth. The most common cause is insufficient dietary fiber. Feeding hay and leafy vegetables provides the wear necessary to prevent the dental

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points. Dental points can be very painful and can lacerate the cheek or tongue if they are allowed to develop. General anesthesia is required in order to remove the points with a high speed dental burr.

Dental abscesses are painful swellings at the base of the incisors or cheek teeth. They can lead to a decreased appetite and ocular discharge due to the obstruction of the lacrimal duct – a small opening that drains tears from each eye and runs very close to the roots of the upper check teeth. Dental abscesses can lead to loss of teeth and/or chronic dental care.

Gastrointestinal Conditions

Hairballs can be a problem in any breed but are most problematic in long haired breeds and rabbits with insufficient dietary fiber. The fiber in the diet provided by hay and leafy green vegetables carries the fur out of the stomach and safely through the digestive tract. Routine grooming (brushing and combing once to twice weekly) helps reduce the amount of fur ingested. Small doses of hairball laxative for cats maybe effective, however, side effects include diarrhea and nutritional deficiencies if used excessively or frequently. Consult with your veterinarian prior to using these laxatives. Improving the diet is a safer alternative.

Diarrhea is the result of decreased motility in the digestive tract. This is often the result of inappropriate diets in rabbits. Carbohydrates found in fruits, grains – including oats, crackers, cereals, and hay cubes (they are bound together with molasses) are often the offensive ingredient and are neither necessary or desirable for a rabbit's nutrition, although small amounts can be fed as treats. Carbohydrates alter the chemical balance and bacterial population of the digestive tract favoring gas producing bacteria which decreases the motility of the digestive tract. The gas production can result in excruciating abdominal pain if severe and can lead to gastric stasis. Mild cases of diarrhea without abdominal pain can be managed by feeding only hay (no pellets, vegetables, or treats) until the diarrhea resolves. If the stools are formed for a couple days, you can resume feeding the vegetables and pellets in small amounts at first increasing to normal amounts over a few days. Cases of moderate to severe diarrhea or diarrhea that does not respond to dietary control require prompt veterinary attention.

Gastric stasis is a progressive condition of the digestive tract that results in loss of appetite, excessive gas production and lack of motility of the digestive tract. It can quickly become a life threatening emergency situation so early recognition and treatment is the key to a successful outcome. Once gastric stasis occurs, fermenting bacteria of the digestive tract produce excessive amounts of gas in the cecum and colon causing severe pain and secondary electrolyte and circulatory problems. Immediate veterinary care from an experienced rabbit veterinarian is necessary. Initially veterinary care should be aimed at pain relief, rehydration, re-establishing digestive motility, reducing gas production, and correcting electrolyte imbalances. Once stabilized the patient can be force fed with Critical Care Herbivore (Oxbow) or Emeraid Herbivore (LaFeber) until the normal appetite returns.

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Neurological Conditions

Neurological conditions in rabbits can be the result of infection, trauma or parasite infestation. Immediate recognition and treatment will minimize the extent of the impairment and provide the best chances for a return to normal.

Spinal cord trauma is a common injury in rabbits. Their strong muscles and delicate bone structure make back injuries and spinal cord trauma common. Rabbits should be held tightly when carried and should not be carried by young children. Symptoms of a back injury are usually characterized by the inability to use one or both rear legs. There may or may not be back pain. Fractures of the vertebral spine are common and often permanently paralyzing. Humane euthanasia is often necessary because the nerve tissue of the spinal cord does not rejuvenate and recovery and use of the rear legs and urinary bladder control is unlikely. Immediate emergency care is necessary to regain function if possible.

Baylisascaris procyonis is an intestinal parasite of raccoons which occasionally causes neurologic disease in rabbits. It is generally consumed when eating hay contaminated with raccoon feces. The rabbit is not a normal host so the immature form of the parasite is lost in the rabbit's body and its wandering migration occasionally takes it into the brain or spinal cord where it does its damage. It can be prevented by buying hay treated by irradiation from pet stores or internet vendors rather than buying bales or loose hay from the local feed store or farm. The condition can be treated with Fenbendazole to help reduce more damage. Some improvement of the neurologic symptoms can be seen when the brain learns to compensate for the deficits produced by the damage.

E. cuniculi is a protozoal parasite that causes damage to the brain and kidneys. It is spread from the doe to the kids via urine, but the symptoms generally do not develop until months later. The symptoms can range from head tilt, loss of balance, rear leg weakness, or paralysis to being entirely without symptoms. Diagnosis is achieved by running antibody titers and correlating the results with the clinical signs and response to the treatment. Healthy rabbits can have positive titers and sick rabbits can have negative titers so titers alone are not meaningful. Treatment can limit further damage and some rabbits will be able to compensate for their deficits while others will resolve their impairments entirely.

Ocular Conditions

Cataracts are occasionally seen in pet rabbits and are the result of a crystallization of the lens as the proteins in the lens are deteriorating. Cataracts must be distinguished from the loss of transparency seen in the lens of aging rabbits called lenticular sclerosis. Cataracts can be caused by trauma, congenital causes or infectious agents such as E. cuniculi. Surgery is necessary to correct the condition, but is rarely done.

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Lenticular sclerosis is the loss of transparency seen in older rabbits. It is caused by the compression of the older fibers in the lens by newer fiber production. This causes the light to scatter and produces a bluish grey appearance to the lens. It does not usually affect the vision unless the sclerosis becomes very dense. There is no treatment for lenticular sclerosis but surgery would be helpful if there was vision loss.

Conjunctivitis can be caused by infectious, irritating agents (such as shampoo or soaps), or foreign material. Conjunctivitis produces an inflammation of the tissue around the eye and a white ocular discharge. White ocular discharge can also be produced when the lacrimal tear duct that drains the tears becomes obstructed.

Lacrimal tear duct obstruction occurs with infection or the tear duct or nasal sinus, scarring secondary to infection or trauma, and/or impingement by tissue swelling associated with dental abscesses. The obstruction of the tear duct results in a white ocular discharge or epiphora which is the spilling of tears onto the skin of the cheek. Attempts to flush out the tear ducts with saline can be attempted, but the cause of the obstruction may require X-rays with dye injected into the tear duct. This procedure requires anesthesia to perform. If infection is determined to be the cause, ophthalmic drops can be effective to resolve the condition.

Orthopedic Conditions

Fractures of the legs are occasionally seen in rabbits, but vertebral spinal fractures are more common (see section “Neurological Conditions”). Leg fractures are repaired with routine orthopedic surgical techniques, but can be complicated by the very thin walls of the rabbit’s bones. Casts and splint are not well tolerated by rabbits as they routinely chew them and they result in poor function following the healing process so are not used. Pain management is essential to the successful management of rabbit fractures.

Parasites

Gastrointestinal parasites with the exception of Coccidia are uncommon in the domestic house rabbit. All rabbits should be tested for intestinal parasites before or when they are first introduced into the household. A fresh stool sample (less than 24 hours old) should be submitted for laboratory analysis. Coccidia is a protozoan parasite that occasionally causes diarrhea in young rabbits. It is treated by oral medications and can infect people so good sanitation techniques need to be used to prevent zoonosis.

Skin mites are occasionally found on rabbits. They result in an intense itching especially around the head and neck as well as dry scaly skin. Cheyletiella and Sarcoptes mites are the 2 most common infestations. Both are contracted by direct contact with other infected pets. Treatment with extra label use of topical flea products produced for cats has made treatments effective and treatment failures uncommon. It is recommend to treat the other pets in the house to prevent cross infections.

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Ear mites are commonly found in rabbits. Ear mites are extremely irritating and cause copious dry discharge to form in the ear canals and external ear. DO NOT attempt to clean this discharge as the resulting pain can be excruciating. The same extra label use of flea products produced for cats are used to treat ear mites and treatments are very successful. Other pets in the house should also be checked for ear mites and may also need to be treated at the same time.

Fleas may be found on rabbits kept in households shared with dogs and cats or where rabbits receive outdoor exercise. Although they are not formally approved for use in rabbits, both Revolution or Advantage may be safely used for flea control under the recommendation of your veterinarian. Other topical flea products can be harmful and should not be used in rabbits. Other household pets and the environment need to be treated to eliminate the flea infestation.

Maggots are less common since rabbits have moved indoors. They still are occasionally seen in indoor rabbits secondary to poor hygiene such as urine scald, diarrhea, or infected wounds. The affliction can also be secondary to disabled rabbits. Maggots are the juvenile life stage of houseflies. The fly eggs can hatch into maggots in less than 12 hours. The maggots can cause profound discomfort and further debilitation of the rabbit. The rabbit requires immediate veterinary attention to manually remove the maggots, provide supportive care (antibiotics, pain relief, and fluids), and treatment for the initiating cause.

Reproductive Conditions

Uterine cancer is common in unspayed female rabbits. It is commonly identified by bloody urine or a bloody uterine discharge. Occasionally it can cause a lack of appetite and decreased activity. Abdominal ultrasonography to check for metastasis beyond the uterus is recommended before surgery. Spaying is the treatment if no other complications are found.

Neutering males is recommended for all males before they reach maturity. Neutering helps prevent aggression and mounting behaviors that occur when the influence of the male hormone testosterone is produced. Once these behaviors begin, they are not effectively reversed with neutering so the key to prevention is neutering before maturity. Neutering can be accomplished safely after 12 weeks of age, but should be done as soon after as possible. Sexual maturity for rabbits averages about 5 months of age, but siring litters before that age has been reported.

Spaying can prevent a doe from belligerent behavior during the breeding season, prevent cervical and uterine cancers, prevent uterine infections, cystic ovaries, and endometriosis (uterine tissue found outside the walls of the uterus). When spaying a rabbit, unlike other species, the cervix is removed along with the ovaries and uterus. It is recommended that spaying is performed when the rabbit is around 5-6 months of age.

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Respiratory Conditions

Upper respiratory infections are commonly referred to as "snuffles" and frequently are the result of stress or husbandry problems such as poor diet, or improper housing. Acute infections can be treated with oral or injectable antibiotics, but resolution of chronic sinus infections is rare. Injectable antibiotics, humidification, and intranasal instillation of ophthalmic antibiotic drops are the preferred treatments. Bacterial cultures should be performed on all chronic sinus infections to determine the primary infectious agent and the proper antibiotic treatment. Occasionally, foreign material is inhaled into the nose and results in a sinusitis. Dental root abscesses of the upper cheek teeth commonly produce a secondary sinusitis that can become chronic unless the dental condition is addressed.

Lower respiratory infections: Pneumonia is the most common and is generally considered to be a result of the spread of a systemic infection rather than an inhaled infection. Early intervention with aggressive antibiotic and supportive therapy is necessary for a successful outcome. Do not attempt to force feed rabbits displaying respiratory distress as inhalation of food will likely occur. Gram positive bacteria are commonly responsible for causing bacterial pneumonias and therapy is initially aimed at this group until bacterial cultures results indicate otherwise. Recently allergic bronchitis has been diagnosed in the pet rabbit and antihistamines were effective in controlling the symptoms. Allergies require lifelong treatment with medications.

Pasteurella historically has been a common opportunistic infection in pet rabbits. It is a common bacteria found in all rabbits' respiratory tracts. Husbandry problems and stress allow for the Pasteurella to become problematic. Very often this can lead to sinus infections, pneumonia, or abscesses anywhere in the body. Once these infections are established, they can be very difficult to eliminate and can become a source of bacteria that can spread via the blood stream to other areas of the body. Successful outcomes require early recognition and treatment.

RHDV2

Rabbit Hemorrhagic Disease Virus, or RHDV2, a highly contagious virus that affects both domestic and wild rabbits, is spreading throughout the U.S. Many times, the only signs of the disease are sudden death and blood-stained noses caused by internal bleeding.

A vaccine is available! However, not all states have approved its emergency use. Contact your rabbit-savvy veterinarian. Until (and after) a rabbit is vaccinated, biosecurity and decontamination should be practiced as a precaution. For additional information about protecting rabbits, see HRS's resource center (https://rabbit.org/resources/rhdv/).

Continued on next page

Skin Conditions

Skin parasites (see section "Parasites") are relatively common in recently acquired rabbits. Superficial fungal skin infections occasionally occur in pet rabbits, they are not frequently seen.

Superficial bacterial dermatitis occasionally occur in pet rabbits. Antibacterial shampoos and antibiotics generally clear the infections. A cause should be determined in order to prevent future recurrences.

Abscesses are not uncommon in pet rabbits. They result both from bite wounds, poor dental health, or injuries and may spread systemically via the blood stream. Abscesses around the face often result from dental disease that must be addressed in order to resolve the abscess. Whenever possible, abscesses in areas of the body other than the face should be excised intact including the wall of the abscess (rather than drained as is done in cats and dogs). Systemic antibiotics usually do not penetrate rabbit abscesses sufficiently to resolve the abscess without surgery, but they are used after excising the abscess to prevent its recurrence. When abscesses cannot be excised, antibiotic beads can be sutured into the area after the abscess has been debrided.

Injuries to the feet and hocks are common occurrences in rabbits kept in cages with wire floors. Solid floors are recommended to avoid calluses and ulcerations of the feet and/or hocks. The use of acceptable litter to cover the cage bottom will help to prevent urine accumulation and wet conditions that can lead to skin irritation or ulceration. Trim nails frequently to prevent traumatic breaking of extraordinarily long nails.

Urinary Tract Conditions

Discolored urine can be caused by blood in the urine or pigments in the diet primarily from fresh vegetables. Rabbits showing signs of frequent urination, urinating outside the litter box, spots of blood, or more frequent grooming of the groin should have a urinalysis done and a physical examination performed by a knowledgeable veterinarian. Rabbits that are not showing any unusual signs can be observed and fed hay and pellets without treats for a few days to see if the color of the urine returns to normal. It is typical for rabbit urine to be cloudy, milky white, or yellow. Dietary pigments or blood may color the urine orange to red. A routine urinalysis can differentiate between blood and dietary pigments. Blood in the urine is more serious and can come from urinary tract infections and bladder or kidney stones. Uterine infections and uterine and cervical cancers in unspayed females are common causes of bloody urine. These conditions warrant additional testing such as X-rays, abdominal ultrasonography, blood chemistries, complete blood counts, and bacterial cultures to determine the cause and the extent of the problem.

Urinary bladder and kidney stones can cause bloody urine, abdominal discomfort, frequent and/or painful urination or straining to urinate. X-rays are usually necessary to determine the location and the number of stones. Surgical removal is the only option presently used to correct the condition.

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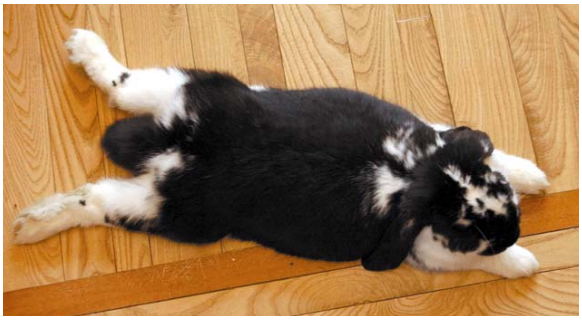
Urinary sludge syndrome results from too much dietary calcium which causes calcium crystals to form in the urinary bladder. This condition can be both irritating and painful. Prevention is accomplished by reducing the dietary calcium by eliminating alfalfa pellets and alfalfa hay from the diet if these are being fed. Timothy hay based pellets and timothy or other grass hay can be fed as a substitute. Serious cases of sludge require irrigation of the urinary bladder with warmed saline to dissolve the calcium crystals and remove them from the urinary bladder. For owners comfortable with giving subcutaneous fluids (injected under the skin), a saline solution or other fluids not containing calcium can be administered, which will help flush the kidneys and bladder. It is also important to feed a wide variety of fresh vegetables to increase the rabbit's intake of fluid (and subsequent urine production).

Vestibular Disease

Vestibular disease is characterized by loss of balance, head tilt, and/or nystagmus (the rapid shaking of the eyes from side to side or circularly). It is caused by an infection or the formation of a small stone in the vestibular organ of the inner ear. This condition may result in nausea, loss of appetite, and spastic, uncoordinated movements. The infection can be from a bacterial abscess, a parasite (E. cuniculi or Baylisascaris procyonis), or a virus. E. cuniculi titers (see section "Neurological Conditions") and skull X-rays and CT scans can be done diagnostically to determine the cause of the condition. It is treated by care until the appetite develops including fluids, assisted feeding, anti-inflammatory medications, and antibiotics. If E. cuniculi titers are elevated, Fenbendazole, Albendazole, or Oxybendazole are used to treat the protozoan. The cause of the formation of the small stones in the vestibular organ is unknown. X-rays and CT scans can sometimes detect these stones. Occasionally manipulation of the rabbit can cause the stone to dislodge and a resulting improvement of the symptoms. Depending on the amount of permanent damage, the rabbit may completely recover (no head tilt or nystagmus) or have some residual permanent head tilt or nystagmus. Good husbandry and proper nutrition can help with, but not guarantee, prevention of vestibular disease.

A Healthy Rabbit Is Up to You

With proper prevention, good husbandry, and good medical care, domestic rabbits can avoid and recover from many medical conditions. Education, vigilance, and early intervention are the keys to successful prevention and recuperation.



Tristan

Special Note: Easter is a very busy time for HRC. HRC is dedicated to educating the public that rabbits involve a lifetime of love and care, and therefore should not be an impulse purchase inspired by the tale of the Easter Bunny and the sudden overpopulation of rabbits (toy and live) in retail stores. Unfortunately, a large number of rabbits are unwanted approximately 6 months after Easter. Our surrender calls (where an individual is trying to find a home for their rabbit(s)) increase significantly in the fall. Many of these unwanted rabbits are "dropped off at shelters" or worse, are released into the wild. Domestic rabbits have a very short life span in the wild. They do not have the natural instincts and abilities of their wild brethren. Appropriate food, shelter, water, and camouflage are generally not available to a companion rabbit. It is likely that a domestic rabbit will be viciously attacked and killed by a predator before it dies of starvation or thirst. If you encounter someone who is contemplating turning an unwanted rabbit loose, please ask him or her to contact the **HopLine** at 413-439-7HRC or info@hopline.org before they take that step.

References

- Health Care section, Paul A. Chace, D.V.M., with the exception of RHDV2 (by HRC)
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- The House Rabbit Handbook, Marinell Harriman
- FAQ: Children and Rabbits, Carolyn Mixon

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- www.rabbit.org
- Twigs (p. 12):
  - Camilla Bergstrom, www.medirabbit.com/EN/GI_diseases/Food/Branch/Branch_en.htm
  - Sari Kanfer, DVM and Alexandra Logsdon, www.mybunny.org/info/

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Baby Molly

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If you're interested in adopting a rabbit or
would like more info on rabbit care,
please contact the House Rabbit Connection.
(413) 439-7HRC
www.hopline.org
info@hopline.org

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