

Caring for Your Pet Rabbit



Congratulations on your new rabbit! Inside this booklet are some tips and tricks that will help you keep your new furry friend happy and healthy for many years to come.

Rabbits are social animals who love to interact with both humans and/or other rabbits. Rabbits will become bored if left by themselves for long periods of time, even to the point of becoming lonely and depressed. While toys can alleviate some of this, they require human attention and interaction. Many rabbits also enjoy having another rabbit as a friend; however, finding a mate for your rabbit may prove to be a challenge as rabbits are quite choosy

when it comes to a partner!

Rabbits are not like dogs or cats. Many learn how to use a litter box while others come to you when called, but rabbits cannot be compared to either of these animals. Each rabbit has its own unique personality. Curiosity and an investigative nature are prominent characteristics of pet rabbits. They need to familiarize themselves with their settings to feel comfortable, but once they do, they like things to stay the same (in other words, rabbits are not big fans of change).

Do You Know That

- Daily playtime and exercise outside of the cage are a necessity
- Rabbits are **not** low maintenance - it takes a good deal of work to properly care for a rabbit
- They do love to chew, so lots of safe chew toys should be provided, and any spaces where the rabbit can run must be carefully rabbit-proofed
- They need a relatively large cage and/or x-pen area and need to be housed indoors, where they are safe from predators (even in the city) and extreme weather.
- While they are generally quiet pets, rabbits are not a good match for active young children. **Rabbits like to be near their people, but often would rather not be held.**

Housing



Your rabbit needs a cage with plenty of room to play, rest, eat, and exercise. The bigger the cage the better and the exact size depends on the size of your rabbit. Rabbits love the two-story “condo” cages with ramps connecting the different levels. Solid flooring is best, because a rabbit’s feet can become irritated and inflamed (known as sore hocks) if in constant contact with wire floors. If you must use wire flooring, provide a resting area of

solid flooring like timothy hay mats, seagrass mats, or newspaper covered with hay. Always use items that can be safely chewed as rabbits are notorious eaters of blankets, towels, rugs, carpets and cords.

If you are going to use bedding, we recommend unbleached white paper bedding, soft paper bedding, Aspen shavings bedding or Pine pellet bedding. Cedar and pine shavings should not be used; they contain resins that can be irritating to your pet's skin, eyes, and mucous membranes. Hay can also be used as bedding but does not provide odor control.



With time and patience, your rabbit can be litter box trained. Place the litter box in a corner of the cage the rabbit has already soiled, and provide a safe litter such as hay, composite recycled newspaper pellets, or wood stove pellets. Place a basket of timothy, orchard grass, botanical, organic meadow or oat hay near the litter box so that your bunny can nibble while “taking care of business”.

Keeping your rabbit's area clean is very important. Always remove any uneaten fresh foods like greens or veggies from the cage daily. Also, take out any hay that hasn't been eaten especially if it's wet or soiled. Wash out all food and water bowls daily, and wash and refill the water bottle. Make sure the sipper tube is clean and that water flows out when your rabbit tries to take a drink.

Litter boxes should be checked and cleaned daily as well. This is important because it gives you a chance to monitor your rabbit's urine and feces and to make sure there aren't any changes that could indicate a health problem. White vinegar is an excellent cleaner for litter boxes as it readily dissolves the calcium deposits resulting from rabbit urine.

Nutrition



The typical diet for the house rabbit includes free choice grass hay (timothy hay is preferred by most, but orchard and organic meadow are also well liked) and should be available around the clock, 2 tablespoons to 1/4th cup of timothy-based pellets per day, and a small amount of fresh leafy greens. Green servings should be no larger than your rabbit's head. Avoid high carbohydrate, candy coated, or yogurt covered snacks and treats. Your rabbit may like them, but his GI tract doesn't!

We recommend Oxbow's Animal Health Bunny Basics/T pellets as they have been designed with your pet rabbit's nutritional needs in mind. Bunny Basics/T is a timothy-

based pellet that is low in calcium. High-calcium diets have been incriminated in certain rabbit health problems such as bladder stones and sludge.

Do not feed your rabbit any of the many commercial pellet mixes that contain seeds, dried fruit or colored cereals. They look yummy to us, but they are definitely not in the best health interests of your pet rabbit. Rabbits are not seed, fruit or cereal eaters by nature and these types of junk foods are high in sugars and carbohydrates, which can lead to an overgrowth of bad bacteria and gut issues.

If your bunny is under 6 months of age, we recommend Oxbow's Animal Health Bunny Basics Young Rabbit Food, an alfalfa-based pellet with extra calcium and protein. Please note that you should also be giving him alfalfa hay along with the Bunny Basics Young Rabbit food. You should start mixing timothy hay into the alfalfa when your little one is around 6 months old, gradually decreasing the amount of alfalfa while increasing the amount of timothy until there is no longer any alfalfa being given. By the age of 7 months your rabbit should no longer be eating alfalfa.

When converting a rabbit from one brand of a pellet to another do so gradually to help prevent digestive upset. A good method is to go by the 5/5ths rule. Substitute 1/5 of the old brand of pellets with the new brand and feed this combination for 5 days. An easy way to do this is to mix up five days' worth at one time. For example, if your rabbit eats 1/4 cup of pellets a day do the following:

Day 1 - 5: feed a mixture of 1 cup former brand with 1/4 cup new, desired pellet of choice

Day 6 - 10: feed a mixture of 3/4 cup old brand with 1/2 cup new, desired pellet of choice

Day 11 - 15: feed a mixture of 1/2 cup old brand with 3/4 cup new, desired pellet of choice

Day 16 - 20: feed a mixture of 1/4 cup old brand with 1 cup new, desired pellet of choice

Day 21 : Switch over entirely to new food

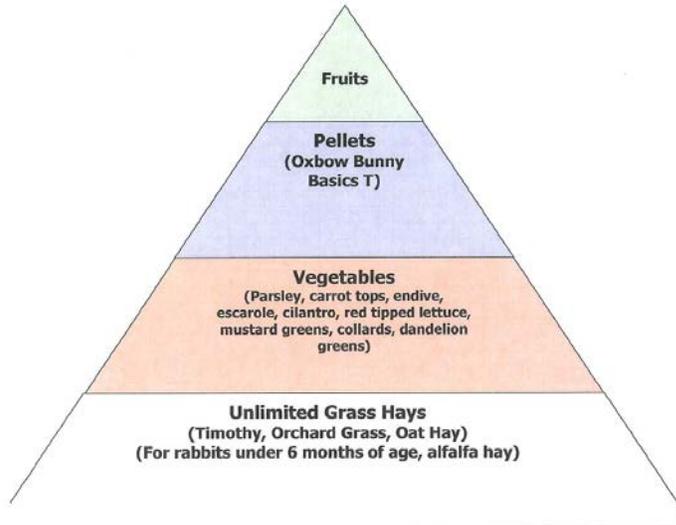
From this mix scoop out their daily feed allotment. Some rabbits are pickier than others and will literally eat around the new pellet. If your bunny does this, be patient. There is always a small percentage of animals that will refuse any changes and test the will and stubbornness of the owner.



Your bunny should also eat a serving of vegetables daily. It is important to introduce vegetables one at a time to make sure each agrees with your rabbit's digestive tract. **Before introducing any fresh foods to a rabbit, it is best if he has been eating grass hay for a minimum of 2 weeks.** Some suggestions include:

Basil	Beet greens (tops)	Bok Choy	Broccoli (mostly leaves/stems)
Carrot tops	Cilantro	Red or Green Leaf lettuce	Kale (can cause gas)
Dandelion greens	Endive	Escarole	Dill
Mint	Mustard greens	Parsley	Watercress
Peppermint leaves	Radicchio	Spinach	
Radish tops	Romaine lettuce	Wheat grass	
	(NO iceberg lettuce)		

Rabbit Food Pyramid



Definite "No-No's"- (not to be given at any time):

- *No chocolate (poisonous)
- *Cookies
- *Yogurt drops
- *Crackers
- *Breakfast Cereal
- *Pasta
- *Bread
- *Grain (corn, oats, etc.)

The most common types of foods that do create havoc in the rabbit's GI tract are those that are high in **starch** and **sugars** because they create a change in the pH of the cecum and eventually can throw the whole system off. Foods that are notorious for causing rabbit GI problems are grains of any kind and legumes (beans, peas, edamame, lentils, soy nuts, etc.) and corn. Even fruits, if fed to excess with their high load of sugars and starch, could be a problem and should only be fed as a very small part of the diet.

Water is the number one nutrient requirement for all animals, and fresh clean water is a must for your rabbit. Water can be

provided in a sturdy crock or a water bottle with a sipper tube. If your rabbit soils the water bowl or enjoys tipping it over, the bowl should be supplemented with a water bottle. Water needs to be changed daily, and a bottle's sipper tube should be cleaned weekly.

Many owners want to offer treats to their pet rabbits. When fed in limited quantities, fresh herbs like parsley, dill, or basil can be offered as a treat. A small piece of banana or apple is a favorite with many rabbits. If giving dried fruits make sure that there is no sulfur or preservatives. We also like the Oxbow Organic Barley Biscuits. To prevent digestive upset, it's best to feed the same treats consistently. **Do not overfeed!** One to two small treats per day is more than enough!

All About Hay



There are 3 different types of hays suitable for small mammals: grass hays, legume hays, and grain hays. Grass hays (think Timothy) are the ones typically used with adult small animals, because the protein and fiber levels are a natural fit.

Legume and grain hays are useful for specific situations (senior rabbits or animals who are just not timothy hay eaters) or just to add something different to their usual hay diet.

Grass hays –



Orchard Grass: High in fiber, low in protein. Typical analysis: Crude Fiber 34%, Crude Protein 10%, Calcium 0.33%. Small mammals who are picky eaters or who don't really like timothy hay tend to enjoy Orchard grass due to it being softer in texture and sweeter tasting.



Timothy: The mainstay hay for the healthy adult rabbit. Typical analysis: Crude Fiber 32-24%, Crude Protein 8-11%, Calcium 0.4 – 0.6%. There are 3 different cuttings of Timothy hay which may or may not impact upon your little one's desire to eat this hay. More info on this on the next page.

Legume hay -



Alfalfa: High in calcium and has a higher protein level than timothy and orchard hays but lower in fiber. Fed to babies (less than one year old) or to older animals who are having weight issues. Alfalfa can cause obesity or mushy poop in adults. Typical analysis: Crude Fiber 28- 34%, Crude Protein 13-19%, Calcium 0.46%.

Grain hay -



Oat: This hay comes from the same plants as cereal grain. If this hay is harvested prior to the oat tops ripening, it is green and nutritious. If it is harvested after the oat tops have ripened, the stalks turn from green to brown and can still be harvested as straw for bedding. Typical analysis: Crude Fiber 31%, Crude Protein 10%, Calcium 0.4%.

Timothy hay – 3 different cuts

First cut hay is long and thin. It is higher in fiber with a lower protein and fat content. A great choice for small animals who need to lose weight, suffer from recurring stasis, or have dental issues. This hay tends to be “chewy” and crunchy; however, not all rabbits enjoy the taste. Not as fragrant as second or third cutting. Can be dusty so small animals with respiratory issues may have problems with it.

Second cut has more leaves on thin stems and while the protein and fat levels are a bit higher, crude fiber is a bit lower. Smells great but can be a bit dusty. This is the most popular hay for small mammals.

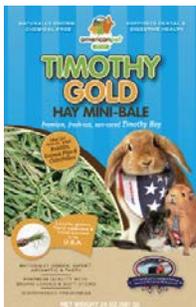
Third cut is super soft and very leafy. It is extremely rich and has less fiber than first or second cut. Because it is more of a “treat” hay, you need to mix this hay with first and second cut to ensure that your little one’s digestive system stays healthy (no stasis issues) and that there isn’t an overload of cecals being produced or that poop isn’t becoming mushy.

How can you tell the difference in cuts of hay that are packaged by **Oxbox**

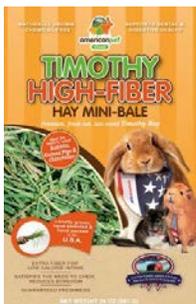


(<http://www.oxbowanimalhealth.com/>)? There is a chart towards the bottom of the package that shows “taste and texture” - sweet to hearty with 5 circles in between and soft to crunchy, also with 5 circles in between. One circle is always filled so that you can see where that hay is taste and texture wise.

American Pet Diner hay (<https://www.americanpetdiner.com/hay/complete-hay/>):



Timothy Gold is either second or third cut mixed with second cut hay. Picky eaters tend to gravitate towards this brand due to its mixture of cuts and fragrance.



Usually a mixture of first cutting and second. Long strands and crunchy, chewy texture. Great for pets with teeth or digestive issues; however, can be dusty thus irritating compromised respiratory systems.

Small Pet Select (<https://shop.smallpetselect.com/>)



Small Pet Select sells their hay by first, second and third cutting. This brand tends to be a good go-to when your pet simply does not like hay. Fragrant, consistently green and leafy.

Thank you to **Small Pet Select** for the use of their fabulous hay pictures in the All About Hay section and for the caption content after each picture.

Common Diseases/Preventative Medicine

Your rabbit should receive a medical wellness check-up at least twice a year. Did you know that the average lifespan of a domestic rabbit is anywhere from 7 to 10 years or more? In that time, your bunny might get sick or have an accident that needs medical care. Routine vet visits are essential; they allow us to evaluate your bunny's general health and become aware of any health problems before they become serious illnesses.

GI Stasis: Rabbit owners may experience circumstances when their rabbit will stop eating, become less active, act depressed, and produce extremely small or no fecal droppings at all. Some of these cases progress and worsen to the point where the rabbit is experiencing abdominal bloating and possibly diarrhea. These rabbits can quickly become lethargic and will sit in a hunched over position and may even grind their teeth, a sign of being in pain. All of these situations may be varying manifestations of rabbit indigestion or Gastrointestinal (GI) Stasis, a syndrome where the normal muscular contractions of the stomach and intestines are greatly diminished and the normal bacterial and protozoa inhabiting the rabbit intestines are thrown off balance.

Several factors can lead to the onset of GI Stasis including feeding the rabbit inappropriate foods and treats, a stressful change in the rabbit's environment, pain from another underlying condition such as dental/tooth points or spurs, or an intestinal blockage from ingestion of fur or something chewed while out exploring the home surroundings.

This is an emergency ~ bring your bunny in to us immediately!

Dental Care: Some rabbits' teeth are prone to dental problems such as overgrown incisors and molar spurs. Some rabbits have a malocclusion that results in improper wear of their incisor teeth. As a result, these front teeth may grow to a point at which they protrude from the mouth and make eating difficult. In these cases, the affected teeth need to be trimmed on a regular basis or should be surgically removed.



Molar malocclusion can result in painful points that irritate the tongue and cheek. Rabbits with molar spurs will have depressed appetites, and you may observe food dropping or excessive drool from their mouths as they attempt to chew. Feeding your rabbit free-choice grass hay stimulates constant chewing action, which helps wear down continuously growing molars. Affected teeth need to be trimmed regularly or extracted.

Spaying and Neutering: We strongly recommend that female rabbits be spayed, and male rabbits be neutered around the age of 4-6 months. Females have an extremely high rate of uterine cancer as they age, so it is important to spay your rabbit while she is still young. Neutered males are less territorial, therefore less aggressive and less likely to mark their environment by spraying urine.

Calcium Metabolism/Bladder Stones/Urinary “Sludge” Syndrome

Rabbits don’t metabolize calcium like other mammals. In the rabbit, the higher the dietary intake of calcium, the higher the level of circulating calcium in the bloodstream. Therefore, rabbits that eat diets high in calcium will have proportionately higher blood calcium levels.

So what happens to all of this calcium? It is excreted in the urine. Rabbits will excrete up to 60 percent of their ingested calcium in the urine (versus other mammals which will excrete only 2 percent of ingested calcium in the urine). That’s why normal rabbit urine will look “cloudy” – this opacity is due to all of the calcium carbonate crystals in the urine.



This syringe shows a rabbit’s urine with a significant amount of calcium-type crystals. If this builds up in excess it can cause a urine sludge syndrome.

Respiratory Tract Disease

- *Pasteurella multocida* – a Gram-negative rod bacterium, this is the most common cause of rabbit respiratory disease, earning it the nickname “Snuffles” amongst rabbit owners. Infection with this bacterium can present as any combination of respiratory disease, ear infections, septicemia, and internal abscesses. It can be spread via direct contact, aerosol, or on inanimate objects, and it can be carried without symptoms by many rabbits.
- *Bordetella bronchiseptica*
- *Pseudomonas aeruginosa* – a Gram-negative rod bacterium that can be resistant to many antibiotics. Can also be normal respiratory flora.
- Benign local neoplasia (often a thymoma) can put direct pressure on lungs.

E. Cuniculi



Encephalitozoon cuniculi, or E. cuniculi for short, is an infectious disease which can cause cataracts, kidney disease or affect the nervous system and cause a head tilt as pictured or partial or complete paralysis. How it infects rabbits and how much disease it is responsible for has been almost as difficult to determine as the name of the organism is to pronounce. Even the percentage of rabbits infected is

controversial – rabbit researches say anywhere from 40 to 80 % of house rabbits will test positive on serology (blood test measuring the body’s immune response to the organism).

EMERGENCY – Bring to Us Immediately

- Gastrointestinal (GI) Stasis: not eating for 6-12 hours; no poops or poops getting progressively smaller in 24 hours; no audible bowel sounds, lethargic
- Bleeding: Apply pressure to the artery to keep rabbit from bleeding to death
- Breathing: absent, labored, shallow
- Broken bones
- Dehydration: decreased skin elasticity, dry mucous membranes in the nose and mouth, fast and weak pulse, depression
- Diarrhea: liquid stool (not cecotropes) without hard fecal production
- Fly strike: fly eggs or maggots in wound or skin
- Immobility: partial or total paralysis
- Level of consciousness: listless, limp, unconscious, unresponsive. **NEVER GIVE A RABBIT IN THIS STATE ANY LIQUIDS, MEDICATIONS OR FOOD BY MOUTH.**
- Neurological signs: head tilt, loss of balance, eyes jumping up and down or left and right (nystagmus), convulsions, seizures

The Mystery of Poop: Cecotropes

Cecotropes are soft mucous-covered poops that a rabbit ingests directly from its anus. Generally they do this late at night or in the early morning hours. That is why they are sometimes called night droppings. Cecotropes are important because they serve as a major source of protein and vitamins for your rabbit. The high fiber, round firm pellets you are used to cleaning up in your rabbit’s cage/potty box are his actual feces.



Cecotropes



Poop

Your rabbit may be trained to use a litter box but don’t be worried if he decides to share his poops throughout your house. This is their way of saying “mine” to their environment. Litter box training can be fairly simple: every time you see your bunny getting ready to go, pick him up and put him in his box. To help get his interest, put his

poops and urine in the box beforehand. This gives him a “smell” hint which will help him to remember that there is a reason he is being placed in a box. Some rabbits are quick to catch on while others take weeks, even months.

As to litter, never use cat litter as it is full of dust, scents that are irritating to rabbit respiratory systems and yummy looking to some rabbits. Try using hay, or, if you are concerned about odor, recycled newspaper litter. Both of these are safe for your bunny and easy to clean up for you!

The Many Colors of Urine



Normal rabbit urine



Red urine



White urine

Rabbit urine always contains a certain amount of sediments. It can vary in color from clear to yellow to brown to red and is usually a result of what your rabbit is eating. If you are seeing or thick urine on a regular basis, bring your bunny in to be checked. Milky urine can be normal, but if this occurs frequently, for long periods of time, or if urine is thick and sludgy, we need to see your bunny. This is generally a sign that there is too much calcium in your rabbit’s diet, but before making any changes it is important to see us first.

Behavior

- **Growling:** grunting or growling means your bunny is not happy about something. It can also be a sign of fear, anger or stress.
- **Crying:** sometimes your bunny may let out a little cry, whine or whimper and then thump their back feet. Something has annoyed or angered her.



- **Licking:** bunny licks are their method of telling you “I like/love you”.
- **Screaming:** this is the most horrible of bunny noises. It usually means she is scared to death, physically hurt or dying.
- **Flopping:** pure form of relaxation.
- **Binkyng:** dancing, hopping high in the air and running around at breakneck speed.
- **Thumping:** back feet are pounding the floor for a

- number of reasons including anger, fear, and danger.
- Chinning: a rabbit will rub their chin over everything to let everyone know that this is mine.

By three to four months rabbits begin to show intense curiosity, hyperactivity and frantic chewing and digging. This is usually when rabbits are at their hormonal “peak”. Coincidentally, this is also about the time that we recommend spaying or neutering. Male rabbits will begin spraying everything with urine while females tend to become aggressive and territorial.

Bunny proofing the area your rabbit can roam is a must. It helps to prevent destruction of your property, protects your rabbit from harm, and provides safe and fun chewing alternatives.

Bonding a bunny to another rabbit is not as easy as you would think. Rabbits are like humans – they need to date before they become mates! During their courtship, they will learn to trust each other and hopefully fall in love.

If you are serious about wanting to introduce two rabbits, please keep in mind that this romance may take months. First meetings can go one of three ways – love at first sight, hatred at first sight or indifference. Sometimes the date may be marked by aggressive behavior; other times they will just sit and stare at each other. It takes patience and a basic understanding of rabbit “social skills” to be able to bond two rabbits.

The House Rabbit Society (www.rabbit.org) has some fabulous advice regarding bonding rabbits. We suggest that you consider your rabbit’s personality and ability to adapt to new situations before introducing him to another bun. It is always best to allow your bunny to “pick” his potential mate. Many rescues and shelters will set up “date times” so that your rabbit can speed date his way to a possible partner. Try the Virginia Beach SPCA. They have a small mammal manager who will help you find the perfect partner.

Common Pet Rabbit Toxins

Pesticides – these are a common source of intoxication for domestic pets and exotic pets alike. Organophosphates, Pyrethrins, and Metaldehyde are all examples of toxic to rabbit pesticides.

Always check with us before you use/put any type of pesticides around/near your rabbit’s environment.

Rodenticides are rarely ingested by exotic animals. There are three main classes: vitamin K1 blockers, bromethalin, and vitamin D3 amplifiers. It is important to differentiate between these three types for treatment, so if you suspect that your pet has eaten one of these compounds, please make every effort to bring in the box, or otherwise identify the compound.

Fipronil – this compound is the main ingredient of “Frontline”, “Parastar”, “Certifect”, and “PetArmor” flea and tick preventative product lines. While it is safe for most companion pet animals, it is highly toxic to rabbits, fringe-toed lizards (*Uma* spp.), fish, and aquatic invertebrates. Clinical signs include muscle twitching, tremors, convulsions +/- excitement, or lethargy and ataxia. Sudden death may occur as well. Onset is usually quick (< 7 hours), and if caught and diagnosed in time, this may be treated with supportive care and anti-seizure medications, such as diazepam or midazolam. Muscle relaxants may help as well.

Contact us before using any flea control products!

Lead is absorbed in the gastrointestinal tract and stored in bone and soft tissues. Lead is absorbed more efficiently if the patient is young, or deficient in calcium, zinc, or iron. Common sources include, but are not limited to: weights (curtain, fishing, diving, aquarium plant), some aquarium thermometers, bells with lead clappers, shotgun pellets, batteries, computer USB cables, solder, stained glass, paints, (even some “lead-free” paints have lead drying agents), galvanized wire or mesh, glazed ceramics, linoleum, costume jewelry, mirror backing, and seeds for planting (coated with lead arsenate).

Further Reading: For more information on rabbits we recommend the following:

Pet Care Veterinary Hospital: <https://www.petcarevb.com/>

Friends of Rabbits: <https://www.friendsofrabbits.org/>

House Rabbit Society: <https://rabbit.org/>

Oxbow Animal Health: <http://www.oxbowanimalhealth.com/>

Small Pet Select: <https://shop.smallpetsselect.com/>

