

Rabbits

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Natural History

Domestic rabbits (*Oryctolagus cuniculus domesticus*) are a subspecies of the European rabbit, distinct from the North American cottontail. Despite their similarities to large rodents like Guinea pigs and chinchillas, rabbits are in a completely different order called Lagomorpha. The use of rabbits by humans dates back to the 1st century BC, when they were used for fur and as sources of food. The house rabbit that is popular today was not commonly kept and promoted until the 1980s, although the American Rabbit Breeder's Association (ARBA) was founded in 1910. Today, rabbits are primarily companion animals but are also bred for fur, meat, laboratory animals, and show. Rabbits are considered the third most popular pet in the United States, behind cats and dogs. Despite being domesticated, rabbits retain many characteristics with their wild cousins. They are strict herbivores and very flighty prey animals that are much more likely to flee than fight.

Characteristics and Behavior

Rabbits are very popular pets due to their cute faces, soft fur, and docile nature. They are unlikely to bite or scratch when threatened and can bond closely with humans. There are at least 60 known rabbit breeds ranging from the tiny Netherland dwarf, to the massive Flemish giant. Rabbits come in different sizes, coat colors, coat lengths, and ear sets. They are generally fairly clean animals that often learn to eliminate in a litter box. Rabbits require a large amount of space and enrichment. While a cage makes a great safe place for an unsupervised rabbit, they should not be considered cage pets. They need significant out of cage time in a rabbit-proof environment.

A playful rabbit will hop around and jump into the air, a behavior that is affectionately called "binkies". Many rabbits enjoy attention and petting from their owners, but they are fragile and need to be handled carefully. A rabbit that struggles and kicks can break their back, and dropping a rabbit can injure their limbs or spine. Most rabbits don't enjoy being picked up and may squirm, particularly if not picked up securely. Young children should not be allowed to pick up or chase rabbits, as this can cause serious stress and injury. Never hold your rabbit on his back as this causes extreme stress.

Lifespan

8-10 average but up to 12 not uncommon.

Adult Size

Varies by breed. Dwarf rabbits may be 1-3.5 lbs, Flemish giants average around 15 lbs. Most rabbits average around 2.5-5.5 lbs.

Housing

Rabbits need a lot of space and enrichment. A large cage or hutch with enough room for a litter box, food, and room to completely stretch out can be provided but should not be the rabbit's only accommodations. Ideally, a rabbit proofed room, exercise pen, or other spacious enclosure should be provided. Some people choose to build their own enclosures, but there are also commercial hutches with attached pens available. The minimum floor size for a rabbit is 3'x3' but more space is always better. A barrier at least 3' tall should be provided to prevent the rabbit from hopping out. Out of cage play time is essential for rabbits and should be offered as often as possible. Any area where a rabbit is allowed to roam needs to be rabbit-proofed. Rabbits are known to chew carpet, electric cords, and toxic plants. Baby gates or closed doors may need to be used to prevent access to unsafe areas. Also be sure to provide plenty of enrichment to help discourage inappropriate chewing.

Flooring for rabbits should be solid, as wire bottoms can lead to foot problems. Newspaper or paper bedding are appropriate for rabbits and should be changed regularly to prevent waste build up. Avoid cedar and pine as these can cause respiratory irritation. Many rabbits can also learn to use a litter box. The litter box should be large enough for the entire rabbit to fit. Newspaper or pelleted paper litter make good rabbit litter, and clay based or dusty litter should be avoided. Place hay in litter boxes to encourage rabbits to sit in the box.

Cage furniture should be included in a rabbit's habitat. Rabbits enjoy hide boxes, chewing material, and other toys that they can interact with. Additionally, rabbits are social animals and do best when housed with other rabbits. Opposite sex pairs (spayed/neutered) or small groups of castrated males tend to be the most stable. Female rabbits are more prone to fighting. Unfamiliar rabbits can be difficult to introduce but don't tend to fight once they are established. Rabbits should not be housed with other animals. Rabbits and guinea pigs can transmit diseases to each other, even if housed in the same room. Cats and dogs are also not suitable companions for rabbits. Rabbits are prey animals that can be easily stressed or killed by predators, and the saliva in a cat or dog's mouth can be deadly.

Feeding

Nutrition is one of the most important aspects of rabbit care. A rabbit's teeth grow continuously throughout their life, and grinding a high fiber roughage helps keep them properly worn down. Without a high fiber, low carb diet a rabbit's teeth can become overgrown and cause discomfort and serious disease. A rabbit's digestive tract is very complex. Rabbits have very long GI tracts that contain beneficial bacteria to break down plant material. The relationship between rabbits and their gut microbes is essential to GI health. Diets that are too high in sugars or energy can feed the "bad" bacteria in the gut and lead to potentially deadly disease. Rabbits also need to consume the initial products of digestion called cecotropes or "night feces". These are soft, glossy fecal balls that are high in B vitamins and other essential nutrients. Consuming cecotropes increases the efficiency of a rabbit's digestive process and allows them to extract nutrients that would otherwise be lost.

A rabbit's diet should be primarily high fiber roughage in the form of hay. There are numerous types of hay available for rabbits including timothy, orchard, oat, and alfalfa. High quality timothy hay is generally recommended for most rabbits, but some rabbits may prefer other varieties. Alfalfa hay is higher in protein and calcium and only appropriate for growing or lactating animals. Hay should be continuously available to a rabbit. If a rabbit stops eating hay, their entire GI tract can be disrupted. In addition to hay, a variety of leafy greens should also be provided. Other types of produce can also be provided, but sugary vegetables and fruits should only be offered in limited quantities. The final portion of a rabbit's diet is a fortified, uniform hay-based pellet. Young rabbits need alfalfa based pellets, whereas older rabbits should have timothy based pellets. Pellets should be uniform and not contain any additives such as dried fruits or vegetables, as rabbits will select the less nutritionally balanced, tastier treats. Healthy adult rabbits have very minimal requirements for pellets and often end up being fed more than they need. Pellets are higher in carbs and lower in fiber, which can lead to weight gain, dental disease, and GI problems if overfed.

Free choice hay should make up 70-80% of a rabbit's diet. Rabbits under 12 months should be fed alfalfa hay, with a slow transition to grass-based hays starting at 6-9 months. For adult rabbits, only 1-2tbsp of pellets should be provided daily to avoid over feeding. Additionally, approximately 1-2 cups of leafy greens and vegetables should be provided daily as well. Treats and fruits should make up no more than 5% of a rabbit's diet. Berries, bananas, and the occasional carrot make appropriate treats, whereas yogurt drops and seeds should be avoided. Oxbow products are recommended due to their high quality.

Recommended leafy greens: Mustard greens, radish greens, turnip greens, carrot tops, dandelion greens, kale, bok choy, arugula, endive, escarole, romaine, bibb lettuce, basil, cilantro, parsley, wheat grass. Spinach and chard should only be offered in moderation as they are high in oxalates, which can increase the risk of urinary stones. Iceberg lettuce is very low in nutrients and not recommended.

Recommended vegetables: Sweet potatoes, squash, zucchini, peppers, cabbage, broccoli, brussel sprouts, parsnips, cucumbers. Carrots are high in sugar and should only be provided occasionally. Avoid leeks, onions, garlic, avocado, and rhubarb.

Water

Fresh water should always be available. Rabbits can drink from both heavy bowls or drippers.

Sexing

Rabbits reach sexual maturity as early as 3 months, so care should be taken when housing rabbits of unknown or opposite sex. Young rabbits can be difficult to sex, as can neutered males. Mature intact males (bucks) have apparent testicles, but younger rabbits or rabbits that have been surgically altered look very similar. The genitalia has to be extruded to distinguish females (does) and males without testicles.

Handling

Rabbits need to be handled carefully to avoid injury, as rough handling can lead to spinal injuries. In general, rabbits do not like being picked up and may struggle. Habituating a rabbit to handling should be done gradually, carefully, and only in short spurts to prevent stress. When picking up a rabbit, always support their body carefully so they cannot kick out and injure themselves. Do not try to scruff a rabbit or grab their skin, as their skin is very thin and can tear easily. It is also not appropriate to pick a rabbit up by their ears. Holding a rabbit on their back, a method called "trancing", is extremely stressful and should never be done. Rabbits that need to be picked up should be gently but securely scooped from under their body, rather than plucked from above. While rabbits generally do not enjoy being picked up, many enjoy petting and may even seek out attention from their owners.

Grooming

A rabbit's nails can grow quite long and need to be trimmed once or twice per month. Just like cats and dogs, rabbits have a quick that contains nerves and vessels that will

bleed and cause pain if nicked. For rabbits with white nails, the quick is visible as a pink area close to the paw. The quick can be difficult to find on dark nails, so the best method for nail trimming is to go slow and only take off small amounts at a time.

Bathing rabbits should be avoided. Long haired rabbits need regular brushing and coat care to prevent matting. Breeds with long hair may need sanitary shaves or “potty patches” to prevent build up of fecal material in their hair around their back end.

Enrichment

Out of cage time in a rabbit safe environment is important for both physical health and enrichment. Toys and other items should be provided to give rabbits a safe outlet for chewing, playing, and climbing. Cardboard boxes, tunnels, paper towel rolls, wooden toys, hay toys, and hard plastic toys are all acceptable for rabbits. Toys can be purchased or homemade.

Rather than providing food in dishes, foraging is a natural outlet for activity. Homemade and store bought hay and food feeders can be provided. Paper bags or paper towel tubes can be stuffed with vegetables or pellets and tied with twine. Rabbits are also very smart and trainable and can receive some of their food as a reward for training. Rabbits can learn tricks and even run agility courses. Safe outdoor time is also a great outlet for rabbits. Rabbit pens or harnesses can be used to allow outdoor access. Care should be taken in areas where rabbit hemorrhagic fever has been found in wild rabbits as this can be spread to domestic rabbits.

Zoonosis

Disease transmission from rabbits to humans is a low concern. Ringworm and some external parasites are contagious to humans.

Health

Rabbits require wellness exams every 6-12 months. It is very important for your veterinarian to monitor your rabbit’s dental health, as their teeth can become overgrown with improper diet or genetic causes. Rabbits with recurrent dental issues require a molar grind to even out their teeth. For some rabbits, this may only need to be done once or twice per year. Others may have significant issues that require frequent correction. Dental disease can become severe and lead to tooth root infections and chronic respiratory infections.

Another major concern for rabbits is rabbit gastrointestinal syndrome, more commonly known as GI stasis. GI stasis is not a disease, but a syndrome. Anything that causes a rabbit to stop eating can cause GI stasis including pain, stress, infectious diseases, improper diet, and dental disease. GI stasis can become serious very quickly, leading to illness and even death in severe cases. **A rabbit that stops eating and/or pooping is an emergency and should be seen by a veterinarian immediately.**

Head tilts are common in rabbits and can range from a slight tilt to constant circling and rolling. There are numerous causes of head tilts in rabbits, which can have varying effects on a rabbit's quality of life. Overweight rabbits and rabbits kept on dirty bedding or inappropriate flooring may also develop lesions on their feet and hocks. It is also recommended to spay and neuter rabbits around 4-6 months of age as they are very prone to the development of reproductive tumors. The risk of anesthetic complications is higher in rabbits than in cats or dogs, but still quite low.

Sources and Further Reading:

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