Behavior Problems in Pet Rabbits

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Abstract

The domestic rabbit, *Oryctolagus cuniculus*, is descended from the European rabbit, which lives in large social groups and digs extensive warrens. Behavior problems include urine spraying, failure to use the litter box, fear of humans and human-directed aggression, intraspecies aggression, destructive digging and chewing, and infanticide. These problems are best prevented and treated by understanding their origin in both species-specific behavior and learning. Urine spraying is primarily a problem of intact males. Litter box use results from both rabbits' species-specific tendency to use particular sites for elimination and from training. Rabbits may become fearful of humans because of painful or frightening experiences with them. Rabbits will become comfortable with humans if they have numerous positive interactions with them. Fearful or aggressive rabbits may be treated by repeatedly exposing them to pleasant associations with humans. Rabbits are territorial and may aggressively reject new rabbits that are not members of the group. Introduction of a new rabbit must be gradual, allowing rabbits to become familiar with each other and preventing them from fighting. Digging and chewing are natural, species-specific behaviors. Giving rabbits acceptable objects to chew prevents them from destroying household items. Infanticide originates, in part, from intense competition between wild females for safe nesting sites. Housing birthing does separately may prevent infanticide.

Key words: **rabbit; behavior; fear; aggression; destructive; spraying**

Domestic rabbits are rapidly increasing in popularity as house pets, as more people discover characteristics that make rabbits good pets. They are generally small, ranging from about 1 kg in the dwarf breeds to a maximum of about 8 kg in the giant breeds. Raised appropriately, they are friendly, sociable, and playful, and can be an endless source of amusement for the family as they toss and push toys around, hop, cuddle, and leap. Assisting rabbit owners in understanding their pet's behavior to prevent and treat behavior problems is an important part of veterinary practice.

There are 11 genera and over 50 species in the family Leporidae—rabbits and hares. The domestic rabbit, *Oryctolagus cuniculus*, descended from the European rabbit that originated on the Iberian Peninsula, modern-day Spain and Portugal. In the forests and grasslands of Europe and Great Britain, *O cuniculus* has spread beyond its original range because of captive rabbits being carried around as portable food sources. Although there are many physical similarities between the European rabbit and the American rabbit, they are not in the same genus. The most common rabbits of North America are the cottontails

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(*Sylvilagus* spp), and these animals do not build the large warrens characteristic of *O cuniculus*.

To understand domestic rabbit behavior, one must first understand the normal behavior of the rabbits' wild ancestor. The wild European rabbit lives in large colonies that dig extensive warrens.[1-5] The generation of such an extensive warren system is possible because of both anatomical and behavioral characteristics. Rabbits have long, strong claws and strong hind limbs. Behaviorally, all rabbits are persistent diggers, even the domestic rabbit that has no need to dig tunnels to hide from predators. Wild rabbits' use of forelimbs to loosen dirt and hind limbs to kick it back is reflected in pet rabbits' digging on a couch cushion or a quilt top.

Members of the colony spend much of their life underground, coming out only to graze.[5-7] When rabbits are outside grazing, constant vigilance for potential danger is essential to survival. A rabbit in an exposed location can often be seen standing up on its hind limbs scanning the surrounding area. Detection of danger results in thumping the hind limb on the ground—an auditory warning signal. True relaxation and sleep only happen within the warren. Wild rabbits also have specific areas called scrapes that are used for elimination of small, firm feces that are not caecotrophs (night feces).[3-5]

Each colony has several small, distinct social groups, typically composed of 2 to 8 individuals.[1,2,4] Does within a subgroup are usually closely related. Although bucks form a dominance hierarchy, aggression and competition among does can also be fierce because control over access to the best nesting areas can be critical to survival of the doe's young.[3,4] As bucks mature to adulthood, they may be driven out of the subgroup in which they grew up, leading to their migrating to another subgroup, or even to another warren.[8]

Because *O cuniculus* was accustomed to living in both small spaces and social groups, it was preadapted to survive the initial domestication process, which began at least 2000 years ago, when Roman farmers kept them in small cages as sources of meat.[9] However, the fact that rabbits can survive crowded conditions in which meat rabbits and some pet rabbits are kept does not mean that such conditions are appropriate.[10-13]

Basic Care for Optimum Welfare

Because rabbits are social, they should be raised in groups of at least two animals.[14-16] They should have adequate space to hop and run around several hours a day and have toys or objects to manipulate.[14] Providing rabbits with tools for both physical and mental exercise enables them to engage in a variety of complex and playful behaviors and results in pets that are more interesting than those constantly confined to small cages.

Behavior Problems of Rabbits

Any rabbit that develops a behavior problem should be evaluated for medical problems because, as with all domestic species, a change in behavior may be the first indication of illness or injury. For example, a rabbit that suddenly becomes aggressive to anyone attempting to pet it on the head or rub its ears may have an ear infection, a tooth abscess, or another condition that causes pain in that region. Identifying medical problems and injuries in rabbits may be made difficult by the fact that, as a prey species, they have been selected to hide illness and injury.

There are several major categories of behavior problems in rabbits: urine spraying; initial litter box training and loss of litter box training; fear of humans, with or without aggression; aggression toward other rabbits, especially unfamiliar rabbits; destructiveness; and infanticide. Urine spraying is mainly a problem of intact males. In wild rabbit colonies, high-ranking males spray urine on lower-ranking males and will also spray females during courtship.[8,17] Male rabbits that are very attached to their owners may spray their owners' feet and lower legs as part of courtship. As with cats, neutering is the best prevention and treatment for urine spraying.

Cats are usually readily trained to use litter boxes because they prefer to dig holes in which to bury their excrement. If the litter box contains the only substrate in the house in which to dig, cats usually will use it. Rabbits, however, do not dig to bury their excrement. They may be trained to use the litter box because they tend to select a particular elimination site, similar to the "scrape" of their wild ancestor. In its simplest terms, rabbits may be trained to use the litter box by observing where they eliminate and placing a box in that location. Depending on the rabbit's housing arrangement, there are several different approaches to litter box training. If the rabbit is going to be caged part of the time and allowed to roam around the house at other times, the rabbit may be trained to eliminate in its cage. Initially, the rabbit should be confined to the cage, and a litter box should be placed in the area inside the cage where it eliminates. Once the animal regularly eliminates in the litter box, the rabbit may be allowed out to wander around the house. It will typically return to the litter box in the cage to eliminate. If the rabbit