

Housing Pet Rodents and Rabbits

Our topics for this week are:

- **Housing considerations for all small mammal pets**
- **Rodent housing requirements**
- **Rabbit housing requirements**

All domestic animals have basic containment needs that should be provided by handlers: adequate and accessible food and water; room to stand and raise their head, stretch, turn around, move forward, lie down, roll, and groom themselves without restriction; regular exercise; and social contact with humans and others of their own species. If the confinement is long-term, an area of seclusion (hide box) and means of continually stimulating mental activity, environmental enrichments, should be provided. Aspects to consider for small animal containment are light exposure, temperature, exercise space and mental stimulation that encourage natural behavior patterns, companionship, bedding, rest and sleeping area, suitability of containment materials for the species, species normal behavior, ability to prevent escape, and location for enclosure

Small mammals housed alone are more anxious about being handled than those kept in groups. Most small mammals should be contained in groups, but there are important exceptions. Neither sexually mature male rabbits nor adult male mice should be housed together to prevent fighting. Adult hamsters prefer to live a solitary life, especially adult females. For these reasons as well as managing reproduction within groups, is important to be able to correctly determine the sex of small mammals. Anogenital (AG) distance is generally used for sexing small mammals, except for guinea pigs and young rabbits. Females have shorter AG distance than do males. Pressure on either side of the prepuce in male guinea pigs or young buck (male) rabbits will cause the penis to extrude.

The safest approach to minimizing aggression within a group of small mammals is to group members of same sex and same litter after puberty to control breeding and fighting. Spacious enclosures and small hide boxes that can be defended will minimize aggression among males. Introduction of new rodents to an established colony should take days to weeks, beginning with mixing used substrate material from both cages and sharing the mixture in each cage to allow adaptation to smells that will be the new mixed group.

All small animal containments should be free of sharp projections, easily cleaned, well ventilated but free of drafts. Wood enclosures absorb urine and will foul the air with ammonia. Most small mammals will also gnaw through wood enclosures. Wire mesh lids are

recommended for adequate ventilation. Drinking water should be constantly present and provided in a way that prevents the water from being spilled or contaminated. Shade from direct sunlight should always be present in the enclosure.

Substrates (bedding) should be kiln dried pine, aspen, paper products, or good quality grass hay. Cedar or fresh pine shavings should not be used due to volatile irritant oils, and cat litter should be avoided because of dust or possible ingestion and digestive tract compaction. Cloth materials such as towels should not be used for bedding. Strings can be ingested and cut the lining of the digestive tract or become caught around a leg or neck.

Small mammal pets should have exploration and exercise time outside their primary enclosure. However, no other animals which could be a predator (dogs, cats, rats, birds, ferrets) should be allowed within sight, hearing, or smell of the small mammals. Time outside of primary enclosures should be directly supervised.

Most small mammals, including rodents and rabbits, burrow and rest during the day to avoid heat and thermoregulate. When in captivity, they can be at risk of heat stress, and the temperature of their containment should be carefully regulated.

Rabbits and many rodents produce and ingest cecotropes (also called night feces) important to their nutrition. Cecotropes are smaller, softer, and more moist than regular feces. Rabbit cecotrope pellets stick together with a greenish mucus. Cecotropes have a high concentration of vitamin K and B vitamins, plus twice the protein and half the fiber of regular feces. Wire bottomed cages could cause wastage of cecotropes although if able, rabbits eat cecotropes directly from the anus.

Rodents

Wood or plastic cages can easily be gnawed through by rodents. Cages for all rodents should be made of wire, sheet stainless steel, or non-galvanized aluminum, or glass with solid gnaw-proof material. Flooring should be solid to prevent foot and leg injuries from wire flooring. Plastic coating will be chewed off and should not be used on wire cages. Substrate should be one inch deep, but cedar shavings should not be used. Wet cedar shavings release fumes that are toxic to the respiratory tract. Other unsafe wood substrates include cherry, citrus wood, pine that has not been dried, oleander, plum, and redwood. Aspen shavings, chopped straw, or stripped paper are safe. Sand can be used for gerbils. Mice, hamsters, and gerbils need mesh wire lids to provide adequate ventilation. Substrates should not be dusty, especially if used in solid wall enclosures such as aquariums.

Gerbils and hamsters can be satisfactorily housed in large aquariums so that at least three inches of substrate can be provided to meet their burrowing desire while containing the substrate within the enclosure.

Hiding and sleeping areas should be provided. Small prey animals hide in small dark areas to escape being eaten in the wild and are stressed if they do not have a hiding area.

Enrichments for mental and physical stimulation should be added such as clay flowerpots, empty coconut shells, or tunnels of PVC pipe. Enrichments can include ladders and ropes for climbing as well as exercise wheels. Exercise wheels should not have any rough edges. Exercise balls should not be used if there is access to stairs or other ledges for the ball to roll off. Blocks of untreated wood should be provided for gnawing. All rodents and rabbits will gnaw wood. Their teeth continually grow and gnawing is an instinctive means of wearing off the teeth to keep up with new growth. Containment contents should be routinely rearranged on a regular basis to maintain interest and mental stimulation, except for hamsters which prefer stability in the location of their possessions. Boredom and stereotypic behaviors will result from an inability to gnaw on objects and sort through mental challenges.

Mice should have substrate replaced every 2-3 days and enclosures washed weekly. Gerbil and hamster cages can be cleaned less often but at least weekly.

Rabbits

Rabbits are social and should be housed in groups of two or more, but bucks should not be housed together due to risk of fighting. Adult males will try to castrate each other.

Allowing pet rabbits to run free in a house can be expensive and dangerous. Rabbits will eat carpet, gnaw on furniture, destroy houseplants, and bite electric cords. They can be harassed, injured, or killed by predatory pets (dogs, cats, ferrets). Just the smell of predators nearby can be stressful to rabbits. They should be confined to a rabbit proof play enclosure, under immediate supervision, or kept in their hutch (rabbit cage).

Rabbits should be housed in wire cages to provide adequate ventilation, but they also need protection from drafts, sunlight, and dampness. The minimum size of the cage needed depends on the breed of rabbit. Medium-sized rabbits require a minimum of 24 X 30 inches/rabbit with 18 inches of height. Giant breeds should have a minimum floor space of 30 X 36 inches/rabbit, and small-sized breeds should have a minimum of 18 X 24 inches/rabbit.

Optimal size cages should be tall enough to permit rabbits to stand on their hindquarters to inspect their surroundings, and an opportunity to climb on elevated platforms. The length of the cage should be four times that of an adult rabbit with a total square footage of at least eight sq. ft. Improperly constructed or excessively confining containment can lead to stereotypic behaviors such as self-mutilation from over-grooming as well as repetitive cage biting and pawing at cage corners.

Wire cages can be somewhat self-cleaning, provide good ventilation, handler visibility, and parasite control. Cages with wood frames in direct contact with rabbits will be gnawed and soaked with urine and feces making them incapable of being adequately cleaned. The floor should be ½ by 1 inch mesh and at least 16 gauge. The sides and roof can be one by two inch mesh and at least 12-gauge. Unlike front opening doors, top hinged doors will remain closed

even if accidentally left unlatched. In addition, open top hinged hutch doors are not an obstruction to a handler's movement around the outside of the cage.

Outdoor hutches should be surrounded by a tall, mesh or solid fence to prevent access by predators, especially roaming dogs. To keep walls free of urine, fur, and feces, aisles three foot wide should be created between hutches and wooden walls of a shelter. Hanging hutches from the ceiling of enclosures facilitates removing manure and eliminates the rotting of wood or rusting of metal hutch legs. Some solid bottom area should be provided in an otherwise wire-bottomed cage to allow the rabbit to rest its feet from the pressure of wire which does not distribute the pressure of the rabbit's bodyweight in a normal manner and can cause chronic foot problems. Cages should be waterproof and draft-free. Two sides of the hutches should have visual barriers, such as scrubs or buildings, for partial relief of predator surveillance by the rabbits, and to block the wind.

Household pet rabbits can be offered outdoor exercise for environmental enrichment, if an outdoor enclosure is escape-proof, predator-proof, and the rabbit's time outdoor is closely supervised. Portable pens for dogs can be used on concrete surfaces to temporarily contain rabbits for exercise. If the pen is placed on a grassy area, the rabbit must be more closely monitored to keep it from burrowing under the fence.

Rabbits evolved to survive in the safety of burrows. All hutches should contain a hide box or other burrow-like shelter to relieve stress. Loose straw or hay can also provide a chance to burrow as well as to eat straw or hay. Alternatively, paper products, towels and newspaper, should be used as substrate. Hide boxes or shelters within an enclosure should be strong enough to support a rabbit if it decides to perch on top of it. A feeding and exercise area and a separate resting area should be provided.

Enclosure enrichments can include cardboard boxes, vegetable treats, untreated wood, paper bags, blankets, cat tunnels, and large breed dog toys that cannot be gnawed into pieces. Since interest in specific enrichment objects will gradually wane, different enrichments should be regularly rotated in and out of the enclosure.

Nest boxes are needed for pregnant does (female rabbits) and does with litters. Nest boxes should be made of ½ by 1 inch mesh wire, 18 inches long, 10 inches wide, and 10 inches tall for average sized breeds. The top should be open to aid with ventilation and control of moisture in the nest. In cold weather, cardboard liners can be used outside the box to provide additional insulation.

The cage or box should be spot cleaned daily and all litter removed weekly. Pens should have a non-slip surface. Pine and cedar as substrate should be avoided. Aromatic oils can irritate skin and respiratory tracts. Clay or corncob litter which can lead to digestive impaction should not be used. Pen walls should be at least 4 feet tall to prevent rabbits from jumping out.

Exposure to environmental temperatures of less than 40°F and more than 85°F should be avoided. Colder temperatures are tolerated better than hotter temperatures since rabbits do not

sweat. They dissipate heat primarily, but inefficiently, from their ears, and pant just when in desperation. Good ventilation is needed to control odors and assist cooling during warm weather, but not to the extent of creating drafts that could cause stress.

If you have comments or you're interested in particular animal handling subjects, contact us at CBC@BetterAnimalHandling.com

Now let's recap the key points to remember from today's episode:

- 1. Rodents should not be housed alone, with the exception of hamsters.**
- 2. It is important to know the correct gender of a rodent before housing it with other members of its species.**
- 3. Housing for rodents or rabbits should permit sufficient room for exercise and mental enrichment.**

More information on animal handling can be found in my books, *Animal Handling and Physical Restraint*, *Concise Textbook of Small Animal Handling*, and *Concise Textbook of Large Animal Handling* all published by CRC Press and available on Amazon and from many other fine book supply sources.

Additional information is provided at: www.betteranimalhandling.com . This website has more than 300 past podcasts with notes on handling of dogs, cats, other small mammals, birds, reptiles, horses, cattle, small ruminants, swine, and poultry.

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.