

Care of small mammals: advice on rabbits and small furrries

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ABSTRACT

The health and welfare of small mammals is directly related to their natural behaviour, environment and nutritional needs. The Animal Welfare Act (2006) places a duty of care on owners to ensure their animals' welfare needs are met via the provision of a suitable environment and diet; the ability to exhibit normal behaviour patterns; to be housed with, or apart from, other species; and to be protected from pain, suffering, injury and disease. It is, therefore, imperative VNs educate owners of such pets to ensure their health and welfare needs are met, with owners acting within the law.

This article outlines the advice VNs should give to novice owners of rabbits and small furrries. As veterinary nurses, we readily advise clients about additional needs of elderly animals at home. However, we must be careful not to neglect applying our recommendations to these same animals when admitted into practice and under our care.

Ageing animals seldom have a single disease, but instead have a unique combination of multiple organ disease with varying levels of dysfunction (Fortney, 2004). Such changes in organ system function, however, may be covert until the ageing animal is stressed by illness, general anaesthetic procedure or hospital stay (Carpenter et al, 2005).

General management of small mammals starts with providing correct accommodation.

For rabbits kept outdoors, a traditional hutch is still a common feature of husbandry, despite keeping of rabbits in this way dating back to Victorian times. The hutch should be of sufficient size to provide sleeping quarters, a feeding area and a toileting area (as rabbits generally like to use a place away from their sleeping quarters). Sufficient ventilation must also be considered.



Figure 1. A variety of cages are available commercially, with many styles having a series of interconnecting tunnels, sleeping areas and exercise areas.

Exact hutch size depends on the species to be housed, but it is often quoted a rabbit, for example, should have sufficient space to perform three consecutive hops. However, three hops from an average sized rabbit can cover 6ft to 7ft.

Guidance from the Rabbit Welfare Association and Fund (RWA; 2010), meanwhile, suggests minimum hutch size should be 6ft x 2ft x 2ft. It should be remembered, however, a hutch is only really a shelter and not a complete living space, so it should, be attached to a secure, part-sheltered exercise run of at least 8ft x 4ft x 2ft high (RWA, 2010).

These sizes, while useful, are for a solitary rabbit and need to be increased depending on the number of occupants – after all, rabbits are highly social species, living in large groups in the wild, so can become stressed when living alone.

Wooden hutches of sufficient size generally prove satisfactory, provided they are:

- treated with wood preservative to avoid weather damage
- raised off the ground to protect them from damp and predators
- fitted with a sloping roof to avoid rain pooling or dripping inside

Hutch positioning is an important consideration too – it must be out of direct sunlight, as temperatures above 26°C can rapidly lead to hyperthermia and subsequent death.

Conversely, it must not be in an overly draughty or exposed position during winter.

Many owners move the hutch into a shed or garage over winter, but if this is done, great care must be taken to ensure the rabbit has sufficient ventilation and is not exposed to harmful fumes, such as those from a car exhaust.

Hutches can be lined with newspaper in the shelter and toilet areas to provide insulation and facilitate ease of cleaning. A combination of dust-free, non-cedar wood shavings and straw can then be used to cover the newspaper – such a combination appears to enable the urine to drop through the fibre framework away from the rabbit, reducing the likelihood of urine scalding in older rabbits (Girling, 2003). Suitable insulating bedding materials include dust-free hay and shredded paper.



Figure 2. Commercially available nesting material can be used to line nest boxes.

Many of the principles of rabbit accommodation can be applied to the housing of guinea pigs. Traditional-style wooden hutches are generally used outdoors, whereas wire cages with plastic bases may be used indoors.

Outdoor access is required daily, however, to provide the opportunity to exercise and access to grazing. The same substrates and bedding materials may be offered as for rabbits.

Rodents belonging to the suborder Myomorpha – including rats, mice, hamsters and gerbils – should be housed indoors in solid plastic-based cages with a secure wire upper.

This style of housing, however, may prove problematic with hamsters, as they have a tendency to climb and hang from the top of the bars, with falls commonly resulting in fractures and/or spinal injury. Hamsters are, therefore, better housed in cages with solid plastic sides.

A variety of cages are commercially available, with many styles having a series of interconnecting tunnels, sleeping areas and exercise areas.

Such cages provide a more natural environment than a single layer cage, as rodents like to explore, tunnel and climb. However, care must be taken to ensure such housing provides sufficient ventilation and can be easily cleaned (**Figure 1**).

The substrate provided will vary depending on the species being housed. Hamsters and gerbils require deep substrate for burrowing, and wood shavings are ideal for this. Nest boxes must be provided too and these can be lined with commercially available nesting material or shredded paper. Hay may also be used; however, this should be dust-free to reduce the risk of respiratory disease (**Figure 2**).

Whatever style of housing is used, it must be positioned on a secure surface, away from predators and extreme temperatures. Environmental temperatures between 18°C and 26°C are best tolerated, as those above 28°C can lead to hyperthermia. Temperatures below 6°C (Girling, 2003), meanwhile, can cause hibernation in hamsters.

Enrichment

Environmental enrichment is designed to modify the captive environment of a pet to promote natural behaviour and general well-being, while reducing stress and abnormal behaviour.

As small mammals may be caged for extended periods with minimal or no human interaction, they have a heightened need for environmental enrichment and, when provided correctly, can produce a positive impact or prophylactic effect on the animal's behavioural and psychological welfare (Church, 2007).



Figure 3. Rats particularly enjoy climbing; therefore, the addition of ropes, hammocks and tubes to play with and hide in provides valuable enrichment.

As environmental enrichment is designed to promote species-normal behaviours, the best enrichments are those appropriate to the animal's natural history; for example, plastic tubing for burrowing species versus branches for an arboreal species.

While often not considered, exercise is important for rodents. Hamsters in the wild, for example, will travel vast distances relative to their size.

Exercise wheels are therefore particularly enjoyed by many smaller rodents and should be solid in construction rather than the traditional wire varieties, avoiding inadvertent damage or fracture of delicate limbs.

Wood and paper-based products, such as cardboard tubes and boxes, meanwhile, provide areas to climb and hide – and opportunities to gnaw, which is a common rodent pastime.

Rats particularly enjoy climbing, so the addition of ropes, hammocks and tubes to play and hide provides valuable enrichment.

As small mammals are prey species, hiding places, such as tunnels and cardboard boxes, also offer a safe retreat, as well as providing valuable enrichment.

This availability of a hiding place often encourages small mammals to be more active and seen, as knowing they can retreat to a secure place can increase their confidence (**Figures 3 and 4**).

It must be remembered, in their natural habitats, many small mammals – particularly rabbits – would spend a large proportion of time foraging and chewing their food, and if access to this type of natural behaviour is not provided in the captive environment, it could, ultimately, impact on mental, dental and digestive health.

Using food to enrich the environment of small mammals is easy to achieve, however, and something can be constructed from lengths of tubing filled with hay or via the use of commercial treat balls.

Care must be taken to avoid the over-reliance on treats and snacks, as many small mammals have a sweet tooth and, as glucose is a quick energy fix, prey species will readily accept such foodstuffs at the expense of consuming the rather less appealing, but more nutritious, fibrous components of their diet.

Over time this can lead to health problems, such as obesity and dental caries.

One solution – dividing the main meal into several parts and scatter feeding – could prevent the risk of obesity, while also encouraging natural foraging behaviours. This, in turn, promotes exercise and provides valuable environmental enrichment.

A general rule for exercise is animals need the opportunity to do so at their most active time of day – with rabbits, this tends to be early morning and late afternoon as they are a crepuscular species.

Hygiene



Figure 4. Solid exercise wheels can prevent damage to delicate limbs.

Provision of correct housing and enrichment is not beneficial unless accommodation is kept clean. To help, many small mammals can be trained to use only one small area of their hutch/cage to eliminate in, not only allowing for ease of cleaning, but also easy identification of problems such as diarrhoea.

Cages and hutches need to be spot cleaned at least once daily, while a thorough cleaning out, including removal of all substrate and accessories, must take place at least once a week.

Meanwhile, for rabbits and guinea pigs living outdoors, more frequent cleaning must take place during warmer months. This, along with examination of the genital area, should avoid any issues with myiasis (fly strike). This happens when poor hygiene and a buildup of faeces around the anus attracts flies to lay their eggs, and can be fatal.

Other consequences of poor husbandry include respiratory infections. For example, when cages are not regularly cleaned out, this allows the buildup of ammonia from urine-soaked bedding. Ammonia is a heavy gas that sits just above the substrate, at the nose level of most small rodents, meaning it is often inhaled in high concentrations – especially if ventilation is poor.

Ammonia is highly irritant to sensitive mucous membranes of the airways and will inflame them, potentially leading to bacterial infection and possible pneumonia (Girling, 2003).

Handling and restraint

While VNs spend a lot of their time advocating correct and safe handling techniques for dogs and cats, the handling technique for small mammals can often go overlooked.

VNs can play a vital role in educating owners of small mammals on how to safely and correctly handle, restrain and habituate their pet to interaction with people, cage cleaning, car journeys and visits to the practice.



Figure 5. Animals should be handled regularly from a young age to reduce stress.

A trip to the practice will likely involve transport, contact with unfamiliar humans and exposure to other unfamiliar and often highly predatory species – all of which combine to form a highly stressful event, even in healthy individuals. When these stressors are combined with clinical disease, the results can prove disastrous.

A common misconception exists that small mammals should not be regularly handled as they are prey species.

While this may be true of their wild counterparts, domestic small mammals will inevitably face situations involving close contact with people, so should be trained and handled daily from a young age to minimise stress (Benato, 2011).

New pets should be allowed to adapt to their surroundings, as well as recognise their cage as part of their territory, with minimal disturbance, for 7-10 days.

Once the animal appears to be settling, the owner should be encouraged to spend some time with the pet daily – interactions of approximately five minutes several times a day, associated with positive reinforcement, such as the feeding of a small amount of a healthy treat, are advocated (Benato, 2011).

The amount of interaction time can then be built up gradually, resulting in a less stressful

experience for the animal and the establishment of a bond between pet and owner (**Figure 5**).

Nutrition

As with any species kept in captivity, the diet of wild animals should be mimicked where possible (Thompson, 2014). For rabbits, this means providing a high-fibre diet based on good quality hay supplemented with leafy greens, including broccoli, cabbage, kale and bok choy.

Commercially available diets have been formulated for rabbits containing the required nutrients; however, these can sometimes fall short on providing a balanced diet – in particular, sufficient fibre.



Figure 6. A variety of species-specific foods are available for small mammals.

This situation occurs most notably with multicomponent cereal-type mixes as, given the opportunity, rabbits will select the items higher in protein and carbohydrate in preference to the more fibrous material, known as selective feeding.

When such diets are fed, it is essential not to refill the bowl until everything in the daily portion has been consumed. If the rabbit is not consuming the entire daily portion, gradual weaning on to a monocomponent diet is advisable.

Monocomponent foods are nutritionally complete foods that are extruded, pelleted or baked and contain all the nutrients the rabbit needs in each bite. This prevents selective feeding and ensures a balanced diet.

Small rodents are often grouped into the same nutritional category; however, studies have demonstrated each of the individual species, despite all being omnivorous, have different nutritional

requirements.

Numerous commercially prepared species-specific diets are available that should be offered daily and supplemented with small amounts of vegetables and fruit. Once a week, a small portion of a protein source should also be provided, such as hard-boiled eggs or cheese (Benato, 2010; **Figure 6**).

Veterinary care

Disease prevention is as important in small mammals as it is in other companion species, so VNs should take the time to educate owners regarding the importance of preventive health care, such as vaccination (rabbits), ectoparasite control, dental care and weight management.

Many owners of rabbits and small furrries often seek health care advice from the pet shop where they purchased the animal rather than veterinary practice. It is important, therefore, VNs are proactive in promoting the practice as a one-stop shop for helping to maintain the health and welfare of their pet, and not just the place to go once the pet is ill.

Client education and regular health checks will hopefully keep practice visits for genuine health concerns to a minimum.

References

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