

BSAVA Factsheet for Owners:

Rabbits

This factsheet has been prepared to help you understand the care requirements of rabbits. It is advisable that you read this information before taking on the responsibility of owning rabbits so that you are aware of their requirements, such as for housing, nutrition, handling, routine and veterinary care. Whilst this factsheet details a broad range of information, please speak to your vet if you have any further questions. Always research rabbit ownership thoroughly to make sure you can provide them with the best care throughout their lives. A good resource is the APGAW Good Practice Code for the Welfare of Rabbits (<https://apgaw.org/wp-content/uploads/2021/06/Rabbit-CoP-2021-1.pdf>)

All domestic rabbits are of the species *Oryctolagus cuniculus*, the same as the European wild rabbit. There are different breeds of domestic rabbit – a breed being an animal with different characteristics but still belonging to the same species. The care requirements of pet rabbits will generally be similar for different breeds, with differences such as coat care for long-haired breeds, enclosure size considerations for giant breeds and particular attention to ear health for lop-eared breeds. The typical adult bodyweight will also be different depending on the breed of your pet rabbits. The life expectancy of pet rabbits is between 5 and 10 years, but individuals can live for up to 14 years. Life expectancy of dwarf and giant breeds is generally less than for regular sized breeds. It is very important to thoroughly research rabbit care and what is involved in taking on rabbits as pets to meet their care and welfare needs and provide them with a happy, healthy environment in which they can thrive.

Social groups

Companionship

Rabbits are social animals and must not be kept on their own. Being on their own can increase levels of stress and leads to reduced health and welfare. Rabbits should not be kept with guinea pigs; both guinea pigs and rabbits need company from their own species and rabbits can bully and injure guinea pigs. Instead, rabbits should be kept in a pair or a group. With pairs, you can keep either a neutered male and a neutered female (generally the most stable and compatible pairing), two neutered males or two neutered females. Studies show that bonding post-pubertal rabbits is easier if they are both neutered. However, sibling pairs



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(or those that have been together since a very young age) may also do well when kept as a neutered female and entire male. Problematic male behaviours quickly reverse even if neutered at an older age. Once rabbits are pair-bonded, it is important never to separate them.

With groups, keeping rabbits in trios or quads is common (and the norm in the wild where rabbits live in family groups), but the larger the group gets, the more complex the social dynamics become as this can lead to a dominance hierarchy. It is generally better to keep groups of rabbits of the same sex and all neutered. Also bear in mind that, when taking rabbits to the vets, it is advisable to take both rabbits of a pair, or all rabbits of a group, to prevent problems with reintroduction back at home, as the clinic can smell very different to the home

environment. Thus, the larger the group, the more impractical following this advice becomes. Furthermore, the larger the group, the larger the indoor and outdoor space required and the greater the environmental complexity to keep all the individuals in the group enriched. However, bear in mind that pair keeping means that inevitably there will be a time when there is a lone animal, and it can be difficult and stressful re-bonding an older rabbit.

Introducing a new pet

If you are introducing a new rabbit to a single rabbit or group of rabbits, which can take anything from one day to a few months, then following these steps is advisable:

- The new rabbit, and the rabbit(s) you are introducing them to, should be neutered
- Put the rabbits in nearby cages where they can see each other
- Move the rabbits' cages closer so they can sniff each other through the mesh
- Swap over the rabbits' litter trays to help them get used to each other's scent
- Put the rabbits together for short periods of time in an area where neither of them has been before
- Provide tunnels and areas to hide when the rabbits are put together for these periods
- Gradually increase the amount of time spent together, separating them if there are signs of conflict
- Repeat the process, including feeding together, until the rabbits become relaxed with each other
- When the rabbits are happy to lie together and groom each other, they can be left unsupervised.

Many people find it easier to transfer the rabbits to an experienced keeper for bonding. This is a 'service' that rabbit rescues often provide.

Neutering and other options

Neutering allows rabbits to be kept in the pairs and groups they need to live a happy life (preventing territorial behaviour in both males and females). It also prevents unwanted pregnancies and health problems. Having a female neutered dramatically removes the risk of uterine cancer later on in life. Male rabbits should be neutered before they are sexually mature, as soon as their testicles descend, which can be as early as 8 weeks old. For females, neutering at around 4–6 months old is preferable. It is important that you speak to your vet about neutering your rabbits as soon as you can, especially as these recommended ages may vary with breed and size.

Housing

Size and location

If your rabbits are living **outdoors**, they will need an indoor space (such as a shed or a hutch) that allows two rabbits (or as many as are in the group) to move around the space comfortably and for rabbits to take three hops forward and stretch fully upright. This means an ideal hutch size of 2 m long × 0.6 m deep × 0.6 m height. Attached to their indoor enclosure, rabbits will need an exercise space where they can display all their natural behaviours, including running,

jumping, digging, hiding and foraging for food. This means a space no smaller than 3 m long × 2 m wide × 1 m high. Being outdoors, their enclosure needs to be made of sturdy, secure material that keeps your rabbits sheltered from the weather. The enclosed and exercise spaces need to be secure so that predators (such as dogs, cats and foxes) cannot gain access, so sturdy wood, strong wire mesh and bolt-operated locks are important.

If your rabbits are living **indoors** then they will need part of a room dedicated to an indoor space and room to exercise, the same as outdoor rabbits. An indoor space of 2 m × 0.6 m × 0.6 m and an exercise space of 3 m × 2 m × 1 m applies to indoor rabbits, too. People often use kitchens, utilities or conservatories for house rabbits, but be aware that conservatories get very hot in warmer weather so a different room will need to be used. Indoor spaces need to be hazard-free, meaning no access to other pets, electric wires, poisonous house plants or escape routes to outside.



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Temperature and humidity

Rabbits are ideally kept between 10–20°C but can be kept outdoors in summer and winter if their environment provides them with everything they need to cope with the weather. Rabbits tolerate temperatures below their ideal range better than they do temperature above the ideal range. Rabbits can get heat stroke if exposed to temperatures above 27°C. The larger the enclosure they have, the better the air can circulate in warmer weather and your rabbits can find cooler areas. Shelter to get out of the cold and the heat is vital, so protecting part of the exercise enclosure with a section of wood with a felt roof, or simply some tarpaulin, can provide shelter from snow, rain and direct sun. Another reason why keeping more than one rabbit is important is that rabbits will huddle together to stay warm in colder weather.

House rabbits will need to be kept in a part of the house where you can control the temperature and humidity (as mentioned, conservatories are not ideal for this in hot weather). The space should be well ventilated to allow for fresh air flow and to prevent a build-up of dust in the atmosphere (remember that your rabbits should not be able to access any open doors or windows). This is also important in sleeping areas of housing which should also have good ventilation. Temperature considerations in hot weather are especially important for long-haired breeds

to avoid overheating. Furthermore, because of a rabbit's need for ultraviolet (UV) light, and because standard window glass does not permit UV light through it, rabbits should be allowed to exercise outside in a secure environment whenever possible, or indoor UV lights may be provided as long as the rabbits cannot access them or chew wires.

Substrate

Substrate is the name given to the material that lines the floor of the spaces your rabbits live on. It is important that your rabbits have the correct substrate to keep them healthy and to make sure they are comfortable.

The enclosure space, whether this is a hutch or shed outdoors or a hutch indoors, can have bedding of straw, hay or grass. All other substrates have been shown to potentially cause foot problems. If kept outdoors, the exercise space should ideally be grass, which should cover all or at least part of the run area. Rabbits should not be kept purely on hard surfaces such as concrete, as this can make their feet sore and lead to medical conditions such as pododermatitis (inflammation of the skin of the feet). The same is true of the exercise space for rabbits kept indoors. Ideally, indoor rabbits should be given the opportunity to exercise in a secure outdoor run that is on grass whenever possible.

Furnishings

Some furnishings you will need to include for your pet rabbits include:

- **Hay station:** Hay should be provided at all times (see the section on 'Feeding'). This can be provided in a net or rack (which increases the amount of time spent feeding and reduces the amount of contamination from the floor). However, care is needed that hay is not too dusty. Dust due to rack-feeding with dusty hay may promote entry of dust into the eyes and nose. Willow or lattice feeders can also be filled with hay to provide enrichment. It is always better to provide your rabbits with a variety of methods to forage for their food
- **Water bowl/bottle:** Rabbits will drink out of bowls or bottles, but studies have shown that most rabbits prefer bowls. If in doubt both may be provided. These should be placed around the run and hutch such that rabbits do not have to move far to drink (see the section of 'Feeding')
- **Digging box:** Rabbits need to be able to express their natural digging behaviours. If the exercise space is indoors, or if it is outdoors without an area of natural soil, then a digging pit will allow this. This can be a litter tray or tub filled with earth or bark chippings, or a box filled with shredded paper
- **Tunnels:** These can either be bought from the pet shop or simply home made using large pipes (material should be free from any rough edges) or cardboard boxes. Tunnels provide rabbits with a place to hide and allow them to display natural behaviours by providing a substitute burrow
- **Toys:** Environmental enrichment can be provided by toys such as willow balls that can have hay and treats hidden inside, climbing ramps and boxes with treats

hidden in shredded paper. All toys should be safe for chewing

- **Litter tray:** If you are keeping rabbits indoors you will need to litter train them, so they go to the toilet in one area that you have set aside (see the section on 'Handling and training'). This will require a litter tray with sides low enough so that rabbits can get in and out easily. Newspaper, straw or paper-based litter is best (certain types of cat litter can be harmful if eaten).

Feeding

Grass and hay

The majority of your pet rabbits' diet should consist of grass or good quality hay, to mimic what they would naturally eat in the wild. Grass can be fresh or freeze-dried and hay should be meadow or timothy hay and should be available at all times. This will provide your pets with a diet that is high in fibre, has moderate levels of protein and that is low in fat. As a guide a volume of hay/grass approximately equal to the rabbit's body size should be given each day. If in doubt, more may be supplied (do not use grass clippings from mowed lawns, as this can ferment quickly and cause digestive problems). Good quality hay should not be dusty or mouldy and should be sweet smelling. As discussed above, hay should be fed from a variety of different locations in racks, nets and baskets to allow your rabbits to forage throughout the day, to maintain their healthy gut movement and to keep their teeth naturally worn down.

Green foods

Leafy green food should be fed to rabbits of all ages; this should be in regular but small quantities, and new plants should be introduced gradually (especially to young rabbits). All green food should be washed before eating.

Examples of safe plants to feed your rabbits include:

- Greens such as broccoli, cabbage, chicory, chard, watercress, celery leaves, radicchio and endive
- The green, leafy tops off carrots or beets (carrots should be given in small quantities as they are high in sugar)
- Herbs such as parsley, dock, basil, coriander, dill, mint and thyme
- Wild plants such as bramble, groundsel, chickweed, dandelions, cornflowers and cleavers (sticky weed)
- Fruits, such as grapes or a slice of apple, or root vegetables (e.g. carrots), are high-sugar treats and should be given infrequently.

Commercial feed

Many adult rabbits do not need a commercial feed (pellets) as part of their diet, as they should receive all of the nutrients from their hay/grass and greens intake. If you do choose to provide a commercial food, this should always be alongside, and never instead of, hay and greens. Things to note when it comes to commercial feed include:

- Rabbits often pick out the bits they like if they are fed a mixed commercial food, leading to an unbalanced diet
- Instead, commercial food should be high-quality pellets that contain all the nutrients in each individual pellet

- Do not feed commercial foods by keeping a bowl topped up, instead feed a small, measured amount daily. Ideally feed fibre and vegetables in the morning and concentrates in the evening. If concentrates are not eaten, subsequently reduce the amounts offered.
- A rabbit should not be fed more than 25 grams of pellets per kilogram of bodyweight per day
- Never change the mix of your rabbits' pellet food abruptly as this can lead to dangerous digestive upsets
- Instead, take at least 1–2 weeks to gradually change over to an alternative feed, with hay available at all times.

Water

As discussed above, rabbits drink out of bowls or bottles, with individual rabbits will have their own preference though the majority prefer bowls even if they previously used drinkers (see the section on 'Feeding'). As such, it is important to provide your rabbits with various options to get their water. Bowls encourage a greater water intake, whereas bottles help water from being contaminated with urine and faeces. Bowls must therefore be checked and changed regularly. Bowls and drinkers should be placed in several locations through the hutch and run to promote drinking. Ensure that water is always available, especially during hot or freezing weather. Special covers are available for drinkers to help reduce freezing, and ice cubes may be added to water on very hot days. Strict attention to hygiene is required, and bottles should be checked daily to ensure they are working correctly. Water should be changed at least daily.

Life stage feeding

Young rabbits: Baby rabbits will feed solely off their mother's milk for the first 3 weeks and then, from 3 weeks old, should have access to fresh hay and water. It should be noted that does only feed their kits once or twice a day as their milk is so rich. The kits will start to wean themselves off their mother's milk from 3 weeks old and should be fully weaned by about 6 weeks old. From about 5 weeks old, if they are eating hay well, small quantities of 'junior food' commercial feed pellets and small quantities of greens can be introduced slowly. Adult commercial food can be introduced from 4–6 months old.

Senior rabbits: Small breeds of rabbit reach a senior age around 5–6 years old, medium breeds around 6–7 years old and giant breeds around 4 years old. Senior rabbits will still require fresh hay, greens and water daily. There are some commercial feeds specifically designed for senior rabbits, but it is important to monitor the weight of your rabbits to make sure they do not gain extra weight due to exercising less but eating the same amount as before. Body condition should also be noted in case of muscle loss due to arthritis, or other diseases. Commercial feed should be altered based on any changes in weight. However, if weight or body condition is lost it is important to seek veterinary advice in case of underlying disease.

Handling and training

Handling

Being a prey species, rabbits can find being handled alarming. However, it is important to get rabbits used to

handling to carry out things like weighing, taking care of their nails and coats, checking their body condition (such as their bums) and given them any medication. Rabbits need to get used to being handled in a safe, secure way so that stress levels are kept to a minimum and the risk of them struggling and hurting themselves is reduced. The younger you handle rabbits from, the more confident they will become. Ideally this should be done as soon as they start emerging from the nest. Safe steps for handling rabbits are:

- Place your hands on their shoulders to keep them steady
- Place your other hand under their chest with two fingers between their front legs, two fingers around the outside of one leg and your thumb around the outside of the other – this will keep all legs steady
- Take your hand off their shoulders and place it on their bottom; scoop them up gently but confidently
- Without squeezing, place them close to your body as soon as possible and support their weight
- When placing them down, keep them close to your body as you squat down to place them on the floor gently



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- A head scratch (if they do not move away straight away) is a good positive experience to end on
- Rabbits should not be 'scruffed' by the skin at the back of their neck and should never be picked up by their ears
- Rabbits should never be held on their back so that they 'trance' (go perfectly still).

Litter training

As discussed above, indoor rabbits can be litter trained to use the toilet in one location, requiring a low-sided litter tray filled with straw or paper-based litter. Steps for litter training rabbits are:

- Neuter your rabbits. Neutered rabbits are easier to litter train, and this also prevents males from spraying
- Place the litter tray where they have already chosen to toilet, or put some droppings and urine inside the tray
- Place hay next to the litter tray, as rabbits prefer to eat and go to the toilet at the same time
- Keep rabbits restricted to this area until they are using the litter tray reliably

- Slowly increase the space they are allowed access to, and the length of time they are allowed in it
- Keep litter trays clean but do not use bleach (this will eliminate the smell and reduce the chances of it being used).

Vaccination

Rabbits should be routinely vaccinated against rabbit haemorrhagic disease (RHD 1 and 2) and myxomatosis. These viral diseases can be fatal in an unvaccinated rabbit, and there is no specific cure for them. The only protection you can give your rabbits is through vaccination.

RHD is spread by direct contact between rabbits (both wild and domesticated) but also via indirect contact with people, clothing, shoes, other objects and fleas. Myxomatosis is spread by fleas and other biting insects and can often be transmitted in this way from wild rabbits to pets. A combined myxomatosis-RHD vaccination can be given from as early as five weeks old. Boosters that cover both diseases are given every 12 months. Due to the risk of accidental transfer, it is recommended to vaccinate indoor as well as outdoor rabbits.

How to medicate

Medicating rabbits can be tricky and different techniques will work differently with each animal. As such, it is important, when prescribed medications, to ask your vet or vet nurse how to medicate and to show you any tips to do this calmly, safely and efficiently. A useful guide for syringe feeding can be found at <https://rabbitwelfare.co.uk/syringe-feeding-guide/>

Older pets

Nutrition

See the section on 'Feeding'.

Environment

Senior rabbits still require regular exercise, but there are some considerations needed for older rabbits who may struggle to navigate their environment as well as they did when they were younger, due to any musculoskeletal issues such as arthritis. Things to consider include:

- If the indoor accommodation previously had a ramp leading up to it, this may need to made floor-level, or have a ramp with a reduced steepness
- Flooring for indoor rabbits should definitely be non-slip to prevent injury, and should potentially be made softer to reduce the risk of pododermatitis in ageing rabbits
- Any furnishings need to be navigable by an older rabbit (for example, steep play ramps and high-sided dig boxes may need to be adapted or changed)
- Make sure that older rabbits can comfortably get in and out of litter trays, and opt for lower-sided trays if needed
- Ensure that bedding inside the indoor enclosure is soft and well-stocked
- Some older rabbits will suffer from cataracts and reduced vision. It is therefore vital that these animals

have a companion, and that the environment is kept as constant as possible.

Veterinary checks

Your rabbits should have regular veterinary checks throughout their lives, and these can coincide with routine vaccinations. However, older pets may need more regular checks, receiving a full examination (such as checking for dental disease, signs of any musculoskeletal problems, or discussing any changes to nutrition or behaviour). Health issues can occur in older rabbits, as they can with all pets. It is important that you discuss any changes you have noticed in a senior rabbit's health or behaviour with your vet. They will be able to investigate and give advice on treatment or, in the case of incurable problems, to relieve the pet's symptoms (such as pain or anxiety).

Signs of ill health

Like any pet, the more of an understanding you have of their everyday appearance and behaviour, the quicker you will be at noticing any changes which may indicate poor health. Observe your rabbit regularly and if you notice any of the following signs, speak to your vet as soon as possible:

- Lethargy: if your rabbit stops moving around and seems to have very little energy
- A change in their droppings: this could be fewer, smaller or no poos at all, or signs of diarrhoea. Changes in droppings should be regarded as urgent or an emergency depending on how well the rabbit looks
- Breathing through their mouth: this is an indicator of respiratory distress and is an emergency presentation. Sometimes this may be seen along with sneezing or wheezing. Less extreme but still urgent is increased breathing effort with excessive chest movement on each breath
- Changes to eating or drinking: including a sudden change in food preference, loss of appetite or not eating entirely. Total anorexia is an emergency presentation
- Hind limb problems: if your rabbit has weak hind limbs, has signs of lameness or any swollen joints. Many rabbits don't show lameness but simply stop moving



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- Visible signs of injury: such as limping, broken bones, major wounds or signs of haemorrhage
- Abnormalities of the mouth: if your rabbit is drooling, has signs of tooth-grinding or has dirty or broken teeth
- Abnormalities of the eyes or nose: if your rabbit has any eye/nose discharge or their eye colour seems dull
- Collapse or convulsive movements: these can be indicators of a seizure
- Blood in the urine: this may also be accompanied by discomfort passing urine, such as squealing (remember that red or orange urine can be normal. However, bloody urine normally shows with obvious blood clots and some patches of clear urine)
- A swelling of their abdomen: this can indicate bloating of the gastrointestinal organs
- Signs of flystrike: this is a condition where maggots lay eggs in your rabbit's fur or around their bottom. This is an emergency and may also be a sign of other serious underlying diseases
- Any other changes to their coat or skin: including hair loss, crusty skin, excess scratching or lumps and bumps.

Further information

This leaflet is purely a guide for the basic care and welfare of rabbits. It is essential to research any animal species thoroughly before committing to their ownership and care. Always speak to a veterinary professional if you have any questions or concerns.