

RabbitingOn

The Magazine for Rabbit lovers

Autumn 20 Price £6.00

HAPPINESS

What rabbits need to be happy

BREED PROBLEMS

Health and welfare problems with specific breeds

DESENSITISING

Helping your rabbits cope with stressors

INDOOR CAGES

Why some cages are unsuitable

- Keeping rabbits in schools and nursery settings
- Loneliness study results
- RWAf bonding survey results
- Pet Remedy study results
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WELCOME TO THE AUTUMN ISSUE OF RABBITING ON



Over the last few months, life for most people has changed to anywhere near normal. Many people have been isolating, working from home, home schooling, and dealing with the far-reaching effects of Covid-19. None of us know what the future holds, and for how long the situation may continue, but everyone at the RWAFA sincerely hopes that all our members are well and coping as best as they can.

This time of year, we spend more time outside and the same is true for our rabbits. With the warmer months upon us, please be vigilant for the problems this can cause. Be on the lookout for flystrike and heat stroke, and take measures to help prevent these from occurring. There is lots of information available on the RWAFA website, in past issues of Rabbiting On, and your vet will be able to advise.

We all want our rabbits to be happy, but can we gauge how happy they feel and what happiness is for rabbits? The Rabbiting On Veterinary Adviser, Guen Bradbury, has shared her in-depth knowledge on the topic, breaking down the subject to assess what rabbits need to be happy. Guen's feature can be found on page 2. Guen has also written another feature on page 28, looking at what outdoor rabbits require in winter to remain fit and healthy. Whilst winter may seem a while off, now is the time to be preparing.

The RWAFA strongly advocates rabbits being kept with another rabbit, and there are many reasons for this. Ria Popat, a final year veterinary student, has analysed Dr Charlotte Burn's research, undertaken at the Royal Veterinary College, to see how housing rabbits in pairs can have profound behavioural and health benefits. You can read Ria's feature on page 8.

More and more owners are choosing to house their rabbits indoors, and there are lots of cages and enclosures marketed for house rabbits, although these may not always be suitable to meet rabbits' needs. Debbie Staggs has examined what cages are available and looked at their suitability, as well as exploring other, often more suitable, options in her feature on page 14.

The question as to what rabbit combinations work best is often asked. The RWAFA recently ran surveys for owners, rescue workers and veterinary professionals, to ascertain the answer. The results make an interesting read and can be found on page 26.

There are also features on breed-related problems; our Five Welfare Needs series continues with the need for a suitable diet; the Back to Nature series on common herbs comes to an end and Carol Valvona discusses how to desensitise rabbits to situations they may find stressful... plus lots more. Rabbiting On aims to bring the most up-to-date and accurate information to our readers.

We are also now delighted to announce that Rabbiting On has a baby sister! Binky magazine is available to download from the RWAFA shop, and is aimed at new owners. Focusing on rabbit and guinea pig care, and with the first issue just £1.99, it is a must-read for everyone.

Please keep sending us your photos, stories, comments and suggestions; we love receiving them! Stay safe...

Claire Speight Editor

RWAFA Note:

In May 2020, a 3 in 1 combination vaccine was launched in the UK, protecting rabbits against myxomatosis, RVHD1 and RVHD2. For legal reasons we are not able to name any POM-V medications, and this covers vaccinations, so it makes it impossible for us to give helpful advice. Therefore, please speak to your vet for the most up-to-date advice regarding vaccinating your rabbits'.



Rabbit Welfare Association & Fund
A hutch is not enough

Rabbits On is the quarterly journal of the Rabbit Welfare Association and Fund, which exists to improve the quality of life of pet rabbits in the UK. For further information about day-to-day rabbit health issues please visit the website at:

<http://rabbitwelfare.co.uk>

To join the RWAFA please go to the website or telephone the Helpline: 0844 324 6090



Cover picture: C Knighton



Our Autumn Star Bunnies are Lizzie and Sophie, sent in by Linda Woodcraft

Lizzie and Sophie win; 1 x 2kg Excel Nuggets (winners choice of Junior & Dwarf, Light, Mature, Adult Mint or Adult Oregano), 1 x 1kg Excel Forage and 1 pack of snack treats.

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Rabbits lower their head to ask a companion to groom them

Photo: P Crouch

WHAT IS HAPPINESS FOR RABBITS - How can you tell?

By Guen Bradbury, Rabbiting On Veterinary Adviser

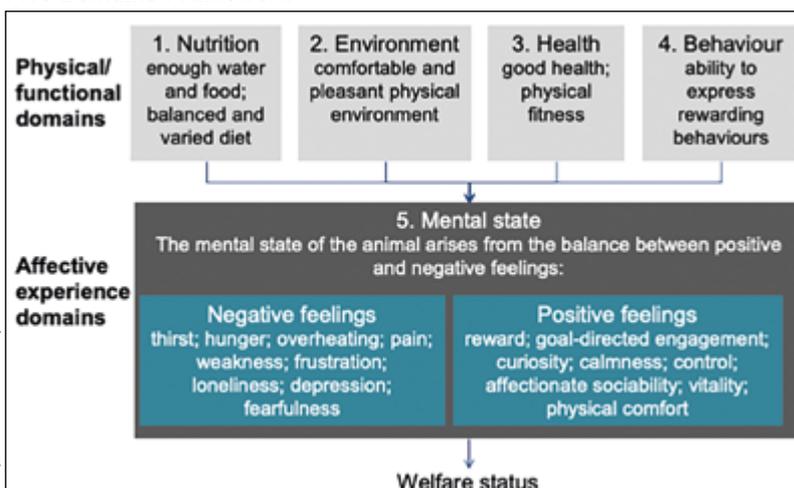
Everyone knows what happiness feels like but it can be hard to define. We use the word to refer to positive or pleasant mental or emotional states, ranging from contentment to joy. If it is hard to define happiness for humans, it is even harder to define what it means for rabbits. As we can't ask rabbits how they feel, we have to assume that they feel happy when they are showing behaviours that are associated with positive mental states.

What is happiness?

We can think about rabbit welfare and positive mental state using a framework like the one below. This is called the 'Five Domains framework', and it helps us think about how rabbit emotions are affected by how they live. Rabbits need to have a good, varied diet; a comfortable and pleasant environment shared with the company of another rabbit; good health and physical fitness; and they need to be able to express rewarding behaviours. These areas of their life influence how they feel - the negative feelings arise when one of these physical 'domains' is not sufficient.

From this model, we can see that happy rabbits should experience feelings of reward, of goal-directed engagement, curiosity, calmness, control of their environment and interactions, affectionate sociability with

Five Domains Framework



Graphic: G Bradbury



Photo: J Dene

Binkies are often performed when the rabbit is in a safe environment

companion rabbits, vitality, and should feel comfortable. A happy rabbit will occasionally experience negative feelings, but should be able to act in its environment to address and resolve those feelings (so if it is thirsty, it can find water). Happiness is not the total absence of negative feelings, it's having the ability to resolve those negative feelings and in general, being in a positive mental state.

How can you tell if a rabbit is happy?

Rabbits show behaviours that express how they are feeling in a number of ways. In the short term, they change their posture, gait, or make noise. Rabbits that are happy typically spend much of their time expressing these behaviours.

Communicating happiness using the face or ears:

Eyes: a relaxed rabbit may sit with eyes partially closed.

Lips: a rabbit that is interested or investigating an object has rounded upper lips. If the rabbit is investigating an object on one side of its face, it will flatten the upper lip on that side. In a fearful rabbit, both lips are often flattened due to increased muscular tension, which widens the nostrils.

Ears: a rabbit that is investigating its environment will have both ears alert with the opening of the ear facing forwards. If there is an unusual or unexpected sound from another direction, or the rabbit is paying attention to a sound while looking in another direction, one ear will be rotated and trained on the source of the sound. Lop eared rabbits aren't able to hear properly because of the ear deformity - this prevents them from expressing some normal behaviour, which can result in poorer welfare.

A rabbit that is relaxed will typically have its ears in a less upright position than one that is exploring its environment. The inside of the ears often face outwards, rather than forwards, and the opening is not as wide as the muscles are relaxed.

A rabbit that is very relaxed will lay its ears along its back. A rabbit that is cold will do the same - the nape of the neck has thinner fur, so body heat can warm the ears in this area.

Communicating happiness through postural changes:

Lowered head: rabbits in a bonded pair will frequently do this behaviour to ask the other rabbit to groom them. A rabbit showing this behaviour is relaxed and willing to interact. Some rabbits will show this behaviour to their owners - this is a sign of a calm and trusting rabbit that enjoys contact with its owner.

Sitting: in this position, the rabbit's chest and abdomen are raised off the ground - the posture is similar to that of a sitting cat or dog. It is a resting position but the rabbit is still alert to changes in the environment.

Lying down: when a rabbit lies down, the chest is in contact with the ground, and the legs may or may not

be outstretched: the degree to which the legs are outstretched shows how relaxed they are. This behaviour is also affected by temperature: in warmer conditions, rabbits may stretch out in the shade to increase heat transfer away from the body, and in cooler conditions, rabbits avoid stretching out because this increases their surface area from which to lose heat. A rabbit that is lying down feels safe and calm.

Communicating happiness through gait:

Binkying: this term describes a set of behaviours that have no obvious function on their own. Rabbits may do either a 'full binky,' where the rabbit jumps into the air and flicks its hind paws, or a 'partial binky,' where the rabbit shakes its head, with or without a jump. These behaviours are thought to have a role in practising escaping - it is useful for the rabbit to 'practise' high speed running and changes of direction, so it is able to escape from predators when it needs to. These behaviours are frequently performed when the rabbit is in an environment where it feels safe, and are performed more when the rabbit is moved from a confined environment into a larger safe environment.

Sprinting: short sprints may be performed with or without a binky. If not triggered by an external stimulus, this seems to be 'play behaviour,' and is usually performed under similar conditions to binkying.

Chasing: young rabbits chase and displace each other as a form of play behaviour, which helps to establish social hierarchies at a young age - this is a positive behaviour. Older rabbits chase each other more rarely. This behaviour may occur when there is some competition over a resource: when one rabbit has a piece of food, for example, or when one rabbit is trying to mount the other (which can be shown by females or males, neutered or unneutered). The chasing rabbit often has a raised tail and each hop may be higher than normal. This behaviour is a common way of resolving conflicts: the chase usually stops when the chased rabbit turns towards the chasing rabbit, lowers the head and flattens the ears.

Communicating happiness through sound:

Teeth grinding: a rabbit often chatters its teeth quietly when it is relaxed, calm, and finds a situation pleasurable. This can be when groomed by a companion or human, and sometimes as the rabbit settles after grooming itself. This behaviour is context specific - rabbits may grind their teeth if in acute pain, but usually painful grinding is louder.

In conclusion, we can tell how happy a rabbit is by looking for behaviours that indicate it is interested, investigative, affectionate, excited, and relaxed. Rabbits feel happy when their life fulfils their needs in terms of diet, environment, health, company, and behaviour, and when they experience many more positive feelings than negative ones.



Photo: D Staggs

A rabbit investigating its environment will have both ears alert

RABBITS AND SCHOOL CHILDREN

- A match made in heaven or hell?

By Dr Emma Milne, Veterinary Surgeon

Everyone knows that pets are great for kids. We know that having pets teaches children empathy, helps them learn how to care for both humans and animals, and also helps children feel happy and relaxed. But the big question should always be, are we or our kids great for the pets? Does human benefit outweigh welfare compromises for the animals?

The misconception that rabbits are easy pets

Small furry pets like rabbits and guinea pigs are often seen as great options for schools; they seem to have fewer needs than animals such as cats and dogs, but is this true? They don't need to be taken for a walk like a dog, but actually rabbits have some of the most complex and misunderstood needs of any of our pets.



All types of handling can be stressful to some rabbits

Photo: G Bradbury

Wild instincts

If you've read any of my articles or books, you'll know that I am a huge fan of looking to nature to tell us what makes our animals most happy. Rabbits are a prey animal, which means they spend their whole lives looking out for potential threats and predators. Just because some rabbits are pets, and kept safe, doesn't take away their wild instincts. When prey animals are caught, they are picked up by whichever animal is trying to eat them. Because of this, rabbits find it very unpleasant being picked up off the floor. It makes them feel very insecure and frightened. With gentle, consistent handling from a young age, rabbits can become used to human contact and even enjoy the fuss, but it is essential this is done properly. The contact given needs to be on the rabbit's terms, and at their level, whereby they can remove themselves from the situation if they feel scared. Many children do not know how to handle rabbits, and even when told, especially younger children, are often a little clumsy and can easily get it wrong. As soon as rabbits start to have bad experiences of being handled, they can become frightened and aggressive. This can result in some severe scratches and bites for the children, and also possible injuries for the rabbits when they try to escape.

Company and space

Rabbits are social animals. They need the company of other rabbits to feel secure and behave normally. They like to groom each other and snuggle up to keep warm. We would never keep a child in solitary confinement, so why do we find it acceptable to do this to so many pet rabbits?

Rabbits need a lot of space. In the wild, rabbits would

graze and explore an area about the size of a football pitch around their burrow network. Many pet rabbits are kept in woefully small cages and hutches. They should have a hutch in which they can fully stand up, stretch completely out and do a minimum of three consecutive hops. And when you remember that there should be at least two of them, that's a big hutch! They should also have access to an exercise run at all times, not just when a human feels like it. Rabbits like to be most active at dusk and dawn, because in the wild this is when they are safest. For many humans, this timing doesn't work well, as they are busy having dinner or getting the kids to school. And it certainly doesn't work well for schools that close at around 3-4pm. If rabbits have access to a secure run all the time, they have freedom of choice to exercise and explore when they want to and when they feel safest. The run needs to have lots of activities too.

In the wild rabbits graze, hop, run, and dig. Digging is an essential behaviour for rabbits and if they can't indulge in this they will be frustrated and bored. Just because they don't need to dig a burrow doesn't mean they don't want to! Rabbits also need to be kept on soft bedding to avoid foot and leg sores that can result from concrete or wire.

Considerations

When you take all these things into consideration, you can quickly see that being a school rabbit probably isn't ideal for the vast majority of the animals. Space is already a problem in many schools and classrooms, so the chances of a school having a large enough area to keep the minimum set up for rabbits is unlikely. The RWAf recommends a minimum area of 3m x 2m x 1m high. And this is just the bare minimum. How many schools have grassy areas where rabbits could have a run on fresh grazing and have access when they wanted it? How many schools have enough time in their packed curriculum for the children to properly interact with the animals, something that should be done every day? Do the children ever clean out the hutches and learn the full responsibilities and the less pleasant aspects of pet keeping?

Also, who is going to look after the rabbit/s during the weekend and during school holidays? They should not be left for days at a time, and equally it is stressful for them to be moved around from one home to another. Added to this, most schools will not have the funds available for routine vaccinations and neutering, let alone if the rabbits fall ill and require veterinary treatment.

The problem is that rabbits are actually not good pets for children in general, even in a good home environment. They have very complex needs, as we've said, and take up a great deal of time, energy, and space, all things that most children and their teachers don't have. Having an animal lurking in the background for children to look at from time to time doesn't justify the compromised welfare of the animals involved.

But let's try to end on a positive note for once! There are plenty of rabbits languishing in schools already, so let's start a campaign to make their lives better. I bet there is at least one small thing that could help improve the welfare of these rabbits, even if everything can't be put right. Any improvement is a step in the right direction, and could make a really good school project for the kids. Get the parents involved too - is there a carpenter who could make a run or a bigger hutch? Could the PTA get involved and do a cake sale or an event to buy some tunnels or a planter to dig in? Is there a lone rabbit in a local adoption centre, that needs to be rehomed, and could be a companion for the school one? Some rescues



Photo: R Wix

Rabbits have complex and misunderstood needs

may be unwilling to rehome a rabbit into a school environment, but those who are willing may have the potential to improve the welfare standards for the rabbit already in the school, by insisting on raising standards to enable the school to pass a home check. These types of projects are an excellent way to teach children about the five animal welfare needs, and start them thinking about what might be more ideal for their own school animal. By involving the children in the improvements in animal welfare and letting them see the rabbits interacting with their toys, digging and having a companion, you can really help them feel the joy and satisfaction of the great thing they have achieved. And of course we would love to see photos of before and after.



Many rabbits enjoy being stroked around their head and ears

Photo: C Bradbury

Spinal problems tend to be more common in long-backed giant breeds

Photo: C Speight

BREED-SPECIFIC HEALTH AND WELFARE PROBLEMS IN RABBITS

By John Chitty, Veterinary Surgeon

In the fashion of many politicians, this article will not directly answer the question posed by the title! This may seem odd given that we know a lot about rabbit breeds (some being very long-established), and should know a lot about linked genetic problems or associated with a particular conformation.

However, aside from ending up as a rather dry and dusty reference list, such lists of "breed diseases" can be misleading and unhelpful in practice.

Why are breed disease lists potentially misleading and unhelpful?

Firstly, not all in that breed will have such problems - instead they may be line-related or "have a tendency toward..." In many of these breeds, therefore, the true incidence rate is rarely known, and with many problems not emerging till adulthood, the main use of such a list (identifying genetic carriers and removing them from breeding lines), is less useful than in other species with longer and more documented breeding lives.

The majority of the rabbits we see are not purebred - instead we tend to see mixed breed pet rabbits or "lop-types", "giant types", etc. In such rabbits, breed-related issues may be reduced by "hybrid vigour" (please note, this is often a fallacy!), or enhanced by crossing with a breed with the same issue, or with a different and complicating issue.

For a clinician, such lists can be misleading in that we can see a certain breed and be more mentally aware of that breed's issues rather than issues that effect all rabbits, or all rabbits of that shape.

For these reasons, therefore, I shall be concentrating on "breed-type" problems with some reference to certain breeds that may have "assisted" in producing these diseases. I will also be describing what you can do, if you have one of these breed-types, to mitigate disease risks, even if it may be that you can't remove the risk entirely.

Glaucoma

Again, like a politician, I am starting with an exception! However, this is an exception that emphasises some of the points made above.

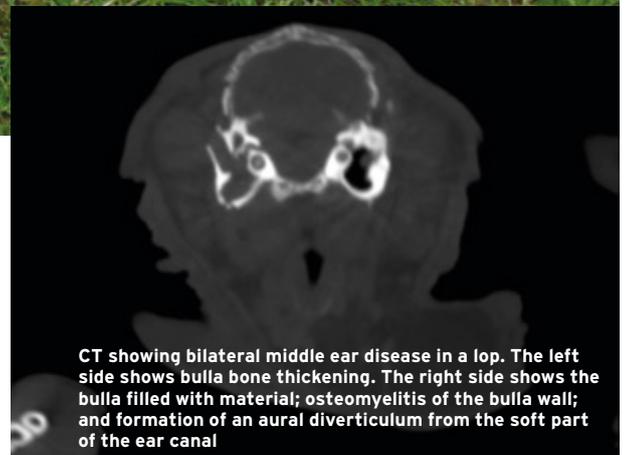
Glaucoma represents prolonged intra-ocular pressure and is seen as a hereditary problem in New Zealand white rabbits. It is typified by bulging eyes, is extremely painful and will cause blindness. Medical management is complicated in rabbits by their resistance to the most common drugs used to treat this.

However, this is primary glaucoma - and normally not being one of the susceptible breeds could be taken to rule this out.



A 'normal' rabbit face shape, versus a brachycephalic

Photo: RWAF



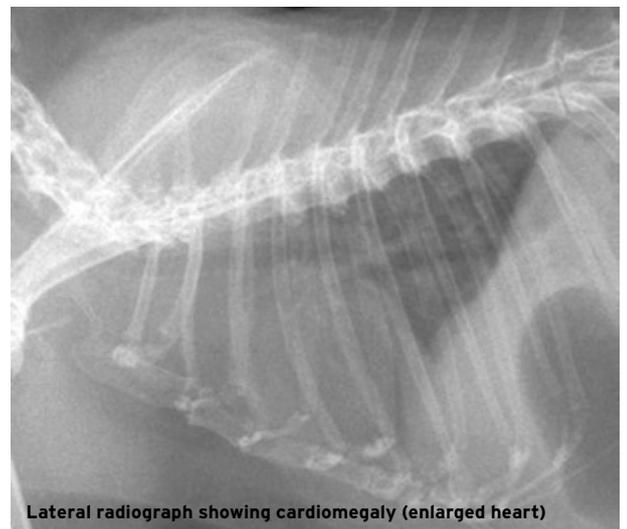
CT showing bilateral middle ear disease in a lop. The left side shows bulla bone thickening. The right side shows the bulla filled with material; osteomyelitis of the bulla wall; and formation of an aural diverticulum from the soft part of the ear canal

Photo: J Chitty

However, glaucoma can also be secondary - e.g. to a displaced lens, a tumour, or following intra-ocular inflammation...so can actually be seen in any breed of rabbit. Albeit, in non-susceptible breeds the finding of raised eye pressure means you need to look for the initial cause.

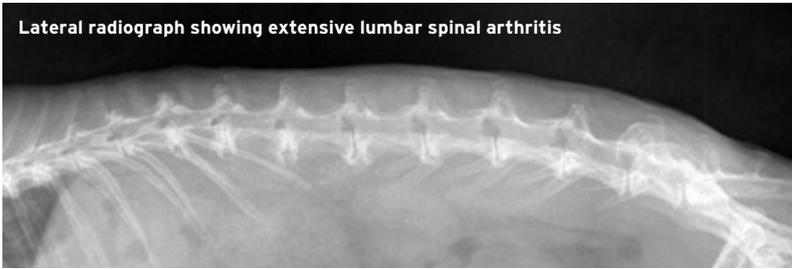
Further, a bulging eye is often the sign of other diseases - if one eye is affected, retro-bulbar masses or abscesses are usually more common cause than glaucoma, even in susceptible breeds. If both eyes bulge, the rabbit should also be checked for chest tumours (thymomas).

So, the same disease may occur in different forms in different breeds, and may not always be what it seems; the finding of what looks like a breed-related problem does not remove the need to investigate properly!



Lateral radiograph showing cardiomegaly (enlarged heart)

Photo: J Chitty



Lateral radiograph showing extensive lumbar spinal arthritis

Spinal problems

Spinal problems are common in rabbits.

They do, however, tend to be more common in long-backed giant breeds, just as they are in dogs (a difference here between dogs and rabbits is that certain dog breeds are very prone to disc problems). While unusual, these are also seen in rabbits but don't necessarily seem to be genetic problems.

This is probably a simple mechanical issue with the back in these breeds taking more strain and large rabbits being more difficult to hold while supporting their back. Thus they are more susceptible to injury and "wear-and-tear". This means there are ways to reduce such issues in these giant breeds:

- Better socialisation and earlier handling allowing less stress and struggling when handling is begun
- Better handling techniques for giant breeds so the back is always supported
- More controlled, slower growth to improve bone calcification (see below)
- Good flooring, resulting in less slipping and fewer injuries
- Promotion of regular exercise so the lumbar muscles are better formed, and the spine better calcified through improved loading
- Weight control - reduced weight to reduce stress on the back, and also to increase ability to exercise.

Long bone deformities

Again, giant breed rabbits seem more at risk of rotations or bends in the long bones. The likelihood is the faster growth rate in these breeds, and soft poorly-calcified bones in young animals.

The effect of these is altered loading of joints, and therefore increased risk of osteoarthritis or ligament damage, especially in the stifles.

As with prevention of back problems, more attention needs to be paid to how these rabbits grow - many were originally bred for meat production so have the "programming" to grow very fast. High fibre lower calorie-dense diets are needed in these young rabbits, and proper attention must be paid to calcium levels and either Vitamin D3 or ultra-violet provision, in order to allow proper bone growth to support the large muscle bulks.

Heart disease

One aspect of rabbit breeding that may result in genetic problems is their use in laboratory studies, and the possible mixing of some of these breeds in pet breeding. An example of this is heart disease, where rabbits are used as a model for human heart disease with strains bred for specific syndromes.

While these syndromes are unlikely to be breed true in pet rabbits, this does demonstrate that such genes are present in rabbits, and there may be a genetic component in some cases. Certainly, it is evident in practice that certain shapes are more prone - namely the very large (just as in dogs), and the very small.

Heart disease is likely to evidence in premature death (common in both breed types), but may also show as weight loss and/or reduced eating. As such, heart imaging should be a part of disease investigations in these breeds where they show such signs,



Ear disease is common and is a classic bred-type condition, being almost entirely seen in lop-eared breeds

and extra care should always be taken with anaesthesia.

There is little that can be done to prevent heart problems other than to ensure good body condition. Some rabbits carry genes to cause hyperlipaemia that can contribute to heart disease - as such, dietary control may reduce some of these effects.

Ear disease

Ear disease is extremely common and is a classic bred-type condition, being almost entirely seen in lop-eared rabbits.

The reason is simple - the lop is created by a gap between ear cartilages. Therefore the ear is unsupported and tends to collapse, or lop. As ever, when you bend a tube, the lumen of the tube becomes closed. This means that normal ear wax (cerumen) cannot drain outwards through the ear canal and so accumulates. The situation is exacerbated in brachycephalics (see later!), where the skull compression will also result in blockage of the Eustachian tubes and further blockage of cerumen drainage.

This results in disease through pressure of accumulated cerumen (e.g. ear-based swellings) or secondary infection (NB rabbit ears are not sterile places even in healthy animals!) causing inflammatory changes, e.g. middle ear infection; facial nerve damage.

All lops will have this cerumen build up and some have suggested all could have prophylactic surgery to remove the ear canal wall. However, this is reasonably radical surgery and not all will show disease. As such surgery should generally be left till there is disease. Nonetheless it is useful to reduce cerumen build up and we have had success with starting prophylactic ear cleaning from a young age. Squalene based cleaners (e.g. Otoact) is effective at removing/reducing cerumen if used correctly, and rabbits tolerate this well especially if started when young, and combined with positive-reinforcement training.

Brachycephalic syndrome

This is the big issue!

Brachycephalics have issues in all species in which they are created - sadly humans have a drive to find brachycephalic faces cuter and more attractive, for the simple reason they resemble ourselves. However, we really need to learn to stop this in naturally long-nosed species, as the problems caused are immense.

I have already mentioned the ear problems to which brachycephalism contributes. However, there are other effects including:

- Breathing problems with compressed nasal cavities and sinuses resulting in reduced drainage of nasal discharges
- Increased likelihood of tear duct blockages and ocular discharge, as nasal compression makes the tear ducts even more tortuous
- Dental disease - brachycephalics have the same number and size teeth as other rabbits... just in a smaller space. As such they are much more prone to dental disease - malocclusions, hooks, abscesses, etc. And, of course, dental root disease can directly cause sinus/upper respiratory issues and tear duct blockage.

Once born, there is very little that can be done about nose shape. However, maintaining a strict high fibre diet will help greatly in reducing dental disease (unless the teeth are completely maloccluded), and therefore other issues. Similarly, reduction in dust and airborne irritants along with good ventilation will reduce upper respiratory irritation and discharges.

Conclusion

So, what should a prospective rabbit owner look for when acquiring a new pet rabbit. Fortunately, that is an easy answer:

- Avoid extreme shapes and sizes
- Avoid short-nosed rabbits
- Avoid lops, if buying a young rabbit. However, many lops in rescue do need good homes, but you may have to anticipate additional problems.

Instead, take a picture of a wild rabbit - evolution is a fantastic mechanism; natural selection has provided us with the size and shape template that works best with the rabbit's physiology.

RWAF note:

The RWAF would always encourage people looking for rabbits, to adopt, not shop.

BETTER TOGETHER: HOW HOUSING INFLUENCES RABBIT WELFARE

By Ria Popat - Final year veterinary student, Royal Veterinary College

Did you know that over half of the domestic rabbits owned in the UK are housed singly, yet in the wild they are social animals? So, what are the benefits of rabbits having friends? A recent study has suggested that it could lead to a reduction in stress. We can imagine this being true even in people - it's just like having a friend to lean on. Along with more stable thermoregulation and reduced bar-biting, housing rabbits in pairs can have considerable benefits for your pet and is something all owners should consider.

Dr Charlotte Burn from the Royal Veterinary College has recently published a paper detailing how housing rabbits in pairs could have profound behavioural and health benefits. So, if you are currently a rabbit owner, or you are considering welcoming some into your home, there are a few things you should be aware of to ensure you have a happy rabbit.

The evidence

Previous studies have found that rabbits exhibit motivational behaviours to access social companions almost as much as they would do to reach food. A behaviour of this sort could include pushing through a door or showing any kind of effort to reach what they're looking for. This proves that in the mind of a rabbit, having a friend is as important as food. This may have something to do with 'social buffering' - a phenomenon used to explain how rabbits associate a companion with increased security. Some studies have even shown that social housing can improve the rate of wound healing in rodents, such as mice, so perhaps the same is true for rabbits?

The results

Burn's recently published paper focused on collecting data from 45 rabbits during winter: 15 singly housed and 15 pairs at a rabbit-only rescue in Hertfordshire. With the help of the shelter care team, and BSc BioVeterinary Science student Pamela Shields from the RVC, the rabbits were selected for either having existing compatible companions, or they had not found their forever companion yet. While the single rabbits tended to have slightly smaller enclosures, this showed no significant impact on the results of the study.

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The results highlighted four main impacts of social housing:

1. About half of the single rabbits exhibited bar biting, while none of the paired rabbits showed this behaviour.
2. Singletons were recorded to be significantly colder, with an average difference of 0.5 degrees Celsius, while pairs generally had a higher rectal temperature.
3. After handling, single rabbits took significantly longer to return to normal behaviour such as eating, drinking, grooming, and emerging from shelter if they entered it. This is another example of social buffering in paired rabbits, indicating that they may have felt more secure than singletons.
4. And finally, paired rabbits spent more than a quarter of their time huddling together and 31% of their time engaging in active social behaviour, meaning they would definitely notice if their housemate was not there.

All of these factors could have a huge impact on the welfare and general well-being of your pet.

Welfare: what's the big deal?

As well as our legal duty of care, we should strive to provide a good life for our beloved pets.

"Good welfare isn't just about surviving and not getting ill," says Burn, "it's also about sometimes being able to have fun, feel comfortable, play and cuddle up. Our pets make us happier, so we should give them as much a chance to feel happy as we can, too".

Here is how the results of this research relate to welfare.

Bar biting: This is normally an indicator of poor welfare. Some studies have found that bar biting is more likely

to occur on the exit route of an enclosure than on any other available bars, suggesting that it reflects a desire to escape. If it is persistent, a small nibble on the bars of a rabbit's run could develop into an abnormal repetitive behaviour, as seen in other confined animals such as pigs and bears. This can lead to further poor welfare and dental problems.

Thermoregulation: Colder rabbits are more susceptible to disease when subjected to cooler environments such as the British outdoors. Evidence also suggests they are less likely to survive clinical procedures, such as surgery.

Huddling in pairs: One benefit shown was the perceived security as a result of social buffering. Burn confirmed her hypothesis that rabbits returned to normal behaviour quicker when a housemate was present. This could be useful to reduce stress during challenging but necessary situations such as nail clipping or vet treatments.

Find me a friend!

One of the biggest things to consider when keeping rabbits in pairs is their compatibility. Aggression was not observed between paired rabbits during this study, but there are steps you should still take to minimise the risk. The addition of novel items, such as fruit-tree branches, hay-stuffed toys, or puzzle feeders (toys that are not associated with food are interacted with much less frequently), can assist in keeping your pets entertained and are particularly beneficial to maintain good dental hygiene too. Rabbit Residence Rescue manager, Lea Facey, offered the following tips about rabbit bonding.

1. A compatible character is more important than breed, age or size:

As an owner, you may need to accept that there is a chance that the two rabbits you would like to be companions for each other will not bond.

2. A neutered buck and doe pair often works best, but that's not to say same sex pairs won't work:

Trio and group bonds are more complex and there's a greater risk of the rabbits falling out at a later stage, so consider carefully if you have the resources to cope with this before you attempt a group bond.

3. Most reputable rescues offer a bonding service:

Bonding can be a stressful process for owners as well as rabbits. Owners of a single rabbits can go to a rescue and meet all suitable rabbits available for adoption as a possible partner, and select their preferred choices. The rescue will then do the bonding process for them, ensuring the rabbits are happy with their choice of partner.

Top tips for successful bonds

1. Leave at least 4-6 weeks post neutering before attempting to bond.
2. Ensure that you are aware of what different behaviours you may see from your rabbits during bonding, and at what point you should intervene should things get out of hand.
3. Ensure you have the time and a neutral area to start with and gradually increase space and novel items once positive behaviours are established.

For more information and advice, check out the RWF guide to rabbit bonding or speak to an expert.

Take home message

Burn's research has provided sound evidence to highly recommend social housing for rabbits. Human companionship cannot provide the same positive



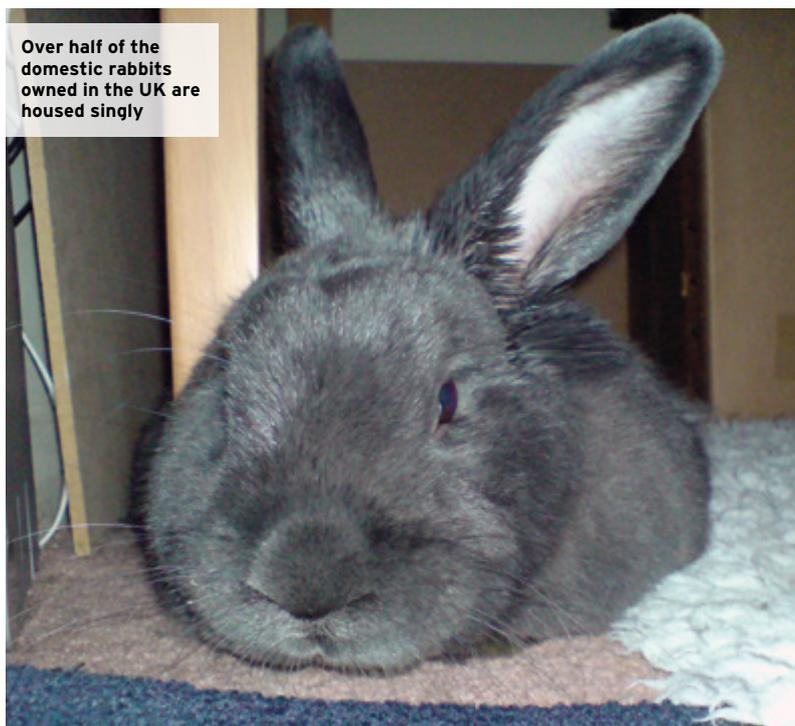
Burn's research has provided sound evidence to highly recommend social housing for rabbits

Photo: H Cassell

welfare as rabbit pairs with regards to thermoregulation and constant security. So here is Burn's take home message:

"Rabbits really do need a rabbit friend, if at all possible. Sometimes we think rabbits are ok on their own, but when we look a little deeper, we can find that being alone affects them more than we realised. It might not be obvious that a rabbit is cold without anyone to huddle with, or that it would stop biting the bars of their cage if only it had a companion to play with, but the research suggests that this can be true for many of them."

Finally, if you are looking to bring home a couple of new friends, or find a buddy for an existing pet, please consider offering one of the many thousands of rabbits in rescue a home. We and our rabbits are better together.



Over half of the domestic rabbits owned in the UK are housed singly



DESENSITISATION, COUNTERCONDITIONING AND HABITUATION OF RABBITS

By Carol Valvona, Member of the Association of Pet Behaviour Counsellors

We clinical animal behaviourists are in the habit of bandying around terms like desensitisation, counterconditioning, habituation, etc., but what are we actually talking about? Perhaps initially it would be a good idea to define these terms and then look at how a desensitisation and counterconditioning programme *may* help your rabbits cope in a situation that they find scary.

Habituation

Habituation is the capacity to stop reacting to meaningless stimuli. Biologically speaking, it is very important that our brains can filter out information that is irrelevant or we would 'burn out'. By habituating to the less important signals, our attention can be focussed on what's new (as it may be dangerous). However, research has shown that habituation can be a temporary state, and if time passes with no exposure to the stimulus, we can react as we did before (*Breed, 2001*). Also, if a subject is repeatedly exposed to a fear-eliciting stimulus in an appropriate manner, it should

habituate. However, here lies the problem - it should! Unfortunately, in some cases the opposite happens due to sensitisation, and it can be difficult to predict which will transpire (*Domjan, 2000*). For example, one of your rabbits may very quickly habituate to a new sound in your home, while the other is still hiding six months later every time the dishwasher goes on.

Desensitisation

Desensitisation means gradually exposing the subject to a fear-provoking stimulus, but starting at such a low level that it doesn't react to it. Then, over time, the intensity of the stimulus is very slowly increased, while still not eliciting a response (*Schwartz and Robbins, 1995*). This technique is frequently used to treat fears and phobias in people, but there is a difference. Human

subjects can be taught to relax and then to visualise the stimulus, starting from the least to the most fearful. Obviously, we cannot ask our rabbits to do this - so we have to jump right into working in real situations (*Burch and Bailey, 1999*).

Counterconditioning

Counterconditioning means pairing something that an animal finds unpleasant with something that it enjoys, and is best combined with desensitisation. If the pleasurable thing is really good, and is both behaviourally and emotionally incompatible with the old fear response, the new association will become the stronger one (*Crowell-Davis, 2007*).

Flooding

Flooding is pretty much the opposite of desensitisation. The fear-provoking stimulus is presented in full and all in one go. The idea is that high levels of anxiety and fear will be produced quickly, and then levels will drop because an organism's neurons just can't keep firing at that rate! Flooding is a 'put your big girl's pants on and get over it' procedure.

As you can imagine there are number of problems associated with this technique - not least the welfare and ethical issues of putting a rabbit in a frightening situation and then preventing it from escaping. As well as being extremely traumatic, it could lead to your pet permanently associating you with the negative experience (*Reid, 1996*).

Desensitisation and counterconditioning (ds-cc) programme

Before starting a ds-cc programme there are numerous things you need to consider. Those of you who have an interest in DIY or sewing will be aware of the proverb 'measure twice, cut once!' - basically, the success of this process is all in the planning.

- Prey animals are especially susceptible to the effect of adrenal hormones. This can cause what is perceived by us to be an 'over reaction' to fear-producing stimuli, and this needs considering when planning your programme (*McBride et al., 2004*).
- It is essential that you have a good understanding of your rabbit's body language. You will need to recognise when it is relaxed and the early signs of anxiety (not just the overt ones).
- When planning your approach, you need to consider the impact of all the stimuli in the environment. You cannot treat a fear in isolation. An individual will be aware of everything that is going on around it. For example, if you are sitting quietly with a fearful rabbit and your mobile rings, that is going to cause one heck of a startle response (which could then be adversely paired with your presence).
- Know where you are starting from and what your end goal is.
- Keep your expectations realistic and be ready to change tack if necessary.
- Real life situations must be avoided while working through this programme, as this could risk sensitising your rabbit and strengthening existing negative associations or creating a new one! For instance, if your rabbit doesn't like being picked up, don't start if you have a routine vet appointment in the next few months (*Overall, 1997*).
- You should keep the ds-cc up throughout your rabbit's life. We all know how important it is in any learning process to keep going back to basics and practising them again. So, although you are going to be moving



Photo: A Tawney

You should keep the ds-cc up throughout your rabbit's life

from one step to the next, it's not a one-way street. Regularly drop back and reinforce earlier steps in order to build on your rabbit's confidence in the programme (and in you!). If you do not, you may notice your pet's old response appearing again (sensitisation rather than desensitisation).

- As your rabbit needs to be relaxed, you may want to try administering some Pet Rescue Remedy or installing a Pet Remedy diffuser (*Bouvier and Jaquinet, 2008 as cited in McBride 2014*).

So, if you want to desensitise your rabbit to something it finds scary, you should work through a hierarchy ranging from the least to the most problematic situation. Over time, you should gradually increase the stimulus but never to the point where your rabbit feels anxious. As you do this, you will be presenting it with something it really likes (usually food), therefore counterconditioning those previous negative associations with positive ones. Remember different individuals will react differently. Some may habituate quickly; others will take longer. Therefore ds-cc is very much an individual programme, not one size fits all.

I cannot stress enough how important small steps are and how crucial it is to know how to break them down further if your plan doesn't work.



Desensitisation and counterconditioning may help your rabbits in a scary situation

Photo: L Boulter

Small steps are crucial
it is important to know
how to break them down



Photo: L Attwood

Example case

As an example of this, let's discuss an imaginary rabbit called Harvey. He enjoys his owner's company but hates being picked up. The owner has taken time to write a ds-cc programme with many steps. For the first one, they touched Harvey on the head while he was eating and he was relaxed with this. For step two, they are going to touch him on his hindquarters. This may be perfectly acceptable to Harvey, but what if it isn't? What if this is just too big a leap? This is what I mean about being flexible and breaking steps down. Perhaps all they need to do is stay on step one for longer, or maybe they need to come up with some interim steps. Here are some ideas for his owner to consider. Food would be present through all these stages.

- Step 1 - Be around Harvey while he is munching on something tasty (just to check the experience hasn't sensitised him).
- Step 2 - Go back to touching his head.
- Step 3 - Increase the value of the treat.
- Step 4 - Increase the length of time touching Harvey on the head, but move away before he has finished eating.
- Step 5 - Don't move away until a few seconds after he has finished eating.
- Step 6 - Choose a different environment in which Harvey is relaxed and touch his head (this is to check Harvey has generalised his response).
- Step 7 - Go back to the original environment, but change to another member of the family for the same reason as above.
- Step 8 - Change both the environment and the family member.
- Step 9 - Repeat steps 7 and 8 for all family members.
- Step 10 - Go back to the original environment and stroke Harvey from the head to his neck.
- Step 11 - Stroke from the head to the middle of his back.
- Step 12 - Stroke from the head to the hindquarters.
- Step 13 - Repeat step 12, but hold hand there for second or two longer.
- Step 14 - Gradually increase the length of time of holding a hand on Harvey's rump, but move away before he has finished eating.
- Step 15 - Don't move away until a few seconds after he has finished eating.

- Step 16 - Go straight to touching Harvey on his hindquarters rather than stroking him.
- Step 17 - Repeat steps 10 to 16 in a different environment.
- Step 18 - Repeat steps 10 to 17 for all family members.

So between the owner's original step 1 and step 2 there are now potentially 16 smaller steps. This type of programme can be frustratingly slow at times. Your rabbit needs to set the pace, not you! I think it was Dr Karen Overall who said 'if you think you are moving too slowly, slow down!' In my experience as a practitioner, the clients who fail are those who want a quick fix.

Conclusion

If you start a ds-cc programme, it is important to ensure that you can see it through to the end, can take small enough steps, and have enough time, otherwise you seriously risk sensitising your pet instead. All this said, I am a realist. Life has a habit of getting in the way and the unexpected can happen. Please don't despair, unfortunately you cannot plan for everything. In the words of the song, just 'pick yourself up, dust yourself off and start all over again'.

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Lindsay, 7th May 2020

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INDOOR CAGES

The good, the bad and the ugly

By Debbie Staggs



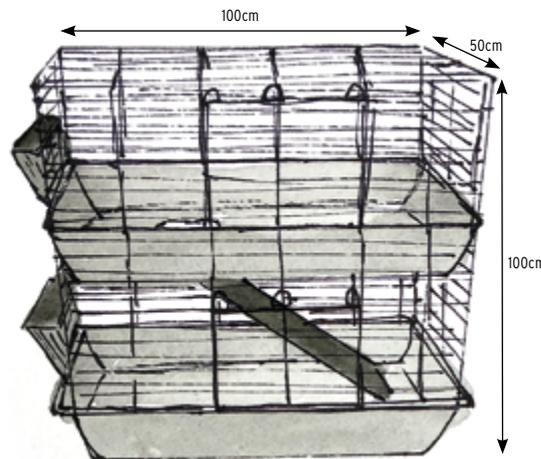
Photo: F Firth

Rabbits are one of the most neglected pets in Britain. Their neglect often stems from that stereotypical image of a bunny in a hutch - rabbits are frequently bought on a whim for a child, with the assumption that they are a 'low-maintenance' pet that can be kept in a small hutch. However, when the confined rabbit lacks space and stimulation, it becomes depressed and appears boring, and so the child loses interest. Hutches were designed for short-term storage of rabbits for meat, not for long-term pets, yet the idea persists.

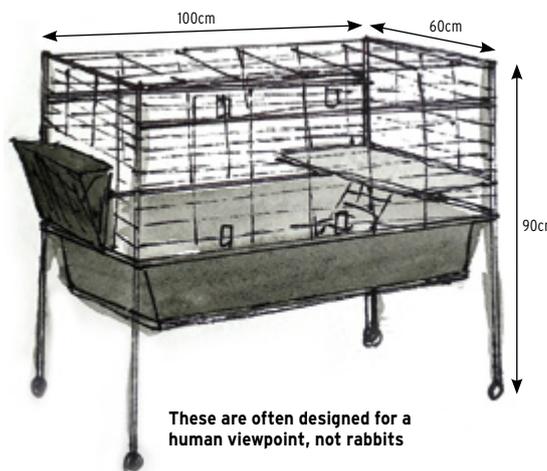
Although the message about minimum hutch size is filtering through to the pet industry, there is a worrying new trend: keeping rabbits indoors in highly unsuitable cages. The pattern of neglect continues, and the house rabbits' needs are often even further overlooked, with the assumption they are content, just because they are living within the household, sheltered from the elements and natural predators.

Unsuitable cages

In pet shops and online, suggestions for indoor rabbit housing are mostly unsuitable cages; review sites' recommendations are frequently inappropriate. Selling points have the owner in mind, rather than the rabbits: ease of cleaning, ability to contain mess, and features to prevent escapes yet enable the rabbit to be "petted". Some resemble display cases or baby incubators, and are designed with a similar purpose: allowing easy observation of, and access to, the inhabitant, which, in the case of prey animals such as rabbits, creates a highly stressful environment. Misinformed buyers will believe these cages provide the perfect home, the "complete habitat", and, unless they are better educated, their rabbit may spend its entire life miserably confined. Furthermore, the owner will lose interest, as the depressed rabbit will not show its true, fascinating nature.



Cages, such as these are listed as suitable for rabbits



These are often designed for a human viewpoint, not rabbits



Some rabbits spend their entire life in cages this small

What makes these cages so unsuitable?

Size: many cages are smaller than the tiniest hutches, well below recommended minimum standards for domestic rabbits. Even more shockingly, many are smaller than the legal cage size requirements for laboratory rabbits and for farmed rabbits^{1&2}. Rabbits need to be kept in bonded pairs, which makes the cage sizes available even less appropriate. Inhabitants are likely to become obese, and develop skeletal problems and other health issues.

Mesh flooring: marketed for ease of cleaning, it's uncomfortable and damaging to rabbits' feet.

No shelter: cages which are entirely mesh but too small to incorporate any shelter offer no place to escape from view - or inquisitive fingers. This is stressful for a rabbit, increasing likelihood of illness.

No ground access: rabbits need to access their exercise space and return home independently, when they choose. Designs featuring stands force the owner to lift them out (if they even think it's necessary). Rabbits often have a natural aversion to being lifted, and their choice of timing for exercise may be different from their owner's.

Wheels: cages that are "easily wheeled" could cause stress if moved with the rabbit inside. Also, rabbits need a fixed location for their home, so they can return quickly when scared.

Bar ramp doors: these risk trapped paws unless the bars are covered.

The only acceptable use of the small ground-level cages would be within a larger set up, and with the door open (and ramp bars covered).

Welfare implications

From a welfare perspective, many indoor cages are completely unacceptable. The Animal Welfare Act 2006 (Section 9)³ states that those responsible for animals have a duty to ensure their welfare, by aiming to

meet five basic needs of an animal.

For rabbits, the first need, **'a suitable environment'**, not only means a sufficiently large home in the right setting, but also the opportunity to eat, drink, play, socialise, climb, shelter, and toilet. This is closely inter-related to the other four needs:

- the need for **'a suitable diet'** can only be met with freedom and space to graze 24/7 rather than eating from a bowl when fed;
- the need **'to be able to exhibit normal behavioural patterns'** (choosing to explore, shelter/hide, stand up/climb to be vigilant, forage, burrow, socialise with other rabbits) can only be met given this 'suitable environment';
- the need **'to be housed with... other animals'** is only possible in a suitably large home;
- the need **'to be protected from pain, suffering, injury or disease'** cannot be met in an unsuitable environment - living alone in cramped conditions, unable to perform 'natural behaviours' and have a 'suitable diet' causes both physical and mental problems.

Sadly, many indoor rabbit cages provide a completely unsuitable environment, and therefore, in turn, do not meet the other four needs to ensure the welfare of their occupants.

The need for a rabbit place

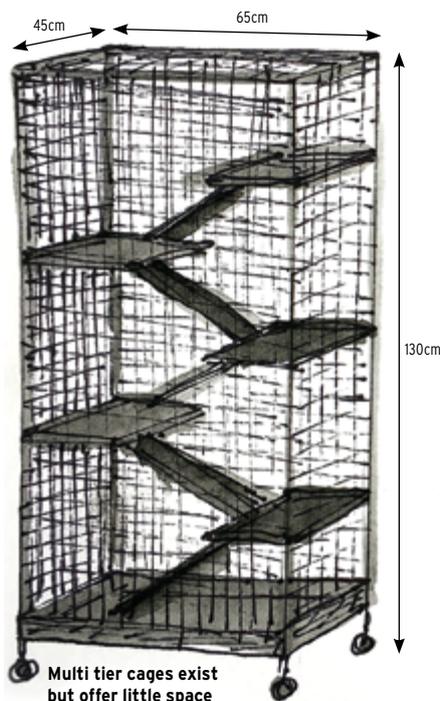
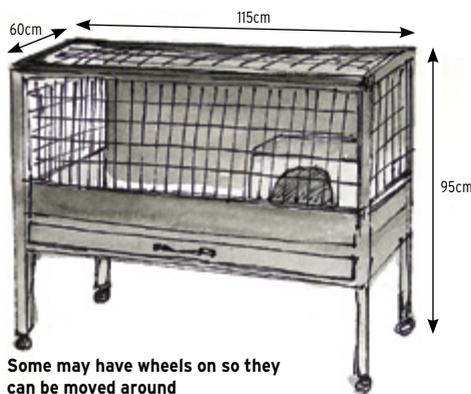
With few suitable indoor housing solutions offered, what are the options? Although it would be ideal to have free range house rabbits, owners quickly realise that rabbits' natural behaviours are at odds with the desire for a pristine home! It is challenging to rabbit-proof an entire house, and even 'well-behaved' rabbits will, for various reasons, occasionally need to be contained. In the interests of both rabbit and home safety, it is advisable to designate a rabbit-friendly space.

A dedicated room, completely rabbit-proofed and filled with items to meet their needs, is ideal. The next-best option is an enclosed rabbit-proofed area. The RWAf recommends a **minimum area of 3m x 2m x 1m high (10ft x 6ft x 3ft)** for a pair of average-sized rabbits. This should be continuous floor space, on which rabbits can run, rather than including any raised areas. It should have soft flooring, to allow them to run easily and to prevent pressure sores on their hocks. Some carpets can cause pododermatitis. Fleece bedding (e.g. Vetbed) or foam tiles may be used, but ensure rabbits don't ingest flooring. Heavy duty stable mats are a suitable option (available as interlocking tiles and in different colours and weights).

Consider the location: rabbits cannot tolerate constant heat, neither do they enjoy draughts; some sunlight is ideal, but not constant exposure. They like to observe what's going on, but also require seclusion. In essence, they need choice!

Their home within your home

A dog gate can be used across a doorway of a dedicated rabbit room, or a puppy/baby pen/fence can be used to create an enclosed area - wire may need to be woven into the gate/pen to ensure the rabbits don't attempt to squeeze through the gaps. To deter high-jumping escapees, they should be no less than 90cm



All cage illustrations: D Staggs

(3ft) tall. Ensure there are no other gaps - rabbits always try to explore further, however large their area! *

An interconnecting system of tunnels and mesh boxes could be used within the home (see www.runaround.co.uk). Some people go as far as connecting the rabbits' room, through a hole in the wall, to an outside enclosure. See <http://www.thebigrabbithutch.co.uk/indoor-ideas.html> for more ideas.

Within their dedicated living area, rabbits need an easily accessible place of shelter, which they recognise as a 'safe base'. It may be necessary for them to spend short periods of time there, for example when cleaning their area, so, regardless of the size of their exercise area, it needs to conform to standards (large enough for three hops, with height to stand, and **no smaller than 2m x 0.5m x 0.5m (6ft x 2ft x 2ft)**), and to include all their requirements (hidey-holes, hay, water, food, litter trays, enrichment items).

Options include:

Play pens: they can be used to fence off the appropriate area, and closed when necessary. *

Puppy crates: smaller crates can be joined together, with end panels removed, to make a good-sized and easily accessible home. *

Hutch: a large hutch is suitable, as long as rabbits can hop in and out.

Tailor-made home: some companies specialise in indoor rabbit homes and enclosures,

attractive to bunnies and owners! See www.manorpethousing.co.uk

The indoor meadow

Rabbits need a continual supply of hay, and this is even more critical if there is no access to grass. Try filling boxes, trays, or racks with hay, but be prepared to deal with mess - it's in a rabbit's nature to dig and spread hay to find tasty bits. Forget about being house-proud!

Raising Awareness

We need to work towards raising awareness of what makes a suitable environment for rabbits, and to explain that, with their needs catered for, rabbits demonstrate that they can be sociable, intelligent, inquisitive additions to the family, rather than cute, boring creatures sitting in a display case. Remember you can help by signing and sharing the RWAf petition⁴ to ban the sale of small hutches and introduce a legal minimum housing requirement for keeping pet rabbits. Also, have a look online at suggestions - if you see unsuitable cages, maybe you could write a review!

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- ¹ <https://www.gov.uk/government/publications/rabbits-on-farm-welfare/caring-for-rabbits> - see section 2.8
- ² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/388895/COPAnimalsFullPrint.pdf - see from page 48
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- ⁴ <https://rabbitwelfare.co.uk/rabbit-welfare-association-fund/our-work/a-hutch-is-not-enough-petition/>

* Hazardous bars *

Rabbits can become trapped between bars. Any cage or enclosure made from bars rather than mesh could be hazardous. This includes puppy pens, puppy gates, and dog crates. Serious limb fractures have been reported, and also cases of rabbits that have died after trapping their heads between bars. Always attach a mesh securely to the bars - flexible mesh can be woven between the bars, or mesh panels can be attached using cable ties.

Photos:

These illustrations are impressions of some of the "indoor rabbit cages" most highly rated on a range of live review sites, as of April 2020. Pros included in these reviews include "easy access to your pet", "lots of room", "clear view of your rabbit", "easy to clean", "takes less space in your home" and "easily moved". In reality, these are all too small for rabbits, and not many provide essential features required for a rabbit (e.g. shelter, ground access).

These designs are listed on independent review sites as rabbit cages. Often the manufacturers of cages listed on these sites have designed them for other animals, for which they MAY BE suitable for.

Good quality hay should smell sweet, be dry and free from dust and mould

Photo: J Viikainen

THE FIVE WELFARE NEEDS

The need for a suitable diet

By Dr Laura Dixon, Research Scientist

This is the second article in a series looking at the Five Freedoms, now more widely known as the Five Welfare Needs, and how they apply to our pet rabbit care. As a reminder, the Five Welfare Needs were developed as a way to assess animal housing and management, and they are¹:

- Need for a suitable environment
- Need for a suitable diet
- Need to be able to exhibit normal behaviour patterns
- Need to be housed with, or apart from, other animals
- Need to be protected from pain, suffering, injury and disease.

Here we will be looking at what constitutes a suitable diet for rabbits and why it's important for rabbit health and welfare.

How do rabbits digest food?

Rabbits are herbivores and can be classified as hindgut fermenters. Hindgut fermentation is when fibrous plant matter (cellulose) is broken down by bacteria into a form the animal can absorb and use by organs near the end of the digestive tract - the large intestine and caecum. The fibrous material gets sorted in the large intestine and indigestible fibre (that the rabbit can't use for nutrition) gets expelled as hard, dry pellets and the remainder of the food goes into the caecum for further break down. After fermentation, the soft faeces which are coated in mucus (also called caecotrophs), are expelled and should be consumed by the rabbit directly from the anus. These soft pellets then pass through the digestive system again. The mucus helps protect them from the harsh stomach acids so further bacterial fermentation can occur and the additional nutrients can be absorbed by the rabbit². Both the digestible and indigestible parts of a rabbit's diet are essential in maintaining proper gut function.

What makes up a suitable diet?

Wild rabbits eat a variety of forages including different types of grasses, forbs, herbs and leaves and have a very high fibre diet. Foraging also takes up a lot of time and energy for rabbits, occupying up to 70% of a rabbit's active time. As our pet rabbits aren't able to forage in the wild, it is important that we are providing them with a suitable diet. Unlimited, good quality hay or grass is essential for a rabbit's diet. This provides crucial fibre, as well as appropriate protein, starch and sugar levels. Good quality hay should smell sweet, be dry, free from dust and mould and be long-chopped or long strands to stimulate natural foraging behaviour. There are specialty hays available that can be added in to give a variety of flavours and nutrients. Remember that alfalfa hay is not a grass hay and is quite rich so should only be fed as an occasional treat. Aside from being a good food source, hays and grasses will also be used for play and digging, so providing lots of forage has a number of benefits.

Rabbits should also get a variety of greens and vegetables in small amounts. These can be things like broccoli, dandelion leaves, celery, greens or herbs. Not all rabbits will like all greens, so feed small amounts to figure out your rabbit's preferences. Although rabbits also like fruit, fruits are higher in sugars so should only be given as an occasional treat, and despite cartoon rabbits living on carrots, the orange part of carrots should only be given as a treat too, but the leafy green tops are fine.

85% of the diet should be hay or grass



Photo: R Macvicar

There is a multitude of concentrated rabbit pellets and nuggets available that are marketed as a complete food. These can't replace hay and greens but can be used in small amounts as a nutritional supplement. Be careful not to buy the 'muesli' type foods, as rabbits will pick out the bits they like and leave the rest, so won't be getting all nutrients from the mix³.

Rabbits must always have access to fresh, clean water at all times. Bowls of water allow rabbits to perform a more natural lapping behaviour while drinking, compared to water bottles. However, bowls can get knocked over or soiled, so it's recommended to provide both to your rabbits and check them frequently⁴.

A general rule is that 85% of a rabbit's diet should be grass or hay, 10% greens or vegetation, 5% pellets and free access to fresh, clean water.

Consequences of a poor diet

Feeding an inappropriate diet to a rabbit can lead to gastrointestinal disease, dental disease, sludgy urine, obesity and behavioural problems.

When food is eaten it is moved through the digestive tract using rhythmic muscle contractions or peristalsis. If these contractions don't work the way they should, it can lead to digestive disorders. Nervous system input and hormones help control the muscle contractions but the contractions are also stimulated and maintained through a high level of indigestible fibre. This means high fibre diets are critical to proper gut functioning and low fibre diets can lead to gut stasis - the slowing down or stopping of the digestive system. Gut stasis can cause a build-up of harmful bacteria in the intestines, which release gases and cause painful bloating. This leads to a decrease in eating and drinking, making the problem worse. The contents in the digestive tract become very compact and the rabbit will have a hard time passing these, and bacteria may release toxins which can lead to organ failure. It is important to get a rabbit with gut stasis to a vet quickly⁵.

High fibre diets also encourage rabbits to drink more water and produce larger volumes of more dilute urine, which can help with reducing the chances of urinary bladder sludge forming. This sludge is a thickening of the urine with calcium salts and it doesn't flow like normal liquid urine, but is chalky in texture and a white-grey colour. Access to fresh, clean water is also essential to reduce chances of bladder sludge occurring⁶.

Rabbits have the type of teeth that grow continuously throughout their lives. However fibrous foods will wear teeth down so overall tooth length is constant. If rabbits aren't fed a suitable, high fibre diet, teeth won't wear properly, will keep growing, and can form painful spikes or prevent the mouth from closing properly. These overgrown teeth can lead to facial abscesses and infection⁷.

Rabbits have evolved to spend around 70% of their waking hours searching for and eating food. Concentrated, low fibre diets can be consumed quickly, which leaves the rabbit with too much free time. This



Vegetables can be given daily

Photo: N Stapleton

can result in boredom, stress and frustration that normal feeding behaviour isn't possible and may lead to abnormal or stereotypic behaviour patterns such as repetitive chewing, over grooming, pacing or repeated circling⁸. Concentrated diets are also often higher in fats and calories than high fibre diets, so may be providing more nutrients than the rabbit needs or can exercise away, and this can lead to obesity⁷.

In summary, a high fibre diet supplemented with greens and pellets plus plenty of fresh water is essential to the physical and psychological health of your rabbit.

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A thick layer of bedding hay can help with management of the condition

Photo: C Speight

OUR 'HOW TO' SERIES LOOKS AT How to help rabbits with Pododermatitis

By Emma Purnell, Registered Veterinary Nurse

Pododermatitis is the technical name for chronic ulcerative dermatitis (ulcers and sore patches), usually seen on the plantar (bottom) surface of the tarsal and metatarsal areas of the feet, and is often known as sore hocks. There are a number of reasons pododermatitis can occur, and management can be difficult, but in this article I hope to cover some ways to help.

The early signs

Recognising the early signs of pododermatitis can make a huge difference to the condition and management. Regular top to toe health checks can identify any soiling to the feet, thinning of fur and reddening of the skin or injury before ulceration occurs, allowing for changes to the environment or diet, before severe issues are seen. Although it is usually seen on the hind feet, the front feet can become affected in severe cases, when hind feet are too sore to hold the rabbit's weight and pressure shifts forward. Changes in body language and resting position can give indications things are not right; restlessness, shifting body weight from one side to another and general pain behaviours including hunching and reductions in eating should be investigated immediately. Spots of blood may be seen around the environment, but by the time this is seen the hocks are usually showing signs of ulceration.

Causes

One of the key causes of pododermatitis is the rabbit's environment. Thankfully, rabbits are rarely kept on wire bottomed cages these days, but these are a major reason for pododermatitis and should be avoided at all costs. Living constantly on any hard flooring, solid wood, concrete or wire will take a toll. The size of the housing is important - if they are sitting in soiled bedding materials, the urine will tend to soak into the fur along their hocks, changing their colour but more importantly causing urine scalding, fur loss and pododermatitis. Soiled areas should be cleaned out regularly, using litter training to allow soiled material to be removed daily. Flooring is important - as discussed, wire should be avoided, but there should also be bedding to soften the ground and reduce the impact on the hocks. Abrasive flooring, including synthetic carpets, can further

aggravate the condition. One other factor to consider is their water source. Being constantly in wet conditions, through urine soiling, a leaky water bottle or a regularly tipped over bowl, can be a causal factor for skin damage.

Small feet for size of body will increase pressure. Genetically some rabbits are born with a tendency to have thinner skin on their hocks or thinner fur. Unfortunately, this is something often only discovered when problems occur, but should be considered if parents are known to have issues. Rex and angora rabbits are particularly at risk, as they have fine hair, and should be checked regularly whatever the housing. Giant breeds are more prone due to their size in comparison with the size of their feet. Sometimes thinner fur can be accidentally caused when trying to keep rabbits clean if they have medical issues, caused by them regularly making a mess around their back end. Clipping off the fur to treat one problem can in turn increase the pressure on their hocks, so environmental management will be needed. Some rabbits are also more prone to stamping and the repeated stamping on solid or abrasive surfaces can cause trauma leading to pododermatitis. Stamping or thumping their back feet is a stress signal, so looking at why they are doing this and how it can be reduced is vital for their overall wellbeing, as much as their feet. Nail length is vital. If the nails are too long, the weight is distributed inappropriately on the feet, placing increased pressure on the hocks. Regular clipping can help to avoid this problem.

Rabbits who are overweight are much more likely to suffer from pododermatitis. They will have much more weight concentrated onto the hocks, increasing the pressure and leading to sores. They are also more



A small hairless spot is the first sign of pododermatitis

likely to be more sedentary, both due to their weight but also as they are more likely to be prone to osteoarthritis and other conditions limiting their activity. For this reason, age can also be a causal factor, with older animals showing more limited mobility on occasion. Keeping your rabbits at a healthy weight, allowing them to be active, with suitable housing, and a good diet means they are much more likely to stay healthy.

Some other health conditions can lead to pododermatitis, including fractures.

Take your rabbit to see your vet

If you suspect your rabbit has an issue with their hocks, the first thing to do is to get a vet check. They will generally do a physical examination of your rabbit with a thorough verbal history from you. Dependant on the severity, and if there is any infection, they may want to take a swab to ensure there is nothing that needs different treatment to resolve. Bacterial pododermatitis through infection can be an issue which may need ruling out or treatment with antibiotics. They will help you to come up with a treatment plan.

Helping at home

One of the key management techniques for pododermatitis is environmental changes, even if they were not an initial factor, as once a problem has begun they can lead to continuing problems. A good bedding layer of soft hay, the use of padding and fleeces, potentially the use of vet bedding (although some man-made fibres can worsen the sores due to friction) and a reduction of hard and friction causing surfaces make a large difference. To do this, assess the whole environment - for indoor rabbits, the carpets and rugs may be a causal factor, or hard solid floors



Rabbits are good at hiding signs of pain



As the disease advances the affected area can become extensive

including tiles and lino. Soft natural fibre rugs and padding areas may be an aid. If overweight, safe weight loss is vital. Ensuring the diet is mainly good quality hay/ grass, amounts of pellets is correct for age and size, high calorie treats are removed and fresh vegetables/ forage is key, as well as ensuring an increase in exercise by giving them plenty of space and scatter feeding.

If your rabbit is prone to pododermatitis and is getting soiled feet, gentle bathing may be needed. This bathing should only be of the affected areas, and the rest of the rabbit should not be getting wet where possible. Clipping of fur should be avoided where possible, as this can make the problems worse. Be aware that tipping a rabbit on its back must be avoided. This is known as trancing and is a fear response which should not be used for restraint.

Mild pododermatitis can sometimes be corrected simply with changes to environments, weight loss and identification/removal of the causing factors. Treatment of severe pododermatitis is usually with the use of topical creams and bandaging, as well as other management. In very severe cases where open wounds are present, they may need antibiotics, pain relief or be admitted for rehydration before ongoing management can occur. Use of a variety of topical creams can be considered, including manuka honey (if dead tissue is present), zinc or silver infused creams, although steroid creams should be avoided as this will thin the skin further. Bandaging can be difficult as some rabbits will naturally want to traumatise or remove the bandages; the use of children's socks, either to cover the dressings or in place of, can be considered. These coverings will stop them ingesting the topical creams used and help to pad around the wounds. While wounds are healing, exercise should be restricted; once the wounds have healed exercise can be encouraged again. In a worst case scenario, if the wounds and pain cannot be managed, amputation might need to be considered. However, if the problem is in both hocks this may not be appropriate. Euthanasia might need considering if management is not possible which is both ethical and does not impend upon the rabbits welfare and quality of life.

Pododermatitis is a complex condition with many causes, complicated management and a high chance of recurrence, but can be managed with care, environmental changes and veterinary support.

One of the biggest issues thought to affect the welfare of rabbits is the fear of being handled

Photo: K Pankhurst

A SCIENTIFIC STUDY INTO THE VALUE OF PET REMEDY WHEN HANDLING RABBITS

By Dr Nicola Rooney, Lecturer, Animal Welfare and Behaviour, University of Bristol

You will not be surprised to hear that a survey of rabbit experts in 2013 found multiple welfare issues in the pet rabbit population, but one of the biggest issues thought to affect the welfare of rabbits was fear of being handled (Rooney et al 2014). Of course, rabbits that are gradually introduced to handling in a positive way (Magnus 2005; McBride 2014), ideally from an early age, (7-21 days Dyles 2006), and that are handled in an appropriate way, can grow to tolerate it, or in rare cases, even enjoy it. Sadly, for many pet rabbits this is not the case, and handling becomes an aversive experience. When 221 rabbits were visited at home by researchers from the University of Bristol, 61% showed signs of fear when handled by their owners; crouching, hunching, freezing with the ears held back, running away or showing aggressive behaviours. These rabbits belonged to volunteer owners, many of whom were keen and well-informed and owned rabbits they deemed well-suited to such a study (Rooney et al 2014). It's likely in the general population, that the proportion that is fearful is even higher.

When and why to handle rabbits

Handling is, however, often necessary for veterinary visits, to perform routine health checks and to move rabbits between living areas (although ideally rabbits should have 24/7 access to enable them to move freely between the areas themselves). Surveys tell us approximately 85% of rabbits are handled at least once a week (Rooney et al 2014). So how can we minimise this stress of handling for them? With time, we can employ behavioural modification techniques, gradually training the rabbit to

associate humans with positive things like food (Magnus 2005). There are also an increasing number of "calming" agents on the market, claiming to facilitate emergency handling and even speed up the training process.

Pet Remedy

Herbal remedies have become popular alternatives to pharmacological products. One such product developed in the UK is Pet Remedy, manufactured and distributed through Unex Designs Ltd and marketed as a safe, natural remedy for the treatment of stress and anxiety in all companion animals, including cats, dogs, small mammals and birds. It contains a small amount of Valerian, a substance extracted from the root of the plant *Valeriana officinalis* and shown to have stress reducing effects on rats and people. The Pet Remedy product range includes a plug-in diffuser, battery-operated atomiser, and a spray, which guidelines state can be sprayed onto animal bedding, handler clothing or directly on to the animal's coat. There are many positive anecdotal reports from owners and rehoming centres, and a number of unpublished trials into the efficacy of Pet Remedy with cats and dogs (see Pet Remedy website), but until now no systematic studies on rabbits. Whilst there is a legal requirement to test the effects of pharmaceutical drugs, for herbal remedies, no such obligation exists. However, our research group at Bristol Veterinary School believes it is essential that the efficacy of such alternative treatments is rigorously tested. If a product is shown to produce the calming effects it claims, it is potentially valuable for improving animal welfare, whilst if it is ineffective, it is not only a waste of the owners' money, but more importantly could



The results suggest that Pet Remedy has some potential value for rabbits during periods of acute stress

Photo: Unex Design

exacerbate problems, as its use could cause additional stress and could delay the use of other effective treatments.

The study

We worked with Unex Design to plan and carry out a robust scientific study testing the effects of Pet Remedy spray on pet rabbits. The study was conducted by Sarah Unwin (at the time a Veterinary Nursing student), in collaboration with lecturers Nicola Rooney, Emily Blackwell and Richard Saunders (Unwin et al 2019). We recruited 50 rabbits from three rehoming centres and sanctuaries. For each rabbit, we tested their response when encountering a new person, a novel place, and being stroked for one minute, and compared when the person and place were scented with Pet Remedy to when they were sprayed with a placebo substance of distilled water. We devised a standardised behaviour test, including a number of sub-tests, examining the rabbit's behaviour; during the initial approach of a new person, when in their home enclosure, when being placed into a carrier, when handled and stroked gently and when placed freely in a novel floor pen with and without a person present. We filmed the tests and then analysed them to measure 19 variables describing the rabbits' responses. We measured, for example how much the rabbit moved whilst being stroked, and when left to explore the novel pen, and how readily it took a small treat from the person, and we also measured their heart and respiratory rate during handling.

Each rabbit was tested three times by the same person over three consecutive days. Baseline measures were taken on day 1 with no product present and on day 2 half the rabbits encountered the person and a towel sprayed with Pet Remedy and half with the placebo water. On day 3, the other substance was applied. The two treatments were in coded bottles, so the experimenter carrying out the study did not know which substance she was applying; she also wore a nose clip as Pet Remedy has a distinctive odour which we didn't want her to recognise. Since all rabbits are individuals and this rehoming population had such varied backgrounds, we did not look at general changes but compared each rabbit's individual responses when the placebo and when Pet Remedy were used.

Using statistics, we were able to ascertain which behaviour differed meaningfully, dependent upon which of the treatment was applied. We found that when the rabbits encountered Pet Remedy (as compared to water), they generally showed a reduction in their heart rate during handling and a noticeable increase in the number of different positive behaviours they showed, such as exploring, grooming, rearing up, lying down, sitting and sniffing the environment in the novel pen. These behaviours are unlikely to be seen when rabbits are distressed, and their increase after Pet Remedy administration, as well as the decrease in heart rate, support the idea that Pet Remedy has a calming effect. But many of the other behaviours we may have expected to change, such as being willing to approach the person or tolerance of handling, showed no general change. The rabbits varied a lot amongst themselves, which is as expected, given their diverse backgrounds, but overall they showed very high heart and respiratory rates during handling. This confirms what we already know - that handling is generally stressful. The Pet Remedy treatment had reduced the heart rate compared to the placebo treatment, but when applied over only two days, the effects were relatively small. Importantly we did not see any reduction in the rabbits' activity levels when they were treated with Pet Remedy. Any reduced movement could have been a sign that the rabbits were sedated - if an animal is scared of something but unable to retreat due to sedation, the fear can become intensified. Therefore, this is a positive result.



We can use behavioural modification techniques, to train the rabbit to associate humans with positive things

Photo: L Staggs

Conclusion

The results of this study suggest that Pet Remedy has some potential value for rabbits during periods that are acutely stressful, such handling; it slows their heart rate and allows them to perform more positive, relaxed behaviours. It may therefore be useful during veterinary visits and during initial handling. But, there were still high levels of stress exhibited throughout, and so we suggest optimal handling and appropriate training and behavioural modification should also be carried out. The value of Pet Remedy for long-term use, and when used repeatedly during early handling, remains to be tested. However, we believe it is imperative that rigorous scientific testing, such as that demonstrated here, is carried out on any new products or for any new uses of existing products.

This study has recently been published in the *Journal Of Veterinary Behavior: Clinical applications* - Full details can be found there (Unwin et al 2019).

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A - Z OF HERBS

By Belinda Francis of Galen's Gardens

Our Back to Nature series concludes with the 'S to Z' of common herbs

Sainfoin - *Onobrychis viciifolia*

Common Names: Healthy Hay and Holy Hay.

Constituents: Condensed tannins.

Cultivation: Sainfoin was once common on the chalk downlands of Southern England. It dislikes heavy, clay soils. Deep-rooting and drought-tolerant, it grows best in moist soil with a lot of sun.

Bees love sainfoin and the pretty pink flowers make it an attractive addition to the garden.

Feed: Sainfoin is a legume herb which means it is high in protein, has high levels of calcium and high calcium to phosphorous ratio. Do not feed if your rabbits are prone to bladder sludge or stones.

Feed in moderation to adult rabbits. Very young, elderly, pregnant or nursing females can have a larger percentage of sainfoin in their diet.

Traditional uses: Used as livestock forage which has the added advantage of being non-bloating and reducing the worm burden in sheep and other grazing animals.

Drying: Dry as you would any grass or legume hay, in a warm area indoors, with good air circulation or in the sun. Turn regularly to ensure there are no damp areas.

<https://cotswoldseeds.com/legumeplus-article.asp?id=102>

Shepherd's Purse - *Capsella bursa-pastoris*

Constituents: Amino acids, flavanoids, glycosides and tannins.

Cultivation: Shepherd's Purse is a weed commonly found on grass verges and playing fields. Cover the seeds with a layer of soil and water regularly until established.

Feed: Shepherd's Purse is not a palatable herb.

Traditional uses in humans: Shepherd's Purse is part of the mustard brassica family and is grown in some countries as a spring green. Medicinally, it is used for its astringent properties; externally as a styptic and as a tea for excessive menstruation.

Drying: The whole plant can be dried at the same time. No need to separate leaf and stem.

Strawberry - *Fragaria sp*

Constituents: Ellagic acid, ellagitannins and proanthocyanidins.

Cultivation: Grow from seed, runners from existing plants, or by splitting large clumps of existing plants.

Feed: The leaves, stalks and calyx make a healthy treat for rabbits, but eat the fruit yourself.

Traditional uses in humans: The astringent



action of the tannins account for the traditional use of strawberry leaf as a tea for diarrhoea and digestive disturbances.

Drying: Separate the leaves from the thicker stems which will need a longer drying time. Crush the stems to speed up drying.

Sunchoke - *Helianthus tuberosa*

Common Names: Jerusalem Artichoke.

Constituents: Inulin is in the root. The leaves are a good source of minerals, high in calcium with high calcium to phosphorous ratio.

Cultivation: In Spring plant 50gm pieces of tuber, 10cm deep in the sunniest part of the garden. They can grow over 2 metres tall and need a long, hot summer in order to flower. Dig up the roots when the plants die back at the end of October. For rabbit forage, take the flowers, leaf and stems to feed fresh or for drying when they are still green and in good condition. Leave just enough to continue fattening the tubers.

Feed: The whole plant can be fed to rabbits but feed the root tubers in moderation.

Traditional uses in humans: The tubers/roots are eaten as a vegetable called Jerusalem Artichoke. They are a good source of inulin, a prebiotic, but many people find eating the tubers increases flatulence.

Drying: Thinly slice the cleaned and dried roots for ease of drying. The leaves grow on thick, hollow, stalks which should be dried separately. Splitting the stalk lengthways into strips, quarters or halves aids the drying process.

Sunflower - *Helianthus annuus*

Constituents: Leaves and stalks are a good source of fibre. The leaves are rich in minerals.

Feed: The leaves and stalks are high in fibre but with a high Ca:P ratio. Rabbits can also eat the petals and the seed heads once the seeds have been removed. The shelled seeds are fattening.

Traditional uses in humans:

The seeds are high in protein and a source of vitamin D. Culinary sunflower oil is extracted from the seeds.

Medicinally sunflower petal tea is used for lung complaints and the leaf tea for fevers.

Drying: The flower heads (minus seeds) are too large to dry in a dehydrator so will need to be air-dried over a period of several sunny days.

Separate the leaves, petals and stalks. Split the stalks into strips.

Willow should not be fed to rabbits on certain pain killing medication



Yarrow - *Achillea millefolia*

Cultivation: Yarrow grows well from seed sown in the spring or autumn. Established plants spread below ground and larger clumps can be separated to produce smaller plants to pot up and grow on.

Constituents: Flavonoids, phenolic acids, coumarins and sterols.

Feed: All the above ground parts can be fed to rabbits.

Traditional uses in humans: Yarrow tea is a traditional remedy for digestive problems, as an antispasmodic and for stomach ulcers. Externally it is used as a first aid remedy to stop bleeding.

Drying: The plant can be dried whole either by hanging in a warm, dry place with good air circulation or in a dehydrator.

Caution: The fresh plant juice can cause allergic skin reactions and excessive amounts taken medicinally may cause a photosensitive response in humans.

Willow - *Salix sp*

Cultivation: Willow grows very fast. The easiest way to grow it in your garden is from living willow 'wands'. Willow likes moist ground.

Constituents: Tannin and salicin (a source of salicylic acid - the active ingredient in aspirin).

Feed: Leaves, twigs and branches can be fed in moderation except when a rabbit is already on pain killing medication from the vet.

Traditional uses in humans: Tea made from the bark and leaves is used as an anti-inflammatory pain killer.



Photo: Galens Garden

Drying: Dehydrating willow leaves can keep the green colour better than sun drying.

ADVICE NOTES

Most of the wild plants which can be safely fed to rabbits are commonly found in ancient meadows or sown as beneficial herbs for grazing animals. Many have also been used traditionally as human herbal medicines.

Certain chemicals, for example tannins, salicylic acid or coumarins, which have led to

the plants being used in traditional human and veterinary herbal medicine, may cause harm if fed in isolation, to excess or if your rabbit has specific conditions which require veterinary attention.

If your rabbit is being treated, or is due to be treated, by a veterinary surgeon you should seek the vet's advice on the suitability of any plants, including culinary herbs, before feeding.

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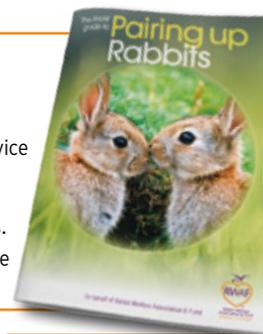
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RWAF FOCUS - WHO IS WHO AT THE RWAF

Debbie Staggs

Rabbiting On Copy Editor



Debbie helps to ensure Rabbiting On is error free!

As the Copy Editor for Rabbiting On, my job is to check the text for errors and to make sure its message is clear.

I have been involved with the RWAF since 1998, originally helping to produce the old regional newsletters, then later writing articles, supplying photos, and attending events. My background is in design, production editing, and copy writing on a variety of publications, including education sector publications, airfreight directories, weekly air cargo and horticultural magazines, and an international industrial fishing magazine! I have been a stay-at-home mum for 18yrs, whilst undertaking freelance design work. Recently, I rediscovered my love of painting, specialising in animal portraits.

I have always loved rabbits - as a child, inspired by my cousin's trick-performing rabbit, I requested a rabbit as my 'reward chart' prize. My parents wisely decided I was too young, and instead adopted two guinea pigs. I persisted and when I was seven, they bought Domino, a black Dutch. A yellow Dutch followed, then a pair of lops.

Following nine years without a rabbit, in 1998 my husband and I bought Lupin, and joined the British House Rabbit Society (BHRA) to learn about keeping rabbits indoors. Since then, we've always had rabbits in our home - after Lupin came Charlie, then Neroli and Rosie. We adopted Neroli, a yellow Dutch baby found in a car park, just before our first child was born. 'Nelly' was with us for nearly ten years - our three children took their first crawls and first steps towards her and learnt to respect and love rabbits. Mabel and Dijon joined us after Nelly. We lost Mabel in 2018, after her two-year battle with a dental abscess. We adopted Ebony as a new companion for Dijon - they are happily bonded, and she keeps him on his toes (and whisker-free!).

So, rabbits have been a large part of my life. There were some impulse buys instead of adopting rescues; in hindsight, some were given inadequate diets, and insufficient space; others could have been helped by today's veterinary knowledge. However, there has been much knowledge and joy gained along the way.

Photo: RWAF



Bobbi and Alan

THE RWAF SANCTUARY RABBITS

By The Rabbit Welfare Association and Fund

Heading to the Sanctuary

Bobbi and Alan arrived when, by some miracle, we had an empty space. Usually we wouldn't dare adopt a pair of rabbits in these circumstances, because before long there is always a needy case and the space is taken up. However, we heard about Bobbi, and that it was proving very difficult to find a suitable home for her, because, despite being possibly the most beautiful rabbit on earth (no, of course we are not biased!), she was half wild, and very nervous. She had been paired up at the rescue with a very laid-back male, in the hope it would make her more appealing as part of an adorable package, and also make her a bit braver. Sadly, this had still not generated a home for them. So, home they came with us, and the space was filled.

Steep learning curve

Despite having lived with rabbits for over 30 years, this was the first half-wild rabbit at the Sanctuary. Bobbi started to educate us very quickly and seemed to outsmart us at every turn. She chewed through the shed wall to escape (into a secure garden), and then, when that was reinforced, it just took her a bit longer to do it again. We reinforced, she escaped, reinforced again, escaped again, you get the picture! She must be around 7 years old now, and she does appear to have given up on her woodwork skills and prefers instead to dig very impressive holes.

Over time, she has become increasingly



One of the impressive holes Bobbi has created

Photo: RWAF

used to us and can even enjoy a free run around the garden (under supervision), and then be encouraged back into their enclosure, which at one point seemed unimaginable.

Alan is a very handsome and laid-back lop, who unfortunately suffers from a kink in his spine. He copes well because he is on daily pain relief, administered via the tried and tested route of 'Fenugreek Crunchies'. We did adapt their housing, so he could access most of it on one level to make things a bit easier for him. He can still manage the Runaround tunnels, and still has a mad five minutes every now and then.

Next issue we introduce Mango and Melon.

The RWAF and RWF are not rescue centres. Together, they are a campaigning and educational organisation.

However, at times we have stepped in and taken in rabbits. In some cases, where we have acted as a rescue, we have been able to rehome the rabbits ourselves, but there are many who have stayed and become part of the RWAF 'Sanctuary'. Here we introduce two more of these rabbits: Bobbi and Alan.

Owners reported bonding pairs or groups of rabbits with different experiences

Photo: R Hutchison



Rabbit Welfare Association & Fund
A hutch is not enough

WHICH BONDS ARE BEST?

By Guen Bradbury, Rabbiting On Veterinary Adviser

RWAF has always recommended that owners try to keep rabbits in bonded pairs of one male and one female. This is because, anecdotally, these bonds seem to be stronger on average than those between rabbits of the same sex. However, there was no good research evidence for this. Therefore, we decided to ask owners, veterinary professionals, and rescue centres about their experiences with different rabbit bonds. RWAFF wanted to ensure that its recommendations were targeted to ensure the best chance of a good quality of life for the largest number of rabbits.

Format of the study

There are various ways to define whether or not a rabbit 'bond' is successful. For this study, we focused on the start and end of a bond - which characteristics of the rabbits or environment make them more likely to bond successfully, and which characteristics increase the risk of the bond breaking down? We wanted to understand the perspectives of owners (who mostly see ongoing bonds between rabbits), rescue centres (which mostly see the initial bond formation), and veterinary professionals (who mostly see the injuries caused by bond breakdown).

In February and March 2020, we sent out three online questionnaires through RWAFF's online mailing lists. We received 1218 unique owner responses, 82 veterinary professional responses, and 22 responses from rescue centres.

The results of this survey suggest that male-female pairs are easiest to bond successfully, and the bond is less likely to break down. This is in line with the current guidelines from RWAFF.

What did we find?

Male-female bonds seem to be easiest to form and least likely to break down:

Owners reported that male-female pairs are the most stable. We can compare other bonds to that baseline (scaled by the frequency of these bonds in the general pet rabbit population):

- groups breakdown 3.5 times more
- female-female pairs breakdown 4.6 times more
- male-male pairs breakdown 5.4 times more.

Male-female bonded pairs are less likely to need rehoming:

Rescue centres reported that male-female pairs are the least likely to break down and require rehoming. Again, we can compare other bonds to that baseline (scaled by the frequency of these bonds in the general pet rabbit population):

- groups were rehomed 7.6 times more
- female-female pairs were rehomed 57 times more
- male-male pairs were rehomed 83 times more.

This implies that not only are same-sex pairs more likely to fight, they are also much more likely to experience bond breakdown that is sufficiently severe that one or both rabbits needs to be rehomed.

Male-male bonds are least likely to work and often break down at puberty.

It's clear from the above data that male-male pairs seem to form the least stable bonds. Veterinary professionals said that the top two reasons for the bond breakdowns they encountered were lack of neutering and young rabbits reaching puberty (most often male-male pairs). Owners said that the major reason for bond breakdown was illness or separation, but rabbits reaching puberty was also common. Given the severity of fights between males and given how common it is that prepubertal rabbits fight at puberty, there is a question about how to ensure the welfare of these rabbits. Prepubertal rabbits should not be sold in male-male pairs. If they are, neuter both rabbits as early as possible. If the rabbits fight before they are neutered, then it is unlikely that they will bond again.

We conducted a separate analysis of all 139 of the questionnaires submitted to RWF in the applications for rabbit-friendly practice status. RWF recommends castrating rabbits at 10-12 weeks or as soon as the testicles descend, but only 23% of practices (32/139) recommend castrating young rabbits at or before 12 weeks of age. Waiting longer than three months increases the risk that young male rabbits will fight, and once they fight, neutering rarely allows them to be reintroduced. RWF recommends that female rabbits are spayed at 16-20 weeks of age, and 79% (104/139) of practices recommend spaying at or before 20 weeks of age. As a result of this, RWF is communicating with vets to reiterate the advice around early neutering of male rabbits.

Many owners try to bond rabbits themselves

Many owners reported trying to bond pairs or groups of rabbits and reported very different experiences. Some owners reported finding the process surprisingly easy, "Great experience on this occasion," "Never had a problem", and "It was so easy I didn't even realise it was supposed to be so hard to do." Many owners said that it was "Stressful," that it was "Horrible, but so worth it," or "Traumatic for both rabbits and us as a family". One owner reported living with a mesh fence across their lounge for eighteen months until the rabbits were bonded.



Group breakdowns are 3.5 times more likely than breakdowns for mixed-sex pairings

Photo: W. James

RWF has always recommended that owners try to keep rabbits in bonded, mixed-sex pairs

Photo: C Cook



Many owners have had to separate rabbits

40% of owners have had to separate rabbits. Of the pairs requiring separation, the majority were neutered and lived in adequate accommodation. The biggest contributors to bond breakdown were illness or separation for hospitalisation, and the owners trying to introduce another rabbit.

Groups of rabbits often form stable relationships

Groups of rabbits seem less stable than male-female pairs but more stable than single-sex pairs (which is somewhat surprising, given that within any group, there will be at least two animals of the same sex). The network of relationships between a group of rabbits may help to reduce the stress between a certain pair of rabbits, because they can interact with others - perhaps, if the pair of rabbits were kept without others, the bond might break down.

Male rabbits are more likely to be injured in fights

We asked whether the veterinary professionals had ever had to euthanise a rabbit because of injuries sustained during a fight with a companion - 12% (10/82) reported this had happened. In seven cases, these involved male-male pairings - five of which involved irreparable injuries to the urethra, penis, or scrotum and testicles. Female-female pairs were reported in two cases of injury requiring euthanasia. The external genitalia of male rabbits are much more likely to be injured than that of females, and injuries involving the urethra are extremely difficult to repair. Injuries to males from females often occur when the male mounts the female rabbit's head and has its external genitalia bitten. Injuries to males from males often occur when one rabbit lies on its back and kicks out - this can cause damage to the penis or testicles or can even cause injuries of the abdominal cavity.

Conclusion

These results support current guidelines that male-female pairs are easier to bond successfully, are less likely to have their bond break down, and if it does break down, they are less likely to injure each other. Male rabbits should be neutered at 10-12 weeks to reduce the likelihood of bond breakdown in young rabbit pairs.

In the winter 2020 Rabbiting On, Guen explores sex-specific behaviours and why sometimes they continue even in neutered rabbits.

The complete survey can be found at: <https://rabbitwelfare.co.uk/rabbit-care-advice/further-reading/owner-rescue-centre-and-veterinary-professional-experiences-of-rabbit-bonding/>

Living outside gives rabbits exposure to many different stimuli

Photo: J Dene

WHAT OUTDOOR RABBITS NEED TO BE COMFORTABLE DURING WINTER

By Guen Bradbury, Rabbiting On Veterinary Adviser

In the UK, the overwhelming majority of wild rabbits survive the winter without coming to harm. However, pet rabbits can be much more susceptible to the cold, especially if they are kept alone. To protect them, we need to ensure that we provide insulated, sheltered areas with good ventilation, and enough space to allow them to move around and perform normal behaviours.

Wild rabbits

Wild rabbits have various physical and behavioural adaptations to survive cold weather. Physically, rabbits grow a thick coat in the autumn and lay down a layer of fat, for insulation and for energy, over the winter months. They have thin fur on the nape of the neck so they can put their thin-furred ears down and keep them warm. Their feet are furry, so the skin on their feet does not touch the ground. Behaviourally, they make insulated, underground burrows which don't fall below freezing - they rest in these burrows and come out to feed. They tend to rest in positions that reduce their surface area as much as possible (so as close to a sphere as possible). They usually have to move more when they are above ground to find enough to eat, because there is less vegetation available. This activity helps to keep them warm when they are outside the burrow.

Although wild rabbits are comfortable at temperatures below freezing, many pet rabbits may suffer at these temperatures. This is because:

- Most rabbits don't have access to an area which provides the warmth and shelter of an underground burrow
- Most rabbits that are not getting most of their nutrition from grazing will not be sufficiently active - if they are not grazing on grass, they don't have much reason to move around
- Some rabbits are moved in and out of indoor environments so don't grow a sufficient coat to cope with cold weather
- Some rabbits are kept alone so can't regulate body temperature by snuggling up to their companion
- Some rabbits have abnormal coats that are less able to cope with cold or wet conditions (such as Rex fur).

It is hard to tell whether rabbits are too cold, because rabbits will try to keep themselves warm. This effort can compromise their health, so you may only find out when your rabbit becomes sick or dies. For this reason, it is important to provide as much shelter and space for activity as you can, to allow the rabbit to stay warm.



Hay helps to provide insulation

What rabbits need

To be comfortable during the winter, outdoor pet rabbits need an area that is large enough and interesting enough to stimulate them to move around, an attached area that is warm and sheltered, and water that is not frozen. Single rabbits are much more at risk of suffering over the winter - another reason that rabbits should never be kept on their own.

• Area to stimulate activity:

In the wild, rabbits move around to find food. Therefore, providing an environment that encourages the rabbits to graze will increase the amount of activity they do. All rabbits should have permanent access to a large run (at least 8ft by 6ft by 3ft), and they should continue to have this throughout the winter - this enables them to get enough exercise. As rabbits usually move around to find food, runs on grass will stimulate rabbits to move around more than runs on tiles or stones.

• Area to provide warmth and shelter:

Large underground burrows provide shelter from cold winds and trap air, causing it to heat up with the rabbits' body heat. As most owners can't provide large underground burrows, we need to instead make sure that rabbits have somewhere that is sheltered from the wind and can trap warm air, keeping the rabbits at the right temperature.

Practically, this means a sheltered hutch (no smaller than 6ft by 2ft by 2ft) permanently attached to the run, or ideally a shed. They should be off the ground (so preventing the rabbits losing heat into the cold earth), dry and waterproof, and sheltered from wind and rain.

The shed should be filled with plenty of hay - deep hay bedding creates a lot of air pockets that trap heat to keep the rabbits warm. When hay gets damp, it releases fungal spores and ammonia which damage rabbit lungs. When owners have taken great care to ensure the shed is completely sealed so there are no cold drafts, it means that the levels of spores and ammonia can build up rapidly to levels that damage the rabbits' lungs. Owners can prevent this build up by changing the hay frequently and by making sure that the front of the hutch is uncovered as much as possible. Winter hay bedding should be deep and changed regularly.



Companion rabbits snuggle up together to keep warm



Rabbits have thick fur on their feet to protect their skin

Heat pads can provide transient warmth so may be useful on a very cold night. However, they will cool down within a couple of hours outside, so are unlikely to last the night. If you choose to use one, use the microwaveable ones and wrap them well so the rabbits can't burn themselves. Electric ones can cause fires, so avoid these. Some rabbits may like them; some may not. As they only last for a couple of hours, they should only ever be in addition to providing a lot of deep bedding - they cannot replace it.

• Preventing water freezing:

You should also remember to ensure that the rabbits have constant access to water. Rabbits drink more water from bowls than from bottles, so bowls are better. Additionally, the water in the spout of bottles is more likely to freeze - the spout is narrow, often made of metal, and is not typically insulated by the hay on the floor of the cage. Use a ceramic bowl and float a couple of ping-pong balls on the water - these will move when there is any air movement, circulating the water and reducing surface freezing. The use of a heat pad under the bowl can also help prevent the water freezing. Use warm water in the bowl when you see the rabbits in the evening. Finally, make sure you always check the bowl twice a day so if it has frozen, you can sort it out. This means that your rabbits should never be unable to find water to drink.

Conclusion

Outdoor rabbits can have really good welfare. Living outside gives them exposure to many different stimuli - different temperatures, wind speeds, light levels, sounds and smells. To allow rabbits to cope with and enjoy the variety that this brings, they need to be able to choose how they react. This is another reason why the hutch/shed should be permanently connected to the run. Rabbits may not choose to spend much time in the shed, even if it is cold or wet, but they need to have the option to do so. Giving the rabbits a choice means that they can use their instincts to regulate their temperature appropriately. You may be surprised at where they choose to spend their time when they have a choice!

In conclusion, rabbits kept outside during the winter need insulated, sheltered areas with good ventilation and enough space to allow them to move around and perform normal behaviours. This will enable them to use their normal physical and behavioural methods to regulate their temperature correctly, while still enjoying the varied enrichment that living outside provides.

Health



Richard Saunders

BSc (Hons) BVSc
MSB CBiol DZooMed
(Mammalian) MRCVS

Richard was the RWF's last Rabbit Resident at the University of Bristol, and is now the RWF Veterinary Adviser, as well as continuing to see rabbits and other animals in small and zoo animal practice.



Guen Bradbury

MA, VetMB, MRCVS

Guen Bradbury is the Rabbiting On Veterinary Adviser and is a vet who runs a teleconsultancy to help rabbit owners, vets, and vet nurses with behavioural problems in rabbits. Her textbook on the subject, 'Behavioural problems in rabbits' has been available through online and high-street retailers since the end of October 2018.

Behaviour



Carol Valvona

MSc (CABC)

Carol (Bonafido Pet Behaviour And Training) is a member of the Association of Pet Behaviour Counsellors and has a Masters degree in companion animal behaviour counselling. She has rescued giant breeds for a number of years.

Houserabbit Advice



Leo Staggs

Experienced rabbit owner Leo Staggs lives in Kent with his wife, 3 children and 2 house rabbits.

Welfare



Georgia McCormick

Georgia is the Welfare Officer for the RWF. With a law degree and a background in animal welfare she is perfect for any welfare related questions you have for her.



Mark Dron

Mark works on a part-time basis as a consulting Animal Welfare Officer for the RWF.

After 27 years as a Police Officer and with Local Authority Trading Standards Units, many of which were spent dealing with Animal Welfare and Wildlife Crime issues, he now provides his services as a consultant to the RWF's Capone Campaign, which identifies and gathers intelligence relating to online breeders and sellers of rabbits around the UK.

We regret that our experts are only able to answer a few questions in the magazine. If you think that your rabbit may be ill, please seek veterinary advice immediately.

ASK THE EXPERTS

How do I check if she is licensed?

Q I suspect one of my neighbours, whom I don't know very well, is breeding and selling rabbits. I see lots of people coming and going, taking in carriers and a friend has told me she has been adverts on local selling groups. Is there a way of checking if she is licensed or getting her facilities checked out?

A Firstly, unlike dogs (and soon cats with the mooted change in UK law in 2020), there is no legal requirement for somebody to register as a rabbit breeder, and this is particularly so where they claim to be a hobby-breeder or to be selling animals as a one off after an unexpected litter.

There are, however, legal requirements where someone who operates an animal sales business should be registered with their local authority as a "pet shop", and these requirements would come in to play where the person was acting in what would be recognised as a trade or business; so you would be considering here multiple sales from multiple litters, offering to sell additional materials like straw, rabbit toys and hutches etc. and multiple advertisements at any one time across multiple sales platforms.

If you suspect that this individual is acting in a trade or business, then you should report the matter to your local authority's Environmental Health team that deals with animal welfare and advise them clearly that you suspect a pet sales business is operating without a licence under the "The Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018".

Of course, notwithstanding any tests for running a trade or business, if you have compelling reasons for believing that there are animal neglect or cruelty issues present, or reason for believing that the welfare of the animals is not being catered for, then you should make a formal complaint. There are numerous routes for this - If your suspicion is that there is an urgent animal welfare matter, then you should report the matter to the Police by dialling **101** asking for your local force, and then report the matter to the RSPCA who can be reached in an emergency on **0300 1234999**. For slow-time matters you can report your suspicions to the RWF by dialling **0844 3246090** (not 24 hours), or by contacting your local authority.

Local authority Animal Health and Welfare Officers have powers to enter premises they believe are being used to conduct animal-related businesses to assess and inspect them, and they can use these powers to ensure that the rabbits at this site are being cared for properly. If you wish to check whether a site is licensed, you can have a look at the relevant local authority's web site, since many councils have an online register of sites they have approved under the legislation, or if you find a council that does not have an online register you can request sight of their list of licensed premises under the Freedom of Information Act.

If you are still concerned, then please report your concerns to the RWF on **0844 3246090** or by email to info@rabbitwelfare.co.uk and our Animal Welfare Officer will investigate further - (Please note that the RWF is a charitable institution, not an enforcement body and while we will look in to your complaint and try to ensure that it is dealt with by the appropriate body, we have no legal powers to intervene).

Mark Dron

RWF Note: Following on from the question in the Summer 2020 Rabbiting On, regarding capturing a stray wild rabbit, to avoid any confusion, the RWF would like to clarify that if any domestic rabbit is abandoned, or a wild rabbit is injured, ill or distressed, to contact a local rescue centre or RSPCA to see if they can help.

To feed pellets or not?



These giant rabbits have a selection of fresh greens, and all rabbits should be presented with a full range of foodstuff

Q I have read lots of conflicting advice online and on social media about whether rabbits actually need pellets in their diet or not, and would like your advice on the subject. Do young rabbits (under 6 months of age) need junior pellets, and do neutered, adult rabbits, over the age of 6 months have to have pellets in their diet? If so, how much and if not, how do I get the correct amount of vitamins and minerals for my rabbits, without giving them pellets?

A Firstly, we should clarify what types of pellets are available. Whilst there are compressed pellets, these are usually part of a muesli mix, which we are not discussing here, and do not recommend at all. The type of pellets we are referring to are extruded, and available as a homogenous bag, i.e. all the pellets have the same ingredients and composition, and selective feeding is not possible.

The available research suggests that completely healthy, adult rabbits presented with a full range of foodstuffs (excellent quality palatable hays, grasses, green leafy vegetables etc.) do not need to have pellets in their diet.

We don't know exactly whether or not young rabbits need pellets in their diet, but we do know that in the wild they require higher levels of protein, energy and other nutrients, and these would be supplied by their mother's milk, and lush, higher nutrient content growing vegetation. Therefore, we err on side of caution and advise that young rabbits need a small amount of junior pellets. However, too much pellet content in the diet runs the risk of causing dental changes, so we strongly advise sticking to the manufacturer's guidelines.

Essentially, we look to use pellets as a "hay balancer", to make up for any borderline or actual vitamin or mineral deficiencies in forage alone, and to raise the energy levels a little.

There are some rabbits with dental disease, making it impossible for them to eat hay fast enough, who will struggle on a hay/veg only diet, and for those we would increase the proportion of leafy vegetables compared to hay, and give pellets. This is especially the case with older rabbits with well-established and irreversible dental changes. For most healthy adults, we would suggest that they receive a small, carefully measured quantity of daily pellets, in case they have underlying health issues, such as dental



The RWAf recommends a small, daily portion of pellets

or gastrointestinal disease, that might make them more susceptible to nutritional deficiencies, and as a training aid (as below). However, this quantity should be reduced or removed if they are gaining weight above an ideal body condition.

In 2015, some scientists did a study where they fed some healthy rabbits on hay with pellets, and some rabbits on hay without pellets, for nine months. The rabbits that just ate hay were just the right weight (they had a body condition score of three). The rabbits that ate hay with pellets were 25% heavier - they became overweight.

Rabbits have evolved to eat food which has the nutrient density of grass and takes the same amount of time to chew. Pellets have a higher nutrient density than grass (even if grass is the first ingredient), and they don't require as much chewing. This is why rabbits are likely to eat too many pellets.

If you buy good quality meadow or timothy hay, and don't store it for more than a few months, the rabbits should get the correct amount of vitamins and minerals. Excessively dusty hay, or any that smells "off", is wet, musty or mouldy, should be rejected. Hay has lots of different types of grasses and plants in it (unlike straw, which is from a grain crop). If you feed them extra fresh grass and leafy plants as well, then the risk of nutrient deficiency is even lower. Ideally, rabbits should spend time outside, because the sunlight helps them to make vitamin D and regulate their calcium balance correctly. Many rabbits don't have access to good quality hay and sunlight - this is another reason that RWAf recommends a small quantity of daily pellets, effectively acting as a daily vitamin and mineral supplement to ad-lib intake of hay and grass, and some leafy vegetation.

If you don't want to give pellets every day to your healthy rabbit, then you can supplement their diet occasionally with pellets instead. Pellets make really good treats. They are small enough that the rabbit can eat them quickly, so you can use them as rewards if you are training them. Feeding a small amount first thing in the morning, by hand, helps promote a positive owner:rabbit bond, as well as giving you the chance to watch them running towards you and check that they are eating well. If they have supervised free run of your house or garden, then teach them to come back to you with a whistle and give them pellets when they get back to you. There are lots of ideas for tricks to train rabbits on YouTube - so why not give them a try?!

Guen Bradbury and Richard Saunders

Ref - Prebble, J. L., D. J. Shaw, and A. L. Meredith. "Bodyweight and body condition score in rabbits on four different feeding regimes." *Journal of Small Animal Practice* 56.3 (2015): 207-212.

Will they ever bond?



It can take many months before a successful bond is formed

Q Three weeks ago, one of our house rabbits suddenly died. His companion was obviously very distressed. I contacted our local rescue centre. They only had one male rabbit, so I rushed into rescuing another very quickly, as I didn't want Sophie being alone. The information from the rescue on him said he was a "very shy rabbit, and the owner didn't have any time for him". When we went to collect him, we found out he had been there approximately five months and he'd had no human interaction whatsoever, prior to him going into rescue. He is approximately 12 months old. He's in a large dog cage in our lounge, and Sophie sits by his cage and tries to bite through the bars, but seems to get comfort from seeing another rabbit. When we let him have a run round the kitchen or bedroom it can take up to 10 minutes to catch him and he's totally traumatised. My partner and I are used to rescuing bunnies, he's our ninth, but I think I've bitten off more than I can chew this time.

My concern is that we may never have a rabbit that we can bond to Sophie and interact with as necessary without causing him and us distress. I can't take him back to the rescue centre, so what can I do to help?

A Introducing a new rabbit to your family and then trying to bond two can be a worrying time for all. After all, they are more than capable and well equipped to fight if necessary.

Clearly no two rabbits are the same. Their personality can be influenced by their breed and individual genes. Similarly their temperament can be shaped by experiences. Studies have shown that if rabbits are handled for a few minutes a day from 10 days onwards, they are more willing to approach people in later life. If during this period they also have a chance to learn about the strange noises, sights and smells of the world, they are less likely to be nervous. Individuals can also be impacted by negative experiences at any time of life and fear associations are very strong. As with a lot of us

who rescue our rabbits, you don't know your boy's history and whether a lack of, or poor handling have contributed to his behaviour.

All prey animals are genetically predisposed to be nervous. They need to be apprehensive of anything new or unusual. As this rabbit has only recently arrived, I would suggest that you allow him more time to become accustomed to his new environment. You may be trying to move too fast for a nervous youngster. So, for now, back off a little; let him do some exploring and leave him to approach you. If he believes he has no control in a situation it will make him anxious, but if he feels he has and can move away, he will be more relaxed. So coming up to you for a treat may overtime be pleasurable, but if you make the approach, he loses that control, the dynamics of the situation change and he is less likely to want to interact with you in the future. Therefore, you must avoid any situations where you have to chase him around. When you let him out make sure there is enough time for him to find his own way home. If you can change the negative associations he has made for positive ones, perhaps you can modify how he interacts with people. I have an article in this magazine which discusses desensitisation and counter conditioning (page 10).

Don't forget, rabbit introductions can take many months - first impressions can be very important, so you don't want to set them up to fail. If possible, house the rabbits in parallel runs. This will enable them to have contact while still separated. Make sure that there are areas where they can get out of each other's sight to reduce any stress. Give both rabbits plenty of mental stimulation. I know this is something we always keep on about but that is because it's so important. You can find more information on the RWAf website <https://rabbitwelfare.co.uk/rabbit-care-advice/behaviour/enrichment/>

Also, rabbits can be more hostile during the breeding season, therefore it may be prudent to wait until the colder weather before you introduce them. Again I would suggest you visit the RWAf website for more information on bonding <https://rabbitwelfare.co.uk/rabbit-care-advice/bonding-rabbits/>

I understand why you were so desperate to get Sophie a new friend and I am hopeful that, if you slow down, you may have two rabbits who can become soul mates. But some rabbits, despite your best efforts, will never bond. Then you do need to consider if it is fair to keep them together when one or both rabbits could form a happy union with someone else.

Carol Valvona

Disclaimer: The rabbit photos on these pages are for illustrative purposes only, and posed by 'models'. They are not the rabbits in the questions.



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IT'S MY BUNNY

**If this is your bunny, then
there is a prize waiting for
you to claim**



**The owner of this issue's lucky
bunny will receive a mystery prize**

If this is your bunny, all you have to do is send the bunnies names, along with your name and address and your RWF membership number to: It's my Bunny, Rabbiting On, RWF, Enigma House, Culmhead Business Park, Taunton, Somerset TA3 7DY.

In each issue of Rabbiting On we picture a different bunny (or bunnies), chosen from all of the photos sent to Rabbiting On, and that bunnies owner wins a mystery prize. So keep looking, it could be your rabbit next time. But hurry - you need to claim your prize before the next issue of Rabbiting On is published.

There's also a chance that your bunny could be chosen to appear on a future cover of Rabbiting On, or to illustrate a feature in the magazine, so keep on sending in your pictures.

RULES FOR PHOTO SUBMISSIONS

We love to see all your lovely rabbit photos. You can submit prints and CDs to the address above (make sure they're labeled with your name, address and the rabbit's name).

You can also submit digital images. Unfortunately some readers send us photos that we're unable to use, because they're not high enough resolution for printing in the magazine, or the rabbit's or owner's name aren't supplied.

Please email your photos to:
rwfphotos@gmail.com

Also, it's vital that your camera is set up properly before you take your photos, as it isn't possible to increase the resolution afterwards. We need you to set your camera to the highest image quality. Any photo files you submit should be about 1 - 1.5MB if it's a jpeg file, and around 2.5 - 3MB if it's a tiff file (please compress tiff files before sending).

If you have difficulties with the online form, please contact hq@rabbitwelfare.co.uk, or the helpline on **0844 324 6090**, and we'll do what we can to help.

URINARY SLUDGE AND THE ROLE OF A LOW CALCIUM DIET

By Rachel Sibbald, Registered Veterinary Nurse

Most rabbits will readily use a litter tray, and this is convenient to them and to us

Photo: L Waister



Urinary disease is relatively common in domestic rabbit populations. Problems with urinary calculi (stones), sludge and infection are some of the most common reasons to visit the vet. It has been hypothesised that a diet too rich in calcium can contribute to these conditions, but why is this?

Calcium metabolism

In most mammals, calcium is obtained through the diet, and depending on the body's needs, an appropriate amount will be absorbed through the digestive tract and into the blood stream, and the rest excreted as waste. Rabbits have a unique method of calcium metabolism, in which all the dietary calcium is absorbed, regardless of the rabbit's needs or current calcium levels within the blood. Therefore, rabbits have a much higher total calcium level within the blood compared with dogs and cats. This also means that rabbits must excrete large volumes of 'unused' calcium within the body, via the urinary tract. The fractional excretion of calcium via the urinary tract is approximately 2% in most mammals; however this can range from 45-60% in rabbits (Wesche, 2014). When the re-absorptive capacity of the kidney is reached, calcium precipitates as calcium carbonate, causing 'sludgy urine'. When metabolic demand is increased by the likes of pregnancy or rapid growth, less calcium is excreted via the urine and the urine may appear clear. In the wild, female rabbits spend a large proportion of spring pregnant and lactating, which requires large amounts of calcium. Further to this, as rabbits have continually erupting teeth, a higher concentration will be required for continued dental growth. Finally, as nutrition in the wild is variable and during winter plant growth is slow and less nutritious, extracting maximal calcium concentration may be necessary to maintain normal levels.

Urinary sludge

As mentioned above, urinary sludge is an accumulation of calcium crystals within the urinary tract. Typically, sludge settles at the bottom of the bladder, so if the rabbit doesn't void all of the contents of the bladder during urination the sludge begins to accumulate, causing secondary problems such as cystitis, infection and possible stone formation. Urinary sludge/stones are painful conditions and need to be treated by your vet. Signs of urinary tract issues include straining to urinate, vocalising when urinating, toothpaste-like urine, blood



Photo: C Speight

Urinary sludge flushed from the bladder of a rabbit

in the urine, urine scalding, secondary gastrointestinal stasis (from pain), weight loss, tooth grinding and a hunched appearance (especially whilst urinating). Failure to address urinary tract issues in rabbits can lead to complete blockage of the urinary tract, which is a life-threatening emergency.

It seems intuitive that if the issue is too much calcium being absorbed, then having to be excreted, then reducing the calcium in the diet should resolve the problem. Unfortunately, the majority of cases are multi-factorial and may include nutritional imbalance, infection, genetic predisposition, inadequate water intake, lack of urination opportunity, pain resulting in reduced mobility and metabolic disorders (Mayer, 2015).

Metabolic disorders and genetic predisposition are out of our control, so we will look at the other factors and what we can do as rabbit owners to reduce the incidence of urinary disease, or manage it where an issue has already occurred.

Contributing factors

• Inadequate water intake

Although bottle drinkers are extremely common, Tshudin *et al.*, (2010) reports that when given the choice rabbits prefer to drink from bowls, as they allow a larger intake of water in a shorter period. Some rabbits may contaminate bowls with urine/faeces and this will usually discourage drinking. If water sources are not changed regularly (at least once daily) this will reduce water intake and possibly lead to chronic dehydration. In order to increase water intake rabbits should have access to both a bowl and a bottle. During the winter months, if your rabbit is outside great care must be taken to make sure water sources have not frozen. Adding water to food can also increase fluid intake and rinsing vegetables/herbs prior to feeding is an easy way of doing this.

• Lack of urination opportunity

Rabbits are extremely clean animals and usually prefer to urinate in one area. If the area becomes particularly soiled, or the rabbit is uncomfortable with the toilet area, it will reluctantly use this toilet area, resulting in urine retention. Urine retention allows sediment to settle at the bottom of the bladder. Most rabbits will readily use a litter tray, and this is convenient to them and convenient to us. It means the area can be cleaned daily and monitoring of urine/faecal output

is made easier. Placement of the tray is important, as many rabbits will prefer to urinate in a corner or secluded area.

• **Reduced mobility/pain**

This is a very broad topic and therefore shall be discussed briefly. Animals in pain are likely to be less mobile, as are obese animals. Reduced mobility in rabbits allows sediment to settle in the bladder. If the rabbit is jumping/doing binkies, any liquid in the bladder will be mixed inadvertently. Pain may also mean the rabbit avoids using a litter tray because it is painful to do so - if your rabbit starts urinating outside its usual toilet area, a vet check is warranted. Osteoarthritis is relatively common in older rabbits and urinating usually involves a particular 'stance'. The rabbit will lift its rear end slightly and lift the tail high with its legs apart, to avoid urine dribbling onto the legs/fur. If the rabbit has pain in the spine or hindlegs, this stance may be painful, and therefore avoided, potentially causing urine scald. Obese rabbits may also have difficulty adopting this stance and exercise tolerance is reduced.

• **Nutrition**

Low calcium diets have been advocated for rabbits with problems with urinary sludge/stones. As discussed above, there are other reasons why rabbits may accumulate sludge but certainly a diet high in calcium may make matters worse. In order to reduce calcium content, we need to look at what foodstuffs have high calcium. Most pelleted food has a balanced ratio of calcium: phosphorous, which allows for growth, tooth eruption and bone health in young rabbits. As rabbits age and kidney function declines, filtering of calcium may become less efficient, therefore pelleted foods marketed at geriatric rabbits usually have reduced calcium content, and these can be useful to rabbits with urinary problems. Special hay-based nutrition formulas have now been specifically designed with low calcium in mind and include ingredients known to be useful for urinary health. Certain vegetables/herbs are often blamed for 'causing' urinary sludge. However, the water content of these vegetables is also high. What is important is the amount of calcium in concentrated dry matter. Whilst it is true some vegetables have higher calcium content than others, the amount the rabbit ingests is very important. Below is a table with a few common foodstuffs fed to rabbits and the amount they would need to eat in order to reach their recommended daily allowance of calcium.

Food	Dry matter (%)	Approximate amount healthy rabbit would have to eat to reach daily allowance
Alfalfa hay	82%	1 large handful
Spinach	15%	2-3 supermarket bags (630g)
Grass	20%	6 large handfuls
Dandelions	15%	2 large plants
Kale	15%	1 supermarket bag (200g)
Parsley	12%	13 small supermarket bags (23g)
Average pellets	90%	1 small handful
Low calcium pellets	90%	1 large handful

Adapted from: Harcourt-Brown, Personal Communication, 2020

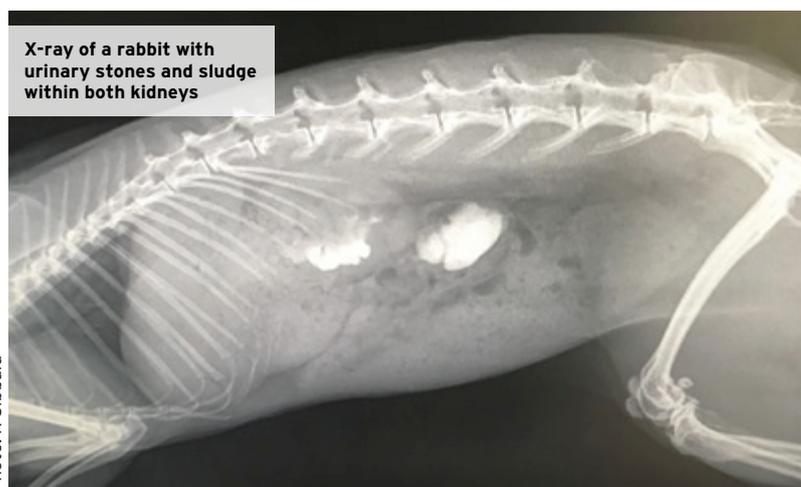


Photo: R Sibbald

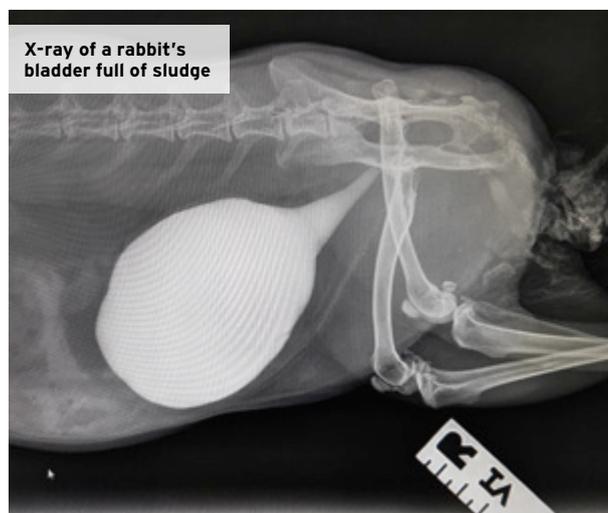


Photo: C Speight

As we can see, far less concentrated dry foods are required to be consumed to achieve the daily allowance, versus fresh vegetables. Avoiding alfalfa hay in adult rabbits and reducing the pelleted portion of daily food is more important than reducing 'high calcium' fresh vegetables/grass. Although dandelions are relatively high in calcium, compared to other fresh foods, they do exert a diuretic effect (meaning your rabbit urinates more), which may be useful in some conditions. Mineral blocks that are sold in pet shops should never be given to pet rabbits, as their calcium concentration is extremely high.

In pregnant, lactating rabbits or rabbits going through rapid growth, having a low calcium diet could actually be dangerous. There is evidence low calcium diets in young, growing rabbits can lead to poor calcification of the teeth and bones in the skull, resulting in dental disease. Fortunately, awareness of rabbit husbandry and diet has increased greatly during the last ten years, and dental disease related to hypocalcaemia is now much less common due to reduction in the sale of foods which allow selective feeding.



Graphic: E Boyd

Correct nutrition is important

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Photo: D. Staeggs

Don't miss the Winter 2020 Rabbiting On!

Don't miss the Winter 2020 Rabbiting On, published in November

The Winter 2020 Rabbiting On will include features on:

- **Conscious dentals** – Registered Veterinary Nurse, Matthew Rendle, examines if these are safe or potentially dangerous.
- **The Five Welfare Needs** – Dr Laura Dixon continues her series looking into the five welfare needs, focusing on why rabbits need to be able to exhibit normal behaviour patterns.
- **Trancing versus towel wrapping** – Rabbiting On Veterinary Adviser, Guen Bradbury, examines what the differences are, if any, and if there is a time when either should be used.
- **Petting zoos and farm parks** – Dr Emma Milne continues her ethics series, focusing on rabbits being kept in these circumstances.

And much more...Don't miss out! Ensure that your subscription is up-to-date so you can receive the issue hot off the press in November 2020.

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READERS' LETTERS



Building a home for Dusty and Lola

Dusty and Lola have had their lives transformed

This is Dusty and Lola's home, which we have just put together. We have four rabbits, all rescues from the RSPCA.

Dusty and Lola were found in a hutch, in the garden with their brothers and sisters and the mum, in a vacant property. The owners had moved out and left them with a bowl of cereal. We adopted them at nine weeks old; they are now three and a half years old. I bought the enclosure, which is actually a bird aviary, for £150, from a friend. The enclosure is very solid with small gapped, galvanised iron wire, so really fox proof. It came with a double entrance door, but we only used one to give a bit more space for them. We put a sloping, tinted corrugated roof on top of the galvanised roof, to keep the rain out, and also bought clear, tough tarpaulin sheets to put all around. These cost approximately £100. We also added clips, so we can roll each panel up in the warmer weather. The furniture came from Manor Pet Housing. We took the bottom level out of the hutch and built steps going up the side.



Outside view of Dusty and Lola's enclosure

The bed is a doll's bed from Ikea, with a piece of vet bed on it. They love to sit on the tree stump and we also put a deep litter tray in with soil, which they love to dig and roll in when it's hot. We plan on putting lighting in and probably some ramps going round. All in all, I would say this has cost us around £600.

Our other two rabbits have previously been shown in an edition of *Rabbiting On*. The enclosure is great as you can go inside and sit with them. Our other two are in a Manor Pet Housing shed, with a run attached.

Daphne Reynolds



The view from the inside

Best Rabbiting On yet!

I just wanted to say I loved the summer issue of *Rabbiting on*. I have been a member since autumn 2019, and this was the best issue yet. I love reading the rescue stories; they are so inspirational, although upsetting at the same time.

I would love to run a rescue, and run events to spread rabbit care knowledge, but will have to wait until my children are older.

We have four of our own rabbits, in bonded pairs, who get doted on daily, and we can't believe people neglect their rabbits like they do. We rescued all ours and have dealt with a few with behavioural problems, but it is so rewarding when they start trusting you.

Charlotte Chambers



Cookie and Fudge are two of Charlotte's rescue rabbits

CAMPAIGN UPDATE

Space

Welcome to another Campaign Update, keeping you informed of our constant fight to make things better for bunnies.

We have had a lot of enquiries recently about our minimum space recommendations for rabbits, so we thought it would be helpful to clear up any confusion.

- **Our minimum recommendations**

Our recommended living area for two average-sized rabbits (and they should be kept at least in pairs), is a footprint of 3m x 2m. By 'footprint' we mean the accessible area of the ground, or floor if they're indoor bunnies. The upper floor of a two-storey hutch does NOT count towards the footprint. Similarly, whilst raised platforms are great for enrichment, they do not count towards the footprint.

- **The sheltered area**

The space should include a sheltered area of 2m x 1m, and this is where some confusion can arise. Our minimum size recommendation for a hutch is 2m x 1m. This should be part of a wider space as described above. **RABBITS SHOULD NEVER BE LOCKED IN HUTCHES.**

- **Get the height right**

We also recommend a minimum height of 1m. This is to allow rabbits to display their happy behaviours of jumping and binkyng!

- **Access all areas all of the time**

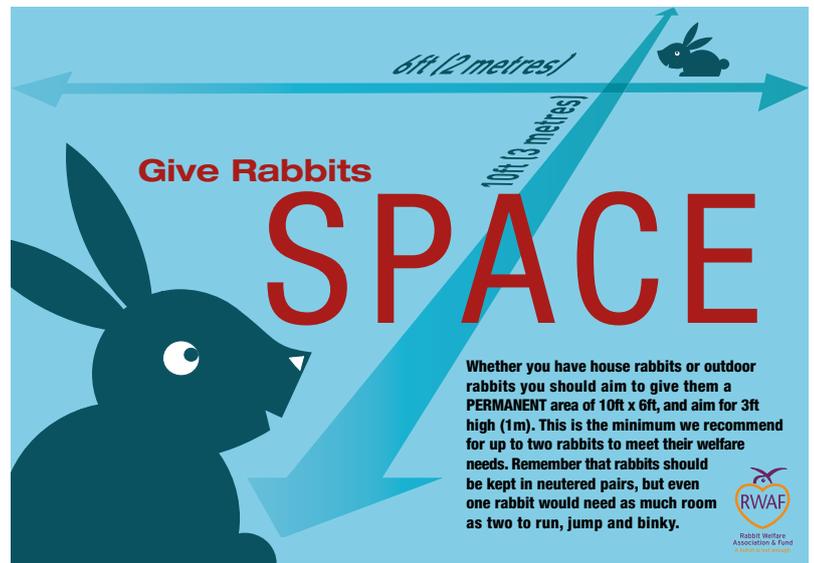
This MINIMUM space, a footprint of 3m x 2m and a height of 1m, must be available at all times, not just for limited periods.

- **Indoors or outdoors**

These recommendations apply both to indoor and outdoor accommodation.

- **Research based evidence**

Our recommendations are based on research by the RSPCA and Bristol University.



The new RWAFA 'Give rabbits space' poster

- **How much room does one rabbit need?**

Rabbits suffer if kept alone and should always be kept in at least friendly pairs. But even if a rabbit was to live alone, it would still need the same minimum amount of space as two rabbits. So, the argument of "I don't have room for two, so I'll just have one", simply does not hold water.

- **Free range**

If your rabbits are free range then great, they would have space in addition to our minimum recommendations. Remember that free ranging should be supervised.

- **Endorsements**

We do not at present recommend or endorse any hutches or boarding establishments, so if you see this claim, please let us know.

- **Be creative**

Take a look at the Housing section of our website for some ideas, and you can convert a garden shed or use a combination of different enclosures.

We are fans of the Runaround system, because it offers so much enrichment for rabbits and because it can be set up in a variety of ways, and maximise the available space. The Runaround setup can meet the total footprint in many different combinations, not all of them immediately obvious.

Remember - these are MINIMUM recommendations

It goes without saying that bigger is better in terms of space for rabbits, but we're saying it anyway!

MJ enjoying his food!



Website revamp

If you've visited our website, www.rabbitwelfare.co.uk, since Easter, you will have noticed that it looks very different. We are delighted with the new funky style, which not only looks better, but includes technical improvements that make it easier to maintain, and allow it to work more effectively on the variety of gadgets that we all use to access the web nowadays.

We would like to say an enormous thank you to Reena and Nitesh from Voras Designs (voras.co.uk), who volunteered their time and considerable expertise to build the site for us. We know they won't want us to make a fuss, but we wanted to thank them publicly, which also allows us to take advantage of the opportunity to print this wonderful picture of MJ, one of their gorgeous rabbits.

Thank you Mr. and Mrs. Vora, you're amazing!

We have also added some new content, such as pages on digging, foraging, hiding and rearing, and information about keeping rabbits with other pets - rabbits with chickens keep cropping up!

Rabbit Welfare Association & Fund - Animal Welfare Officer Update, January to June 2020

The RWA's current Animal Welfare Officer took up the role in late May 2017, and has been in post for three years.

The primary role of the Animal Welfare Officer is to investigate the online trade in pet rabbits by breeders who use sales platforms to maintain their trade. The role has expanded somewhat in that time, and, in the last year, now also encompasses other areas of welfare concern such as the use of rabbits in entertainment (a licensed activity), the breeding of rabbits for food, and diverse non-welfare areas such as agricultural standards, animal health and where identified in the course of Animal Welfare enquiries other criminal offences, including fraud, counterfeiting, fly-tipping and drugs.

2020 has been a record-breaking year for the Animal Welfare Officer role; it started with more investigations than any other year so far since 2017, and has continued in that vein, despite the restrictions that came with COVID-19 and the resulting UK Lockdown.

The RWA AWO says, "As we move in to July 2020, I have worked on 143 investigations, the lion's share of which have related to rabbit breeders and allied matters (101 enquiries to date), and the remainder relating to Hunting Act offences (mainly Hare Coursing), allied firearms matters, drugs, fly-tipping and fraud.

"Despite COVID-19's impact upon legitimate businesses, it appears that "Black Market" activities have flourished in the last 3 months of lockdown, and I have even identified new breeders seeking rabbits to kick start their breeding businesses.

"So far this year, I have referred suspected unlicensed pet traders to numerous councils, referred welfare matters to the RSPCA and other criminality to various Police Forces; I have also referred a number of matters to HMRC where there is a suggestion of tax offences occurring, which in the last 6 months has also included offences relating to red diesel, identified when I have been out making enquiries.

"Where endangered species issues have been identified, these have also been referred to the Police via Crimestoppers - the illicit trade in endangered wildlife and fauna is one of the major priorities for the

National Wildlife Crime Unit, and the funding that supports this trade was recently the subject of a major report by the Financial Action Task Force.

"The matters that RWA investigates, particularly around uncontrolled online breeders, is a part of the web of wildlife crime in the United Kingdom, and its impact is felt in a wide array of ways, ranging from animal welfare to animal health and even money laundering and tax evasion.

"To illustrate how massive the scale of operations is in 2020, I will compare the same points since taking up my post:

2017 - First six months in post - 35 investigations

2018 - January to June - 40 investigations

2019 - January to June - 50 investigations had been raised by this point.

"It is clear from these figures that, far from suppressing the online trade in pets, COVID-19 has caused an apparent proliferation of breeders and their advertising.

Only this morning I received notification that 53 new advertisements for Rex Rabbits had gone onto a popular animal trading site in the last 24 hours.

"My enquiries have shown that the issue is a national one, with traders and breeders cropping up in England, Wales, Scotland and Northern Ireland.

Analysis of the figures from HINDESIGHT and my own research, has shown that the greatest concentration of breeders appears to be in England, and in particular in the South and South-East, although bubbles of activity do appear around many major conurbations.

"As I type, I have 10 completed investigations that are ready to pass to the relevant Local Authorities, with five of those also being suitable for referral to HM Revenue and Customs.

A further 25 cases are in development.

If the year continues as it has started, then I can foresee at least 200 cases mounted by the RWA before 2020 is over" - **Mark Dron.**

RABBIT ROUNDUP

Photo: Burgess Pet Care



Rabbit Awareness Week goes digital for 2020 Campaign

Rabbits are officially one of our most misunderstood pets

The organisers and partners of Rabbit Awareness Week (RAW), the UK's largest welfare campaign for rabbits, are excited to announce that this year's RAW campaign will look rather different in the light of the recent pandemic. This year, all the fun will be hosted online, as a festival of live videos, content sharing and activities from August 10th - 23rd - a longer period than usual.

RAW 2020 aims to reach, educate and inform more rabbit owners than ever before about the five key welfare needs of rabbits and will encourage them to join in the conversation online.

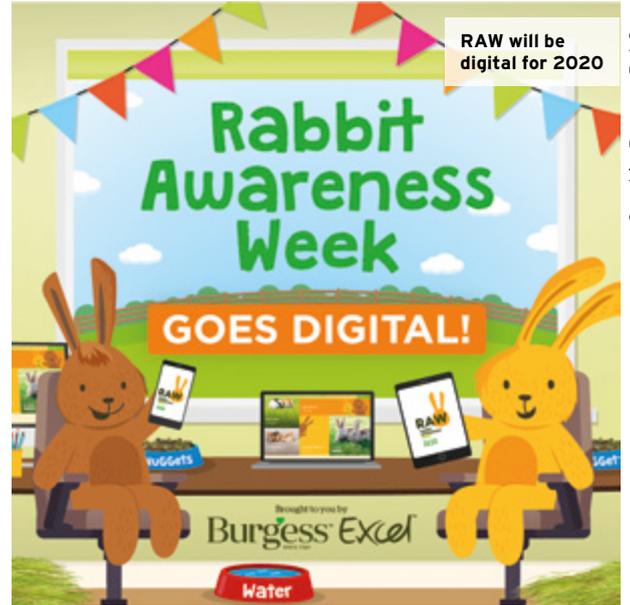
As always, RAW will bring together leading rabbit welfare experts and veterinary professionals from across the UK, as they join forces with welfare charities and organisations who work tirelessly to help improve standards of rabbit care.

In previous years, these individuals and organisations have hosted physical events at their premises, which is obviously significantly more challenging this year. As a result, the RAW team is currently collating a packed programme of digital workshops, live Q&As, virtual tours and educational videos, as well as a huge range of content, which will be shared online.

Rabbit owners, animal lovers and anyone else interested in learning more about rabbit welfare will be able to take part in all of the fun for free throughout Rabbit Awareness Week, through the official website and social media pages, as well as the social media pages of the RAW partner organisations.

Holly Ackroyd, Senior Brand Manager at Burgess Pet Care, who organise RAW, said: "Vets have always played an active, and absolutely vital part of Rabbit Awareness Week but the Coronavirus pandemic means we've had to get a bit more creative to make sure we can drive and facilitate their involvement with this year's campaign. We're delighted that the RAW partners and our supporting vets will once again be lending their support to the campaign by delivering online content that promises to both entertain and educate UK owners, and 'would-be' owners of these amazing animals.

"Despite the current challenges, we're confident this year's campaign will build on previous years to be our biggest RAW campaign yet. As one of the UK's most



Graphic: Burgess Pet Care

misunderstood pets, it's so important that we continue to raise awareness about the welfare needs of rabbits. We've invested significantly into the creation of new content and collateral on all of these needs and have extended the length of the campaign to ensure that we comprehensively shine a light on them all."

This new collateral includes the RAW Better Bunnies Programme, a daily checklist that encourages rabbit owners to maintain regular daily interaction with their rabbits, as well as ensuring they're providing the right diets and performing regular health checks.

Dr Richard Saunders, Specialist Veterinary Adviser at the Rabbit Welfare Association & Fund said:

"Rabbits are officially one of our most misunderstood pets so going ahead with RAW was more important than ever in this crisis. We are delighted to see Burgess, as our organisers, diversifying a well-established national campaign to devise an innovative, creative, digital programme of activity, which will do a great job of addressing the key issues."

Thousands of veterinary practices, rescue centres and pet retailers take part in RAW every year and are urged to do their bit for rabbit welfare by hosting their own digital events online.

A full timeline of activity for this year's RAW campaign, as well as updated marketing collateral, is available to download from the RAW website at www.rabbitawarenessweek.co.uk.

Payment by cheque

From August 2020, it is going to cost us 90p for each cheque we pay in to our bank account. This is almost 4% of the £24 adult membership. Although we do expect there to be some fees for the majority of the transactions that we process, we cannot absorb that cost, especially having just increased the fees for the first time in 8 years to ensure that we are around for a long time to come! By comparison, Standing Orders are free, and we pay less than 1% of the membership fee via 'Take Payment' on our website.

So unfortunately, if you would like to pay by cheque we ask that you pay the £90p fee, in addition to your annual subscription, so for adults that will be £24.90, and for vets £55.90, etc.

You can pay over the telephone at no extra charge.

If you would like a Standing Order form, please let us know, and we can send one to you.

You can of course pay via our website too.

40 Autumn 2020 | **Rabbiting On**

Cancellation of 2020 RWAFF Conferences

As you are likely to be aware, due to the Coronavirus pandemic, we had to cancel both the RWAFF conference and the welfare day we had planned for 2020.

We had initially hoped that we could deliver both of these later in the year, but the with situation being so serious and unclear how long it will go on for, we thought the most sensible thing was to postpone them until 2021. We will announce new dates for both as soon as we are able to.

We are, of course, still working hard on other projects.

If you had booked for either the 2020 events, and have not yet been contacted about a refund, please email info@rabbitwelfare.co.uk.

Supporting the rabbit with rolled up towels will help them if they are unbalanced

Nursing care at home - caring for rabbits with a head tilt

By Claire Speight, Registered Veterinary Nurse

This new series will help to support owners caring for their rabbits at home who have specific care needs. In the first instalment we look at rabbits with a head tilt.

Why do rabbits get a head tilt?

A head tilt (torticollis) can occur for a variety of reasons, but is usually caused by either an inner ear condition, such as an infection or abscess, or the parasite, *E. cuniculi*.

The severity of the head tilt can vary and may be anything from a near-180 degree angle to the near-normal position of the rabbit's head. The tilt can be either to the left or right. The rabbit may also be exhibiting nystagmus, which is flickering of the eyes from side to side, up and down, or a mixture of both.

Veterinary treatment

You must take your rabbit to a rabbit savvy vet as soon as you notice your rabbit has a head tilt, or anything else which concerns you. Your vet will perform a clinical examination, as well as appropriate diagnostics, in order to determine the cause and prescribe the correct treatment. This may vary from rabbit to rabbit, even with the same condition, so it is important you follow your vet's advice for as long as necessary and do not deviate from this.

Home care

As well as the treatment from your vet, your rabbit is likely to require some supportive care at home.

Rabbits with a head tilt are often uncoordinated, have difficulty standing and moving, roll or circle around, and may also suffer from dizziness.

You are likely to be required to undertake some of the following home care for your rabbit:

• Help to mobilise

You may need to pad your rabbit's accommodation, so they do not injure themselves. Rabbits with a head tilt may be unable to stand or move without rolling around. They should be kept in a confined area, which is padded with rolled up towels, to stop them panicking and rolling around. Initially a laundry basket can be a good enclosure during rolling periods, padded with rolled up towels. Only when they begin to adjust to the head tilt or there is some improvement (which may be several weeks), can the space be increased, taking care to ensure they are still supported as much as required. Regular exercise (once they are stable) is very important. Having a large area to play in is particularly beneficial.



• Syringe feeding/hand feeding

If your rabbit is not eating or not eating enough, you will need to syringe feed them. A rabbit with a head tilt is often unable to maintain their balance, and as a result they may feel dizzy and not want to eat. You will need to ensure you can safely restrain your rabbit to syringe feed them. Your vet will be able to show you how, but often the best solution is to wrap them in a towel for their own safety. You can also try to hand feed them with their favourite food, to tempt them to eat. You may need to place their water bowl/bottle directly in front of them, under supervision, every couple of hours to offer them a drink.

• Medications

Your rabbit may be on a variety of medications, which will need to be given at specific times and doses. Make sure you do not over or under-dose on the medications, otherwise they will not work. Drawing up a chart to ensure you do not miss a dose is a good idea, and, like syringe feeding, you may need to wrap the rabbit in a towel for their own safety.

Careful monitoring is needed to ensure the rabbit's eye, which is turned down towards the floor, does not rub on bedding or the floor.

Handle the rabbit as little as possible, as the sensation of motion will distress them, and perform all medicating and cleaning with them on the floor, in case they start to become distressed.

• Grooming and cleaning

Rabbits who have a head tilt are often, initially, unable to groom themselves (although may be able to after some adjustment time). Wiping your rabbits eyes, ears and mouth, to ensure they stay clean is imperative. If they will accept being groomed and having their bottom cleaned, this should also be done daily. Make sure they are bedded on absorbent bedding, if they are unable to get to their litter tray, so urine and faeces wick away and are not in contact with the skin.

• Keep the environment comfortable

They will need to be bought inside the house. Make sure the environment is not too warm or cold. Ensure the area they are kept in is quiet, away from other animals, although try to keep their companion within sight and smell if direct contact is not possible.

Setting up a webcam so you can monitor them when you cannot directly supervise them is a good idea.

RWAF note:

Although many rabbits with a head tilt do recover to live a normal or near normal life, not all rabbits will, and signs that welfare is poor include an inability to groom/move about and inability to show escape behaviours. In these cases, very sadly euthanasia on welfare grounds may need to be considered.

RESCUE POINT OF VIEW

Wood Green the Animals Charity versus COVID-19

One of the giant babies growing up

By Marie Pavaday-Pillay,
Behaviour and Training Specialist
- Small and Field Animal



All photos: Wood Green the Animals Charity

Like for so many other rescues and charities, during March 2020 the decision was made to temporarily close the rehoming centre and all charity shops to the public due to Covid-19, something none of us could ever have imagined happening. As I sit and write this (May 2020), the whole world is still very much living day to day, assessing how this virus will affect us, our families and our pets.

24/7 task

As many other rescues will know, it is not just a case of shutting up shop and going home; small and large rescue organisations still have to continue regardless. Pets and people still need our support, whether this is in their homes or for the pets that were already in our care before lockdown.

At Wood Green we are so fortunate to have such a dedicated team of staff, volunteers and foster carers, each and every one pulling together to ensure we could still operate to the best of our abilities, with the goal of ensuring happy and healthy pets.

Changes

So, what changes did we have to make and how has this affected us?

Obviously, the safety of our staff is extremely important: those who had to go into isolation did and continue to do so; where possible, as many staff who were able to, now work remotely from home reducing the onsite care teams across the species to minimum levels. Due to the need to reduce the amount of staff and volunteers on site, our foster co-ordinators were quick to place 126 dogs, cats and small pets, including eighteen rabbits, into fully equipped foster homes, which eventually grew to 217 pets in foster. Those new to fostering were trained through video and online training facilities, and offered video call support when needed by myself and the specialist team. We are fortunate to have a team of drivers who continue, in a safe way, to drop off and collect all foster animals and any supplies the foster homes may require, enabling the families to continue to stay home and safe.

Of course, not every pet in our care was able to go into a foster home. Some may require regular vet checks, others may have just not suited the foster homes available due to special requirements. For the small pet department, that meant that a remaining 22 rabbits stayed on site.

WOOD GREEN
The Animals Charity

Veterinary care

The small pet and veterinary teams also had to put changes into effect.

In most cases, the small pet team consisted of around four members of staff, each responsible for different species, including rabbits, guinea pigs, ferrets, chickens and rodents. Social distancing was obviously a key factor and thankfully each area is relatively well spread out, so each member was able to carry out day-to-day duties mostly lone working. We have radios for communication and team meetings now take place through video calls.

Thankfully we had plenty of hay, dry feed etc. stocked up. However, initially fresh food was harder to purchase, due to the stockpile rush and following restrictions in quantities. Luckily, we grow an abundance of fresh forage on site, so were able to provide the rabbits with plenty of handpicked forage each day, and suppliers soon found a balance in arrival times for other supplies.



The emergency intake of nine rabbits



As some will know, we are extremely fortunate to have a veterinary building on site with access to many rabbit savvy vets and nurses, and although neutering had to temporarily stop, we were able to continue with vaccinations, treatments and emergencies. Similar to private veterinary practices, we set up an area where any rabbits requiring nurse or vet appointments could be placed in a safe waiting area for the nurses to collect and take through.

Prior to the virus we had two or three vets on site daily. However, this obviously changed as not all were able to continue to come in and, on some days, only one vet was able to attend, so many assessments/triaging treatment requirements etc. had to be done through email images and Skype videos. This meant the small pet team had to plan rabbit bonding carefully, and whilst injuries are very rare, thanks to the very experienced team who have mixed thousands of rabbits over the years, everyone who has bonded rabbits will know there is always a small risk of a fight injury that may require veterinary treatment.

Bonding services

We have for many years now offered a mixing service, whereby customers who have a single rabbit are able to bring their rabbit in to be mixed with a suitable one we have available for rehoming. Single rabbits can make up a large percentage of those waiting to come into our care, so rather than mix them into pairs as soon as it is safe to do so, our rehoming team works hard to match them with customer's rabbits who are looking for a new companion. This enables us to rescue more rabbits and get them into homes quicker, due to often already having potential homes lined up prior to the rabbit coming into our care.

We do take in pairs and keep bonded pairs together. However, over the years sadly we have found these can often stay in our care waiting for a new home for longer, as the demand for pairs is less than it is for people wanting to match up a single rabbit. Due to the lockdown, we had to reassess this method, and felt that due to the uncertainty of timescale that the single rabbits in our care would be alone, we would need to pair all single rabbits up to ensure their social needs were being met. Thankfully, all the rabbits fell in love with their new companions and we were not faced with any 'tricky mixes'.

Rehoming and intakes

Initially, intake and rehoming was brought to a complete standstill whilst the strict lockdown measures were in place, and our average adoption enquires slowed right down, so the rehoming teams only had the rabbits that were reserved prior to lockdown to try to process. From the beginning of May, this was slightly eased allowing larger organisations, like ourselves, to take small steps towards rehoming pets in our care and resuming intake.

Marie with two of the Wood Green rabbits



We had several rabbits already reserved prior to the shut down and their new homes were very much ready and waiting for the green light. We initially found that some suppliers of enclosures, food etc. had delays, but this now seems to have evened out.

Rehoming routines have had to change slightly, for example, normally a member of staff would be able to demonstrate how to health check and handle their new rabbits. As we are still unable to allow customers onto the site, our team of drivers are delivering the rabbits to their new homes and our rehoming team is ensuring each home receives a health check and handling video, which I was able to put together with the support of our marketing team. They are also provided with video content of the rabbits in their foster home so the new owner can feel they have an idea of the rabbit's character, likes and dislikes prior to them officially meeting them, which normally would be possible in our rehoming warrens where the public could sit and socialise with their potential new rabbits.

Intake also had resumed by early May, although again on a much smaller scale whilst we continue to operate on minimum staff levels. During late May, we were asked to assist with the emergency intake of nine rabbits due to the ill health of the owner, all required neutering, vaccinations and general assessments. Thankfully the surgery team are now able to continue with neutering etc. so these rabbits were quickly available for rehoming. We also took in two groups of hand reared babies, including a litter of continental giants. These have all done really well and will be looking for their new suitable homes once old enough.

Like everyone else we will continue to reassess how we operate and how to stay safe, and although we are in uncertain times, we know one certainty is that rescue workers will continue to pull together to support people and their pets.

PAW PRINTS



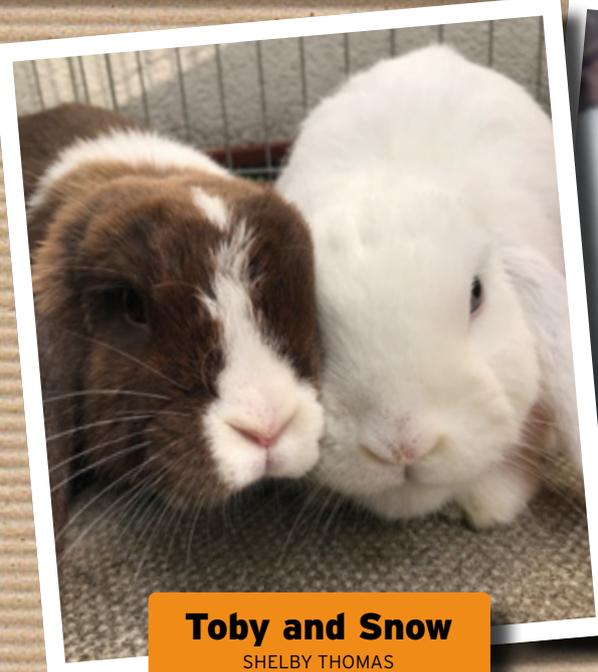
We'd love you to contribute to Rabbiting On, and how better than with photos of your own rabbits? We know there are some gorgeous bunnies out there, and we'd all love to see them. Please share your favourite photos with us, and we'll choose the best shots for our regular Paw Prints feature.

We also choose photos for Star Bunny (on the Contents page) and our It's My Bunny! Competition from your Paw Prints pictures - and there are prizes to win!

Pictures submitted to Paw Prints may also be chosen to illustrate features in Rabbiting On.



Eli, Reina and Sebastian
SARAH MCMAHON



Toby and Snow
SHELBY THOMAS



Clemintine and Maximus
HEATHER MEDLEY



Peaches and Sammy the top
LAURA DRIVER



Cornelia

LAURA SCOTT



Florence

HELEN FOSTER



Pumpkin

SUMMER HOBBS



**Penelope
and Parker**

CHARLOTTE FARRANT



Posie and Percy

EMMA COOK



**and
tortoise**



**Dolly and
Max**

JAMIE BURGESS

RULES FOR PHOTO SUBMISSIONS

We love to see your photos of your rabbits, and we're delighted to be able to feature them in Paw Prints, as well as It's My Bunny, and the Star bunny on the Contents page. Remember that one picture on Paw Prints wins a mystery prize. And we also choose our cover pictures from the photos you submit, so your bunny could even become a cover star! We also use photos in advice leaflets, on our website and on our Pinterest boards, so your rabbits could become Internet stars too! If you aren't familiar with Pinterest, you'll find our boards here, courtesy of one of our wonderful volunteers, Jo Hinde <http://www.pinterest.com/rwaf/> But unfortunately some readers send us photos that we are unable to use, because they're not high enough resolution for printing in the magazine, or the rabbit's or owner's name aren't supplied.

Please email your photos to: rwafphotos@gmail.com

Also, it's vital that your camera is set up properly before you take your photos, as it isn't possible to increase the resolution afterwards. We need you to set up your camera to the highest image quality. Any photos you submit should be about 1-1.5Mb (or more) if it's a jpeg or jpg file, and around 2.5-3Mb (or more) if it's a tiff (please compress tiff files before sending)

If you have difficulties, please contact hq@rabbitwelfare.co.uk or the helpline on 0844 324 6090, and we'll do what we can to help.

You can also send print photos or photo CDs to: **Rabbiting On Photos, RWAF, Enigma House, Culmhead Business Park, Taunton, Somerset, TA3 7DY.**

We're looking forward to seeing lots more lovely bunnies!

CAN WE HELP?

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- Log on to the website at www.rabbitwelfare.co.uk for advice and articles on many rabbit related topics.
- To contact the RWF by post please write to:
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Please include an SAE if you would like a reply.
- To contact the RWF by e-mail, please send e-mails to:
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RWAF departments

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(Photos can be e-mailed to rwafphotos@gmail.com. Please do not e-mail photos to the Editorial e-mail address.)

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