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AN INTRODUCTION TO Keeping Rats as Pets

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Introduction

If you are looking for a pet that is friendly, entertaining and social, then rats are a great choice for all ages. Despite many people having a predisposed phobia of them, once you have met rats, even the most reluctant of people find it hard to resist their charm. The following article examines some of the considerations of keeping rats as pets including the cost of keeping rats, common health problems that may be encountered and how understanding a rat's natural behaviour can ensure better care is provided.

Firstly, rats are highly entertaining and many an hour can be spent observing their interesting behaviours. Each individual rat has a distinctive personality that cannot fail to entertain even the hardest of people. Rats are intelligent and form bonds with cage mates and indeed human carers. They are extremely inquisitive by nature and any new object placed in their enclosure is explored with vigour.

Males and females have different behavioural traits but both sexes are fantastic to keep. Males tend to be 'lazier', whilst females tend to be faster and the sneakier of the sexes, often looking for escape routes when the cage door opens. Females will be in oestrus (receptive to mating) every 4-5 days when at breeding age, which can be from approximately 6-8 weeks of age through adulthood. During this time, their behaviour changes and they can often be seen running very quickly around the cage and suddenly freezing in mating position often shaking on the spot. They may be more or less receptive to human handling during this time depending on the individual

(authors own observations). If males are housed nearby, these males may begin fighting over the potential mate (Taylor, 1975). Both sexes can be neutered therefore preventing unwanted litters in mixed groups. Whilst this can also reduce aggression in males it does not have the same affect in females (DeBold & Miczek, 1984) and indeed spaying is very much more risky to undertake than

castration and should not be advised as a routine procedure, especially on such a small animal. A castrated male and entire females will usually happily cohabit provided the environment is suitable.

In their groups, rats will demonstrate natural communication behaviours with each other and will show submissive and dominant behaviours. A truly submissive rat will lie on its back, to expose vulnerable body parts, and stay there – even when other rats have left them. Other forms of aggression include 'boxing' and fighting with injuries. Male rats tend to retaliate against attacks



from other males whereas females tend to display more avoidance behaviours. However, these displays of aggression will often depend on the social status of the individual in question (Hurst *et al.*, 1996). It is important that if one rat in particular receives a high level of social pressure that they are either re-housed with another less aggressive rat (Barclay 2001) or the environment is enriched with more "escape" areas. Long term social pressure (such as continuous mounting, being rolled over by another rat, aggressive grooming) may cause long -term physiological consequences (Hurst *et al* 1999).

Rats will also communicate using squeaks, although as much of the vocal communication is in ultrasound, it will be too high for the range of human hearing (Sales *et al.*, 1988).

Rats are generally inexpensive to buy from pet shops or breeders. More than one rat should always be acquired – as naturally social animals they should never be housed alone. Rats that are housed singly are

more prone to developing behaviour problems such as tail chasing and bar biting (Hurst *et al.*, 1997). There are also many rescue centres (usually smaller based charities) that have rats in need of homes. These are often rats from unwanted litters where young rats have bred prior to being separated from siblings of the opposite sex. If introducing strange rats to each other, always do so on neutral territory in order to prevent aggression towards the newest member (Lore *et al.*, 1984).

Rats are easy to feed and worth noting is that these animals are omnivores so need a mixture of meat and vegetable matter. Diets are available from pet stores either in mixed form or in complete kibble. Whilst the mixed food allows rats to selectively feed, the kibble foods will ensure that they get all their nutritional needs fulfilled as opposed to simply eating the best bits. That said, diets should be supplemented with fresh foods such as raw or cooked vegetables (with no added salt or spices) or small meat portions. 'Free foods' such as untreated dandelion leaves are always welcomed with relish, although these should always be given in moderation. Supplementation will not only ensure a good quality diet but will also provide the animals with environmental enrichment. Fresh water should always be provided and whilst a bottle will ensure the water stays clean a heavy bowl can also be used.

Cages are a 'one off' buy and therefore the largest cage that can be afforded is best. Cages marketed as ferret cages are an excellent size, although be aware of the width of cage bars – young rats can get through very small gaps. Avoid 'starter cages' and lidded glass aquariums, as whilst these suit young rats for very short periods, they soon grow. These accommodation types are completely unsuitable for adult rats due to not only their size but also lack of climbing opportunities they present. Glass aquariums do not allow adequate ventilation which can lead to health problems (Blue Cross,

2013). Cages with mesh flooring are not suitable to house rats in. These cages can not only cause health issues such as Bumblefoot but are simply not comfortable for rats to rest on who, if given the choice, will seek out solid flooring as opposed to mesh (Manser *et al.*, 1995). As with all housing, location is important. Accommodation should not be placed in too hot or too noisy an environment so this should also be considered when deciding on the rats location within the house.

Environmental enrichment is essential in order to fulfil the rats necessary welfare needs thus reducing environmental stress (Belz *et al.*, 2003). Enrichment is relatively inexpensive to provide. Rats can be given cardboard boxes to sleep in although many do appreciate a comfy hammock. Ladders, ropes and untreated fruit tree branches also allow rats to climb using their amazing balancing skills. Branches also allow them to fulfil their natural and necessary rodent behaviour of chewing and keeping their continuously growing teeth down (Johnson *et al.*, 2004). Objects such as empty cereal boxes, paper bags or scrap paper (be aware of ink) can also be placed in enclosures. Females tend to be the sex that will 'nest build' but males can do this too. This trait can be extremely entertaining for rat and owner, especially if providing them with bits of the 'nest', such as scrap paper, one piece at a time.



Items can also be given with food placed inside in order to give rats more of a foraging challenge,

however if doing this, ensure your rats can access other food just in case they are unable to work out the given puzzle! Different smells in the way of edible herbs e.g. rosemary or a small sprinkle of fresh citrus juice can also be placed around the enclosure in order to give their noses a challenge. As well as these, toys can be purchased such as treat balls and Kongs although objects need to be changed on a regular basis in order to maintain interest (Balcombe, 2006).

Trips to vets are, if lucky, few and far between. Rats have a relatively short lifespan of 2-3 years although many exceed this. Some rats may never need a trip to the vets whilst others may develop health issues. The most common problems are respiratory problems and tumours (National Fancy Rat Society, 2013). Whilst the first can be treated with medication (or occasionally changing accommodation floor covering-rats can develop allergies to certain coverings), tumours may need removing. Other health problems include ear infections (presented via head tilts or scratching at the ears) and skin problems. Close observation of health is needed and as with all animals, any concern over health should be acted upon as soon as possible.



As previously stated, rats are highly social with great personalities. Most (there are always exceptions to the rule) love human company. Even rats that don't want to be fussed and handled may be happy to approach you for food. Rats that have been under socialised, such as rescue rats or those that have not had early

handling in a pet shop, can learn to trust and approach you given time. That said, human company can never replace the company of their own kind - even the most human orientated of rats cannot sleep in a hammock with their human owners!

Rats can be trained just as many other animals can be. They can easily learn to come to their name, just as a dog will, and they can also be trained to perform tricks. These tricks can be simple such as targeting objects but with time, rats can also be trained to perform 'agility' and more complicated actions (Ducommun, 2008). Not only does this training help to improve the bond with the owner it also gives these intelligent animals an opportunity for stimulation and of course provides entertainment for humans too.

Rats are easy to handle and unlike mice they will not 'jump' off surfaces so handling them is relatively stress free! To pick up a rat, hold them over their shoulders whilst supporting the weight of their body with your other hand. They can then be held against your chest or lap. Do not try to handle a rat if your hands smell of food or other animals. Due to their poor eyesight rats may think your approaching hand is a tasty treat or a predator - either way, it can lead to a nasty bite! If approaching a nervous rat always approach at a slow pace and do so calmly and quietly. If they appear anxious move away and try to get them used to being touched first, for example a feather can be stroked along their back whilst offering small tit bits.

Never pick rats up by their tails as this can cause painful injuries and may in turn lead to a rat that doesn't trust its handlers. Rats also do not need to be 'pinned down' before being picked up. Tame rats will approach humans and allow themselves to be scooped up; some may even groom you with a few licks! In order for rats to be tame and trusting of humans they need to be handled from a young age; a good breeder will be handling rats from a few weeks old in order to get them used to humans. If purchasing rats

for children, it is an idea to handle them first in order to judge how they respond. Never purchase a rat that has been removed from its mother at four weeks of age or younger. Whilst young rats can be weaned at three weeks a good breeder will leave them with their mother until at least five weeks old in order for them to continue learning how to behave as a rat, and may not home them until 8-9 weeks.

Many rats will happily sit on laps to be stroked and when content, will grind their teeth (known as bruxing) (Lissenberg, 2006) or even snooze which is just as relaxing as having a dog or cat on your lap. Some will even happily sit on shoulders or in large pockets whilst you carry out your daily business. If handling rats outside however, it is important to be aware of natural predators such as cats, dogs or even birds of prey.

This article has been written as an introduction to keeping rats, the care needed and an overview of their natural behaviour needs. If considering keeping these animals, as with any animal, it is worth investing time before purchasing them in order to ensure you can provide the necessary care for them. There are many books and articles on keeping rats that are worth reading prior to a decision to keep them being made.

Reference List

Balcombe, J. P. (2006) Laboratory environments and rodents' behavioural needs: a review. *Laboratory Animal*. **40**: 217-235.

Barclay, R. (2001) The effects of intrusion on the behaviour of caged laboratory rats (*rattus norvegicus*): Consequences for welfare. *Animal Welfare* **10**: 421-436

Belz, E.E., Kennell, J.S., Czambel, R.K., Rubin, R.T. and Rhodes. M.E., (2003) Environmental enrichment lowers stress responsive hormones in singly housed male and female rats. *Pharmacology, Biochemistry and Behavior* **76**: 481-486.

Blue Cross. Caring for your rat. <http://www.bluecross.org.uk/2150-2796/Caring-for-your-rat.html> Accessed 9/5/13.

DeBold, J. F. and K. A. Miczek. (1984). Aggression persists after ovariectomy in female rats. *Hormones and Behavior*. **18**: 177-190.

Ducommun, D. (2008) *The Complete Guide to Rat Training*. T.F.H. Publications Inc, Neptune City, New Jersey.

Hurst, J.L., Barnard, C.J., Hare, R., Wheeldon, E.B. and West, C.D. (1996) Housing and welfare in laboratory rats: time-budgeting and pathophysiology in single sex groups. *Animal Behaviour* **52**: 335-360.

Hurst, J.L., Barnard, C.J., Nevison, C.M. and West, C.D. (1997) Housing and Welfare in laboratory rats: Welfare implications of isolation and social contact among caged males. *Animal Welfare* **6**:329-347.

Hurst, J.L., Barnard, C.J., Tolladay, U., Nevison, C.M. and West, C.D. (1999) Housing and welfare in laboratory rats: effects of cage stocking density and behavioural predictors of welfare. *Animal Behaviour* **58**: 563-586.

Johnson, S.R., Patterson-Kane, E.G. Niel, L. (2004) Foraging enrichment for laboratory rats: a theoretical review. *Animal Welfare* **13**: 305-312.

Lissenberg, J. (2006) *Fancy Rats*. Rebo Publishers, The Netherlands.

Lore, R., Nikolettseas, M and Takahashi, L. (1984). Colony aggression in laboratory rats: a review and some recommendations. *Aggressive Behavior*. **10**: 59-71. Cited in www.ratbehavior.org Accessed 9/5/13.

Manser, C.E., Morris, T.H. and Broom. D.M. (1995) An investigation into the effects of solid or grid cage flooring on the welfare of laboratory rats. *Laboratory Animals* **29**: 353-363. Cited in Guidelines for the Housing of Rats in Scientific Institutions. Animal Research Review Panel, NSW Department of Primary Industries, Locked Bag 21, Orange NSW 2800.

National Fancy Rat Society. Articles and information on the health of fancy rats. <http://www.nfrs.org/articleshealth.html> Accessed 9/5/13.

Sales, G. D., Wilson, K.J., Milligan Sr., S.K. (1988). Environmental ultrasound in laboratories and animal houses: A possible cause for concern in the welfare and use of laboratory animals. *Laboratory Animal* **22**:369-375.

Taylor, G. T. (1975). Male aggression in the presence of an estrous female. *Journal of Comparative and Physiological Psychology* **89(3)**:246-52. Cited in www.ratbehavior.org Accessed 9/5/13.

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