



# Shelter

## research

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## The effects of a structured enrichment program on a kennelled population of domestic dogs (*Canis familiaris*).

By Anne Fawcett



Mia and her dog Caleb

Recent research has shown that elements of environmental and social enrichment can have positive effects on the welfare of dogs in kennel facilities. But what happens when all of those elements are combined in a structured enrichment program? Does the welfare of kennelled dogs uniformly improve and to what extent? Do we run the risk of stressing kennelled dogs by over stimulating them?

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Domestic dogs are often housed in kennel facilities in rescue shelters, boarding or training facilities. But due to their design for the ease of maintaining hygiene and housing multiple animals, many kennels are sterile and often fail to meet the behavioural needs of resident dogs. Behaviours like eating faeces (coprophagy), excessive vocalising and repetitive actions that serve no apparent purpose (stereotypies) may indicate stress and reduced welfare in kennelled dogs.

Mia Cobb, Training Kennels and Veterinary Clinic Manager for Guide Dogs Victoria, is undertaking a research project through the School of Psychology, Psychiatry and Psychological Medicine at Monash University to find out.

“Research has been conducted into the effects of individual elements of enrichment with kennelled dogs,” says Mia. “We know that playing classical music is a positive thing, we know that providing toys has benefits, and we know that using scents like lavender has been supported.”

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# Environmental enrichment for cats housed in welfare shelters

Adult cats provided with environmental enrichment and positive handling experiences may increase their chances of being re-homed by as much as 31 per cent, according to researchers from the University of British Columbia.

Anyone who works in an animal shelter knows that adult cats are among the most difficult animals to re-home. This may be for a variety of reasons: Some would-be owners may choose a kitten because they want to enjoy the maximum amount of years with their pet. Alternatively, adult cats may be less physically appealing to potential adopters than kittens, or they may be less interactive.



There's no question that adult cats are fighting an uphill battle when it comes to grabbing the attention of potential owners.

But does the shelter environment make it harder for adult cats to shine? While kittens tend to adapt to individual or group housing quite quickly, we're all familiar with adult cats that hiss or growl and hide at the back of their cage.

A series of US studies have already shown that cats housed in individual stainless steel cages exhibit a variety of behavioural problems including excessive vocalisation, over grooming and self mutilation, pica (eating non-nutritious substances like cat litter or newspaper), aggressive or destructive behaviour, reduced appetite, reduced

urination and defecation, and reduction in other normal behaviours like grooming and playing.

This can directly impact on the welfare of adult cats. For example marked reduction in eating and drinking can lead to dehydration, which can make cats more vulnerable to illness. Cats with signs of disease are less likely to be re-homed and more likely to be euthanased.

In some cases group housing of adult cats may reduce some of these negative effects by providing social interaction and environmental enrichment – but not all cats cope in a group situation. In fact, some studies have shown that group-housed cats exhibit higher stress levels than those housed

individually. So group housing alone isn't enough to reduce stress in adult cats.

An alternative method of reducing stress in adult cats is to provide consistent and positive interaction with handlers. This isn't always possible in shelters that may be understaffed and overstretched.



And does it really make a difference? A recent study published in *Animal Welfare*, the journal of the Universities Federation for Animal Welfare, suggests it does. In the study, published late last year, researchers from the University of British Columbia in Canada set out to determine whether providing a combination of environmental enrichment and consistent, positive handling could reduce behavioural problems and increase the chances of adoption for adult cats.

The study, performed at the Vancouver Shelter of the British Columbia Society for the Prevention of Cruelty to Animals (BCSPCA), was a randomised controlled trial involving 165 healthy adult cats.

After the cats were surrendered and deemed suitable for re-homing, they were randomly assigned to one of four groups.

Group one cats were individually housed in stainless steel cages lined with newspaper and furnished with food and water dishes, a towel to sleep on and a litter tray.

Group two cats were housed in the same way as group one cats, although the cage was vertically oriented (to allow for climbing) and featured a horizontal shelf with a towel draped over it. The cats could sit on the shelf or hide underneath it behind the towel. These cats were also provided with two toys each.

Group three cats were housed with a maximum of seven other cats, in a larger cage designed so that each cat had personal space. These cages contained ten shelves for cats to sit on, each with a towel for bedding. It also contained baskets for cats to hide in, as well as litter trays and separate water bowls and dishes.

Group four cats were also communally housed, but the cages were designed to maximise interaction (particularly play behaviour) between cats. A large playhouse, designed to accommodate several cats, was

placed in the centre of the cage, surrounded by hanging toys. Shelves were provided to sit on – but these shelves allowed for several cats at a time.

Handling of group one cats was minimal, but typical for most adult shelter animals. That is they were moved into a new cage while their

Results of the questionnaire indicated that the behaviour of cats strongly influenced the decision of potential owners to adopt them. Those who adopted cats listed friendliness, playfulness and apparent happiness as the most important behavioural characteristics in the selection of their cat.

**Adult cats provided with an enriched environment and consistent positive handling, are 31% more likely to be adopted than their standard housed counterparts.**

**You could achieve similar results in your shelter or pound by providing cats with interactive toys, extra hiding spaces in cages and by having your staff gently stroke and talk to the cats during handling.**

cage was cleaned each day, then returned to the original cage by the handler. Handlers changed frequently, and none were trained to handle the cats in any particular way.

Cats in the remaining groups (two, three and four) were handled by a trained handler assisting in the study. While cats were moved to an adjacent cage to facilitate cleaning, the handlers moved slowly and spoke reassuringly to the cats. Minimal restraint was used to move the cats, which were stroked by the handlers. Once the cats were placed back into their clean cages handlers spent several minutes patting them and talking to them.

Owners who adopted cats were asked to complete a questionnaire about what influenced their decision.

The results of the study were impressive. Just 45 per cent of the cats kept in the standard, basic manner (group one) were adopted within 21 days, compared with 69 to 76 per cent of cats in groups two, three and four.

That means cats provided with an enriched environment and consistent, positive handling were 31 per cent – or almost one third – more likely to be adopted than adult cats housed in the stock-standard shelter environment.

There was no statistically significant difference between the adoptability of cats in groups two through four. So it didn't matter what alternative type of housing was used, as long as environmental enrichment and positive handling were provided.

Group one cats tended to be adopted slower (spending an average of 12.5 days in the shelter prior to adoption) compared to the other groups (adopted after an average of just five days).

In addition, group one cats were more likely to succumb to illness or be euthanased. They showed evidence of higher levels of stress than the other cats in the study.

So what does it all mean? The key point here is that the standard way cats are housed in shelters results in increased fearful behaviour, as well as a lower adoption rate and increased length of time in the shelter.

But it isn't all bad news. The upshot is that fearfulness, and other less desirable behaviours in shelter cats, may be reduced by providing environmental enrichment (which allows cats to express natural behaviours), and also providing positive and interactive handling experiences.

The researchers suggest that providing housing that gives cats opportunities to hide or seek out personal space may make them more relaxed in the presence of handlers as well as potential owners. This in turn makes the cats more likely to be friendly and playful in the presence of those seeking to adopt a cat.

One problem with the way the study was designed was that it does not allow us to tell which aspects of the environmental enrichment and handling combination had the most beneficial effects on cats.

But it does suggest that shelter staff may increase the chances of re-homing adult cats by providing simple items like toys and hiding spaces in cages, and/or using minimal restraint and stroking and talking to adult cats when interacting with them. Spending a couple of extra minutes attending to each adult cat may make that cat more likely to behave in a friendly and playful way towards humans – and more likely to appeal to a potential owner.

#### References

**Gourkow, N and Fraser, D (2006)** *The effect of housing and handling practices on the welfare, behaviour and selection of domestic cats (Felis sylvestris catus) by adopters in an animal shelter.* *Animal Welfare*, 15:371-377.



## From the Editor

Firstly, I would like to say thank you for the kind comments and positive feedback I received regarding the first issue of our newsletter. We hope to continue to provide the shelter industry with an informative and engaging newsletter and a forum for the sharing of information.



Kate with her dogs Archie and Charlie

"This issue of Shelter Research explores current research on environmental enrichment for cats and dogs housed temporarily in a shelter or pound situation. We trust you will find this topic both interesting and relevant.

We welcome your ideas, for articles or topics, for future issues of the newsletter.

Please contact us if you would like extra copies of Shelter Research.

Please send your ideas or requests for extra copies to:  
**Kate.Mornement@med.monash.edu.au**

# Hints & Tips

Lorraine Sanney, from RSPCA Fairfield (QLD), is a member of the Behavioural Assessment Team and has kindly shared the following ideas for environmental enrichment for both cats and dogs in shelters:

## Dogs:

- Treat bottles – Cut some holes into plastic milk or drink bottles. Then fill them with some treats. You can spread peanut paste or vegemite spread on the outside to encourage the dog to lick the bottle. When it rolls, the treats will fall out.
- Smelling towels – Find any animal in your shelter (goat, cow, horse etc) and give them a good rub down with a towel. Tie the towels around the dog's pens – They LOVE them!  
(For extra smelling power, seal the towels in a garbage bag over night and the smell seems to intensify).
- Swimming pool – Add treats that will sink, as dogs will dip for treats. There's also the added bonus of cooling dogs down on a hot day.

## Cats:

- Cardboard boxes can be made into beds or extra hiding places. Make multiple levels so that many cats can enjoy.
- Cat mobiles – Use empty toilet rolls and toothpaste boxes tied together with wool or string.

NB: These are suggestions and should always be used under supervision.



## The effects of a structured enrichment program on a kennelled population of domestic dogs (Front page article continued)

“While it may seem logical to think that if we add these things together it will be really good for dogs, we need to conduct research to make sure this is actually the case. For all we know, there is a chance we are actually adding more stress to the dogs housed in kennel facilities by giving them all of these enrichment activities.”

Despite the fact that enrichment programs comprising some or many of these elements have been implemented in kennel populations around the world, there have been no published studies that show they are of benefit to the welfare of kennelled dogs.

“Any changes in the way Guide Dogs Victoria operates need to be backed up by scientific facts,” says Mia.

She will use Guide Dogs as a model in the study, but the findings will be of some relevance to all kennelled dogs.

Mia will measure the impact of a structured enrichment program on the behaviour and physiological parameters of dogs. The study will involve Guide Dogs during their first few weeks after returning from the puppy raising program.

One group of dogs will be exposed to a structured enrichment program comprising elements such as free running, massages, grooming and music. They will have visual and social contact with other dogs, interaction with staff and supervised toy play.

A second group will be cared for in the standard fashion, without exposure to the enrichment program.

During the sixteen day study period, dogs from both groups will have their behaviour monitored in a neutral environment. Mia will also measure the presence of stress indicators cortisol and immunoglobulin A (IgA) in both groups at intervals throughout the study.

While cortisol has traditionally been considered a marker of stress, recent studies have suggested that IgA is an excellent indicator of stress in guide dogs. Further studies are required to further determine the relationship between salivary cortisol and salivary secreted IgA.

“This study is also a good opportunity to contribute data about that relationship,” says Mia.

If the results are equivocal, or if they suggest dogs exposed to the structured enrichment program had higher levels of stress, further studies will be required to determine which elements of the program were more likely to cause stress than others.

If the results do show that the structured enrichment program has an overall positive effect, this will form a good basis to compare various structured programs and determine which provides the optimum level of enrichment to maximise the welfare of kennelled dogs.

For more information, please contact Mia at: [Mia.Cobb@med.monash.edu.au](mailto:Mia.Cobb@med.monash.edu.au)



Please email us on [Kate.Mornement@med.monash.edu.au](mailto:Kate.Mornement@med.monash.edu.au) with your environmental enrichment ideas for animals in your shelter. We hope to include your ideas in future issues of the newsletter in our “Toy Box” section.