

1. Introduction

This Code of Practice for the Australian Capital Territory (ACT) has been prepared by the ACT Animal Welfare Advisory Committee (AWAC) to outline the welfare needs of mice and rats. Its purpose is to provide general guidelines on the minimum standards of accommodation, management and care appropriate to owned mice and rats.

This Code of Practice is not intended to cover issues relating to the keeping and care of mice and/or rats for scientific and/or research purposes. A person keeping mice and/or rats for scientific or research purposes is obliged to adhere to the requirements of the *Code of Practice for the Care and Use of Animals for Scientific Purposes*.

A person in charge of mice and rats has a legal liability under the *Animal Welfare Act 1992* to ensure that each rat or mouse receives appropriate and adequate food, water, shelter and exercise.

This Code is divided into two Parts. The first Part of the Code outlines the minimum welfare requirements for the care of mice and rats as required by the *Animal Welfare Act 1992*. The second part of the Code contains animal husbandry techniques for the care of mice and rats as recommended by the ACT Animal Welfare Advisory Committee. Adhering to the full implementation of this Code will achieve a high quality of life for a captive animal.

Animal welfare considerations are becoming increasingly important in the keeping of animals. This Code is based on established experience and current scientific knowledge. Practices once considered acceptable are now being reassessed and modified according to new knowledge and changing attitudes.

Note: Throughout this Code wherever the phrase mice and rats is used it must be emphasised that the AWAC is not suggesting the two species be kept in the same enclosure. In all circumstances it is recommended that mice and rats are housed only with members of their own species.

PART ONE

1.1 Basic Welfare Needs

Mice and rats need housing that provides:

- adequate protection from rain, wind; predators (including cats and dogs); direct sunlight, and extremes of temperature (below 10°C and above 26°C).
- opportunities for exercise; and
- generous ventilation and safety from fumes and vapours (car exhausts, chemicals, ammonia from urine);

1.2**Cages**

Cages should be easily cleaned, vermin proof and safe for the occupants ie. have no sharp projections, and not have a wire mesh floor through which feet and legs may be damaged. This includes during transportation.

The cage should be thoroughly cleaned weekly with a solution of detergent and hot water.

Mice and rats may eat their bedding.

suitable materials include uncontaminated, dry straw, meadow hay, white sawdust, white shavings or shredded paper. The bedding should be checked daily and replaced if wet.

Rats and mice are gregarious by nature and, ideally, should be kept in same sex pairs, or groups, preferably from the same litter, unless they are intended for breeding.

Some males are prone to excessive aggressive behaviour or fighting. If any sign of either of these traits is present then the males should be housed separately.

1.3**Nutrition and Health Care**

Mice and rats should be fed once a day with a commercial pelleted or block mouse and rat feed. Mouldy or rotten vegetables should not be offered.

Fresh clean water should be available at all times. The water should be replaced daily and the bottle kept clean.

Most diseases can be prevented by:

- selecting healthy stock;
- maintaining hygienic living conditions;
- providing adequate space and environmental stimulation;
- ensuring food is fresh, in appropriate quantities, and suitable for mice and rats; and
- early detection of problems and seeking advice from a veterinarian.

1.4**Breeding and Placement of Young**

Mice and rats are prolific breeders. When breeding is not intended males and females must be kept in separate cages or desexed.

Young can be placed in a new home soon after weaning, provided that they are healthy and gaining weight. The new owner should be given accurate information on housing, diet, health care, parasite control, handling and grooming.

PART TWO

2.1.	Responsible Ownership
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Since humans can alter or control an animal's environment, animal welfare includes the concept that people have duties and responsibilities towards animals. The greater the level of interference with, or control of an animal's environment, the greater the need for vigilant animal care.

Responsible ownership means looking after the physical and emotional needs of the animal, and includes adult supervision of children who have rats and/or mice as pets. Account should be taken of its potential interaction with neighbouring humans and animals. When taking on the responsibility for an animal its potential life span should be considered, which for rats is 3 to 5 years and for mice is 2 to 4 years.

Small animals, such as mice and rats, must not be allowed to escape from the owner's control as they are susceptible to attack from other animals.

Identification is difficult, however microchipping, ear tags or leg bands are options.

To reduce the number of mice and/or rats for which homes can not be found, the decision to allow rats and/or mice to breed should be made only after ensuring adequate homes are available for the offspring. (*Adequate homes do not equate to healthy offspring*) Owners are responsible for finding suitable homes for all progeny produced by their animals and informing buyers about the animals' requirements for diet, accommodation, management and general health care.

2.2**Unwanted Animals**

It is recognised that there will be times when a person will be unable to keep and/or care for an animal. When that occurs arrangements to pass the animal on to a new owner either privately or through the RSPCA should be made. It should be noted that if the RSPCA is unable to rehouse the unwanted animal it will ultimately be euthanased. Only after efforts to have an animal rehoused have been fully explored should euthanasia be considered. Euthanasia should be performed by a veterinary surgeon.

It is illegal under the *Animal Welfare Act 1992* to abandon or release an animal. Domesticated rodents will be unable to survive in the wild if released and may starve to death or become prey to natural predators.

Mice and rats need adequate protection from:

- rain;
- wind;
- predators;
- direct sunlight; and
- extremes of temperature (below 10°C and above 26°C. The optimum temperature to keep mice and rats in is 18°C - 21°C).

This includes during transportation.

All mice and rats should have an adequate exercise area. Isolation in an area without natural light, adequate ventilation or contact with humans or other mice and rats is unacceptable.

Unless intended for breeding purposes, mice and rats housed together should be of the same sex or desexed, (refer to Section 2.7). Being gregarious by nature, they should ideally be kept in same species pairs, or groups, preferably from the same litter. It should be noted that when placing males together a degree of behaviour monitoring should occur. Some males are prone to excessive aggressive behaviour or fighting. If any sign of either of these traits is present then the males should be housed separately.

Mice and rats are inquisitive by nature. Exploratory behaviour should be encouraged by the provision of such items as listed in Table A.

2.3.1**Housing**

Mice and rats may be kept in a variety of situations, but whatever is chosen, care must be taken to ensure that the enclosure must:

- be predator proof;
- exclude vermin which may be attracted to food;
- provide adequate protection from heat and cold;
- provide continuous access to water;
- provide generous ventilation and be safe from fumes and vapours (car exhausts, chemicals, ammonia from urine);
- be easily cleaned;
- be safe for the occupants ie. have no sharp projections, and not have a wire mesh floor through which feet and legs may be damaged; and
- provide opportunities for sufficient exercise.

In order to avoid injury to the animal, cage doors should not open inwards. Care should be taken when opening the door on an elevated cages to ensure that the animal does not fall or jump out.

Housing indoors is recommended. Mice and rats should be kept out of direct sunlight, and there must be adequate ventilation. Pet cats and dogs with indoor access may attack mice and rats, so a sturdy cage will be necessary.

Minimum floor areas for mice and rats are listed in Table B.

2.3.2**Cleaning**

Depending on the numbers of animals kept and the housing provided, the cage may require cleaning daily. Otherwise, the cage should be thoroughly cleaned weekly with a solution of detergent and hot water. It should be rinsed thoroughly and be allowed to dry completely before replacing both bedding materials and mice or rats.

2.3.3**Bedding Materials**

As mice and rats may eat their bedding, uncontaminated dry straw, meadow hay, white sawdust, white wood shavings or shredded paper should be used. The bedding should be checked daily and replaced if wet. Paper can be placed beneath the bedding material. This provides both insulation and cleaning advantages. Avoid glossy magazines as the inks used can be dangerous and treated wood because of the chemicals used.

2.4**Nutrition**

Fresh clean water should be available at all times. Water is best supplied by a gravity fed water bottle with a metal ball and tube sipper. The bottle should be attached to the housing with a receptacle provided underneath to prevent the water dripping onto bedding. The water should be changed daily and the bottle kept clean. The spout should be checked daily for correct flow as blockages occur frequently.

Mice and rats are omnivores and will eat most foods. They should be fed once a day. All stale food and scraps must be removed for hygiene. It should be noted that mice and rats are great hoarders and the daily removal of scraps should include a thorough search of the sleeping areas.

To obtain a nutritionally balanced diet it is preferable that mice and rats be fed commercial pelleted or block mouse and rat feed. If commercial pellet or block feed is not the primary source of nutrition then you should supplement your animals diet with a commercial mineral block.

Washed fresh fruit and vegetables, as well as dry bread are good ways to both supplement the diet and keep the diet interesting. It should be remembered that these treat foods need to be removed after 24 hours and the housing checked for hoard sites.

Bones, particularly chicken, or hard, untreated wood pieces should be offered for healthy teeth and gums and replaced regularly.

Mouldy or rotten vegetables should not be offered.

Care should be taken that the animal is not becoming obese (refer to Table C for the daily food and water allowance for mice and rats). Table scraps, though loved, tend to be too high in fats and protein and should only be given as a very occasional treat. Do not feed your mouse or rat chocolate, chips or any other "junk" food as they are high in fats that may lead to obesity, tumours or heart trouble. Quantities of all foods require adjusting based on the season, age, weight, sex, and activity of the individual animal. Pregnant female will require double the normal intake of food (see Table C). Offer more pellets if your animal is actually eating all that is offered.

2.4.1**Rats**

Mixed nut and seed feeds are not recommended for rats due to their tendency to only pick out the seeds high in fats.

2.4.2**Mice**

Mice are predominantly seed feeders and should be fed a mixture of seeds, grains and pellets. Ensure that the mouse is not selectively eating only high fat seeds, eg sunflower seeds. Choose a feed without these seeds or remove where necessary. Mice also benefit from the addition of a small amount of hay in which they can nest and nibble to aid digestion.

2.5**Health Care**

Mice and rats generally maintain good health and are rarely affected by disease. Rats in particular are resistant to many of the infectious organisms that afflict other species. However, some problems may occur when housing, hygiene and feeding are not ideal. Owners should be observant and seek veterinary help as soon as possible.

Most diseases can be prevented by:

- selection of healthy stock;
- maintaining hygienic living conditions;
- providing adequate space and environmental stimulation;
- ensuring food is fresh, in appropriate quantities, and suitable for mice and rats; and
- observation and early detection of problems and seeking advice from a veterinarian.

2.5.1**Skin**

Mice may chew each other's hair. This is called "barbering". The responsible mouse should be removed, though another may continue the practice.

Mites and lice, especially in mice, may cause skin irritations and owners should inspect animals' daily paying attention to any hair loss, skin redness and scaling and/or scabbing, especially around the head and shoulders. Ringworm, a fungus, may cause hair loss with scaliness. A rough hair coat may accompany old age, other illness, cold, fighting, soiled or damp bedding or housing on wire.

Male mice housed together frequently fight resulting in skin wounds particularly on the rump and tail. Rats commonly lose toenails due to unsuitable caging - heavy bleeding may result. Heavy pinworm infection may cause a mouse to bite around its anus and tail.

Lumps in or under the skin may be mammary glands, testes, salivary glands, pregnancy, abscesses or tumours. Veterinary advice should be sought if lumps are found.

2.5.2**Digestive System**

Mice and to a lesser extent rats, may suffer malocclusion, that is teeth that do not meet and wear against each other. This condition will result in drooling, inability to eat and weight loss. Affected incisor (front) teeth may be trimmed but only by experienced operators. Diarrhoea is uncommon but may be caused by infections (viral, bacterial, protozoal, worms) or poor quality or unsuitable feed.

2.5.3**Respiratory System**

Respiratory infections caused by mycoplasmas, viral and bacterial infections, are common. These conditions result in:

- sneezing and snuffling;
- nasal discharge (sometimes red);
- pawing at the nose;
- increased respiratory rate;
- breathing difficulties;
- poor coat;
- weight loss; and
- death.

Stress as well as ammonia from urine soaked bedding may contribute to these conditions.

A red, wet or crusty discharge containing pigments from a gland behind the eye (not blood) often accompanies respiratory infections or other serious health problems.

2.5.4

Handling

Mice and rats need to be handled regularly if it is intended that they remain tame. Small children may be excessively noisy, rough or lack sufficient confidence to handle these animals and adult supervision is required.

(Scan pictures)

2.6**Transport**

Mice and rats are extremely sensitive to heat and should not be transported in temperatures above 27°C.

For short-term transport of less than one hour, a strong and securely lidded cardboard box with airholes is acceptable. The temperature in a mouse or rat box must be kept below 27°C.

For longer journeys, mice and rats should be confined in a suitable container which is kept level and secured against more than minimal movement at all times. A suitable container should provide adequate ventilation and security for the animals, whilst enabling the animal to stand, turn around, and lie down. The container should be lined with straw. This helps prevent injury and ensures the animal's comfort.

If in transit for longer than six hours a source of water, eg apple, celery, should be provided.

Food and clean bedding needs to be provided at least every 24 hours when travelling. Young mice and rats may require more frequent feeding.

Except when mice and rats are travelling with their owner in a private motor vehicle, the transport container should have a label both on the top and at least one of the four sides with the name, address, and phone contact number of both the sender and receiver and a label saying LIVE ANIMALS.

2.7.**Breeding**

Mice and rats are prolific breeders and owners of these rodent species should keep this in mind. In an uncontrolled breeding situation population growth can be dramatic and therefore breeding needs to be planned. When breeding is not intended males and females must be kept in separate cages.

Two major systems are used to breed mice and rats. Of these, the monogamous system is best used in the pet situation and one male and one female are placed in a cage. The litter may be born and weaned in the presence of the male although some breeders may prefer to remove the male prior to birth. In a polygamous mating system, one male and 2 - 5 females are placed in a large cage. This system would only be used when a large number of offspring are the goal.

Female mice and rats reach puberty at 6 - 8 weeks of age, and males tend to reach puberty a week or two later. Mature females are constantly cycling and usually exhibit a 4 - 5 day oestrus cycle. The vulva becomes swollen and congested during oestrus and the female is sexually receptive to the male.

The pregnancy duration is usually 19 - 21 days. Mice and rats should be provided with additional soft bedding material, eg cotton wool for nest making in the advanced stages of pregnancy. First litters of a particular mother may be smaller but may number 10 - 12 at maturity. Litter size begins to drop off slowly at 6 - 7 months of age and breeding in females usually stops by 12 - 18 months of age.

Young are born hairless with closed eyes and ears. The ears open within 4 days and the eyes open by the end of the second week. By 7 - 10 days the young are fully haired. Weaning usually occurs at 21 - 28 days and weanlings are capable of eating solid food at that time.

Newborn males may be distinguished by the significant greater distance between the genitalia and anus relative to females (1.5 to 2 times), the pale testes visible through the abdominal wall. With newly born females there is a conspicuous row of nipples at 9 days.

2.7.1**Placement of Young**

Young can be placed in a new home soon after weaning provided that they are healthy and gaining weight. The new owner should be given accurate information on diet, housing, health care, parasite control, identification, grooming and handling.

TABLE A**ENVIRONMENT ENRICHMENT ACCESSORIES**

bricks or blocks	cotton wool	commercial chews
exercise wheels	plastic pipes	terracotta pipes
toilet rolls	ladders	rope for climbing
platforms	other commercial toys	

TABLE B**MINIMUM SPACE ALLOWANCE**

Housing Size Guide			
	Length	Depth	Height
Mice	35 cms	28 cms	30 cms
Rats	35 cms	28 cms	44 cms

TABLE C**DAILY FOOD AND WATER ALLOWANCE FOR MICE AND RATS**

Species	Age	Pelleted Food per 100 gms of body weight	Water
Mice	Up to 9 months of age or pregnant	10 gms	10 mls
	Adult	5 gms	
Rats	Up to 9 months of age, or pregnant	10 gms	50 mls
	Adult	5 gms	