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Rat Behavior Packet

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About this Packet

This packet is intended to provide both general as well as evaluation-specific information for both Pet Partners prospective/existing handlers and Pet Partners team evaluators. Some sections include reference to which audience may be particularly interested in that material; however, the entire contents are useful to both audiences.

Rat Introduction and Behavior

General Considerations and Information about the Species at Large

Rats are the smallest species registered as therapy animals by Pet Partners, but the same standards apply. They must be harnessed and leashed at all times and have a temperament that lends itself to visiting. The following information is designed to give some basic background on rat behavior and stress signals. If you are not familiar with rats and are asked to complete an evaluation, you may wish to get in touch with fancier groups or other organizations for additional information.

Grooming

Rats are extremely clean creatures, spending almost a third of their waking life grooming. As such, it is rarely necessary to bathe rats, with the exception of light-coated varieties which may need the occasional stain-removal session before visits. If bathing is needed, a shampoo formulated for animals, such as those for kittens or puppies is best, as human shampoo can irritate their skin.

The red stuff sometimes seen around a rat's eyes and nose is called porphyrin. It is produced by a gland behind the eyeball and helps lubricate the eye. Porphyrin naturally drains from the eye down into the nose through a small tear duct. Small amounts of porphyrin seen every now and then are normal.

Whiskers and Vision

The rat uses his whiskers to gain information about its surroundings through touch. Using tiny muscles around each whisker, the rat sweeps its whiskers back and forth, brushing them over everything within a few inches of its face, and gleans an image of the world around it. Sometimes whiskers touch the same object several times in a different place, providing a three dimensional picture of the object.

Whiskers are extremely sensitive, more sensitive than a human's fingertips. Rats use their whiskers to navigate, balance, find and discriminate food, and in social interactions with other rats. At short distances rats use their whiskers more than their eyes to determine depth.

Some rats, especially pink eyed albinos, often sway from side to side. Albino rats have extremely poor vision, and this swaying may help them see better. Dark-eyed rats may sway or bob their heads

up and down too, though they tend to do so less frequently than albino rats. Head bobbing in dark-eyed rats is usually seen before the rat takes a big jump.

Swaying may help the rat figure out how far away various objects are. When a rat moves its head, the images of the objects around the rat move across its retina. Close objects will move faster than far ones, a phenomenon known as motion parallax. Rats may use such motion parallax cues to judge distance and depth.

Food and Treats

Like people, rats are omnivores. They fare best on fresh wholesome foods: wholegrain (brown) rice, vegetables, grains (wheat, barley, oats, millet), wholemeal bread, and some animal protein.

Behavior Considerations

Teeth grinding, eye boggling and tail wagging

Rats grind their front teeth together producing a grinding sound called [bruxing](#) or [chattering](#). Rats probably grind their teeth together to wear them down (a process called thegosis). A rat's incisors grow continuously. This constant growth enables rats to spend their lives gnawing on things without wearing their teeth down to the gum. But it also means that rats must use their teeth continually to keep them from growing too long, hence the tooth grinding.

Sometimes, a rat's eyes may vibrate rapidly in and out of the eye socket, a phenomenon called [eye boggling](#). This odd eyeball movement often occurs at the same time as [bruxing](#), or tooth grinding. The reason bruxing and eye boggling occur together is anatomical: a part of the muscle that pulls up the rat's lower jaw passes through the eye socket, behind the eyeball. When a rat grinds its teeth, it moves its lower jaw rapidly up and down, and the contractions of the jaw muscle vibrate the eyeball in and out of the socket in time with the jaw.

Rats may "wag" or writhe their tails on the ground. This action has many names, such as [tail wagging](#), tail swishing, and tail writhing. Tail wagging may involve the whole tail or as little as the tail tip. The function of tail wagging is unknown in rats, but it appears to be associated with excitement and tension. For example, rats may writhe their tails during aggressive encounters with each other, or when facing a predator.

Scent Marking

Rats may dab or smear drops of urine on the surfaces and objects they walk on, including yourself. This is called urine marking, or [scent marking](#). Adult socially dominant males mark the most, but all adult rats, both males and females, scent mark to some extent. Females tend to scent mark most right before they come into heat.

Scent marking is a complex form of chemical communication that has several functions. It is a sexual signal that advertises the rat's presence to other rats of the opposite sex. Rats also use their own scent marks to denote areas that they have visited and are familiar with. Scent marking may help them navigate, too.

It is unclear whether scent marking serves a territorial function. If scent marking were territorial, then male urine should deter strange male rats from entering a marked area. However, this is not always

the case: sometimes male urine attracts male rats. Therefore, it is unclear whether scent marking has a territorial function in rats or not.

Rats are highly intelligent, social animals, and although they enjoy the companionship of humans, they thrive in - and need - the company of their own species.

Signs of Fear or Stress

- ▶ Rats make a whole variety of vocalizations, including peeps, chirps, squeaks, and shrieks. As a general rule, audible vocalizations are signs of protest or stress.
- ▶ A rat may peep a little while being petted, indicating mild protest. Long squeaks produced during a tense interaction with another rat probably indicating distress. A shriek or scream indicates strong distress or pain, such as when its tail is pinched.
- ▶ Occasionally, rats may [hiss](#). Hissing is usually a sign of distress and is given at times of stress.
- ▶ A rat that poops and urinates copiously when picked up is frightened and stressed. Urination and defecation are common signs of stress, and may function to (a) void the animal of excess weight in preparation for flight, and in a prey animal such sudden excretion may (b) surprise or disgust a predator enough to drop the animal.
- ▶ Rats may grind their teeth in times of stress. For example, a pet rat may grind its teeth at the vet's office, or during a tense interaction with another rat, or when the rat experiences pain.
- ▶ When a rat is stressed, it may overproduce porphyrin, which may overflow the eyelids and form a red crust around the eye. Porphyrin may also overflow the nose, creating a red crust around the nostrils. This condition is a sign of illness or stress.

Signs of Relaxation

- ▶ Rats do emit sounds that are associated with pleasure, but these sounds are very high pitched and above our range of hearing. Therefore, for the purposes of evaluation, a quiet rat is a sign of contentment.
- ▶ Rats may also grind their teeth when they are relaxed, rather like purring in a cat.
- ▶ Eye boggling occurs at times of great contentment and relaxation.

Evaluation Overview

The Pet Partners [Evaluation Overview - Rats](#) is a resource developed for handlers to increase understanding of the evaluation exercises. Evaluators are encouraged to review it prior to evaluating a rat.

Rat Supplement to Policies and Procedures

- ▶ Unless they will never be outside of a cage, all rats must visit wearing a harness and lead.
- ▶ Evaluators should always be gentle with rats.
- ▶ Ensure brushes used on rats are soft and appropriate to the size of the animal.
- ▶ Animal should be relaxed and not try to jump out of arms, basket.
- ▶ 'Come When Called' - this exercise is not performed when evaluating rats.
- ▶ 'Neutral Dog' - some rats are frightened of dogs; an unknown dog must be included in the testing. Make certain that the dog used during the evaluation does not react to rats.
- ▶ Evaluators may wish to lace fingers through the animals harness/halter at certain points, such as during the restraining hug.
- ▶ The restraining hug must involve a gentle restraint given the animal's size. Since all four feet must remain on the surface, evaluators may hug with just hands/forearms and may not be able to give the type of hug (to the chest) that happens with other species, like canines and equines.
- ▶ During several exercises the animal may change position, but the evaluator should look for movement indicating the animal attempting to leave or escape the situation.
- ▶ Any vocalizations, including hissing, should signal a Not Ready. Additionally biting of any kind should signal a Not Appropriate rating.
- ▶ Tooth grinding can be both a sign of stress and a sign of relaxation, depending on the animal. Watch for tooth grinding in association with other stress signals, but minimal tooth grinding alone may not necessarily indicate a Not Ready.