

Rats

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Natural History

The domestic, or fancy, rat (*Rattus norvegicus domestica*) is a small rodent bred for companionship and laboratory research. Originally, the wild brown (Norway) rat was captured for use in the “rat pits”, a blood sport that involved releasing a dog to dispatch as many rats as possible. It is thought that unusually colored specimens were kept and bred, which led to their propagation as pets. Rat breeding and showing as a hobby was first noted in the early 1900s, but fell out of favor again until the 1970s. Today, domestic rats are readily available, popular pets. Domestic rats are a distinct subspecies of the brown rat, and are not considered any more of a disease risk than other commonly kept domestic pets. Brown rats are also distinct from the black rat (*Rattus rattus*), which is sometimes kept as a pet, though much less commonly. Black rats were one of the original carrier species of the Black Plague, and are not considered a domesticated species.

Characteristics and Behavior

Rats are curious, docile, and social pets. Despite widespread fear and misinformation, they tend to be very clean and playful animals. Rats often bond strongly with both their human and rat companions and are intelligent enough to recognize their owners. They rarely bite, but are capable of doing so if they feel threatened. Most rats are gentle and can become very tame with regular handling from a young age. Care should be taken when children are interacting with rats, as they can be very wiggly and easily dropped. Unfortunately, rats are not very long-lived, and are prone to numerous health issues. They do best when housed with other rats and require daily stimulation and enrichment.

Pet rats come in 7 varieties including the standard, rex, hairless, dumbo, bristle, satin, and tailless. They also come in at least 40 recognized color varieties and are available at most pet stores, along with rescues and private breeders. It is not recommended to purchase feeder rats (rats bred for reptile consumption) as pets since these rats are not bred for health or temperament.

Lifespan

2-3 years.

Adult Size

350-650 grams.

Housing

Rats are social and do best in opposite sex pairs (with spayed/neutered animals to prevent accidental breeding), female pairs/groups, or female groups with a single neutered male. Males, particularly if neutered, can live together if introduced at a young age. A rat's cage should be as large as possible. As an absolute minimum, a pair of rats would need a 2'x2'x2' cage. 63" tall Critter Nation cages or similar designs are much more appropriate for rats. Bar spacing should be no more than 1in. Multiple levels provide opportunities for exercise and enrichment. Cages should be stainless steel, as plastic can be easily chewed through. Glass aquariums are not recommended for rats, as they do not provide enough space or ventilation. Galvanized metals may be toxic.

Floors should be solid, as wire floors can trap feet and cause foot problems. Bedding can be fleece or paper based bedding such as Care Fresh, and should always be kept clean. Rats urinate frequently and built up ammonia can cause disease. Avoid cedar or pine as these can cause respiratory disease. Rats need plenty of toys, tunnels, bedding, and other structures to keep them entertained. Always keep in mind that rats are chewers when selecting cage items.

Feeding

Wild rats are omnivores that consume seeds, nuts, fruits, insects, grains, and other plant matter. Rats need a diet that is approximately 12-16% protein and <8% fat. The majority (75%) of a rat's diet should be a fortified, uniform pellet. Although mixed pellet/seed diets look appealing, rats will pick and choose the tastier, less healthy seeds or other additives over the balanced pellets. Seed diets are deficient in vitamins and too high in fat. Rat pellets should be age appropriate (young rat pellets for animals <6 months). Oxbow brand is high quality and recommended for pet rats.

In addition to pellets, rats should also be offered fresh veggies and leafy greens daily. Fruits and treats should make up no more than 5% of a rat's diet as rats are very prone to obesity. Some rats are able to self regulate, but many may become overweight if allowed to free feed. Approximately 1-2tbsp of pellets, along with 1-2tsp of fresh veggies should be offered daily. Treats should be offered in portions no larger than 1/2tsp at a time.

Veggies: Various types of lettuce, parsley, arugula, kale, broccoli, squash, sweet potato, peppers, cucumbers, radish, sugar snap peas, okra, mint, asparagus, basil, and zucchini are all appropriate vegetables for rats.

Appropriate treats: Whole grain unsweetened cereal, oats, cooked whole wheat pasta, bananas, oats, berries, insects, hard boiled eggs, kiwi, unsalted nuts, pumpkin seeds, sunflower seeds, cooked meat, melon, plain popcorn, and barely.

Water

Fresh water should always be available. Most rats will readily drink from dripper bottles, but heavy ceramic bowls are another option.

Sexing

Mature, adult rats are easy to sex. Males have very apparent testicles as early as 3-4 weeks of age.

Handling

Young or unsocialized rats may be wiggly or bitey when handled. Most rats can be gently scooped and held safely with minimal fuss. Their entire body should be supported to help them feel secure. Gently placing a hand over their shoulders can help prevent them from jumping out of your hands. Never pick up a rat by their tail, as this can cause injury when done incorrectly.

Grooming

Rats are meticulous groomers and will keep themselves clean. Their nails may need trimming if they become too sharp. Bathing rats is not recommended.

Enrichment

Rats are very intelligent and active animals. They need a variety of enrichment activities to keep themselves physically and mentally fit. Rats enjoy hiding in boxes, PVC pipes, plastic huts, and fabric hideaways. Cardboard is particularly enjoyable, as it can also be safely chewed and destroyed by rats. Be sure to provide a variety of hiding spots so the rats are able to choose where they want to spend their time. A combination of hanging and ground-placed structures should be provided. Even though rats may choose to share space, there should always be enough hiding spots for rats to choose to be by themselves if they want.

Exercise wheels with solid bottoms (wire bottoms may catch feet) are a great source of enrichment and activity for rats. The wheel should be large enough that they can run without arching their back into a U shape. There are numerous tunnels and plastic toys available commercially for rats, as well as hay or wood based toys that they may enjoy shredding. All toys must be non-toxic and inspected regularly to watch for signs of wear. Food is another excellent source of enrichment. Vary the types of food that is offered, and hide it around their cage to encourage foraging rather than eating from a bowl. Many rats can also be clicker trained.

It is recommended that rats receive at least 2 hours of out of cage time daily. This can be done in a rat-proofed room, a playpen, or even a bathtub. Ensure there are no dangling cords, household cleaners, or other pets around that could hurt the rats. Cats and dogs have bacteria in their saliva that can be deadly to rats, so they should never be allowed to interact.

Zoonosis

The bacteria in a rat's mouth may cause Rat Bite Fever if a human is bitten. Bites should always be washed and thoroughly disinfected. Pet rodents may also carry *Salmonella*. In recent years there have also been reports of pet rats transmitting hantavirus to their owners, which is a very serious and potentially deadly disease. Commercial tests are available and are recommended for new rats, particularly those from ratteries, because they can be asymptomatic carriers. Always thoroughly clean rat urine and feces, and wash your hands after handling pet rats. Keep pet rats away from wild rodents, which can transmit very serious diseases that are also transmissible to humans.

Health

Unfortunately, rats have short lifespans and are prone to a number of diseases. Mammary tumors are extremely common in pet rats, and will occur in most animals in their lifetime. Mammary tumors are usually benign (meaning they do not spread to other organs), but they can become so large that they impede a rat's ability to eat, walk, or rest comfortably. At this point, they require surgical removal. Rats are also prone to respiratory diseases. Symptoms are usually mild and include intermittent sneezing and nasal discharge, but serious pneumonia can occur. A rat's incisors grow continuously throughout their life but should not need trimming in a healthy rat. Pet rats are also very prone to obesity.

Signs of disease in rats include hair loss, overgrown incisors, diarrhea, bloody urine, increased respiratory effort, loss of appetite, and sores or lumps on the body. Rats also have an organ called the Harderian gland near their eye that will excrete an orange-brown discharge called porphyrin. This is sometimes confused for bloody tears or a bloody nose. Small amounts of porphyrin staining is normal, but excessive secretion indicates stress, illness, pain, or poor diet. Spaying and neutering rats can significantly decrease the risk of mammary tumor development. It is recommended to have your rat examined by a veterinarian every 6-12 months.

Sources and Further Reading:

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