

## **Domestication and Behavior of Small Mammals Other than Dogs and Cats**

Our topics for this week are:

- Domestication of small mammals, aka “pocket pets”
- Natural behavior of small mammals
- Handler and small mammal safety during handling

In addition to dogs and cats, there are other small mammals that are domesticated or tamed and kept as pets or used in research. Since common tame species can be confused with similar non-tame species, small mammal names are often rendered more specific by reference to their Latin genus-species name, such as the mouse. The most common of these other small mammals are mice, rats, hamsters, gerbils, guinea pigs, chinchillas, degus, sugar gliders, African pygmy hedgehogs, rabbits, and ferrets. None are domesticated to the point of enjoying handling from humans as much as most dogs and cats. Handling is stressful to these other small mammals and should be kept to minimum. Frequent brief duration and gentle handling during their juvenile socialization periods can reduce the stress of handling experienced during later life. Rats and mice are the most common laboratory animals in biomedical research. They are also raised as food for captive reptiles and birds of prey. Ten percent of U.S. households have other small mammal pets, often referred to as *pocket pets*.

Rats, rabbits, and guinea pigs are the easiest small mammal pets for new pet handlers. Rabbits are the most popular other small mammal pets in the U.S. They are also the most common pet relinquished to animal shelters after dogs and cats in large part due to owners being unfamiliar with the needed handling, restraint, and nutritional needs of rabbits and all other small mammals. In March 2016, the state of New York passed legislation to require retailers of small mammals and reptiles to provide new owners written instruction on the proper care of the animals.

### **NATURAL BEHAVIOR OF SMALL MAMMALS**

The natural behavior of small mammals depends on whether they are prey or predator. Most are prey and have similar characteristics. The only domesticated small mammal other than dogs and cats that is strictly a predator is the ferret. Rats are primarily prey, but in some situations, they can be a predator.

Determining the gender of small mammals is important to prevent mixing groups that are incompatible. For example, if not raised together, adult male mice or male rabbits will fight each other and adult female hamsters will fight each other. Gender determination of small mammals is often not easy. Male rodents have open inguinal canals which enables them to pull their testes from the scrotum into the abdomen. Therefore, lack of external (scrotal) testes cannot be relied on as evidence the animal is a female.

Anogenital (AG) distance is the length from the urinary papilla to the anus. AG distance is longer in males than females, and the external genitalia in a male is somewhat circular while a female's is more like a slit. Measuring the AG distance can be used to determine gender for most small mammals, except for guinea pigs and young rabbits. Sexing these animals requires gently

pressing on each side of the genital orifice in an attempt to be able to extrude the penis, or not.

### **Prey Small Mammals**

All prey small mammals need a dark area to hide in. Hiding is an inherent need that helps relieve the stress of constantly being on guard for dominant aggression of other members of the group or for predators. This characteristic of seeking a hiding area makes it fairly easy for most of them to be coaxed into an opaque plastic cup or a small bin for capture and transport.

The vision of prey small mammals is good for detecting movements but poor for detail. Prey small mammals have excellent senses of hearing and smell. Hearing is enhanced by also being able to detect sound vibrations from the ground. Handlers should wear plastic or rubber gloves to diminish the smell of predators that the handler may have recently touched or the smell of perfumes from hand soap. Gloves are also indicated for handler protection from infectious disease and allergens from small mammals.

With the exception of hamsters, prey small mammals need the security of others of their species. However, new members must be carefully introduced to an established group. Small mammals mark their territory and possessions by rubbing a part of their body on the object to be marked. Others with a different smell are rejected. Introduction of a new member involves placing the new member in a nearby separate cage within sight and smell of the group. Over a period of days the new member cage is moved closer to the group cage. Next, the most docile member of the group is put into a 3<sup>rd</sup> cage near the new members. When the docile group member and the new member appear adjusted to each other, they exchange cages so that each acquires the smell of the other. After sufficient time to acquire the smells, the two should be able to be put in the same cage. If they accept the presence each other, they can usually join the main group.

Small mammals need opportunities to exercise and stimulate mental activity. Since most small mammals instinctively have a need to gnaw, objects for gnawing (kiln dried pine wood, cardboard tubes or boxes) should be offered.

Most small mammals also burrow and enjoy exploring PVC pipe in the size appropriately large enough for the species. Exercise wheels are popular enrichments for small mammal enclosures, but care must be taken that the construction of the wheel is safe for the small mammal species that will use it. Environmental enrichments, called cage furniture, should be removed before attempting to capture small mammals to avoid accidental injuries.

Most small domestic or tame small mammals are nocturnal and unable to tolerate wide ranges of temperature. They should be allowed undisturbed rest during daylight hours in quiet surroundings. Their enclosures should not be exposed to drafts or direct sunlight.

The greatest stress a prey small mammal experiences is the sight, sound, or smell of a predator. All prey small mammals should be segregated at all times from dogs, cats, large birds, ferrets, and reptiles.

### **Predator Small Mammals**

Like prey small mammals, ferrets need social interaction of others of their species, long periods of undisturbed rest, and when awake, lots of opportunity for exercise and exploration. Much of the waking hours, are spent in mock predator activities, such a wrestling with other ferrets, exploring burrow-like structures, and marking territory and possessions with their body scent. Ferrets should never be housed within sight, sound, or smell of possible prey animals.

## **SAFETY FIRST**

### **Handler Safety**

All small mammals may bite when restrained. Rodents have incisors which angle backward. If bitten and the animal does not release its bite, the handler should replace it in its cage or box where it will probably release its bite. Rabbits can, and on occasion, will bite. Scratching from toenails on the hind feet is typically the greatest risk to handlers from rabbits. Plastic gloves should be worn whenever handling rodents because allergies to saliva, dander, or urine are common.

### **Small Mammal Safety**

All small mammals are handled on tables, and all will attempt to jump off resulting in injury if restraint outside of its cage is not constant.

Mice, rats, and gerbils can be restrained by grasping the base of the tail, but they should not be held by the last 2/3 of the tail. Holding them by the distal aspects of the tail can allow them to turn and bite the handler or spin in an effort to escape and deglove (rip) the skin from the tail. While suspended by the end of the tail, rats can climb their tail to bite handlers. Gerbils are especially prone to tail degloving during handling. Only the base of their tail can be safely held.

If capturing to perform a grooming or medical procedure, all materials should be readied prior to capture to reduce stress to the animal from prolonged restraint.

Plastic gloves should be worn when handling nursing small mammals, especially rodents and rabbits. The young should be rubbed with used bedding after handling and before being returned to their enclosures. Otherwise, human scent may cause the mother to shun the babies.

Now, let's recap the key points to remember from today's episode:

- 10% of US households own pocket pets
- Knowing the gender of small mammals is essential for proper handling, especially choosing appropriate containment
- Except for rats and ferrets, small mammals have the characteristics of prey animals.
- Plastic gloves should be worn when handling rodents.

Abby says it is time to wrap up this episode.

More information on animal handling is available in my book, *Animal Handling and Physical Restraint* published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Don't forget serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.