



Care sheet

for

Hamsters

Care of Hamsters

Hamsters are small, virtually tailless, velvet-furred rodents with enormous cheek pouches. They originated in the Middle East and southeastern Europe. The most common and popular, both as pets and laboratory animals, is the golden or Syrian hamster. Color and hair-type varieties of the golden hamster include cinnamon, cream, white, and 'teddy bear' (the long-haired variety). Most of the hamsters sold as pets or used in research are the descendants of 3 littermates domesticated in 1930.

The cheek pouches are a relatively unique anatomic feature of hamsters. They are actually a cavernous out pouching of the oral (mouth) cavity on both sides, extending alongside the head and neck to the shoulders. These pouches are used to store food and allow the hamster to transport food from where it is gathered to the hamster's den or nest. The food is then eaten later, at the hamster's leisure. Hamster owners not familiar with these cheek pouches often panic when seeing them fully distended for the first time, thinking they represent tumors or abscesses.

Another relatively unique anatomic feature of hamsters is the paired glands in the skin over the flanks. These appear as dark spots within the hair coat and are much more obvious in males than females. These glands are used to mark a hamster's territory and also have a role in sexual behavior.

Hamsters are very popular pets today because of their availability, affordability, small size, cuddly appearance, often docile temperament and relatively clean habits. They are not very long-lived, which can be disconcerting to owners (especially children). Many parents, however, believe that having their children experience the relatively short period of companionship and subsequent death is a meaningful way to expose children to the 'ups and downs' of life.

For many years hamsters have been used in biomedical research laboratories. Consequently, their medical problems have been traditionally approached on a group basis, rather than on an individual basis. As a result, very little practical information exists on the medical care of individual hamsters. Furthermore, even less information is available to pet owners on the responsible home care of hamsters and their potential medical problems.

Handling and Restraint

Hamsters handled frequently from a very young age usually remain docile and rarely bite. Those with docile temperaments and a history of not biting can simply be picked up by using one or both hands, and then held in both hands or in one hand held against the body.

Many hamsters develop untrustworthy personalities and begin to bite because they have been handled roughly or suddenly disturbed or awakened. Hamsters whose personalities are not well known must always be approached cautiously. A glove or small towel can be used to pick up these hamsters, or the animals can be encouraged to crawl into a small container, which is then removed from their enclosure. Unknown hamsters and those known to bite can also be picked up and restrained by grasping a large amount of skin behind the head. As much skin as possible should be grasped between the thumb and index and middle fingers because their skin is so very loose. In fact, hamsters can literally turn nearly all the way around within their skins and bite a handler if this caution is not heeded!

Housing

Proper housing is a major factor in maintaining healthy hamsters. The psychosocial well being of the pets must be a primary consideration. Hamsters can be housed within enclosures made of wire, stainless steel, durable plastic or glass. The last 3 materials are preferred because they resist corrosion. Wood and similar materials should not be used to construct enclosures because they are difficult to clean and cannot withstand the destructive gnawing of rodents. Many pet stores sell durable colored plastic enclosures that include attached horizontal and vertical tubes through which the hamster can crawl for exercise. These are suitable enclosures for hamsters.

The enclosure must be built so the hamsters cannot escape. This is an especially important consideration because hamsters are proficient 'escape artists'. In fact, once free of their enclosure, they are very difficult to find and rarely return to it. A hamster free to roam the house is a real liability because it will chew and gnaw on electrical and telephone cords, and household furnishings.

The enclosure must also be free of sharp edges and other potential hazards. It must be roomy enough to allow normal activities and breeding, if the latter is desired. One reference recommends at least 20 square inches of floor area per hamster, and a cage height of at least 6 inches.

Hamsters seem to do best when housed in enclosures with solid floors, relatively deep bedding, and abundant nesting material. The enclosure should be easy to clean, well lighted, and adequately ventilated (see Vital Statistics for preferred temperature and relative humidity ranges). Bedding must be clean, nontoxic, absorbent, relatively dust-free and easy to replace. Shredded paper, wood shavings, and processed corncob are preferred bedding materials. Cotton or shredded tissue paper is suitable nesting material.

Hamsters are primarily nocturnal (night-active), though they may exhibit relatively short periods of activity throughout the day. During their active period, hamsters eat and exercise. Hamsters seem to especially enjoy exercise wheels and other activities. The plastic enclosures equipped with horizontal and vertical tubes/tunnels mentioned above are highly recommended for this reason. Hamsters seem to really enjoy running through them. They also enjoy tin cans opened at both ends and boxes with multiple openings through which they can crawl.

Pet hamsters are usually housed singly. Sexually mature females must *not* be housed together because of their inevitable aggressiveness toward each other. Breeding females are larger than males and tend to be aggressive toward them. For this reason, males *must* be removed from the enclosure after breeding has been completed.

Hygiene

The frequency with which the enclosure is cleaned depends on its design, the materials out of which it is made, and the number of hamsters within it. As a general rule of thumb, the enclosure and all cage 'furniture' should be cleaned and disinfected once weekly. The food and water containers should be cleaned and disinfected once daily. More than one set of containers should be maintained, and the soiled set should be washed in a dishwasher, if possible. Vigorous scrubbing of the enclosure and furniture with hot water and soap and a thorough rinse should be followed by use of a disinfectant.

Food and Water

Good-quality food and fresh, clean water must be readily available at all times. The exact nutritional requirements of the hamster are not known. In the wild, they are omnivorous, feeding on plants, seeds, fruits and insects. Pet hamsters are best fed commercial rat or mouse

diets containing at least 16% crude protein. These foods are usually available as dry blocks or pellets. These commercial diets can be supplemented with small amounts of dry, sugar-free breakfast cereals, whole-wheat bread, uncooked pasta, cooked chicken, tuna fish, cheese, fresh fruits and vegetables. The last 2 items must be thoroughly washed to avoid exposing pet hamsters to pesticide residues and possible bacterial contamination.

Pet stores sell prepared hamster diets available in boxes or bags. These diets contain large quantities of seeds and items rich in oils. Consequently, if improperly stored, they become rancid and lose their nutritive value. Furthermore, these oil-rich items promote obesity. These types of foods can be offered as a supplement to the commercial rat or mouse diets mentioned above.

All food should be provided in heavy ceramic crocks that resist tipping. The sides of the crocks should be high enough to keep bedding and fecal material out of the food, or the crocks should be elevated slightly above the bedding.

Water is most easily made available and kept free from contamination by providing it in one or more water bottles equipped with 'sipper' tubes. Make certain the ends of the tubes are positioned low enough to allow all residents within the enclosure (especially juvenile hamsters over 1 week old) easy access to them. Also make certain that very young hamsters are strong enough to obtain water from these sipper tubes.

Breeding Considerations

The sex of adult hamsters is easy to determine. Males have very large, prominent testicles. In fact, owners unaccustomed to seeing them are often astonished at these anatomic peculiarities.

Male golden hamsters should be first bred when they are 14 weeks old. Females should be first bred when they are 10 weeks old. As the time of copulation approaches, thin, stringy, cobweb-like mucus exits the female's vulva. The female is then placed into the male's cage about one hour before dark. The pair must then be carefully observed for mating activity and/or fighting. Females can be very aggressive to males in this situation and can harm them. The male should be removed at once if there is fighting. Because fighting is so likely, aggressive males are best hand-mated. In these situations, they are better able to defend themselves and 'hold their ground'. The male should be removed after mating.

Pregnancy lasts only 15-16 days. Before delivery, the female becomes restless and usually discharges a small amount of blood from her vulva. Litters usually range from 5 to 10 pups. The pups are born hairless, with ears and eyes closed. They do, however, have their front teeth (the incisors) at birth.

Female hamsters with young must be provided with abundant nesting and bedding materials, and plenty of food and water. They must *not* be disturbed in any way. The young should not be touched or handled until they are at least 7 days old, the nest should not be disturbed, and the cage should not be cleaned during this period. Failure to heed these cautions (especially with females nursing their first litters) most often results in cannibalism of the young.

Observant owners may note an interesting maternal rearing activity, especially if the female with young is excited or disturbed. She will stuff pups into her cheek pouches and deposit them into the nest a short time later when she believes the danger has passed. Occasionally, pups suffocate as a result of this activity, especially during lengthy periods of disturbance.

Young hamsters usually begin eating solid food at 10 days of age but are usually weaned at about 3 weeks of age. Solid, pelleted food must be soaked to soften it and be placed on or near floor level of the enclosure for easy access by the weanlings. As mentioned above, sipper tubes must be positioned low enough so that the smallest pups can reach them. Some pups will not be

strong enough to extract water from sipper tubes, so owners must be vigilant for this potential problem and provide an alternative water source for them.

Disease Susceptibility

Hamsters tend to be affected by relatively few naturally occurring diseases. Their susceptibility, however, to a host of infectious diseases of other animals, including people, and the ease with which these diseases can be transmitted to hamsters have made them very popular laboratory animals for biomedical research. 'Teddy bear' hamsters and other genetic varieties tend to be much more susceptible to disease and sensitive to antibiotics and other drugs than golden hamsters.

Recognizing Disease in Hamsters

Because hamsters are very small, nocturnal (night- active) and not closely observed, the early signs of illness are frequently overlooked or not noted at all. Hamster owners must be constantly vigilant for signs of illness and must seek immediate veterinary assistance when illness is suspected.

Sick hamsters often become irritable and frequently bite. They are usually reluctant to move about and walk stiffly when forced to do so. Their eyes often look dull and sunken, and frequently have a discharge. Sick hamsters often stop eating or greatly reduce their intake of food. Consequently, weight loss is a common sign (not necessarily an easy one to recognize) of illness in hamsters. Fluid losses from diarrhea also may cause marked weight loss. Sudden intestinal disease (with accompanying diarrhea) is the most common illness of hamsters, especially amongst those being weaned or recently weaned. If the serious accompanying dehydration is not recognized immediately and corrected with appropriate fluid therapy at the direction of a veterinarian, death is probable.

Conditions Requiring Veterinary Attention

Teeth Problems

The incisor (front, gnawing) teeth grow continuously for the life of the hamster (this is true for all rodents). They receive continuous wear as the uppers and lowers contact each other, preventing overgrowth. Misalignment of either the upper or lower incisors because of previous injury, abscess formation or malnutrition may result in overgrowth of one or more of the teeth. Overgrown incisor teeth usually cause serious injury to the roof of the mouth. Sometimes the lower incisors actually grow through the roof of the mouth and into the nasal cavity!

Initial signs of this problem are inappetence and drooling. Total lack of eating, weight loss, and a foul odor from the mouth may be noted later. These signs often are completely overlooked.

A veterinarian must carefully trim the overgrown incisors and extract them from the roof of the mouth. Antibiotics are prescribed because of the high probability of infection following this type of injury. Periodic trimming of the incisors is usually necessary for the remainder of the hamster's life.

Some popular hamster houses made of plastic had holes in the horizontal and vertical tubes originating from the main rectangular enclosure. Hamsters frequently caught and broke their incisors in these holes in the plastic. The manufacturer has since made the holes smaller,

and this injury is seen less frequently now.

Trauma

Hamsters are easily injured. They are frequently dropped while being handled (especially by children), or after they bite. Pet hamsters allowed 'free run of the house' (even for very short periods) are often stepped on or kicked and seriously injured or killed.

Hamsters are frequently injured while inside an "exercise ball". This is a clear plastic sphere that is propelled along the floor by the action of the hamster running inside it. Injuries occur when a person accidentally kicks the ball or when it falls down a flight of stairs. Hamsters often perish when they are forgotten and left in these devices without food and water. In spite of the clever design and obvious benefits of this device, hamster owners must continually supervise its use. Parents must be made aware by their children that it is in use.

Trauma may result in broken bones and/or serious internal injuries or death. A fall of over just a foot or more may result in a broken back, for which there is no practical treatment.

Injured hamsters should be immediately examined by a veterinarian. Broken bones are very difficult to manage. Often an appliance (splint, etc.) to immobilize the broken bone will *not* be applied because of the sometimes greater problems they impose on the broken limb. The veterinarian will determine the best course of action in each situation.

Bladder Stones

Hamsters are susceptible to formation of stones within the urinary tract. The bladder is the only location within the urinary tract in which a veterinarian would likely detect stones upon physical examination.

Signs of bladder stones may or may not be detected by hamster owners and are usually associated with infection within the urinary tract, frequent urination, straining on urination, blood in the urine, increased water consumption, listlessness and inappetence.

A veterinarian may be able to remove the stones. This is accompanied by appropriate antibiotic therapy. Dietary management to help dissolve the urinary stones and prevent their recurrence is not practical with hamsters.

Cancer

Cancer is very common in pet hamsters. The incidence increases with age (as is the case with most animals) and is higher among females than males because of the variety of cancers that involve the female reproductive tract. Tumors of hamsters may be benign or malignant. Hamsters are vulnerable to an unusually large number and variety of benign cancers.

Cancers involving hormone-producing organs (such as the thyroid and adrenal glands) are among the most common tumors found in hamsters. These cancers cause hormone imbalances, hair loss and changes in behavior, as well as other significant signs.

Veterinarians can often perform surgery to completely remove small external tumors. Internal tumors, however, are much more difficult to diagnose and remove. The small size of the patient, the even smaller size of the organ(s) involved, the sometimes inaccessibility of the tumor and the expense involved are some of the reasons why an owner of a pet hamster might elect euthanasia (putting the pet to sleep) or do nothing and allowing the hamster to live out its life instead of surgery in these situations.

Lack of Food and Water

Partial or total neglect of hamsters by their owners is an unfortunate but common problem. Neglectful owners fail to provide adequate supplies of food and water for their pets, and are unaware of any medical problems. Potentially serious dehydration, starvation, stomach ulcers, eating of bedding material, and even cannibalism have all been reported as a result of food and/or water deprivation.

Sipper tubes often become clogged or continually contact bedding material, thereby draining the water bottles to which they are attached. Water bottles and their delivery tubes must be checked constantly for these problems.

Parents must set a 'good example' for their children and teach them a routine of care and maintenance of their pet hamster. Careful observation and vigilant attention to their hamster's every need should be emphasized. Neglect to any degree is intolerable and always results in some detriment to the hamsters.

Abscesses

Abscesses are most often caused by bite wounds from fighting. These wounds become infected, forming abscesses that appear as firm, painful lumps under the skin. Abscesses from injuries other than bite wounds may be indistinguishable from those that result from fighting.

Abscesses of one or both cheek pouches are also very common among pet hamsters. These commonly result from penetrating wounds to the lining of the pouch caused by harsh foods or bedding materials. It may be very difficult for you to know whether a swelling in the area of the cheek pouch is an abscess or simply food or bedding being temporarily stored within the pouch. Generally speaking, the swelling resulting from a cheek pouch abscess persists, but a pouch swelling from stored food or bedding disappears when the animal empties its cheek pouch.

If an abscess is detected or suspected, the abscess must be opened and the pus drained or removed by a veterinarian. An appropriate antibiotic also will be prescribed. Furthermore, the underlying cause(s) for the abscess must be eliminated, if possible.

Wet Tail (Proliferative Ileitis)

The most serious intestinal disease of hamsters is 'wet tail'. The bacterium suspected of causing this disease is called *Campylobacter*, which can also cause intestinal disease in swine, dogs, ferrets, primates and other animals.

This disease most often afflicts hamsters of weaning age (3-6 weeks old), but hamsters of all ages are susceptible. Since weaning hamsters and those slightly older are commonly sold in pet stores, wet tail is a fairly common disease among recently acquired hamsters. Longhaired 'teddy bear' hamsters are highly susceptible to wet tail. Signs include lethargy, inappetence, unkempt hair coat, sunken, dull eyes, increased irritability, hunched posture, very fluidy diarrhea, and a wet, soiled anal area and tail. Blood from the rectum and protrusion of the rectal lining (prolapse) may be noted in particularly serious cases.

Hamsters with wet tail must be immediately examined and evaluated by a veterinarian. Fluid replacement, oral anti-diarrheal medication, and antibiotics will be given, along with supportive care to keep the patient warm, clean, comfortable and well nourished. Treatment is often unrewarding, and death may occur as soon as 48 hours after the onset of initial signs. This disease is not transmissible to people.

Salmonellosis

Several species of the bacterium, *Salmonella*, can cause serious intestinal disease (salmonellosis) in hamsters under certain circumstances. Salmonellosis is transmissible to and equally serious in people.

The bacterium is usually acquired by eating food contaminated with the organism. Pet hamsters established in homes would most likely become infected via this route. For this reason, fresh fruits and vegetables must be thoroughly washed before they are offered to hamsters. Newly purchased pet hamsters may harbor the *Salmonella* organism, having acquired it from the colony into which they were born.

Salmonellosis in hamsters may manifest itself as sudden illness that often is fatal or as a more long-standing disease that causes weight loss.

Salmonellosis can be diagnosed on stool culture by a veterinarian. Antibiotic treatment of the disease may or may not be recommended by the veterinarian, depending upon the public health implications. Euthanasia (putting the patient to sleep) would be recommended if treatment were not undertaken.

Rabies

The subject of rabies inevitably comes up whenever a hamster bites an individual and because hamster bites are so common. Hamsters are *not* natural hosts of this virus. Therefore, the only way that a hamster could become infected with the rabies virus is to become exposed to infected saliva from a natural host of the virus (skunk, fox, bat, etc). This is highly unlikely, since hamsters are almost exclusively indoor pets.

Lymphocytic Choriomeningitis

This viral disease can be transmitted from hamsters to people. A large number of cases in 1974 and 1975 were traced to a common infected hamster colony. Signs of this disease in people include recurrent fever, headache, fatigue, muscle aches, sore throat, rash and arthritis.

The natural host in the wild for the causative virus is the rodent population. Hamsters would most likely acquire their infection from this source. Because hamsters are almost exclusively indoor pets, they are unlikely to become infected with the virus. Hamster owners must, however, restrict contact between their pets and orphaned wild rodents that have been adopted.

Demodectic Mange

Mites that reside within the hair follicles and certain glands of the skin cause Demodectic mange, a common external parasite problem of hamsters. The mites cause dry, scaly skin and significant hair loss, especially over the back.

This disease is rarely a problem by itself and is frequently associated with long-standing, debilitating diseases, such as those involving the kidneys.

A veterinarian should examine hamsters exhibiting hair loss as soon as possible. The doctor will do a skin scraping and examine it under the microscope. The presence of mites in the scraping confirms the diagnosis. This disease can be treated, but the patient may have an underlying problem for which there is no practical treatment or cure.

Intestinal Parasites

Hamsters frequently harbor tapeworms within their small intestines. Heavy infections may cause weight loss. Lighter infections usually go undetected unless pieces of the worms pass out of the hamster's anus or appear in the faeces.

People can become infected with the same organism. Tapeworms can be transmitted to uninfected hamsters (or people) when faeces harboring tapeworm eggs are inadvertently eaten. This underscores the importance of restricting access to hamsters and their enclosures by very young children. All such encounters should be carefully monitored.

Hamster owners suspicious of this parasite problem should submit a faecal sample to a veterinarian for analysis. The presence of tapeworm eggs in the sample (noted microscopically) confirms the diagnosis. The veterinarian can institute treatment.

Pinworms are a less common intestinal parasitism of hamsters. These extremely tiny worms reside within the large intestines and usually cause no signs at all.

A veterinarian via microscopic examination of the faeces can diagnose pinworm infections. Pinworm eggs passing from the anus of the hamster sometimes cause intense itching in this area. A veterinarian may be able to detect the presence of pinworm eggs by pressing tape to this area and examining it under the microscope. Pinworms of hamsters do not cause disease in people.

Human Allergies to Hamster Dander

Certain people are allergic to the hair and/or dander of hamsters. People working with hamsters in laboratory situations are more likely to develop such allergies because of the continual association with them. Signs include itchy eyes, sneezing, runny nose, persistent cough, shortness of breath, wheezing, skin rash and anaphylactic shock (a medical emergency).

Owners of hamsters may also be susceptible and if a suspected allergy problem occurs a medical doctor should be consulted.

Vital Statistics

Scientific name	<i>Mesocricetus auratus</i>
Potential Life span	2-3 years
Adult Body weight	100-150 gms (females > males)
Desirable environmental temperature range	65-75 F
Desirable relative humidity range	30-70%
Recommended age at 1st breeding	male: 10-14 wks; female: 6-10 wks
Length of estrous (heat)	94 hours
Gestation (pregnancy)	15.5 - 16 days
Average litter size	5 - 10 young
Age at weaning	3 wks

