

# CARE OF HAMSTERS



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Hamsters are peculiar little rodents with large cheek pouches and short stubby tails. They have gained popularity as pets and research animals since the 1930's. The Syrian hamster's (*Mesocricetus auratus*) wild habitat extends through the Middle East and Southeastern Europe. In 1930, a litter of eight baby hamsters was taken to Israel and raised as research animals. Virtually all domesticated hamsters sold in the pet trade and research are descendants of three of the survivors of this litter. Hamsters were first introduced to the United States in 1938 and since their domestication, several color and hair coat varieties of the Syrian Hamster have arisen through selective breeding.

Also kept as pets are other species of hamsters, often referred to as dwarf hamsters, but these are less common than the Syrian hamster. The smaller, dark brown Chinese hamster (*Cricetulus griseus*) is often used in biomedical research, and they are sometimes acquired as pets. These hamsters are recognized for their small size, dark brown color and black stripes over their backs. Two other breeds encountered in the pet trade are the Russian hamster (*Phodopus sungorus*) and the Roborovski hamster (*Phodopus roborovskii*). The following information pertains mostly to the Syrian Hamster, since they the most popular hamster kept as pets, however most of the information contained here can be applied towards the dwarf species as well.

## DIET

As with any pet, good quality food and clean, fresh water must be provided at all times. The precise nutritional requirements of hamsters have not been fully determined. In the wild, these animals feed on plants, seeds, fruits, and insects. Current recommendations for feeding in captivity are pelleted rodent ration containing 15%- 20% protein. These rations are typically processed as dry blocks or pellets designed for rodents. Seed diets are also "formulated" and sold for hamsters, but these diets should only supplement the basic rodent pellet. Seed diets contain high levels of fat which can easily become rancid if improperly stored. In addition, when fed alone, these diets often lead to obesity and potential nutritional deficiencies. Other supplements to the diet may include sugarless breakfast cereals, dog biscuits, whole wheat breads, pasta, cheese, cooked meats, hard boiled eggs, fresh fruits and vegetables; all fed in moderation. Hamsters eat approximately 12 grams of food daily, and consume most of this at night. Hamsters often hoard their food in a corner of their cage, making it seem as though they eat a lot more than they really do.

Water is easily provided in water bottles equipped with sipper tubes. This method also helps keep the water free from contamination. Always make sure that the tubes are positioned low enough to allow the pet easy access. Juvenile hamsters need special consideration that they are strong enough to use the sipper tube as well as able to reach it. The average hamster drinks approximately 10ml of water per 100 grams of body weight (average adult size). Although this amount is only a fraction of the total bottle volume, fresh water should be provided daily, not only when the bottle empties.

# HANDLING

Hamsters handled frequently from a young age usually remain docile and seldom bite. They should be cupped in one or both hands and held against the handler's body. Beware that even docile hamsters may bite if surprised or abruptly awakened from sleep.

Hamsters that are not accustomed to being handled can be scooped up in a small bowl or cup and then transferred to a hand or container. An unfriendly hamster can also be picked up with the help of a small hand towel. Since all hamsters are prone to jumping and running, new hamsters should be handled low to the ground, and children should always be supervised while playing with the pet.

# HOUSING

## Caging

Several types of caging are available which provide suitable housing for hamsters. Many of these units come equipped with cage "furniture", such as exercise wheels, tunnels, and nest boxes. Such accessories, as well as sufficient litter depth to burrow in, are considered necessary for the hamster's psychological wellbeing. A hamster's habitat should be cleaned at least once or twice weekly; smaller cages should be cleaned more frequently than larger cages. There are several types of cages typically used, all of which are readily available at most pet stores. With all types of caging it is important to make sure the cage is secure to prevent escapes and at least one side of the enclosure is open for circulation.

Wire cages with solid bottoms provide good ventilation, but can be messy and drafty. The cages themselves are typically easy to take apart and clean. Bedding can also be kicked over the side between the wires and cause extra mess to clean up. Hamsters may chew on the wire sides and could damage their teeth. Caging with wire bottoms should be avoided because feet can get stuck in the floor and injury could result.

There are many colorful plastic commercial cages available, many of which are equipped with tubes and tunnels. This can give the hamster plenty of exercise, but many of these cages are too small for a hamster to live in comfortably. Plastic tubes have poor ventilation and can be difficult to clean on a regular basis. Many adult hamsters are too big to easily fit through the plastic tubes and can become stuck.

Glass aquariums keep bedding from being pushed out of the cage and can allow the hamster to burrow, however, beware that glass containers drastically reduce ventilation and can lead to problems with temperature and humidity regulation. Aquariums are typically easy to clean, but can be heavy and awkward to lift.

Syrian hamsters should be housed singly. **Adult Syrian Hamsters will become aggressive and often fight to the death when housed together.** Chinese hamsters can be kept singly, in pairs, or small family groups. The Russian hamster can be kept in pairs and may suffer a shortened lifespan if kept singly. All paired hamsters should be introduced when young. A single hamster can be housed in a 10 gallon aquarium, but a larger cage is preferred. They should have a floor space of 19 square inches, and a cage that is at least 6 inches high. Optimal temperature range for hamsters is between 65° and 80° F and the optimal humidity range is between 40% and 70%. Twelve hour light cycles are preferred, with hamsters being more active at night.

## Bedding Materials

Hamsters thrive in solid bottom cages with deep bedding and ample nesting material. Bedding must be clean, non-toxic, absorbent, and relatively dust free. Aspen shavings and wood pulp or paper based

beddings (such as Carefresh), are preferred beddings. Be sure any bedding used is free of mold, mildew, or other contaminants before placing in the cage. **Do not use cedar, pine, or chlorophyll impregnated shavings** since they have been associated with respiratory and liver disease. Corn cob bedding can be a source of mold and fungal growth when wet and should also be avoided. Provide at least one to two inches of bedding in the cage to allow normal burrowing behavior. Shredded paper, paper towels, tissue paper, and toilet paper all make excellent nesting materials for hamsters. Commercial cotton “fluff” material should be avoided because, if a hamster places the bedding in his mouth, it can cause gastrointestinal and cheek pouch impactions.

### **Cage Accessories and Toys**

Hamsters need activities to keep them occupied during the night, when they are most active. Toys and safe activities can be placed in the cage and give hamsters mental and physical stimulation needed to live a happy healthy life.

Hamsters in the wild spend a large portion of their time running and seeking food. An exercise wheel can be provided to give caged hamsters an outlet for the desire to run. Care must be taken to avoid open wire wheels, to keep legs and feet from becoming trapped and injured. Masking tape can be applied to the outside of the wheel to make it “solid” and bedding can be sprinkled on the tape to decrease stickiness. Hamsters may chew the tape so it will need to be replaced regularly. An alternative to open wire wheels are solid wheels, which are often made of plastic. These are generally the safest wheels to use because they prevent most injuries. Wheels need to be replaced if damaged through regular use or chewing. Wheels should also be secured to the side, bottom, or top of the cage to prevent the hamster from knocking it over.

Pet hamsters may enjoy plastic exercise balls in addition to a wheel. This can also provide some interaction between owner and pet. A hamster in an exercise ball must be supervised by an adult at all times and doors and stairs should be blocked off from the hamster’s access.

Hamster teeth grow constantly, so hamsters have an innate ability to chew and gnaw, which helps wear down the teeth. Commercially produced toys made of wood are excellent for hamsters to wear their teeth down on; some toys come in the form of houses or boxes and provide a place for the hamster to nest in and hide when feeling threatened. Cardboard also provides rodents with a substance to chew on and use as nesting material. Cardboard boxes are a greatly appreciated treat for a hamster to play with, but care should be taken when providing toilet paper and paper towel tubes. Hamsters, when fully grown, can be too big to crawl through these tubes and risk becoming stuck.

A playpen or a maze may be constructed for out-of-cage time and can be an excellent way to interact with a hamster. Playpens can be constructed or purchased, and structures to climb on can be placed inside. Objects to chew on and a clean water supply should be provided as well. Mazes can be constructed out of cardboard tubes, boxes, or other materials and can be used to hide treats of food items for the hamster to find. **A hamster should always be supervised while out of the cage** because some hamsters can escape from mazes and climb out of playpens, even those that are taller than the hamster.

## **DETERMINING SEX and LOCATING THE SCENT GLAND**

The sex of hamsters can be easily determined. Mature male hamsters possess large, prominent testicles, which often alarm owners who first notice their size and mistake them for tumors. In addition, the genitourinary to anal separation is much wider in males than females, making it possible to differentiate genders in young hamsters. Scent glands on both flanks, sometimes referred to as hip spots, are more prominent in males. In dwarf hamsters there is also a scent gland on the abdomen.

# **BREEDING SYRIAN HAMSTERS**

Consideration must be taken when deciding to breed hamsters. Most litters are the result of accidental mixing of male and female adults, but this can be avoided by carefully determining the sex of each hamster and housing hamsters separately. Breeding and selling hamsters is not a good way to make money and can put unnecessary stress on the animals involved. Those who are seriously considering breeding hamsters should thoroughly research the topic before attempting it.

Male hamsters should be first bred at 10 to 14 weeks of age. Females can be bred at the age of 6 to 10 weeks, but it is best to wait until she is 12 weeks old when she is mature. Females come into estrus (sometimes referred to as “heat”) every four days, typically in the evening. For breeding, place the female into the male’s cage (do not place the male into the female’s cage) about one hour before dark. If the female is receptive to the male she will adopt a mating posture, where she is crouched down with her tail in the air. Closely observe the pair for mating activity or fighting. Mating can last up to 10 minutes. Females can be very aggressive towards males and can cause serious injuries, so at the first sign of aggression by the female, remove the male; then try again the next night. Also, remove the male shortly after a successful mating has taken place.

Pregnancy is of very short duration in hamsters; lasting only 15 to 16 days. The mother’s abdomen should start to swell at 9 to 10 days into the pregnancy. Just before delivery, the expectant mother will become restless and may discharge a small amount of blood from her vulva. Do not handle or disturb her at this time. It is best to clean her cage two weeks following breeding, so her cage is relatively clean when babies arrive. Litter size ranges from 5 to 10 pups; larger litters are not uncommon. The pups are born hairless with their eyes and ears closed. However, they do already have their front teeth, the incisors.

Provide ample nesting material and bedding for the new mother and young. Plenty of fresh food and water should be available before the babies are born. DO NOT disturb the mother and young for any reason during the first week after birth. If a mother hamster seems threatened for any reason, she typically will kill and cannibalize the young. In other instances, she may stuff the young into her cheek pouches and frantically carry them around the cage looking for a safe place to establish a nest. Occasionally, pups will suffocate as a result of their activity, especially if the disturbance is prolonged.

Young hamsters usually begin eating solid food at 7 to 10 days of age, but are not weaned until 21 to 25 days. Provide food on the cage floor for the young, and also have soaked, softened pellets available for them as well. Make sure that the water bottle is low enough for the weanlings to use, and that they are strong enough to use it; or provide an alternative water source during this time.

If a mother hamster abandons her young she may attempt to cannibalize them. She may do this because her nest has been disturbed, she has too many young to take care of, she is inexperienced, or she senses a defect with the infant. Hand rearing orphans is often difficult and unrewarding, but can be attempted to keep the orphan alive.

## **BEHAVIOR**

### **Hoarding**

Hamsters are known to stuff large amounts of food into their cheek pouches in order to carry it to a hiding place, making it seem like the hamster is eating more than it really is. Typically food is hidden in a corner of the cage or near the hamster’s nesting site. Food that is kept here can become moldy if not cleaned away on a regular basis.

Hamsters will also stuff nesting materials into their cheek pouches in order to transport it from point to another. String and commercial “fluff” nesting can become stuck in the cheek pouches and should be kept out of the hamster’s reach.

### **Grooming**

Healthy hamsters do not need to be bathed by their owners because they will groom themselves. A hamster may be seen sticking a foot in his mouth and then combing his hair coat with it. Excessive grooming or scratching however could indicate a health problem and should be checked by a veterinarian.

### **Coprophagy**

Coprophagy is the practice of consuming feces, and this is a normal process in hamsters. They can obtain valuable nutrients by passing food through the digestive system twice. Animals on well balanced diets may not be seen practicing coprophagia.

### **Hibernation**

If the environmental temperature drops below about 41° F the hamster may enter into a deep sleep. The pulse slows, respiration becomes shallow, and the hamster may appear to be dead. The temperature in the environment should be warmed up slowly and a veterinarian should be contacted immediately. The hamster may need supportive care to ensure a healthy recovery from hibernation.

### **Litter Training**

Some hamsters can be trained to urinate and defecate in a specific container or location, making it easier to keep the cage clean. Training can be attempted by placing a small litter tray or pan of bedding in one corner of the cage and place some soiled bedding and feces in the tray. The hamster may start using this as his bathroom, so the tray will need to be cleaned frequently.

## **HAMSTER QUICK FACTS**

Average Life Span: 2 to 3 years

Age At First Breeding: Males- 10 to 14 weeks,  
Females- 6 to 10 weeks

Adult Body Weight: 100 to 150 grams

Gestation Period: 15 to 16 days

Environmental Temperature Range: 65° to 80° F

Average Litter Size: 5 to 10 pups

Relative Humidity Range: 40% to 70%

Weaning Age: 21 to 25 days

# INFECTIOUS MEDICAL CONDITIONS

## **Proliferative Ileitis (Wet Tail)**

The most commonly encountered bacterial infection recognized in hamsters is “wet tail”. The precise cause of the disease is not fully understood, but underlying infections with the bacteria *Campylobacter fetus* subspecies *jejuni* have been reported. Similar *Campylobacter* sp. are responsible for serious intestinal diseases in other animal species, such as swine, dogs, ferrets, non-human primates, and even humans. It is thought that this disease is stress related, commonly seen at the age hamsters are weaned or moved to new homes. Malnutrition, overcrowding, and other changes to the diet or environment are all thought to contribute to the disease.

Wet tail most often affects weanling hamsters between the ages of 3 to 6 weeks, but hamsters of all ages are susceptible. Since this is the age at which most hamsters are sold, this is a common disease encountered in pet store animals and newly acquired pets. The long haired hamster seems to be more vulnerable than other varieties. It is rarely found in dwarf species.

Death may result within 1 to 7 days after the onset of watery diarrhea. Other signs include matting of the fur around the tail, unkempt hair coat, hunched stance, loss of appetite, dehydration, emaciation, and irritability. Blood from the rectum and rectal prolapse may be seen in some serious cases. This is a very serious disease, with death being the most likely outcome.

Due to the severity, any hamster exhibiting these signs must be examined by a veterinarian as soon as possible. Antibiotics, fluid therapy, and anti-diarrheal medications will be administered to the patient. Supportive care will also be started. Unfortunately, in most cases of wet tail, prognosis is not good and death is probable.

## **Alopecia (Hair loss)**

Hair loss can occur for a number of reasons in hamsters. This loss of hair can be due to both disease and non-disease conditions. Continual rubbing on sides of the cage as well as barbering (hair chewing by cage mates) are examples of non-disease causes of alopecia. Infestation with demodetic mites is one of the most common infectious causes of patchy alopecia and scaling in hamsters. Other conditions that lead to hair loss include ringworm, adrenal tumors, thyroid deficiency, and chronic renal disease. Some of these conditions may be correctable, while others are not.

Demodex mites are the most common external parasite causing problems in hamsters. The mite lives within the hair follicles and certain skin glands of their host. The presence of these mites results in dry, scaly skin, and subsequent hair loss, especially over the back and rump. This disease is rarely a problem by itself. Demodectic mange in hamsters is often associated with chronic, debilitating diseases or other underlying problems. For this reason, a thorough examination must be performed on any hamster presented with mites. To confirm the presence of mites, the veterinarian may perform a skin scraping for microscopic observation. Treatment for the mites is often possible, but remember that there may be another problem, often more severe, underlying this one which must also be addressed.

## **Parasites**

It is possible for hamsters to be infested with internal and external parasites other than ringworm and demodectic mites. Signs usually include lesions or blisters on the skin, hair loss, or chronic weight loss. Diagnosis of parasites is done through fecal or skin testing and treatment is anti-parasitic medication. Fleas and lice are not common in hamsters, but can be obtained through contact with other animals.

## **Geriatric Conditions (Old Age Diseases)**

Hamsters tend to have relatively short life spans when compared to other species. The average life expectancy of a hamster is between two and three years of age. For this reason, spontaneous aging diseases are not uncommon in these animals, typically after the age of one year. Two of the most common geriatric conditions of hamsters are amyloidosis (protein deposition in various organs) and cardiac thrombosis (blood clots in the heart). Treatment of these conditions involves managing clinical signs since cures are not possible. A diagnosis of virtually any geriatric disease carries poor prognosis.

Amyloidosis is a condition whereby proteins produced by the body are deposited in various organs, primarily the liver and kidneys. Kidney and liver failure often occurs as a result of this protein deposit. Many other organs are also affected, and the changes are irreversible. Signs of this condition include swollen abdomen, urinary problems, dehydration, poor appetite, and rough hair coat. Supportive care is the only treatment since this condition is eventually terminal.

Blood clots within the heart occur at relatively high frequency in older hamsters. This condition is known as cardiac thrombosis, and typically occurs in the left side of the heart. Many factors are involved in the formation of these clots including clotting disorders, heart failure, circulating bacterial infection, and amyloidosis.

Many other old age diseases occur in hamsters over the age of one year. Liver and kidney disease is not uncommon in the middle age to old hamsters. Other conditions commonly encountered are gastric ulcers, tumors, and dental disease.

## **Ovarian Cysts**

Ovarian cysts are common in females that have not had any litters of young during their life. They typically occur bilaterally (on both sides) and clinical signs include swollen abdomen with bloody vaginal discharge. Sometimes these cysts can be drained, but the only way to cure this condition is to spay the female hamster.

## **Conjunctivitis**

Conjunctivitis is an infection of the inner surface of the eyelid and the exposed surface of the eyeball and can progress quickly. It can be caused by any irritant that comes in contact with the eye, such as dust or abrasive bedding material. Early signs include crusting or discharge around the eyes and inflammation. A hamster may rub or scratch at an infected eye, and this can make the problem worse. Treatment usually includes eye ointment or drops several times a day and removal of the irritant that likely caused the problem.

## **Respiratory Infections**

Hamsters can catch colds and influenza viruses from their human families, especially from children. Good hygiene must be practiced to protect the hamster from these illnesses, which can lead to fatal pneumonia. All hamster handlers should wash their hands prior to and after handling the hamster. They are also susceptible to drafts and sudden drops in temperature in their environment, which can also lead to infections. Signs of respiratory infections include sneezing, lethargy, and discharge from the nose or eyes. Treatment comes in the form of antibiotics, fluids therapy, and supportive care. A veterinarian may prescribe decongestant medication, but hamsters should never be given any human medication (human cold medication, for example) without the consent of an experienced hamster veterinarian.

# NONINFECTIOUS MEDICAL CONDITIONS

## Cheek Pouch Impactions

Hamsters possess expandable cheek pouches, which are used for hoarding food and nesting materials. Because the inner walls of the pouches are dry food and inedible substances can become lodged (impacted) within them. Any hamster that is unable to remove the contents of his cheek pouches should be seen by a veterinarian immediately. Without treatment infections and abscesses can develop and the hamster may stop eating. Treatment can include removal of the impacted substance, antibiotics, and supportive care.

## Malocclusion

As with other rodents, the teeth of the hamster grow constantly throughout life and wear down through chewing and eating. Sometimes the teeth do not align properly and do not wear down correctly when a hamster uses them. As the teeth get too long they should be clipped by a veterinarian. Malocclusion can be a congenital disorder or can be caused when the teeth are broken or damaged.

## Fractures

Trauma, such as a fall or mishandling can cause fractures of the limbs. Treatment is supportive care or light dressings. Severe fractures may need amputation. Prevention is the key to avoiding this condition. Proper handling should be practiced and children should always be supervised with pets. Cages should be kept secured and doors should always be closed to prevent escapes.

## Overgrown Toenails

Overgrown toenails occurs more in older hamsters than in younger hamsters. Long nails can become caught on cage accessories and lead to injuries so when the nails become long they will need to be trimmed, avoiding the blood vessel in each nail (called "the quick"). If the vessel is cut some bleeding will occur. Because hamsters rarely sit still for nail trims it may be best to have an experienced veterinarian perform the trim.

## SYMPTOMS TO WATCH FOR

If you see any of the following conditions in your hamster contact your veterinarian immediately.

- Sudden weight loss or gain
- Hair loss
- Diarrhea or constipation
- Head tilt, loss of balance
- Discharge from the eyes, ears, or nose
- Lumps, masses
- Wounds, blisters, or bleeding
- Breathing difficulties
- Lethargy
- Anorexia (poor appetite)
- Abnormal posture
- Collapse, trembling, seizures

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