



Institutional Animal Care and Use Committee™

Title: Hamster Husbandry

SOP Number: 077

Purpose: To establish proper hamster room maintenance and husbandry procedures to ensure quality care and prevent the development of disease.

HOUSING AND CARE

- A. Hamsters will be housed in suitable caging based on space requirements. Hamsters prefer larger, taller cages when available. The minimum requirements are as followed:

Body Weight (g)	Minimum Floor Area/ Animal (in ² /cm ²)	Minimum Height (in/cm)
60	10 / 64.5	6 / 15.2
Over 60	13 - ≥19 / 83.8 - ≥122.5	6 / 15.2

- A. Hamsters will be housed in pairs or trios upon arrival at the facility.
1. Hamsters are aggressive, especially females, so if fighting is observed they will be separated individually as needed.
- B. Temperature range: 68-79 degrees F
1. Temperature should not fall below 60°F nor exceed 85°F.
- C. Humidity range: 30-70%
- D. Light cycle will be on a 12:12 light/dark cycle unless otherwise specified in protocol.
- E. Water is provided ad libitum unless justified in the protocol.
1. Water bottles are refilled as needed and are changed out weekly.
 2. Lixits for cages on automatic watering are checked twice a week to ensure proper function. Lixits are changed out as needed due to malfunction or at minimum once a month.
- F. Hamsters need to carry and manipulate their food and eat throughout the day in a semi-aroused state. Feed should be provided in a manner to allow for these behaviors to decrease stress and excessive hoarding behaviors.
1. Food will be kept on the caging floor even if a feeder is also used (J feeder preferred). Fresh food is added to the cages as needed. Food should be checked daily for signs of excrement in feed.
 - a. Hamsters will carry food to their burrows so food quality and quantity will be monitored prior to adding more food.
 2. Food may be supplemented with good quality fruits and vegetables consistent with individual dietary requirements.
 3. Any uneaten supplemental food will be removed from the enclosure such that bedding does not become soiled to a degree it might be harmful or uncomfortable to the animals.
- G. Bedding material: processed hardwood chips, sawdust shavings, Carefresh, corncob, or certified paper products.
1. Hamsters should be provided with deeper bedding to encourage burrowing behavior.

2. Hamsters prefer softer bedding for burrowing but when it can not be provided more nesting material can be supplemented.
 3. When deep bedding is provided the height of the cage must still provide suitable head room.
- H. Nesting material is provided to build nests and also encourage burrowing behavior. The amount of nesting material should be adequate for each hamster in the cage.
1. Larger quantities of nesting material is preferred if the bedding is not very deep.
- I. Shelters or material to construct a shelter are provided.
1. Shelters may be provided for each hamster in the cage. If only a single shelter is provided it is large enough for all hamsters to fit inside.

HAMSTER HANDLING AND BEHAVIOR

- A. Care should be taken not to startle them or handle them while they are sleeping to prevent being bitten.
- B. To restrain a hamster
1. Place the hamster on a flat surface then press the palm of one hand gently against its back with fingers open/straight.
 2. Your fingers and thumb can curl around the sides of the hamster grabbing as much loose skin as possible.
 3. Bunching the loose skin tightly will pull the skintight against the hamster's abdomen and chest. The animal should not be held so tightly it cannot breathe, but also not so loosely that it can turn and bite the handler.
- C. For cage transfers:
1. A small cup or bowl can be placed in the cage and the hamster will usually get inside the cup and then the hamster can be transferred quickly to another cage.
 2. You can also gently cup around the hamster, holding it in your palms, and move from cage to cage.
 3. Direct handling of the hamster by approaching it from behind and grabbing the loose skin across the shoulders and head.
- D. Hamsters will carry food, bedding, and nesting material in their cheek pouches to transport items to preferred locations throughout the cage.

ENRICHMENT

- A. Social enrichment:
1. Human interaction with the hamsters during daily husbandry is encouraged. Human interaction with the hamsters can help reduce aggression and aid in research techniques and weekly cage changes.
 2. Hamsters are housed in pairs or trios except in instances where hamsters are determined incompatible due to aggression; in which case, they will be housed individually and provided additional physical enrichment.
- B. Physical enrichment
1. Gnawing, hiding and burrowing behaviors should be encouraged.
 - a. Burrows, pipes, boxes, tubes, or shelters which mimic natural habitats or under-ground burrows.

- b. Paper tunnels, tubes, and cardboard can be provided for the hamster to gnaw and climb on.
 - c. Enrichment chews and blocks will be used to help with species-specific gnawing behavior and teeth health.
 - 2. Nesting material
 - a. Nesting material may consist of commercial nesting materials as well as shredded paper, cardboard, and paper towels. However, loose strand paper offers a more complex nesting opportunity.
 - b. Extra nesting material may be supplemented if harder bedding (e.g. corncob) is used to help them create more complex burrowing opportunities.
 - c. Provision with enough material is necessary to allow more than one nest to exist will help decrease aggression.
 - 3. Enrichment should be provided for each hamster in the cage to reduce aggression.
 - 4. Multiple height levels are encouraged for climbing and to allow designation for play, eating and rest.
- C. Exercise
- 1. Running wheels are a high valuable enrichment item that satisfies the hamsters want to move and travel.
- D. Food items can be offered as an enrichment but should not be considered an alternative for gnawing behavior.
- 1. High-fiber food items as well as seeds, granolas, dehydrated fruits and vegetable and other treats are good food enrichment items.
 - 2. Fruit and vegetables may also be supplemented and used as food enrichment.
- E. Implementation
- 1. Enrichment will be provided to the hamsters at change-out and various times throughout the week.
 - 2. Enrichment items will rotate to keep the items novel and the hamsters interested.
 - 3. Exceptions to using enrichment require a statement in the protocol providing adequate justification as to why environmental enrichment would interfere with the study.

CAGE CHANGES AND SANITATION

- A. Cage lids, wire bars, water bottles, and enrichment devices are changed out and sanitized at least once every 2 weeks. Cage changes will be as follows:
- 1. Total cage change outs will occur every two weeks (this includes wire bars, lids, bottoms, and enrichment).
 - 2. Cage bottoms will be changed out every week (this includes new bedding and nesting material).
 - 3. If hamsters are singly housed, then the cage bottom will be assessed for dirtiness and level of excrement and changed as needed. Cage bottoms will not go longer than one month between cage changes.

4. A small amount of food cache will be transferred during cage changes to prevent excessive hoarding behavior.
- B. Bedding from the cages is dumped in the trash and a scraper is used to remove bedding stuck to the bottom or corners of the cage. This is performed inside a bedding disposal station or in front of a bio bubble.
 - a. If neither are available, husbandry staff must wear an appropriately fitted n95 mask to dump bedding.
- C. All cage parts and devices are cleaned and sanitized in a rack washer or cage/bottle washer capable of effective hot water disinfection (180°F)
- D. Racks will be cleaned and sanitized every 6 months in the same manner as above.

ANIMAL ROOM CHECKS AND SANITATION

- A. Rooms should be checked daily for any operational deficiencies. Any deficiencies should be reported immediately to the facility manager.
- B. Floors are swept daily and mopped with disinfectant mixed according to manufacturer's recommendations three times a week.
- C. Weekly- All surfaces (including door frames, lights, and vents) are wiped down with disinfectant mixed according to manufacturer's recommendations.
- D. Monthly- Floors, walls, and ceiling should be disinfected according to manufacturer's recommendations.

ANIMAL HEALTH MONITORING

- A. All animals will be observed upon receipt for overall health, condition and well-being.
- B. All forms located in the room's notebook must be adequately filled out.
 1. Daily observations
 2. Task sheets
 3. Temperature/humidity logs
 4. Treatment records if applicable
- C. Animals are observed daily by animal care staff for any evidence of illness or change in behavior.
 1. Everyone with access to the animal facility is responsible for immediately informing the facility manager or university veterinarian(s) when an animal becomes ill or a change in behavior is observed.
- D. In the event of suspected illness:
 1. Record your observations in the hamster's individual record- include the date, the problem observed, and your initials.
 2. Immediately contact the ACS facility manager or the university veterinarian:

Sydnee Woodman: ACS facility manager
806-834-2872 Office
602-758-0670 Cell

Dr. Tiffanie Brooks: ACS/ University veterinarian
806-834-8588 Office
806-239-2120 Cell

Dr. Paul Stonum, ACS Clinical Veterinarian
806-834-7373 Office
660-562-4425 Cell