

RODENTS AND ASTHMA

PROBLEM STATEMENT

Mice are associated with asthma. The proteins in mouse urine are the main allergen. Mouse saliva and feces can also trigger asthma. Rodent-associated diseases affecting humans besides asthma include plague, typhus and rat-bite fever.

As a group, rodents have certain behavioral characteristics that are helpful in understanding them. They are perceptive to touch, with sensitive whiskers and guard hairs on their bodies. Thus, they favor running along walls and between objects that allow them constant contact with vertical surfaces. They are known to have poor eyesight and are alleged to be colorblind. Contrastingly, they have an extremely sharp sense of smell and a keen sense of taste. Rodents will gnaw to gain entrance and to obtain food.

Mice are very suspicious of any new objects or food found in their surroundings. This characteristic is one reason rodents can survive in dangerous environments. This avoidance reaction accounts for pre-baiting (baiting without poisoning) in control programs. Initially, rats or mice begin by taking only small amounts of food. If the animal becomes ill from a sub-lethal dose of poison, its avoidance reaction is strengthened and a poisoning program becomes extremely difficult to complete. If rodents are hungry or exposed to an environment where new objects and food are commonly found, such as a dump, their avoidance reaction may not be as strong; in extreme cases of hunger, it may even be absent.

The presence of mice is indicated by sightings (less common) and droppings. They are attracted by food, water, shelter and warmth.

RODENT CONTROL STRATEGIES

Eliminate Food Sources To accomplish this, it is imperative for the homeowner or occupant to do a good job of solid waste management. This requires proper storing, collecting and disposing of refuse.

Eliminate Breeding and Nesting Places This is accomplished by removing rubbish from near the home, including excess lumber, firewood and similar materials. These items should be stored above ground with 18 inches of clearance below them. This height does not provide a habitat for rats, which have a propensity for dark, moist places in which to burrow. Wood should not be stored directly on the ground, and trash and similar rubbish should be eliminated. Also, weeds, brush and ivy should be cleared

Killing Program This can vary from a family cat to the professional application of rodenticides. Cats (if not an allergen to the person with asthma) can be effective against mice. Over-the-counter rodenticides can be purchased and used by the homeowner or occupant. These typically are in the warfarin groups.

BACKGROUND

Exposure to mouse urine and fecal matter can trigger asthma attacks. Studies have shown a linkage between rodent allergy and asthma symptoms. However, even after a rodent population is controlled, rodent allergens may remain, which can trigger allergic reactions in some people making thorough clean-up necessary. Therefore, conducting an integrated pest management protocol is essential.

Conduct this protocol only in homes with rodent activity and if child is allergic to rodents.

- Rodents are a persistent problem for garden communities (low-income housing) and may be found in other housing throughout Seattle and King County.
- Rodents, especially mice, are found in homes more often during colder months, when they come inside to stay warm.

ASSESSMENT

- Assess prior education received by caregiver and their knowledge.
- Ask caregiver if they have seen any evidence of rodent activity.
- Look for evidence of rodent activity (e.g. droppings in crawl spaces, under sinks).
- If rodent activity is present, record in database visit encounter.
- Assess for caregiver's willingness to change behavior by eliminating rodent attractants.

EDUCATIONAL MESSAGES

- The urine and perhaps hair of rodents, such as mice and rats, contain allergens that can make asthma worse.
- Reducing exposure to rodent allergens is an important strategy in helping to control asthma among people with allergies to mice. This can be done in two ways:
 - Prevent mice from entering the house.
 - Remove mice attractants such as food, garbage, and clutter from both inside & outside of the home.

ACTIONS

CHW ACTIONS	CAREGIVER ACTIONS
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<p>If the caregiver is a Housing Authority tenant:</p> <ul style="list-style-type: none"> • Refer the SHA tenants to the pest control supervisor at SHA-Impact Property Services. If the caregiver is a KCHA tenant, have them check with the building manager. If there is no resolution to their problem in a timely manner, consult with the project manager. <p>If the caregiver is a tenant:</p> <ul style="list-style-type: none"> • Encourage the caregiver to ask the landlord to make some necessary changes as needed, such as: <ul style="list-style-type: none"> ▪ Repair of large gaps and holes, repair of broken sewer pipes, and installation of screening over vents. ▪ Remove outdoor rodent hiding and nesting places by cutting back bushes and removing yard debris. Rats often like to hide in ivy. ▪ Eliminate outdoor rodent attractants such as open garbage or compost storage, food debris, and pet dung. ▪ Install door sweeps or door shoes to block gaps at the bottom of doors, if necessary. • Consult the project manager about a support letter from the landlord requesting specific actions, if the tenant so desires. • Assist caregiver in excluding rodents from the home and in setting up rodent traps. 	<p>The following actions can help prevent a rodent problem from developing or recurring:</p> <ul style="list-style-type: none"> • Keep food away from rodents so they are not attracted to the home. • Store food in sealed containers. • Keep garbage in closed containers. • Clean up dishes after use or place them in soapy water. • Clean up food spills and crumbs immediately. • Remove rodent indoor hiding places such as empty boxes, cans, bottles, bags, and newspapers. • Remove outdoor rodent hiding and nesting places by cutting back bushes and removing yard debris. Rats often like to hide in ivy. • Eliminate outdoor rodent attractants such as open garbage or compost storage, food debris, pet dung.
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FOLLOW-UP VISITS:

ASSESSMENT

- Ask caregivers if they have seen any evidence of rodent activity.

- If none, reinforce successful efforts in controlling rodent access & limiting attraction of rodents.
- If present, record in database visit encounter.
- Look for evidence of rodent activity (e.g. droppings in crawl spaces, under sinks). If present, record in tracking system.
- If rodents are still present, review protocol above. If it has been successfully implemented, discuss referral to pest consultant with project manager.
- Use clean steel wool, foam and mesh, or other appropriate materials to plug holes or gaps greater than ¼ inch in diameter between construction materials and pipes or holes in walls.
- Install screens on vents that provide entry into the home (e.g. dryer vents, fan vents). Cover sharp edges of screening mesh with duct tape.
- Help caregiver set up rodent traps.

HOW TO SET UP RODENT TRAPS:

- Use glue boards in accessible areas.
- Caregivers may place snap traps in crawl spaces or other areas.
- Apply bait such as peanut butter to traps.
- Place traps perpendicular to the wall, with bait end of trap against the wall.
- In areas with known rodent activity, 5-10 traps should be deployed. Place traps closely together, 3 traps per foot, in a row so that the rodents would have to step on the traps.
- Where rodent activity is not well known, traps can be spaced 10 to 20 ft. apart along suspected runways.

Upon retrieval, traps should be handled with gloves, sealed in plastic bags and disposed of in sealed garbage cans.

SUPPLIES

- Flashlight and tools for CHW use:
 - Steel wool
 - Foam
 - Mesh
 - Vent screens
 - Traps: glue and snap types

EDUCATION HANDOUTS

- “Mousetraps” Local Hazardous Waste Management Program in King County
- “Unwanted: Rats are Dangerous” Public Health – Seattle & King County
 - Available in English Spanish

REFERRALS

- Landlord as indicated
- In cases of extreme infestation, when other methods fail, CHW should consult with the project manager about obtaining help from a pest consultant