ALLEY CAT

How To Get Rid of Rats: A Step-By-Step Guide



ALLEY CAT Local. Professional. Experienced.

Over 1000 Reviews ★★★★★ Google yelp DIAMOND CERTIFIED

Quick Debrief: What Are We Dealing With?

ALLEY CAT

Rats are social creatures that live together in groups and communicate through pheromones—chemical signals that convey information about:

- Food
- Mating
- Safety & shelter
- Health, stress, fear, and more

Moreover, rats are usually discovered only when their numbers exceed a threshold that makes their presence noticeable. Where one rat is found, additional rats may be nearby or hidden elsewhere on the property.

Did you also know that rats can:

- Climb vertical surfaces including wood, brick, and concrete
- Chew through wood, rubber, vinyl, plastic, and concrete
- Swim in open water and even travel through the trap of a toilet
- **Give birth 6x per year with 6-12 pups per litter**

Fact

Under ideal conditions, one breeding pair of rats can theoretically lead to a population of nearly 1,500 descendants within one year, leading to significant infestations and property damage.

Pro Tip

Pheromones are often released through rat droppings and urine. Look for droppings that are ½ -¾ inch long, capsule-shaped, and pointed at one or both ends. A single rat will leave 40-50 pellets per day.



DID YOU KNOW?

Nearly 12% of U.S. homes experience rodent activity in a typical year, and rats account for almost half of identified cases. Even so, 52% of homeowners try to handle pest removal themselves, while only 42% bring in a professional.

A Rat's Diet



Fruit



Nuts



Berries



Pinecone Seeds



Pet Droppings



Body: 7-12 inches

Tail: 6-9 inches

© 2026 Alley Cat. All rights reserved

Chapter 1: Inspection

Inspecting your home is the first step in getting rid of rats. It helps you identify the extent of the infestation, locate entry points, and understand where rats are nesting.

Fact

Since 2013, rodent activity has risen across parts of the Bay Area:
- 33.36% in Contra Costa County
- 27.52% in Alameda County
- 242% in San Mateo County

Pro Tip

Document evidence with photos and notes where possible.



Pro Tip

During your inspection, avoid touching dry waste, which can crumble easily and become aerosolized (airborne).

1. Ensure You Have The Right Equipment



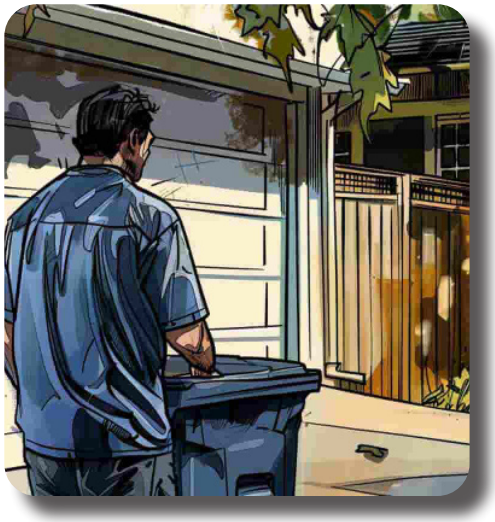
Before you begin, gather all necessary materials, including:
- A flashlight
- Gloves
- A P100 mask

You'll need a flashlight to inspect some dark, hard-to-see places. Gloves and a mask, on the other hand, are essential for protecting yourself from potential health hazards, **as rat droppings and urine can carry diseases.**

2. Check Around Trash For Holes, Damage, & Droppings

Rats are attracted to easily accessible food sources, such as trash. Examine where you keep your trash, pet food, and other food storage areas. Look for holes, gnaw marks, or droppings that are a clear sign of their presence. Remove any food sources immediately if you notice any damage - they could be contaminated.





DID YOU KNOW?

Unsecured trash is the #1 leading contributor of an increasing rat population.

Pro Tip

Properly secure trash bins and promptly remove food waste to reduce the risk of rodent infestations. Easy access to shelter and food, especially from trash, **can extend rats' lifespans by up to 375%**, making infestations harder and costlier to clean.

Pro Tip

If your trash bin is damaged or broken, contact your local waste company about repair or replacement options.

© 2026 Alley Cat. All rights reserved

3. Inspect Possible Entry Points

Walk around your home and inspect potential entry points - **check for ½ inch gaps (or larger)** around doors and windows, cracks in walls, and openings around pipes and vents. Sealing these is critical - understanding where (and how) rats are entering your house can help you prevent them from entering in the future.







Rats can slip through holes as small as 1/2 inch in diameter.



Normal AA Battery

1/2 inch

Check carefully - structural defects such as holes and cracks remain the #1 underlying cause of rodent infestations.



DO NOT ENTER contaminated, confined, or difficult-to-access areas without appropriate protective equipment.

4. Determine High-Clutter Areas To Evaluate

Rats prefer to hide in cluttered, undisturbed areas, such as:

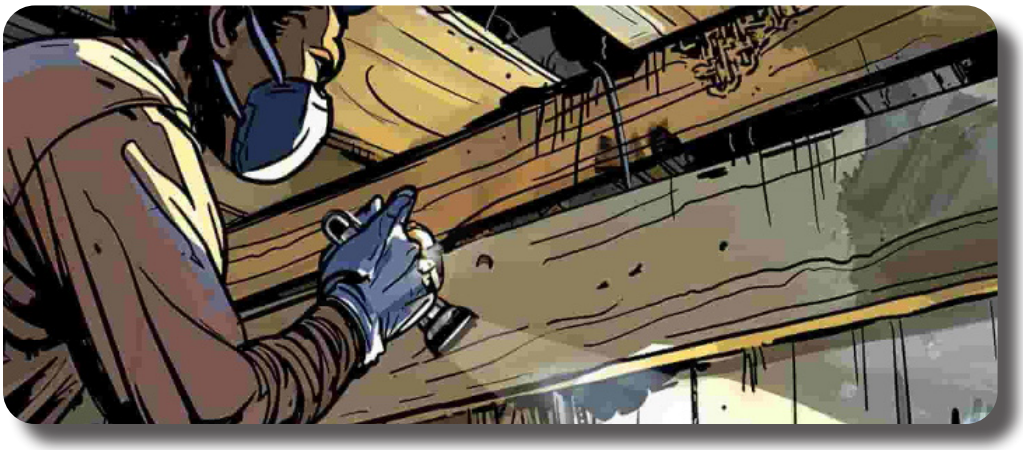
- Attics
- Basements
- Crawl spaces
- Garages
- Additional Dwelling Units (ADUs), and more.

Evaluating rodent activity there can help you **quickly identify hiding spots and the extent of a possible infestation**. Also, by reducing clutter, you can make these areas less attractive to rats.

Pro Tip



If you suspect an entry point, fill small holes and gaps with dirt or crumpled paper. Check back the next day to see if it's moved. This helps pinpoint and validate entry points.





One of the biggest mistakes homeowners make is simply ignoring the signs of an infestation. If control measures aren't enforced, they'll simply repopulate.

© 2026 Alley Cat. All rights reserved

5. Identify Signs of Rodent Activity

- **Droppings/Urine Marks**: Often found along "runways" or near food sources. Urine marks may appear as stains or streaks.
- **Torn/Damaged Insulation And HVAC Ducts**: Rats will shred insulation and HVAC ducts to use as nests. Rigorously evaluate.



- **Gnaw Marks**: Look for chew marks on wood, plastic, or structural material. Rats constantly gnaw on hard materials **to keep their teeth short and reduce stress**.
- **Nesting Material**: Twigs, paper, leaves, torn insulation, and more.



- **Runways & Grease Marks:** Rats create paths or "runways" that they frequently travel. Over time, these paths become marked with dark, greasy tracks from their fur.
- **Chewed Electrical Wiring**: This is dangerous and a serious sign of rat activity as **damaged wiring can lead to electrical fires.**

Fact

An estimated 25% of all fires attributed to "unknown causes" are likely started by rodents gnawing on gas lines and electrical wiring every year, with an average estimated residential property loss of approximately $20,371 per fire.

STOP

If you find a dead rat, droppings, debris, contaminated material, or any damage caused by rats, **DO NOT TOUCH** it.

For dead rats, wear gloves and turn a plastic bag inside out. Grasp the rat with the bag's inside, then turn the bag right side up. Proceed to Page 8 for detailed handling instructions.

DID YOU KNOW?

Rats' teeth grow 4-5 inches per year and never stop. In fact, because of their gnawing, rats cause over $282 million in property damage in North America alone each year.

DID YOU KNOW?

It takes only 30 seconds for a small flame to turn into a major blaze.

© 2026 Alley Cat. All rights reserved

Chapter 2: Kick Them Out

To kick rats out, find their hiding places and eliminate their sense of safety and security. ***Make sure you wear disposable:***

- *Gloves
- *Foot covers
- A full protective face mask
- A protective heavy-duty coverall suit

**Use duct tape to secure to your coverall suit*



Fact

It takes just 5.33 hours for one rat's droppings to reach the human allergen threshold of 1.6 µg/g. Contaminants in rat urine, feces, and nests can become easily airborne if touched or inhaled, potentially triggering severe asthma attacks, diseases, & other health hazards.

Pro Tip

Wear disposable, protective gear wherever possible when cleaning up. Use containment barriers (e.g., plastic sheeting) throughout the house to protect against the spread of possible contaminants and diseases.

1. Identify Their "Nesting Locations"

Rats thrive in places where they feel secure and hidden. Your goal is to disrupt their environment to force them out by making their hiding places "uncomfortable" and "unsafe" to continue living in.







DID YOU KNOW?

Rodents can spread up to 35 diseases, such as hantavirus and salmonella.

DID YOU KNOW?

49% of rats have Salmonella, and even 1 mouse can introduce 23 million Salmonella bacteria through their droppings in a single day, 460x the human threshold for infection.

First, focus on the entry points and signs of activity such as **droppings, gnaw marks, and torn insulation** - use these clues to track the rats' movements. Follow grease marks and runways to trace their paths from entry points to nesting locations. Pay special attention to cluttered or dark, undisturbed spots, as these are prime locations for rat nests.

© 2026 Alley Cat. All rights reserved

ALLEY CAT

2. Inspect & Remove All Clutter Carefully

Rats often shelter in boxes, paper piles, stored belongings, and other undisturbed clutter. Do not rapidly overturn items, as dry contaminated particles may become airborne. Removing clutter not only exposes their hiding spots but also makes your home less attractive to them.



STOP

Remember, turning over contaminated materials can **cause particles to become airborne**. Be cautious when handling items, and ensure you have disposable, protective gear covering your entire body.

3. Safely Remove All Contaminated Materials & Debris

It's crucial to **remove anything that has been contaminated by rats**. When you eliminate their scent trails and nesting materials, you make it harder for them to return. Follow these guidelines:

- **Remove Damaged Insulation:** If rats have shredded insulation, remove it. This gets rid of nesting material and pheromones.







DID YOU KNOW?

Rodent infestations increase energy bills by an annual average of $653.77 for Northern California homeowners due to insulation damage alone.

DID YOU KNOW?

Fiberglass insulation costs have surged by 76% from 2019 to 2024 and show few signs of slowing down in the long run.

© 2026 Alley Cat. All rights reserved

- **Remove Damaged HVAC Ducts and Chewed Wiring**: **Rats often burrow in HVAC ducts** for warmth and chew wires to reduce stress. Promptly repair them to prevent fires & contaminant spread.





Pro Tip

If wiring has been chewed, avoid touching or using the damaged circuit or equipment. Shut off power when it can be done safely and contact a licensed electrician for evaluation and repair.

- **Vacuum Up As Much As Possible**: **Use a heavy duty vacuum cleaner with a HEPA filter** to remove droppings, dead rats, and other debris. This helps avoid spreading contaminants and reduces health risks.
- **Remove All Contaminated Material**: Discard any items that have been contaminated. If you must keep an item, thoroughly clean it with a disinfectant (refer to page 10).



DID YOU KNOW?

22% of inner-city children suffer from rodent-induced asthma, largely caused by poorly ventilated areas with no HEPA filters. Additionally, poor ventilation is the #1 risk factor for infection by rodents.

4. Place All Material In Large, Thick Trash Bags

After gathering all the contaminated materials, place them in large trash bags, seal them tightly, and **dispose of them ASAP** at a dump.



Pro Tip

If you have an HVAC system, make sure to use HEPA filters. These filters are designed to capture tiny particles, including those that could be contaminated with rat droppings or urine, and can greatly reduce the chances for infection, disease, or asthma.

© 2026 Alley Cat. All rights reserved

Chapter 3: Get Your Home Back

After you've kicked the rats out of your home, it's time to restore your living space to a clean and safe condition. First, focus on disinfecting the contaminated areas and sanitizing them properly.

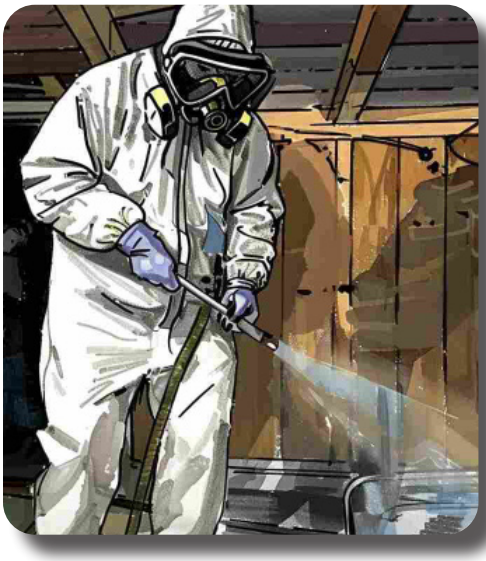


Sanitize & Decontaminate

Sanitize areas contaminated by rat droppings, urine, grease marks, nesting materials, and any surfaces or items they may have come into contact with. This helps reduce pathogens, allergens, odor residue, and other contamination left on affected surfaces.

Fact

Using other popular household cleaning items such as bleach will NOT properly disinfect the contaminated areas, and might cause contaminants to become airborne if cleaned incorrectly.





STOP

Remember to protect yourself from contaminants and chemicals. Wear disposable gloves, shoe covers, masks, and protective clothing, and duct tape all connecting parts together.

Pro Tip

Consider using Nisus DSV®, a powerful disinfectant and sanitizer. DSV is effective against a wide range of pathogens and is ideal for cleaning areas that have been contaminated by mice. This product is designed for use on hard, non-porous surfaces and is particularly effective when sprayed from a lawn & garden pump sprayer, especially for hard-to-reach areas. Check availability via your local home improvement store.

DID YOU KNOW?

Most droppings become gray, dusty, and crumbly after only 2 weeks, meaning they're much more likely to crumble and become airborne when disturbed

© 2026 Alley Cat. All rights reserved

Chapter 3: Get Your Home Back

Here are some other important steps:

- **Wet All Surfaces**: **Thoroughly saturate contaminated areas with a disinfectant solution** (e.g., **Nisus DSV**), including countertops, floors, and any other spots showing signs of rat activity. This helps eradicate bacteria and viruses that pose health risks.



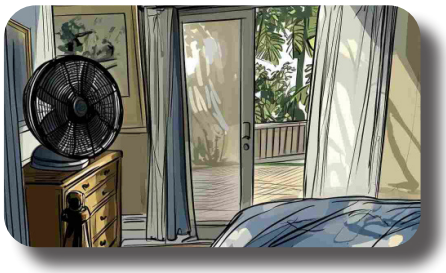
- **Allow Disinfectant To Set**: Let the disinfectant sit for ***at least 10 minutes*** to ensure its effectiveness. Afterward, rinse the surface or let it air dry. Finally, use disposable cloths to wipe up any excess.



- **Clothing & Fabrics**: Immediately wash any exposed fabrics and clothing, such as curtains, bedding, and shirts, in ***hot water.*** The high temperature will likely kill any remaining pathogens.



- **Air Out Your Home**: Open windows and use fans to ventilate your home once all contaminated materials have been saturated. This helps remove any lingering odors and airborne particles from the cleaning process.



- **Consider Natural Deterrents**: **Use peppermint oil to deter rats from returning (temporarily)**. Also, you may consider other forms of natural deterrents, such as eucalyptus oil, citrus oils (from fruits like lemons or oranges), bay leaves and clove oil.



Pro Tip

If you don't have an open window in places like your attic, basement, or crawlspace, consider placing a fan near the entrance and direct it towards the outside to ensure proper air movement.

DID YOU KNOW?

Rats dislike the smell of peppermint oil for two reasons: (1) it has a strong, sharp scent that can irritate their olfactory senses (i.e., sense of smell); and (2) the strong scent may temporarily interfere with some environmental scent cues, which can interfere with their ability to detect food, predators, safety, etc.

Pro Tip

Place peppermint oil-soaked cotton balls in areas where mice are likely to enter. This may provide a temporary scent deterrent, but it should not replace mouse-proof repairs or trapping.

© 2026 Alley Cat. All rights reserved

Chapter 4: Keep Them Out

Next, focus on preventing future infestations. This involves sealing entry points, maintaining cleanliness, and using hardware deterrents.



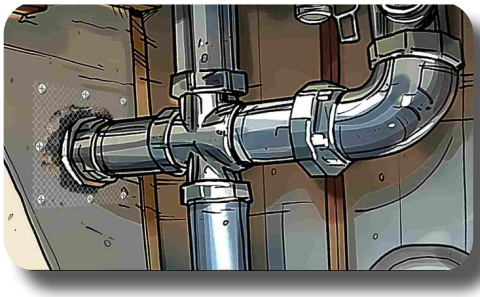


Rats can chew up to 6 times per second. They can also exert 2,133 lbs of force per square inch (~2000 psi). That's about 13 times the force of a human's bite (162 psi), 2-3 times that of a lion's (650-1,000 psi), and equivalent to an American Alligator's (2125 psi).

1. Seal Access & Prevent Re-Entry

Rats can squeeze through ½ inch openings, **so seal all possible entry points you come across**. Here are rats' most common sources of entry:

- **Pipes**: Check for gaps around pipes and use steel wool and caulk to seal them. **Steel wool is difficult for rats to chew through.**
- **Vents**: Install wire mesh screens with screws over vents to keep rats out while still allowing airflow.



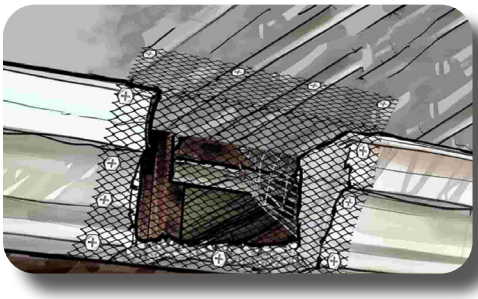


- **Holes/Cracks**: Use steel wool and expanding foam to seal any holes and cracks, even oddly shaped ones.
- **Roof Entry Points**: Rats can enter through damaged shingles or gaps in the eaves. **Repair any damage with hardware cloth and screws**, or even metal flashing if necessary.

Pro Tip



Seal tough or hard-to-get-to holes/cracks with hardware cloth or wire mesh secured with screws for added protection.





Pro Tip



Rats often chew through standard weatherstrips. Instead, use rodent-proof weatherstrips (e.g., RodeXit), which are designed to keep rodents out.

- **Doorways, Windows, Entryways**: Install door sweeps or weatherstrips on exterior doors. Check that windows close tightly, and repair any gaps or holes around frames.

© 2026 Alley Cat. All rights reserved

ALLEY CAT

2. Replace Damaged & Vulnerable Areas

Insulation, HVAC ducts, and wiring that have been chewed or contaminated **should be *replaced, not repaired*** to prevent future infestation. They can still have bacteria, allergens, and pose fire hazards.

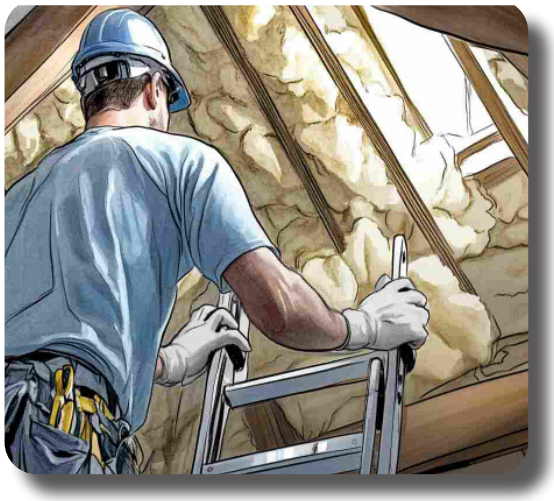


Fact

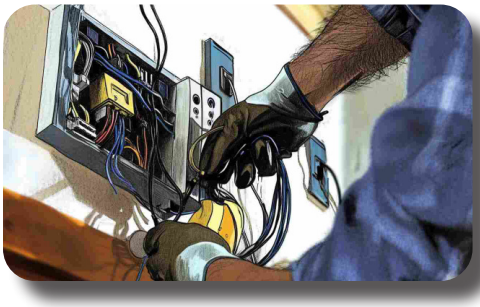
Homeowners are:

- 2.68x more likely to see a rodent if they have a crack or hole in their exterior foundation;
- 4x more likely if they have a small hole in their roof

Additionally, these materials can retain pheromones, attracting other nearby rats and encouraging them to return. New insulation **restores energy efficiency and eliminates hiding spots**, new HVAC ducts ensure clean air circulation, and new wiring prevents fire risks. Repairing structural damage restores the safety of your home's foundation.



If you see any vulnerable areas, even without clear rodent damage, the recommendation is to **strengthen them now**. This includes broken screens, damaged roof tiles, or other potential entry points.





DID YOU KNOW?

33% of all rats have fleas. Moreover, rats serve as principal hosts for more than 80% of all known flea species.

DID YOU KNOW?

Fleas - *primarily carried by rats* - were responsible for transmitting the Black Plague, which killed over 25 million people in the 14th century.

DID YOU KNOW?

Published cost and project estimates suggest that a professional team may complete some severe remediation work in approximately 4–8 hours, while a DIY effort can extend for weeks or as long as two months. Actual timing depends on the size, contamination, access, and repair scope.

© 2026 Alley Cat. All rights reserved

ALLEY CAT

3. Set Traps For The Stragglers & Starve The Rest

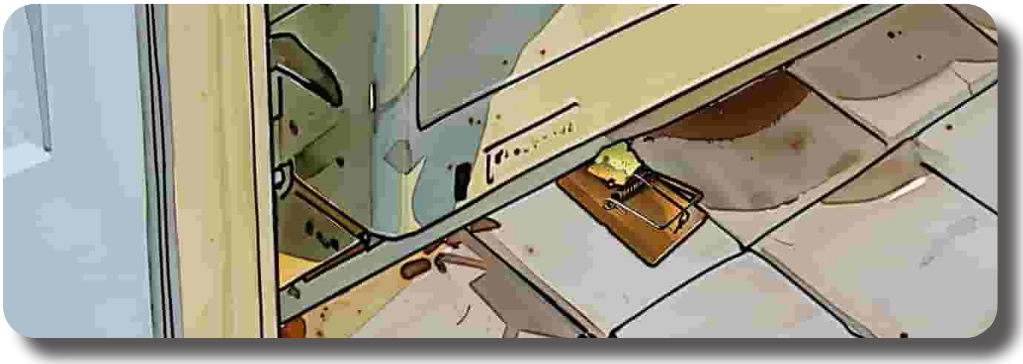
Even after taking preventive measures, a few rats might remain. Properly setting traps and removing food sources will help eliminate any stragglers.



Place traps near entryways, along wall edges, and in areas with runways, grease marks, or rat activity.



Additionally, place traps near sources of warmth, such as water heaters, as rats are drawn to these spots, especially in winter.



Pro Tip

Before setting traps for rats, make sure you get ***rat traps***. Mouse traps are too small and may not have sufficient striking force or trigger geometry for an adult rat, increasing the risk of an ineffective or inhumane capture. Use traps specifically designed for rats.

Pro Tip

Place rat traps along established runways, where droppings, grease marks, gnawing, or repeated sightings indicate activity. Rats are cautious around unfamiliar objects, so pre-bait unset traps until the bait is being taken consistently, then activate the traps.

Pro Tip

Though you can use a variety of different foods, **peanut butter** often works best in rat traps as its scent is highly attractive to rats.

Pro Tip

When placing a rat trap, be sure that the "bait side" (i.e., where you would put the peanut butter) is facing the wall. That way, you decrease the chances of them escaping.

© 2026 Alley Cat. All rights reserved

Chapter 5: Make Sure They Don't Return

Preventing future infestations is crucial to maintaining a rodent-free home. This involves regular maintenance, inspections, and adopting habits that deter rats.



1. Keep Removing Food Sources



- **Secure Trash**: Properly secure your trash bins with tight-fitting lids to prevent rats from accessing food waste. Store trash in sealed bags and keep bins clean and free of holes.



- **Store Food Properly**: Keep pet food in sealed containers and avoid leaving it out overnight. Transfer boxed goods and pantry staples into airtight containers wherever practical to prevent access.



- **Yard Maintenance**: **Pick up fallen fruit, nuts, berries, pinecones, and *pet droppings*** from your yard regularly. Minimize bird seed spillage around feeders.

Pro Tip

Try to schedule your daily task of yard maintenance at the same time every day. You'll likely want to do it before dark, as rats consume 70-85% of their food at night.

Rats need approximately 60 calories a day to survive. Nut-bearing or fruit trees nearby can easily provide this, making it easier for rats to thrive.

Nearby Food Sources



~385 calories



~42 calories



73 calories

Fact

Rats rarely travel more than 150 feet for food. In fact, nearby seeds from a single gray pine pinecone, an orange, and daily acorn production from one oak tree can feed over 8 rats a day.

© 2026 Alley Cat. All rights reserved

Chapter 5: Make Sure They Don't Return

2. Consistently Monitor Your Property

Regular inspections help catch early signs of a rodent problem before it becomes a full-blown infestation. **Perform inspections every 2-3 months**, looking for entry points, signs of activity, and droppings.

Fact

Physical rodent exclusion has achieved reductions in rodent intrusion of up to 98.5%, demonstrating its effectiveness.



Even if you don't see signs of rats, keeping a few traps set can help catch any stragglers. Check traps regularly and **move traps every three weeks** to cover different areas if ineffective.

By removing trash and natural food sources in the yard, performing regular inspections, and keeping traps set, you can effectively deter rats from returning after your initial rodent exclusion efforts.







DID YOU KNOW?

Rats can get "trap shy" and may choose to avoid contact with a single trap for up to two weeks.

Pro Tip

At the end of the day, just remember the simple acronym "TTY" - Trash, Traps, and Yard for daily upkeep. A little bit each day goes a long way.

© 2026 Alley Cat. All rights reserved

Sources

1. University of Nebraska-Lincoln: Extension Publications. Index: Wildlife Management. "Wildlife Damage Control: Controlling House Mice." G1105. March 2012.
2. Cornell, College of Agriculture and Life Sciences. New York State Integrated Pest Management. Outreach & Education. What's Bugging You: Rodents. "Managing Mice And Rats: Inspection".
3. University of Nebraska. Rats and Mice 2012 Manual. Chapter 13: IPM for Rats & Mice
4. University of Nebraska-Lincoln: Extension Publications. Index: Wildlife Management. "Wildlife Damage Control: Controlling Rats." G1737. July 2007
5. Contra Costa County Vector Control. Annual Report 2022. Rats & Mice
6. Contra Costa County Vector Control. Annual Report 2023. Rats & Mice
7. Contra Costa County Vector Control. Annual Report 2014. Rats & Mice
8. Alameda County Vector Control. Annual Report 2022. Urban Rodent Surveillance and Control.
9. San Mateo County Vector Control. Biennial Report 2013-2015. Rodent Programs: Rodent Service Requests
10. San Mateo County Vector Control. Annual Report 2022. Resident Service Requests: Resident Services
11. University of Nebraska Cooperative Extension. "Norway Rat (Brown Rat)". https://nematode.unl.edu/norwayrat.htm
12. Moxie Pest Control. "Blog: 5 Things You May Not Know About Mice." https://www.moxieservices.com/blog/5-facts-you-may-not-know-about-mice
13. National Park Service: Public Health Program. "Rodent Exclusion Techniques: A Training Guide For Park Service Employees." 1997.
14. University of Nebraska-Lincoln: Extension Publications. Index: Wildlife Management. "Wildlife Damage Control: Rodent-Proof Construction - Structural". G1530. January 2009
15. Bell Laboratories, Inc. "2023 PCT State of the Rodent Control Market." https://giecdn.blob.core.windows.net/fileuploads/document/2023/12/07/2023-rodent-som.pdf
16. United States Census Bureau. "How Many American Homes Have Pests." Michael Sellner and Jordan Wicht. April 12, 2021. https://www.census.gov/library/stories/2021/04/how-many-american-homes-have-pests.html
17. Wildlife Animal Control. Wildlife Control Education: Wildlife Education and Directory of Wildlife Experts."How Rodents Communicate Using Pheromones." http://www.wildlifeanimalcontrol.com/wildlifepheromone.html
18. Bind, R. H., Minney, S. M., Rosenfeld, S., & Hallock, R. M. (2013). The role of pheromonal responses in rodent behavior: future directions for the development of laboratory protocols. Journal of the American Association for Laboratory Animal Science : JAALAS, 52(2), 124–129
19. Vellers, Heather & Letsinger, Ayland & Walker, Nicholas & Granados, Jorge & Lightfoot, J.. (2017). High Fat High Sugar Diet Reduces Voluntary Wheel Running in Mice Independent of Sex Hormone Involvement. Frontiers in Physiology. 8. 10.3389/fphys.2017.00628
20. National Research Council (US) Subcommittee on Laboratory Animal Nutrition. Nutrient Requirements of Laboratory Animals: Fourth Revised Edition, 1995. Washington (DC): National Academies Press (US); 1995. 3, Nutrient Requirements of the Mouse. Available from: https://www.ncbi.nlm.nih.gov/books/NBK231918/
21. The Rat Fan Club. "The Nutritional Requirements of Rats as Set By The National Research Council, USA." http://ratfanclub.org/nutreq.html
22. Broadhead, Laura. California Native Plant Society, Shasta Chapter. Redding.com. Life: "Native Plant Society: An appreciation of the gray pine." Feb. 4, 2017. https://www.redding.com/story/life/2017/02/04/native-plant-society-appreciation-gray-pine/97436540/
23. Medford, Barbara. University of Texas at Austin. Lady Bird Johnson Wildflower Center. Ask Mr. Smarty Pants. Compost and Mulch, Seeds and Seeding, Trees: "Why all the acorns from Austin?" Nov. 3, 2010. https://www.wildflower.org/expert/show.php
24. Cervoni, Barbie. Very Well Fit. Nutrition Facts. "Orange Calories, Nutrition Facts and Health Benefits". June 2, 2024. https://www.verywellfit.com/oranges-nutrition-facts-calories-and-health-benefits-4119322
25. United States Environmental Protection Agency. Managing Pests In Schools. "Rodents and Schools." June 13, 2024. https://www.epa.gov/ipm/rodents-and-schools
26. US Department of Interior: National Park Service. Rodent Exclusion Manual. "Mechanical Rodent Proofing Techniques: a training manual for National Park Service Employees " 2014
27. Jackson, S. J., Andrews, N., Ball, D., Bellantuono, I., Gray, J., Hachoumi, L., Holmes, A., Latcham, J., Petrie, A., Potter, P., Rice, A., Ritchie, A., Stewart, M., Strepka, C., Yeoman, M., & Chapman, K. (2017). Does age matter? The impact of rodent age on study outcomes. Laboratory animals, 51(2), 160–169. https://doi.org/10.1177/0023677216653984
28. Charles River. Research Models & Services: Research Animal Models. "Timed Pregnant Mice And Rats." https://www.criver.com/products-services/research-models-services/animal-models/timed-pregnant-mice-and-rats
29. Frontiers. (2018, November 28). 'Stash your trash,' say rat researchers. ScienceDaily. Retrieved July 2, 2024 from www.sciencedaily.com/releases/2018/11/181128141723.htm
30. Oh, H. Y. P., Humaidi, M., Chan, Q. Y., Yap, G., Ang, K. Y., Tan, J., Ng, L. C., & Mailepessov, D. (2022). Association of rodents with man-made infrastructures and food waste in Urban Singapore. Infection ecology & epidemiology, 12(1), 2016560. https://doi.org/10.1080/20008686.2021.2016560
31. Muñoz-Zanzi, C., Mason, M., Encina, C., Gonzalez, M., & Berg, S. (2014). Household characteristics associated with rodent presence and Leptospira infection in rural and urban communities from Southern Chile. The American journal of tropical medicine and hygiene, 90(3), 497–506. https://doi.org/10.4269/ajtmh.13-0334
32. The University of Alabama at Birmingham. UAB Nathan Shock Center. Resources: Methuselah's Bestiary. "1-5 Years". https://www.uab.edu/shockcenter/resources/methuselah-bestiary/1-5-years
33. Human Aeging Genomic Resources at Senescence.info. AnAge: The Animal Aeging and Longevity Database. "AnAge entry for Rattus norvegicus: Classification (HAGRID: 03083)"
34. Gorbunova, V., Bozzella, M. J., & Seluanov, A. (2008). Rodents for comparative aging studies: from mice to beavers. Age (Dordrecht, Netherlands), 30(2-3), 111–119. https://doi.org/10.1007/s11357-008-9053-4
35. Hagan, Catherine D.V.M. PhD. The Jackson Laboratory. News & Insights. Blog. "When Are Mice Considered Old?" November 7, 2017. https://www.jax.org/news-and-insights/jax-blog/2017/november/when-are-mice-considered-old
36. Edmund Ramsden & Jon Adams. London School of Economics: Department of Economic History. Working Papers on The Nature of Evidence: How Well Do 'Facts' Travel?. "Escaping the Laboratory: The Rodent Experiments of John B. Calhoun & Their Cultural Influence. January 2008
37. Illinois Department of Public Health. Prevention & Control. "Municipal Rodent Management." http://www.idph.state.il.us/envhealth/pcmunicipal_rodents.htm
38. Nationwide Insurance. MyNSightOnline.com. Blog. "Rodent control for food processing facilities." https://www.mynsightonline.com/resources/articles/keep-rodents-under-control
39. PBS. Nature. Blog. "Rat Fact Sheet." May 21, 2021. https://www.pbs.org/wnet/nature/blog/rat-fact-sheet/
40. Summit County Public Health: Rodent Biology. Classification. https://www.scph.org/sites/default/files/editor/Rodent%20Biology.pdf
41. Spanner, Holly. BBC. Science Focus. "Top 10: Which animals have the strongest bite?" April 29. 2023. "https://www.sciencefocus.com/nature/top-10-which-animals-have-the-strongest-bite"
42. Schlick, Jonathan. GMM Group Company. Techni Waterjet. "Cutting Stone with Water Jet Cutter." October 4, 2023. https://www.techniwaterjet.com/water-jet-stone-cutting/
43. Whipsnade Zoo. "Panthera Leo (African Lion)." African Lion Facts. https://www.whipsnadezoo.org/whats-here/animals/african-lion
44. Cleveland Clinic. Health Library. Diseases & Conditions: Human Bites. "Human Bites". March 10, 2023. https://my.clevelandclinic.org/health/diseases/15745-human-bites
45. Murray, Taylor et al. Serious Eats. Equipment: Electric Appliances. "We Tested Nine Multi-Cookers and Pressure Cookers—5 Brought the Heat." July 2, 2024. https://www.seriouseats.com/equipment-the-best-pressure-cookers-review
46. Kubo, K. Y., Iinuma, M., & Chen, H. (2015). Mastication as a Stress-Coping Behavior. BioMed research international, 2015, 876409. https://doi.org/10.1155/2015/876409
47. Diagne, C., Ballesteros-Mejia, L., Cuthbert, R. N., Bodey, T. W., Fantle-Lepczyk, J., Angulo, E., Bang, A., Dobigny, G., & Courchamp, F. (2023). Economic costs of invasive rodents worldwide: the tip of the iceberg. PeerJ, 11, e14935. https://doi.org/10.7717/peerj.14935
48. Miller, David. Division of Hazard Analysis U.S. Consumer Product Safety Commission. 2017 – 2019 Residential Fire Loss Estimates. "U.S. National Estimates of Fires, Deaths, Injuries, and Property Loss from Unintentional Fires." October 2022
49. United States Government. Ready.gov. "Home Fires." May 23, 2023. https://www.ready.gov/home-fires
50. US Department of Energy: Energy Efficiency and Renewable Energy. "Guide to Home Insulation." DOE/EE-0340. October 2010
51. Hygnstrom, Scott E., "House Mouse Damage to Insulation" (1996). Nebraska Swine Reports. 191. https://digitalcommons.unl.edu/coopext_swine/191
52. United States Government. US Bureau of Labor Statistics. Geographic Information: Western. News Release: Western Information Office. "Average Energy Prices, San Francisco-Oakland-Hayward – May 2024."24-1183 SAN. June 17, 2024. https://www.bls.gov/regions/west/news-release/averageenergyprices_sanfrancisco.htm
53. NRG Clean Power. "How Much Is The Average Electric Bill in California?" May 29, 2024. https://nrgcleanpower.com/learning-center/average-electric-bill-in-california/
54. Inspire Clean Energy. Clean Energy 101. Blog. "Natural Gas Price Per Therm: How Much Does Natural Gas Cost?" https://www.inspirecleanenergy.com/blog/clean-energy-101/natural-gas-cost-per-therm
55. Gordian. RSMeans Data. Resources: Insulation Cost Updates. "What the Data Says: Insulation Cost Updates". April 25, 2024. https://www.gordian.com/resources/insulation-cost-updates/
56. United States Environmental Protection Agency. Managing Pests In Schools. "Rodents and Schools." June 13, 2024. https://www.epa.gov/ipm/rodents-and-schools
57. Conover, Michael R., Berryman, Jack H. Utah State University. Institute and Department of Wildland Resources. Human–Wildlife Interactions. "Numbers of human fatalities, injuries, and illnesses in the United States due to wildlife." 13(2):264–276, Fall 2019
58. King, Katherine Yudeh, MD, PhD. UpToDate. "Rat Bite Fever." June, 2024. https://www.uptodate.com/contents/rat-bite-fever
59. Jahan, Nusrat & Lindsey, Laramie & Larsen, Peter. (2020). The Role of Peridomestic Rodents as Reservoirs for Zoonotic Foodborne Pathogens. Vector-Borne and Zoonotic Diseases. 21. 10.1089/vbz.2020.2640
60. Ribas, A., Saijuntha, W., Agatsuma, T., Prantlová, V., & Poonlaphdecha, S. (2016). Rodents as a Source of Salmonella Contamination in Wet Markets in Thailand. Vector borne and zoonotic diseases (Larchmont, N.Y.), 16(8), 537–540. https://doi.org/10.1089/vbz.2015.1894
61. Kurtz, J. R., Goggins, J. A., & McLachlan, J. B. (2017). Salmonella infection: Interplay between the bacteria and host immune system. Immunology letters, 190, 42–50. https://doi.org/10.1016/j.imlet.2017.07.006
62. Phipatanakul, W., Matsui, E., Portnoy, J., Williams, P. B., Barnes, C., Kennedy, K., Bernstein, D., Blessing-Moore, J., Cox, L., Khan, D., Lang, D., Nicklas, R., Oppenheimer, J., Randolph, C., Schuller, D., Spector, S., Tilles, S. A., Wallace, D., Sublett, J., Bernstein, J., … Joint Task Force on Practice Parameters (2012). Environmental assessment and exposure reduction of rodents: a practice parameter. Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology, 109(6), 375–387. https://doi.org/10.1016/j.anai.2012.09.019
63. Perry, et al., "The Prevalence of Rat Allergen in Inner-city Homes and its Relationship to Sensitization and Asthma Morbidity," Journal of Allergy and Clinical Immunology (August, 2003) pp. 346-352
64. Herrero-Cófreces, S., Flechoso, M. F., Rodríguez-Pastor, R., Luque-Larena, J. J., & Mougeot, F. (2021). Patterns of flea infestation in rodents and insectivores from intensified agro-ecosystems, Northwest Spain. Parasites & vectors, 14(1), 16. https://doi.org/10.1186/s13071-020-04492-6
65. Fitzgerald, B. M., Efford, M. G., & Karl, B. J. (2023). The fleas of house mice (Mus musculus L.) and ship rats (Rattus rattus L.) in forest of the Orongorongo Valley, New Zealand. New Zealand Journal of Zoology, 1–16. https://doi.org/10.1080/03014223.2023.2270433
66. Eads, R. B. and Campos, E. G. (1983) "Deer mouse, Peromyscus maniculatus, and associated rodent fleas (Siphonaptera) in the arctic-alpine life zone of Rocky Mountain National Park, Colorado," Great Basin Naturalist: Vol. 43: No. 1, Article 11. https://scholarsarchive.byu.edu/gbn/vol43/iss1/11
67. Thomas, Adam. UDaily. University of Delaware: Communications and Public Affairs. "Rat Research". March 3, 2015. https://www1.udel.edu/udaily/2015/mar/rats-fleas-nyc-030315.html
68. New York State. Department of Health. "Hantavirus Disease." June 2018. https://www.health.ny.gov/diseases/communicable/hantavirus/fact_sheet.htm#:~:text=Anyone%20who%20comes%20into%20contact,strongest%20risk%20factor%20for%20infection.
69. Pelchen, Lexie. Forbes Home. Home Improvement: Pest Control. "2024 Pest Control Sentiment Survey Shows Millennials Opting For Kinder Methods Of Pest Control." June 3, 2024. https://www.forbes.com/home-improvement/pest-control/pest-control-sentiment-survey/
70. Frye, Dr. Matthew. Pest Control Technology. Rodent Control Issue. "Exclusion: The Future of Pest Management." August 2016. https://www.pctonline.com/article/exclusion-the-future-of-pest-management/
71. Hopkins, A. S., Whitetail-Eagle, J., Corneli, A. L., Person, B., Ettestad, P. J., DiMenna, M., Norstog, J., Creswell, J., Khan, A. S., Olson, J. G., Cavallaro, K. F., Bryan, R. T., Cheek, J. E., Begay, B., Hoddenbach, G. A., Ksiazek, T. G., & Mills, J. N. (2002). Experimental evaluation of rodent exclusion methods to reduce hantavirus transmission to residents in a Native American community in New Mexico. Vector borne and zoonotic diseases (Larchmont, N.Y.), 2(2), 61–68. https://doi.org/10.1089/153036602321131850
72. National Park Service: Public Health Program. Rodent Exclusion Techniques: A Training Guide For Park Service Employees. 1997
73. He, Y. Y., Zhang, M. W., Zhao, Y. L., Huang, T., Zhou, X. J., & Huang, H. N. (2024). Rodent-Proof Wall: An Efficient Physical Method for Controlling Rodents and its Efficiency Statistics. Journal of visualized experiments : JoVE, (205), 10.3791/66596. https://doi.org/10.3791/66596
74. Badzik, Bruce, et al. National Park Service. US Department of Interior. National Resource Stewardship and Science. Rodent Exclusion Manual. Mechanical Rodent Proofing Techniques: a training manual for National Park Service Employees. September 2014. https://www.nps.gov/orgs/1103/upload/NPS-Rodent-Exclusion-Manual-Mechanical-Rodent-Proofing-Techniques_2019_508.pdf
75. Noel, Sarah. HomeGuide. Cost Guides: Rodent Removal Cost. "Rodent Removal Cost." April 18, 2024. https://homeguide.com/costs/rodent-removal-cost
76. Burt, S. A., & Lipman, S. A. (2021). What Do They Know? Comparing Public Knowledge and Opinions about Rodent Management to the Expectations of Pest Controllers. Animals : an open access journal from MDPI, 11(12), 3429. https://doi.org/10.3390/ani11123429
77. Jankovic, Ljiljana & Draskovic, Vladimir & Pintaric, Stefan & Mirilovic, Milorad & Djurić, Spomenka & Tajdic, Nada & Teodorovic, Radislava. (2019). "Rodent pest control." Veterinarski glasnik. 73. 20-20. 10.2298/VETGL190507020J.
78. Gardner, Douglas BCE, RS. Ecolab. "Detection, Elimination, Protection: Science-Based Rodent Solutions." 2011. https://www.ecolab.com/-/media/Ecolab/Ecolab-Home/Documents/DocumentLibrary/WhitePapers/Pest/EcolabRodentWhitePaper.pdf
79. Motro, Yoav & Ghendler, Yotam & Muller, Yoav & Goldin, Yair & Chagina, Olga & Rimon, Ayla & Harel, Yehonathan & Motro, Uzi. (2019). "A comparison of trapping efficacy of 11 rodent traps in agriculture". Mammal Research. 64. 10.1007/s13364-019-00424-7
80. de Masi, E., Vilaça, P. J., & Razzolini, M. T. (2009). Evaluation on the effectiveness of actions for controlling infestation by rodents in Campo Limpo region, Sao Paulo Municipality, Brazil. International journal of environmental health research, 19(4), 291–304. https://doi.org/10.1080/09603120802592723
81. City of Royal Oak. Rodent Information. Domestic Rodents. https://www.romi.gov/DocumentCenter/View/146/Rodent-Information-Handbook-PDF
82. LA County Public Health. A Practical Guide to Rodent Control. http://publichealth.lacounty.gov/eh/docs/safety/practical-guide-rodent-control.pdf
83. Newall, Mallory. Sawyer, Johnny. Ipsos. Society. Housing: Economy. "Majority of homeowners hit with unexpected home repair costs in the past year." June 13, 2022. https://www.ipsos.com/en-us/news-polls/majority-homeowners-hit-unexpected-home-repair-costs-past-year
84. Brannon, Matt. USA Today. HomeFront: Home Warranty. "High costs, major regrets: Homeowners spend nearly $6,000 on home maintenance annually, our survey finds." June 2024. https://www.usatoday.com/money/homefront/home-warranty/home-maintenance-survey
85. QR Staff. Qualified Remodeler. News. "Many Homeowners Ignoring Maintenance, Survey Reveals." August 18, 2023. https://www.qualifiedremodeler.com/many-homeowners-ignoring-maintenance-survey-reveals/

© 2026 Alley Cat. All rights reserved