

Tips on Bed Bug Control

Managing bed bugs requires a multi-faceted approach that includes cleaning, room modifications, and often insecticidal treatments to the affected area.

- **Search for signs of bed bugs.** Carefully inspect the bed frame, mattress, headboard and other furniture for signs of bed bugs and their eggs. Search for live (crawling) bugs and ensure they are bed bugs before considering treating. To confirm the identity of the specimens, refer to <http://www.hsph.harvard.edu/bedbugs/specimen.pdf>.

- **Thoroughly clean** the infested rooms in the residence. Scrub infested surfaces with a stiff brush to dislodge eggs, and use a strong vacuum to remove bed bugs from cracks and crevices. Dismantling bed frames and headboards will expose additional bug hiding sites. Remove drawers from desks and dressers and turn furniture over to inspect and clean all hiding spots.

- **Mattresses** and box springs can be permanently encased within sealed mattress bags. Once they are installed, inspect the bags to ensure they are undamaged; if any holes or tears are found, seal these completely with permanent tape. Any bugs trapped within these sealed bags will eventually die over a period of a year.



Adult bed bug, life size

- **To prevent bed bugs from crawling onto a bed**, pull the bed frame away from the wall, tuck sheets and blankets so they won't contact the floor, and coat the base of the frame legs with Vaseline.

- **If you own your residence**, we suggest you contact a licensed pest control operator who is knowledgeable and experienced in managing bed bug infestations. Ask the pest control company for references, and ask at least a few of their customers about their experiences before you agree to any contract.

- **If you are a tenant**, contact your property manager or landlord to discuss your respective obligations, and to agree on a plan to manage the infestation. Generally, landlords are legally required to contract with a licensed pest control operator.

- **Request a written integrated pest management (IPM) plan** from the pest control operator. This plan should detail the methods and insecticides to be used by the pest control operator, and describe the efforts expected by the building manager as well as by the tenants.

- **Do not dispose of furniture that is useful.** Infested furniture can be cleaned and treated. Placing infested furniture (particularly mattresses) into common areas or on the street may simply help spread bed bugs to the homes of other people. Infested furniture intended for disposal should be defaced to make it less attractive. To reduce opportunities of infested furniture re-entering their building, building managers should ensure that any disposed furniture is immediately carted away to a landfill or waste facility.



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Pest Control Tips

Bed Bug Control



**A Guide for Harvard
Faculty, Students and Staff**

Bed Bugs are Increasing in New England

This brochure will help you to more effectively identify, prevent, and safely manage a suspected bed bug infestation at Harvard.



Bed bug nymph after a blood meal.

Human bed bugs are found all over the world and are constantly being dispersed via used furniture, luggage and bedding. During the last decade, there has been a significant increase in the number of bed bug infestations reported from the housing industry in Massachusetts. The good news is that this insect is not

known to transmit human disease. The challenge is to correctly identify this pest, prevent its spread, and eliminate it from housing units.

How do bed bugs invade a home?

Because bed bugs hide in small crevices, they may accompany (as stowaways) luggage, furniture, clothing, pillows, boxes, and other bedroom objects when these are moved between apartments, homes and hotels. Used furniture, particularly bed frames and mattresses, are of greatest risk of harboring bed bugs and their eggs. Thus, one should carefully scrutinize and consider the history of any used furniture, particularly 'street' items so plentiful at the beginning and end of each academic year. Because they readily survive for many months without feeding, bed bugs may already be present in apparently 'vacant' and 'clean' apartments. Bed bugs can wander between adjoining apartments through voids in walls and holes through which wires and pipes pass.

How to Identify Bed Bugs

Immature bed bugs are light brown or yellow in color unless they have recently fed on blood and then they are darker in the middle. Adults are reddish brown and they also turn darker after a blood meal. Even though bed bugs are small, about 1/5th of an inch, they can be readily seen with the naked eye. They are wingless, oval and flattened in appearance and crawl at a steady rate.

Bed Bug Biology

Bed bugs are active at night when they leave their daytime resting place deep inside cracks and crevices to seek out human blood. Adult male and female bed bugs, as well as nymphs (young), feed on blood. ***By checking the bed linen in the middle of the night, you have the best opportunity to find bed bugs on the move.*** Bed bug bites are normally two or more and often blood spots are deposited on the sheeting. Any nearby crack or crevice can serve as a daytime refuge for bed bugs. ***Look for bed bugs under folds in mattresses, along seams in between bedposts and bed slats, and behind headboards.*** When large numbers of bed bugs are present they produce a distinctive pungent odor. Numerous dark fecal spots on linen or near cracks are another indication of a larger infestation. After feeding, a female bed bug will lay eggs in their daytime refuge of cracks and crevices. An immature bed bug may take several months to mature to an adult and an adult can live for up to one year. During development, the young bed bug will feed frequently on the



Ventral view of bed bug

blood of humans and they can exist for many months between blood meals. Bed bugs inject saliva into the blood stream of their host to thin the blood and to prevent coagulation. It is this saliva that causes the intense itching and welts the next day. The delay in the onset of itching gives the feeding bed bug time to escape into cracks

and crevices. In some cases, the itchy bites can develop into painful welts that last several days.

Spiders, mites, ticks, mosquitoes or even lice can also cause itchy bites, and these pests require different control methods.

Outline of Harvard University's Bed Bug Response Plan

- Building managers and tenants should report the identification of bed bugs to EH&S at 617-495-2060
- Building managers, tenants, pest control vendors and EH&S will develop an appropriate site specific control plan.
- Building managers should distribute bed bug fact sheets to all concerned parties.
- Tenants will prepare their room for treatment.
 - Inspect for bed bugs thoroughly
 - Brush and clean surfaces
 - Enclose mattresses
- The building manager will request an IPM plan from the pest control vendor.
 - Schedule treatment as soon as possible and arrange for tenant to be away during treatment.
 - Re-inspect premises after treatment as a follow-up.
 - If infested mattresses are thrown out, they can not be recycled.



A Guide for Harvard Faculty, Students and Staff

Harvard's bed bug web page:

<http://www.uos.harvard.edu/ehs/pes.shtml>

You can search the Internet for additional information under the bed bug's scientific name, *Cimex lectularius*.