The Bug’s... Bed Bug Information

James R. Ginder, MS, NREMT, PI, CHES, NCEE
Health Education Specialist
Hamilton County Health Department

Reviewed By:
Jeanette McGavic,
Vector Control Biologist
Hamilton County Health Department
The Learner Will Be Able To...

• List three signs of bed bugs

• Identify three ways bed bugs can be transmitted

• Explain three ways to prevent bed bugs

• Describe three ways to treat for bed bugs
Bed Bug Basic Information...

- Bed bug infestations were common in the United States before World War II.

- With improvements in hygiene, and especially the widespread use of DDT during the 1940s and ‘50s, the bugs all but vanished.

- The pests remained fairly prevalent, however, in other regions of the world including Asia, Africa, and Eastern Europe.

- Bed bugs are mentioned in medieval European texts and in classical Greek writings back to the time of Aristotle.
Bed Bug Basic Information...

• Bed bugs are increasingly being encountered in homes, apartments, hotels, motels, health care facilities, dormitories, shelters, schools, and modes of transportation.

• Other places where bed bugs sometimes appear include movie theaters, laundries/dry cleaners, furniture rental outlets and office buildings.
What Are Bed Bugs...

- Bed bugs are small wingless insects that feed solely upon the blood of warm-blooded animals.

- Bed bugs and their relatives have evolved as nest parasites.

- Certain kinds inhabit bird nests and bat roosts and await the return of their hosts; others have adapted well to living in the ‘nests’ (homes) of people.

- Hatchling bed bugs are about the size of a poppy seed.
What Are Bed Bugs...

- Adult bed bugs are about 3/16-inch long and reddish-brown, with oval, flattened bodies.

- They are sometimes mistaken for ticks or cockroaches.

- The nymphs resemble the adults, but are smaller and lighter in color.
What Are Bed Bugs...

- The host’s blood may appear as a dark red or black mass within the bug’s body.

- Bed bugs do not fly, but can move rapidly over floors, walls, ceilings and other surfaces.

- Female bed bugs lay their eggs in secluded areas, depositing 1, 2 or more eggs per day and hundreds during a lifetime.
Life Cycle Of Bed Bugs...

• The eggs are tiny, whitish, and hard to see on most surfaces without magnification (individual eggs are about the size of a dust speck).

• When first laid, the eggs are sticky, causing them to adhere to surfaces.

• Newly hatched nymphs are straw-colored and no bigger than a pinhead.
Life Cycle Of Bed Bugs...

- As they grow, they molt (shed their skin) five times before reaching maturity.

- A blood meal is needed between each successive molt.

- Under favorable conditions (70-80°F), the bugs can complete development in as little as a month, producing three or more generations per year.
Life Cycle Of Bed Bugs...

- Bedbugs inject an anticoagulant to keep your blood flowing as they suck, along with a numbing agent to keep you from feeling them when they're at work.

- Bed bugs are resilient. Nymphs can survive months without feeding and the adults for more than a year.

- Infestations, therefore, are unlikely to diminish by leaving the premises unoccupied.

- Although *C. lectularius* prefers feeding on humans, it will also bite other warm-blooded animals, including dogs, cats, birds and rodents.
Where They Hang Out...

- Bed bugs are active mainly at night.

- During the daytime, they prefer to hide close to where people sleep.

- Their flattened bodies enable them to fit into tiny crevices — especially those associated with mattresses, box springs, bed frames and headboards.

- Bed bugs do not have nests like ants or bees, but do tend to congregate in habitual hiding places.

- Characteristically, these areas are marked by dark spotting and staining, which is the dried excrement of the bugs.
What To Look For...

• Also present will be eggs and eggshells, the brownish molted skins of maturing nymphs and the bugs themselves.

• Another telltale, though less frequent sign, is rusty or reddish blood smears on bed sheets or mattresses from crushing an engorged bed bug.

• Heavy infestations may have a “buggy” smell, but the odor is seldom apparent and should not be relied upon for detection.
Hotel Bed Bug Guide

Check All Furniture:
- Dresser Drawers
- Beneath Pillows
- Under Cushions
- Headboards

Inspect the Bed:
- Between Mattress
- Mattress Cover
- Between Bed Skirt Pleats
- Box Spring

Using a Flashlight, Check:
- Baseboards
- Ceilings
- Corners
- Luggage Rack

Quick Facts
The Top 5 Most Bed Bug Infested Cities of 2012
1. Philadelphia
2. Cincinnati
3. New York City
4. Chicago
5. Detroit

65% of bed bug treatments are in hotels or motels.

3x Bed bugs incidents are three times higher in urban areas than rural.

Sources:
National Pest Management Association
(http://www.pestwarriors.org/b/4-things-bed-bugs/information-on-bed-bugs/bed-bug-facts-statistics/)
InvestorPlace
(http://investorplace.com/2012/10/most-bed-bug-infested-cities-2012/)

Source: Western Pest Service
How They Feed...

• Bed bugs usually bite people at night while they are sleeping.

• They feed by piercing the skin with an elongated beak through which they withdraw blood.

• Engorgement takes about three to 10 minutes, yet the person seldom knows they are being bitten.

• Bed bugs normally do not reside on people like head or body lice do.

• Immediately after feeding they crawl off and reside elsewhere to digest their meal.
How They Feed...

• While feeding, they inject a tiny amount of their saliva into the skin.

• Repeated exposure to bed bug bites during a period of several weeks or more cause people to become sensitized to the saliva of these bugs; additional bites may then result in mild to intense allergic responses.

• The skin lesion produced by the bite of a bed bug resembles those caused by many other kinds of blood feeding insects, such as mosquitoes and fleas.
Signs and Symptoms of a Bite...

- An itchy red welt or localized swelling develops within a day or so of the bite.
- Others have little or no reaction.
- In some people, the reaction is delayed.
- Unlike flea bites that occur mainly around the ankles, bed bugs feed on any skin exposed while sleeping (face, neck, shoulders, back, arms, legs, etc.).
Signs and Symptoms of a Bite...

- The welts and itching are often wrongly attributed to other causes, such as mosquitoes.

- Bed bugs also are suspect if you wake up with itchy bites you did not have when you went to sleep.
Bed Bugs And Diseases...

- Although bed bugs can harbor pathogens in and on their bodies, transmission to humans is considered unlikely.

- Though not known to carry diseases, bed bugs can severely reduce quality of life by causing discomfort, sleeplessness, anxiety, and embarrassment.
How Do You Get Them In Your Home...

- Bed bugs readily hide in small crevices. They may accompany (as stowaways) luggage, furniture, clothing, pillows, boxes, and other such 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.

- Because they readily survive for many months without feeding, bed bugs may already be present in apparently ‘vacant’ and ‘clean’ apartments.
How Do You Get Them In Your Home...

• Bed bugs can wander between adjoining apartments through voids in walls and holes though which wires and pipes pass.

• In a few cases, bats and/or birds may introduce and maintain bed bugs and their close relatives (bat bugs and bird bugs).
What To Look For...

- Bed bugs infest only a small proportion of residences, but they should be suspected if you wake up and have bites that occurred while sleeping.

- The bedroom and other sleeping areas should be carefully examined for bed bugs and signs of bed bug activity.

- Folds and creases in the bed linens, and seams and tufts of mattresses and box springs, in particular, may harbor bed bugs or their eggs.
What To Look For...

• Bed bugs may also be found within pleats of curtains, beneath loose areas of wallpaper near the bed, in corners of desks and dressers, within spaces of wicker furniture, behind cove molding, and in laundry or other items on the floor or around the room.

• Dark brown or reddish fecal spots of bed bugs may be apparent on the bed linens, mattresses or walls near the bed.

• A peculiar coriander-like odor may be detected in some heavily infested residences.
What To Do If You Find Them...

• Thoroughly clean the infested rooms as well as others in the residence.

• Scrub infested surfaces with a stiff brush to dislodge eggs, and use a powerful vacuum to remove bed bugs from cracks and crevices.

• Dismantling bed frames will expose additional bug hiding sites.

• Remove drawers from desks and dressers and turn furniture over, if possible, to inspect and clean all hiding spots.
What To Do If You Find Them...

- Mattresses and box springs can be permanently encased within special 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.

- To prevent bed bugs from crawling onto a bed, pull the bed frame away from the wall, tuck in sheets and blankets so they won’t contact the floor, and place the frame legs into dishes or cups of mineral oil.
What To Do If You Find Them...

- Caulk and seal all holes where pipes and wires penetrate walls and floor, and fill cracks around baseboards and cove moldings to further reduce harborages.

- Place clothing, toys, shoes, backpacks, etc., in a clothes dryer set at medium to high heat for 10 to 20 minutes.

- This will kill all bed bug life stages and can be done alone or in conjunction with laundering.
What To Do If You Find Them...

• Items which cannot be put in a washer or dryer can sometimes be de-infested by wrapping in plastic and placing them outdoors in a hot, sunny location, closed vehicle, etc. for at least a day.

• If this method is attempted, packing fewer items per bag makes it harder for the bugs to find cooler places to hide.

• Monitoring with a thermometer is prudent, with a target internal temperature of at least 120°F.
Flow-Chart For Treatment...

Identification of suspected Bed Bug infestations

Have you experienced bites during the night?

No → Relax, but learn how to protect yourself from bed bugs and other pests

Yes → Inspect sleeping area for signs of bed bugs

Inspect sleeping area for signs of bed bugs

Refer to How-To Document Identifying signs of bed bugs

Are live (crawling) bugs present?

Yes → Submit image(s) and/or Specimen Evaluation Form to IdentifyUS

Submit image(s) and/or Specimen Evaluation Form to IdentifyUS

- Await our rapid review of your specimens or images to confirm species identification
- If battling bed bugs, review our guidance and recommend treatment steps on our website
- Treat only once you make positive identification of any pests

No → Refer to How-To Document Protect your home from bed bugs (recommended products)

Protect your home from bed bugs (recommended products)

- Do not treat
- Monitor premises for future signs of bugs
- Read more about how to protect your home
How To Prevent Bed Bugs...

• You should think before acquiring used furnishings, especially beds and couches.

• Travelers may want to get in the habit of checking their bed for signs of bed bugs, a common practice in the past.

• This would entail examining the bed sheets and upper and lower seams of the mattress and box spring, especially along the head of the bed.

• Some professionals also suggest removal and examination behind the headboard, a frequent hiding place for the bugs in hotel rooms.

• Headboards are heavy and cumbersome, however, and untrained persons should not attempt removal themselves.
Treatment...

• Don’t panic

• Do not dispose of furniture that is useful

• Infested furniture intended for disposal should be defaced to make it less attractive to other people.

• ALWAYS hire a licensed pest control contractor
Where To Get More Help...

• Harvard School Of Public Health
  • https://identify.us.com/idmybug/bed-bugs/

• Michigan Manual For The Prevention Control Of Bed Bugs
Remember...

Don’t Let The Bed Bugs Bite
Source...

- Centers For Disease Control and Prevention
- EPA
- Harvard School Of Public Health
- Western Pest Service
- University Libraries, University of Washington