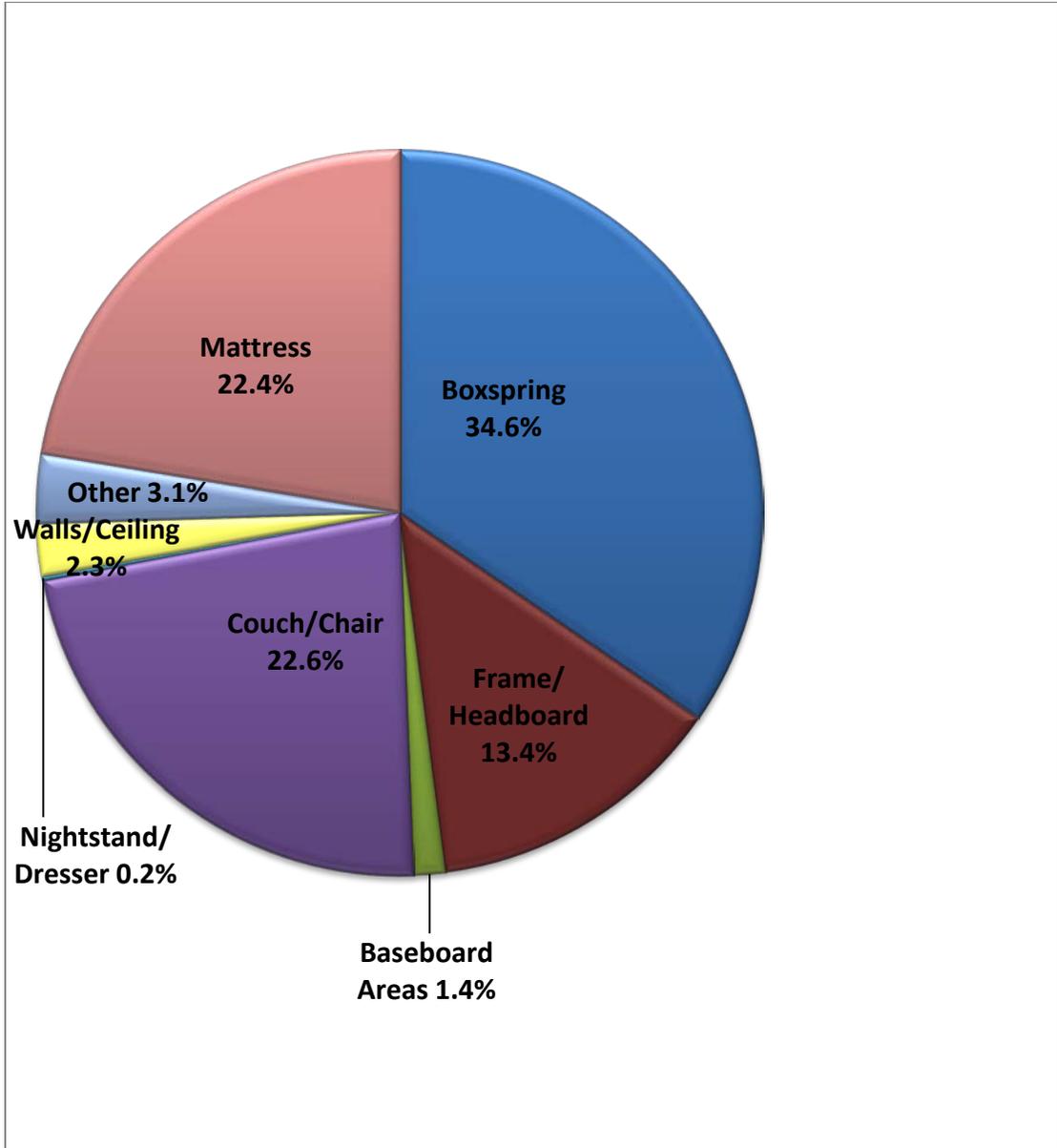


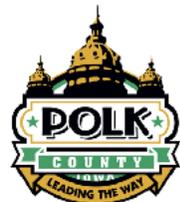
INSPECTION

BED BUG HIDING PLACES



Distribution of bed bugs found in 13 infested apartments
Source: University of Kentucky

Polk County Health Department
Polk County Bed Bug Task Force



Where to Look

Begin your search where people sleep (bed, couch, or chair). It is important that you inspect all crevices where bed bugs could hide. Places to check include:

- Along and between the mattress and box spring seams, as well as the bed frame and plywood support panels.
- Items immediately near the sleeping area, such as nightstands, behind wall-mounted objects (pictures), headboards, and in electronics such as alarm clocks and remote controls
- Inside cracks and crevices of upholstered and wooden furniture, in cracks in wood molding or behind baseboards (where the wall meets the flooring).
- Look high and low in the room, as bed bugs will aggregate along the edge of the walls and ceiling.
- Under and in items on the floor (especially under the bed) that are producing a cluttered appearance. Clothes, books, boxes, toys, and backpacks or other luggage are hiding places for bed bugs.

Tools and Equipment

The following are tools and equipment that are essential in assisting you in inspecting for bed bugs. Several companies also sell bed bug inspection equipment kits.



Flashlight Bed bugs usually hide in dark crevices; without a flashlight, you may not see them. Use a bright flashlight (a white LED is preferable over blue) with fresh batteries. Using a black light (ultraviolet) flashlight in a darkened room will illuminate eggs.



Magnifying glass At 1 mm, most people need a magnifying glass to clearly see bed bug eggs and newborn bed bugs which are light and straw-colored. Use a large magnifying glass to make close-up examinations easier.



Collection containers (re-sealable plastic bags, tightly capped vials such as pill bottles, small jars, etc.). If you find insects that may or may not be bed bugs, you will want a specimen to submit to a professional for identification. Put rubbing alcohol or alcohol-based hand sanitizer in the container to preserve the insect(s). Ensure a tight seal by taping around the outside of the lid. You can also place sample between a piece of clear tape (be careful not to smash the bug if placing between tape).



Forceps, tweezers, or a thin probe to help collect specimens and place sample in a tightly sealed collection container or in between a piece of tape.



Probe for checking cracks if cracks and crevices are too deep to inspect. You can use a metal spatula, putty knife, old credit-type card or other small probe to drive bed bugs out into the open. Compressed air (used for cleaning computer keyboards) can also be used to flush bed bugs from hiding places in tight cracks.



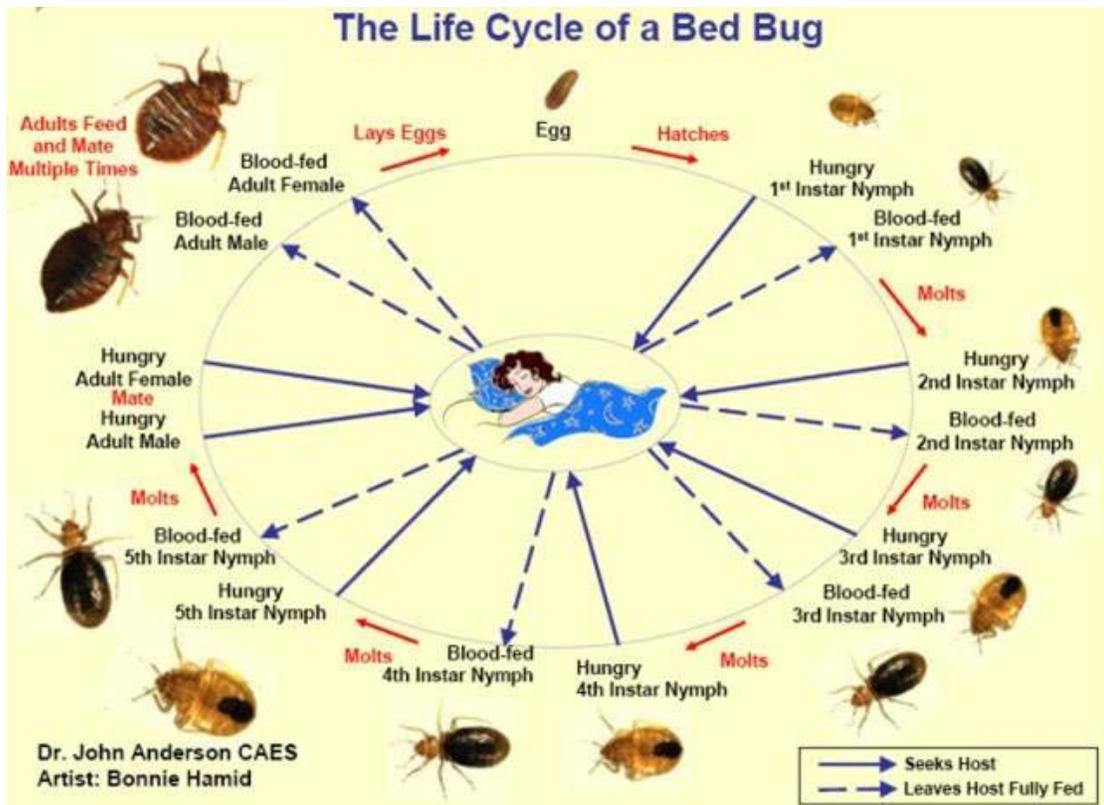
Vacuums can be used to suck up bugs and their waste. To prevent bed bugs from getting into the vacuum cleaner, insert a knee-high nylon stocking in the end of the vacuum hose then insert the crack and crevice attachment to hold the nylon in place. The bed bugs will be captured in the toe of the nylon stocking. When you are finished vacuuming, remove the stocking, tie a knot in the top and place in a tightly sealed plastic bag for immediate disposal in an outdoor trash container. If you do not use this strategy, vacuum containers should be cleaned with heat over 120° F. **Vacuuming is not an effective strategy for eliminating bed bugs or managing an infestation. Do not vacuum and remove bed bug evidence prior to a professional assessing your home.**



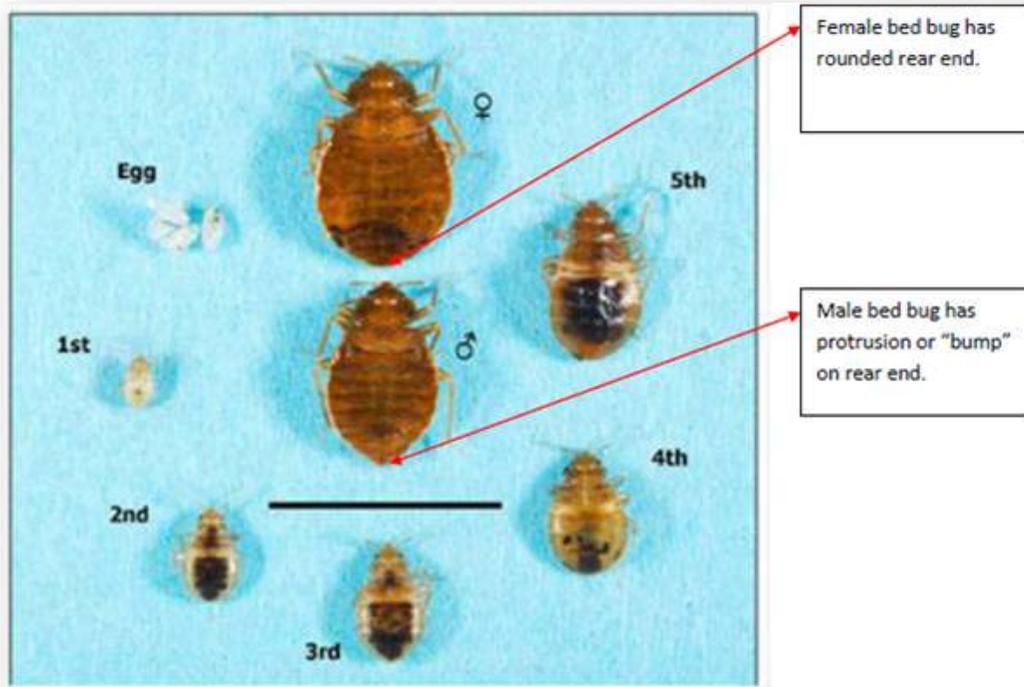
Monitoring Devices are designed to confirm the presence of bed bugs at all stages not manage an infestation. There are two types of monitors for bed bugs: passive and active. A passive monitor targets the behavioral patterns of bed bugs and relies on getting in their pathway coupled with a mechanism such as glue or a base to either trap the bugs or show their fecal matter. Passive monitoring is most effective in a room where people regularly sleep. This type of monitoring includes barrier tapes on the bed legs, interceptor devices on the bed legs (which can be purchased or created by using clean empty can such as a tuna can) or Vaseline or mineral oil barriers placed on the bed legs. If you find bed bugs or cast skins, immediately place bugs and/or monitoring device with bugs in a tightly sealed plastic bag and report it to your landlord or have sample verified. The second type, active monitoring, uses attractants (such as carbon dioxide and a heat source) to attract bed bugs. These monitors are generally more expensive and most effective in vacant rooms.

What to Look For

You will be inspecting for live or dead bed bugs, cast skins, eggs, and fecal stains or droppings.



In order for bed bugs to spread, they need a mature female
 Bed bugs must have a blood meal to grow





Size Comparison of a fully grown bed bug

Live Bed Bug



Bed Bugs (Live or Dead). Live bed bugs may be crawling around their shelter area or resting motionless in a crack or crevice. Newly hatched bed bugs are very light brown and difficult to see until they have had a blood meal. Bed bugs that have fed have a dark digestive tract and can be seen much easier than unfed bugs. As they mature, the bugs become darker and easier to see on light-colored backgrounds. Dead bed bugs are frequently found in or near their shelter areas with their legs and antennae broken off.

Dead Bed Bugs



Cast Skin

Cast Skins. Bed bugs grow by shedding their skin and leave a shed skin behind. The skins look like empty shells of the bed bugs. They are extremely light and will blow away at the slightest breeze.



Dead Bed Bugs, Cast Skins and Waste



Bed Bug Eggs

Eggs. Although they are only about 1 millimeter long, bed bug eggs are white and will show up well in a number of situations: on dark backgrounds, smooth surfaces or under ultraviolet light. A cluster of eggs is a good indication that there is a fertilized female nearby. Look for fecal stains and droppings from the female.



Fecal Stains & Droppings. The droppings appear as small dark or black spots and are the easiest to spot of all the signs. A grouped arrangement of droppings suggests a closer search of the area. Droppings may appear as solid blobs or as thin ink-like stains. They can be seen as blood spots on sheets and pillows.



Bed Bug Fecal Stains and Droppings

How to Look

Remember, keep your thoughts on the bigger picture, the majority of bed bugs will be found wherever a person sleeps (beds, couches, lounging chairs).

Mattress inspections should focus on the following areas:

- Along the top and bottom seams
- Along each side of the piping material sewn onto the edges
- Under mattress handles
- Inside air holes
- Between the mattress and box spring, platform or frame
- Inside folds of material and under buttons
- Near or on mattress consumer tags
- Original plastic wrapping from manufacturer; this should be removed
- **If you have found bed bug evidence, stop inspection and call a pest management professional**

Box Spring inspections should focus on the following areas:

- Underneath corner protectors
- Points where the box spring sits on the bed frame (lift slowly to avoid scattering bed bugs)
- The top surface of the box spring
- Inside folds of material
- Along seams and where the material is tacked to the frame
- Around and beneath furniture staples and tacks
- Near or under mattress labels
- Inside the web cloth cover under bed springs
- Original plastic wrapping from manufacturer ; this should be removed
- **If you have found bed bug evidence, stop inspection and call a pest management professional**

Bed frame and head board inspections should focus on the following areas:

- Wood beds and head boards (especially wicker). These are preferred hiding spots for bed bugs but they will hide in crevices on metal and plastic or where a mattress touches a metal frame
- Where all joints and parts of the frame meet (especially where the steel hooks insert into the side rails and head/foot boards)
- Screw and nail holes
- Wood support slats supporting the box spring
- Remove the head board from the bed and check along the joints and on the wall behind it.
- Remove the head board from the bed and check along the joints and on the wall behind it. If a headboard is attached to the wall or instead of removing the head board, use compressed air to move bed bugs from wall behind it.
- For beds with a plywood platform, lift out plywood sheet and inspect cut sides and knot hold and gaps in lamination.
- **If you have found bed bug evidence, stop inspection and call a pest management professional**



Other furniture near sleeping area should focus on the following areas:

- Drawers and shelves of the furniture closest to the sleeping area. Place items into plastic bags to be inspected and cleaned, if necessary. Pull out drawers and inspect every corner and the undersides, using a crevice tool to check under the metal drawer guides
- Turn over all furniture to inspect the underside
- Electronics, such as lamps, remote controls, alarm clocks and radios
- Shelf and bookcase frames
- Screw and nail holes
- **If you have found bed bug evidence, stop inspection and call a pest management professional**

Plush and Upholstered furniture inspections should focus on the following areas:

- Pillows and cushions, particularly the seams and the folds around zippers
- Legs of chairs and couches
- Thin cloth backing under furniture; this should be removed for proper inspection
- Staples and where material is stapled to the frame
- All wood parts of the frame
- **If you have found bed bug evidence, stop inspection and call a pest management professional**

Room perimeter inspections ,since bed bugs will spread toward the perimeter of the room, including walls, ceiling, moldings and rugs.

- Moldings or the joint between the floor and wall closet to the sleeping area. Use the crevice tool to check behind moldings. The tool will chase bed bugs out of hiding if used in a sweeping motion
- Edges of wall to wall carpet
- Under area rugs
- Around crevices of electrical and outlet plates.
- Under ceiling moldings and in smoke detectors
- Anything hanging on the walls
- **If you have found bed bug evidence, stop inspection and call a pest management professional**

Unusual locations should be inspected since bed bugs may turn up in unexpected places in moderate and large infestations. If the infestation is large, every object in the affected area should be carefully inspected and should focus on the following areas:

- Television and other remote controls, in the battery compartment
- Telephone, cell and cordless phones
- Lamps and alarm clocks
- Computers and other electronics
- Cardboard boxes in closets and under the sleeping area
- Children's toys and stuffed animals
- Jewelry boxes
- Brick walls and "popcorn" or other textured ceilings
- Books (including book binding), magazines, newspapers and files
- Ceiling light fixtures
- Smoke and carbon monoxide detectors
- Heating units such as baseboard heaters or space heaters
- Air conditioners and ducts
- Wheelchairs
- Prosthetics
- **If you have found bed bug evidence, stop inspection and call a pest management professional**

Note: If a significant infestation is identified and confirmed, other units adjoining may need to be inspected. However, they typically don't move long distances on their own when food is available. Evidence that may suggest unit to unit movement includes bed bugs:

- In ceiling light fixtures
- Coming out of electrical and switch plates
- Away from sleeping rooms, such as the kitchen or bathroom
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-
-
-

Bed Bug Decision Tree

Are bugs present on bedding or other furniture?

Yes

Contact a Pest Management Professional

OR

No

Monitor

Mail collection sample directly to ISU
327 Bessey Hall, Ames, IA 50011-1020
(There is a \$10 fee)
Sample submission form at
www.ipm.iastate.edu/ipm/info/files/documents/page/264/322.pdf
(It is important that your collection sample is tightly sealed with tape)