



BED BUGS

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Bed bugs are small insects that feed on blood. They can be found in and near beds. They like hiding in crevices such as seams, joints, cracks and folds of the bed, furniture, walls, clothing and floor close to beds.



What do bed bugs look like?



The darker, rounder and longer bed bugs have fed recently.



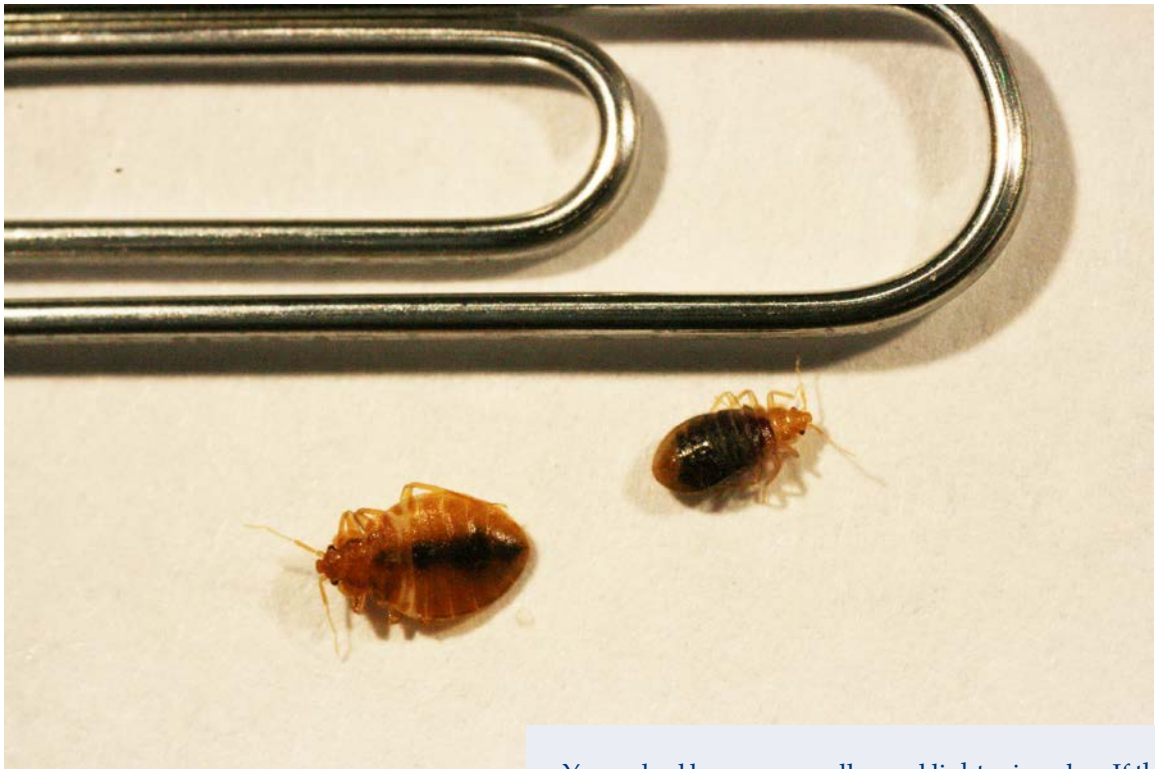
When full grown, bed bugs are reddish brown and about the same size as an apple seed. Bed bugs just hatched from eggs are the size of a poppy seed, and are nearly see-through. The young bed bugs are smaller than adults and lighter in color if they haven't fed recently. They can be bright red if they have just had a blood meal.



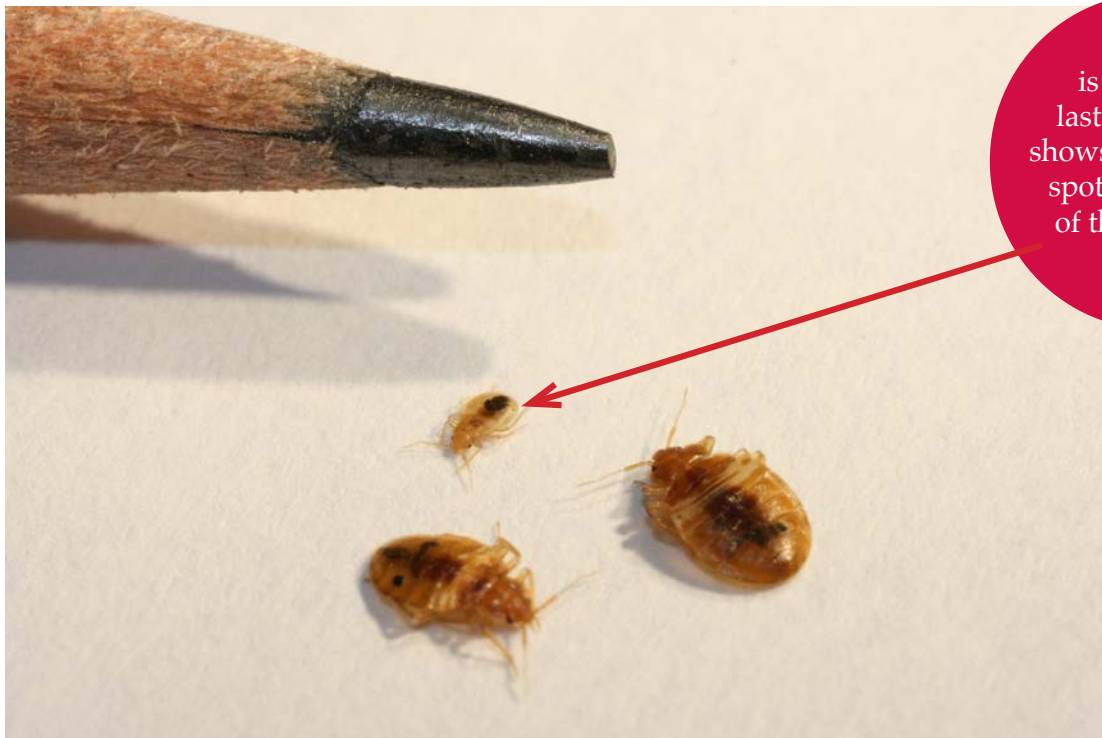
Bed bug bodies get longer and rounder as they get full.



Baby bed bugs look red when they are full of blood.



Young bed bugs are smaller and lighter in color. If they haven't fed for several days, they appear yellow or tan with a dark spot near the end of the body.



What is left of the last blood meal shows up as a dark spot in the body of the baby bed bug.



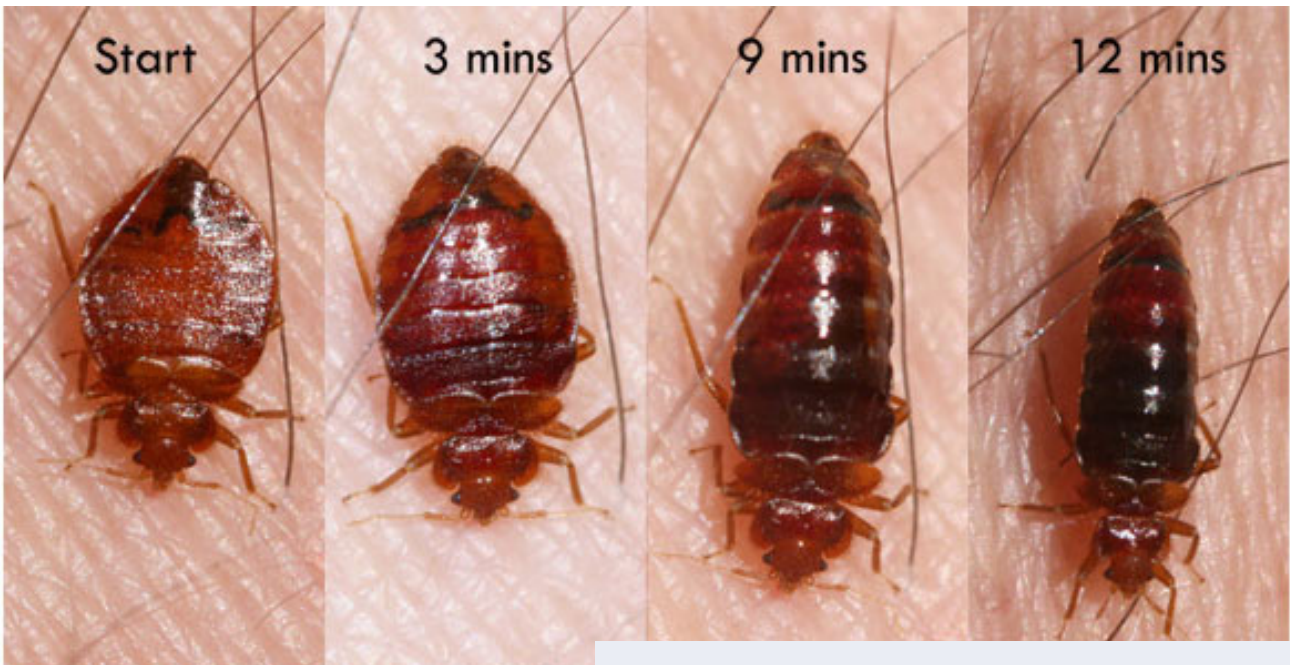
Baby bed bugs.



Bed Bug Life Cycle and Behavior

The life stages of bed bugs include the egg and 5 nymph stages before turning into an adult. Bed bugs need to feed on blood at least once during each life stage.

CHANGLU WANG, RUTGERS UNIVERSITY.



WHITNEY CRANSHAW, COLORADO STATE UNIVERSITY

Bed bugs usually feed at night. If they are very hungry, they may come out to feed during the day. They feed on a person for about 10 – 15 minutes and then they go back into hiding.

Bed Bug Effects on Human Health

Bed bug bites may feel itchy – but do not scratch them! Wash the area with soap and water. Bed bug bites can cause welts on skin. Bites are most often found on skin that was bare or uncovered during sleep.

Bed bug bites can look similar to mosquito bites or those of some other insects. If they do not heal properly, see a doctor.

Some people find it difficult to sleep, and some become very stressed. Bed bugs can be killed successfully.



Typical bed bug bites after 2 weeks. Everyone reacts differently to bed bug bites, but the marks in the pictures included here are very typical.



Bed bug bites.



Some Bed Bugs Can be Found:

Soon after they are brought into the home, low numbers of bed bugs can be found in hiding places on or near the bed. When numbers increase, they can be found hiding in many places in the room.



Bed bugs prefer to stay in the mattress and box spring seams and corners, near the sleeping people they feed on.



Pillow-top mattress with no bed bugs.

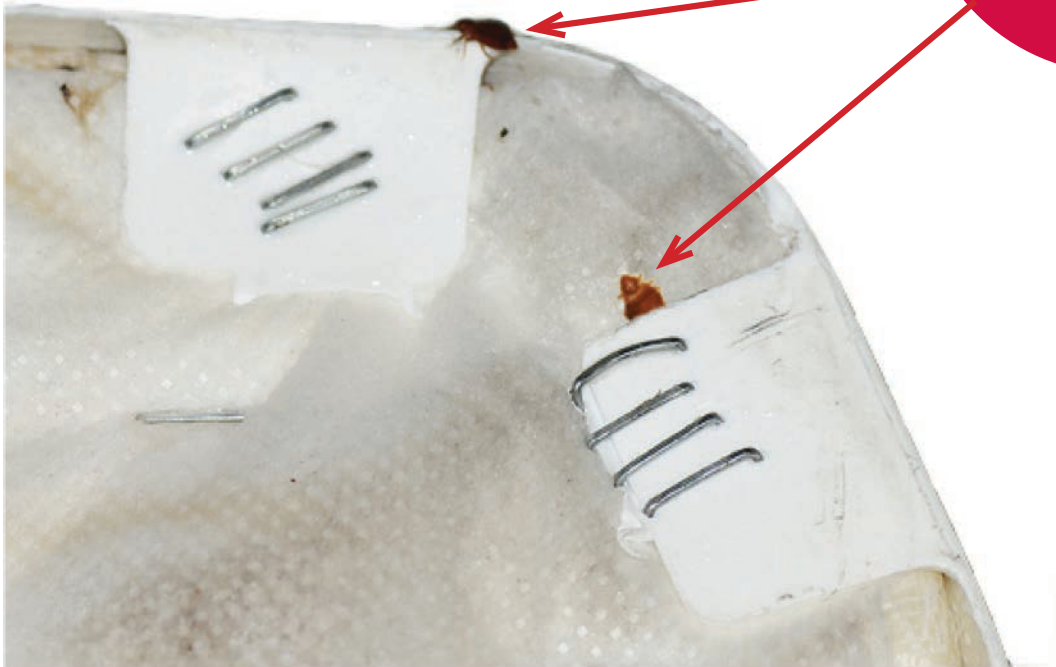


Bed bugs and poop stains left by bed bugs.

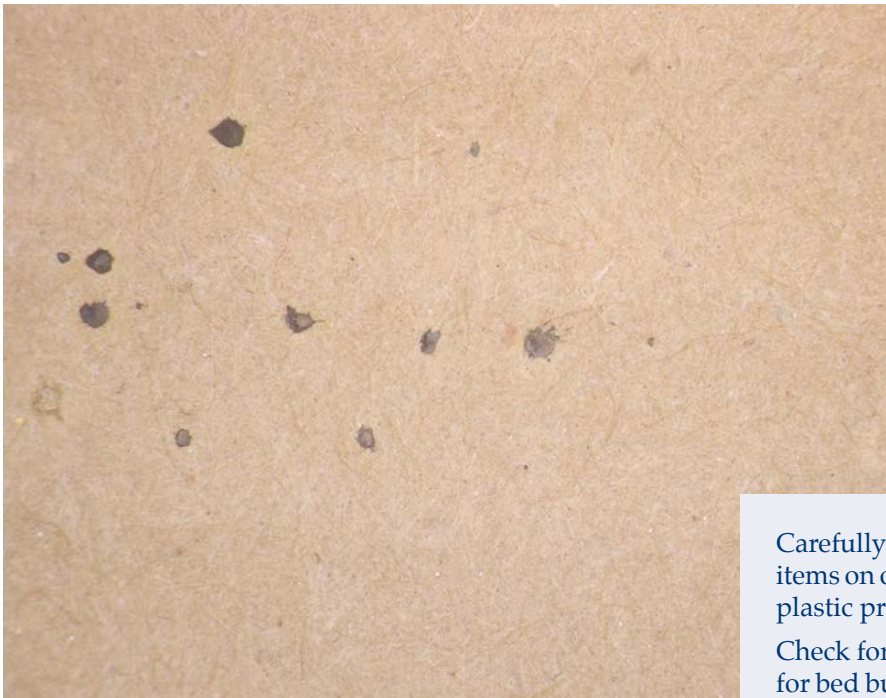
Evidence of bed bugs on the side of a pillow-top mattress.



Box spring with no bed bugs.



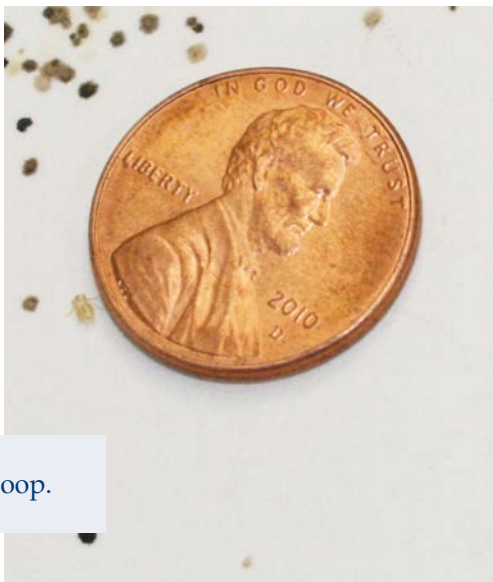
Here the corner shield of the box spring harbors bed bugs. Corner shields are favored places where bed bugs like to hide.



Carefully check mattresses, box springs, and items on or close to the bed. Look at the corner plastic protectors on mattresses.

Check for the bed bugs themselves. Also look for bed bug poop, shed skins, and blood spots on bed sheets.

Rusty red marks in the corners or seams of mattresses are a sign of bed bugs.



Bed bug poop.



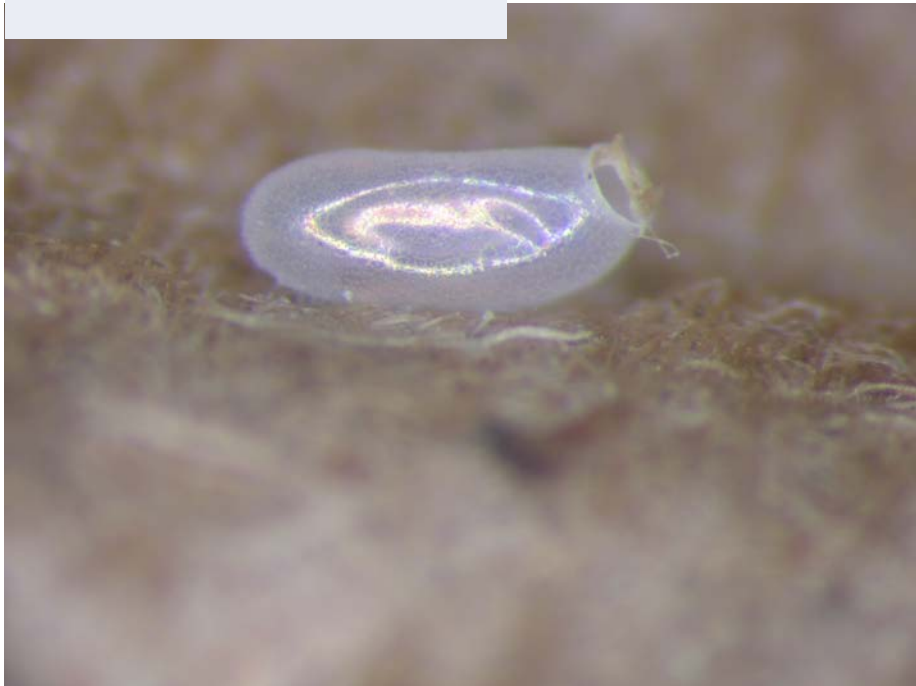
Bed bugs shed their skin.

Bed bug blood stains on the sheets. People may bleed after being fed on, or crush a bed bug that had just fed, bursting the body.





You may also find bed bug eggs. Bed bug eggs are pale white and about the size of a pinhead. They look like tiny oval grains of rice but with lids at one end.



You may find bed bugs on your body during the night or when you are resting.



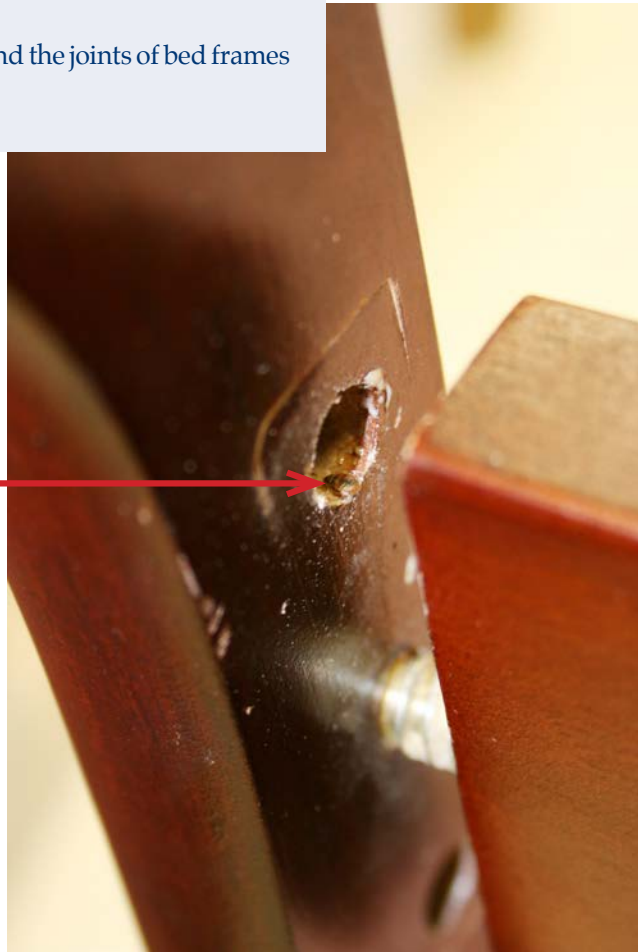
You do not often feel them crawling on your skin or biting you.

Where Do Bed Bugs Hide?

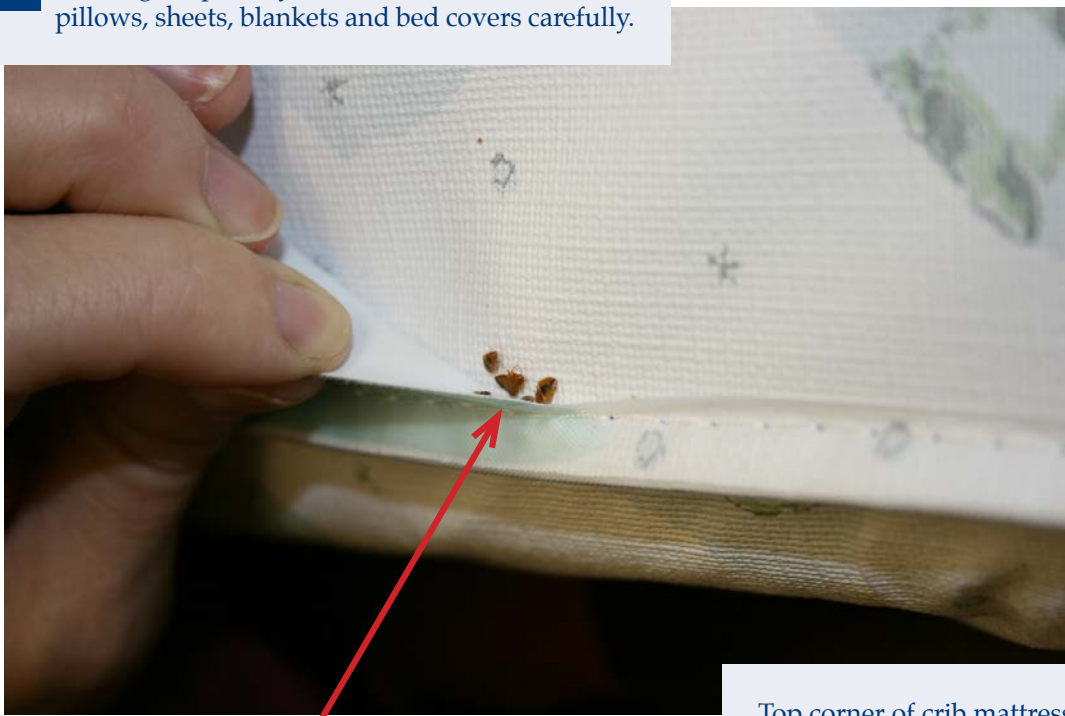
1

In mattress and box springs seams and the joints of bed frames and headboards.

Bed bugs and poop stains left by bed bugs.



2 In and on bed mattresses, box springs, and bedding. Especially at seams and corners. Check pillows, sheets, blankets and bed covers carefully.



Top corner of crib mattress.

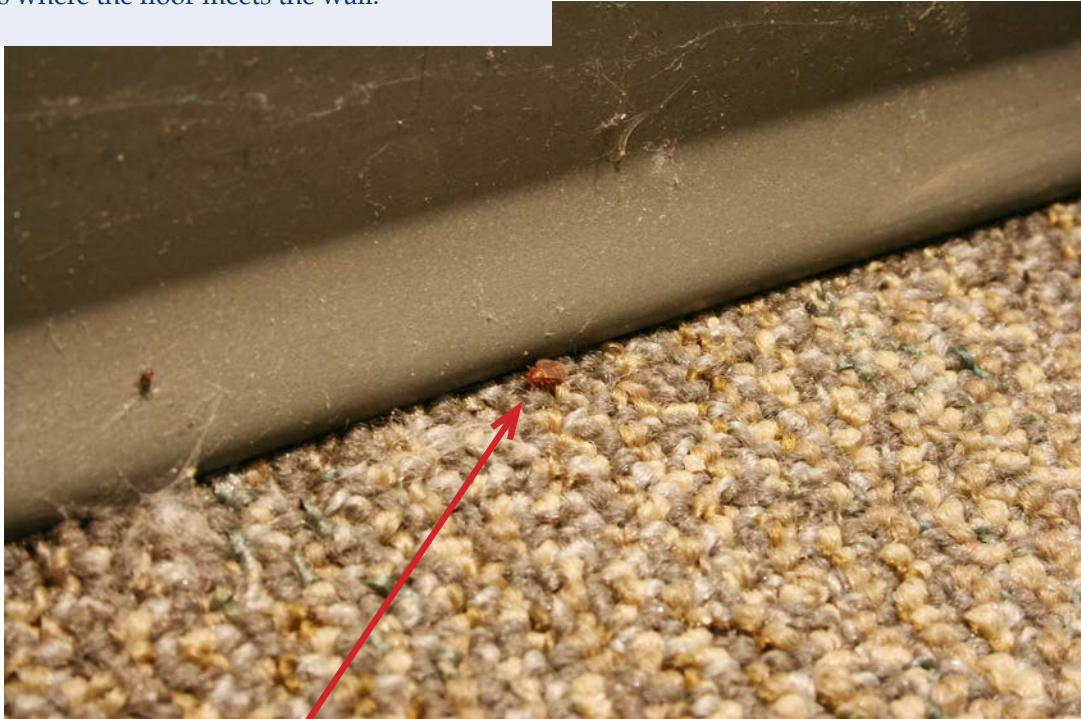
Bed bugs.



Bed bugs on a sheet along the seam.

3

Along and under the edge of carpeting and in the places where the floor meets the wall.



Bed bugs.



4

Behind moldings and baseboards.

Bed bugs.



5

Behind and in picture frames and wall hangings.



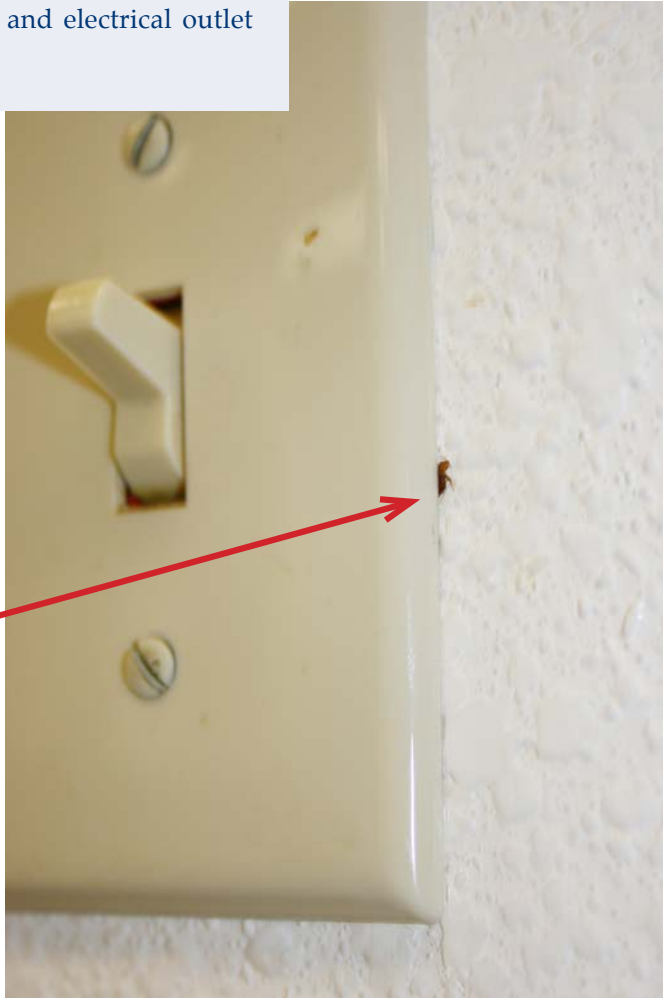
Bed bugs.



6

Behind light-switch plates and electrical outlet covers.

Bed bugs.



7

Bed bugs can be found on clothing stored in closets and drawers near beds. This bed bug is behind a button on a shirt.



Bed
bug.

8

Inside and under items on the furniture, near the bed.



Bed bugs.



9

Inside electronic devices, such as clocks, phones, TVs, remote controls, and smoke detectors. There is a bed bug in a hole on the bottom of this alarm clock.

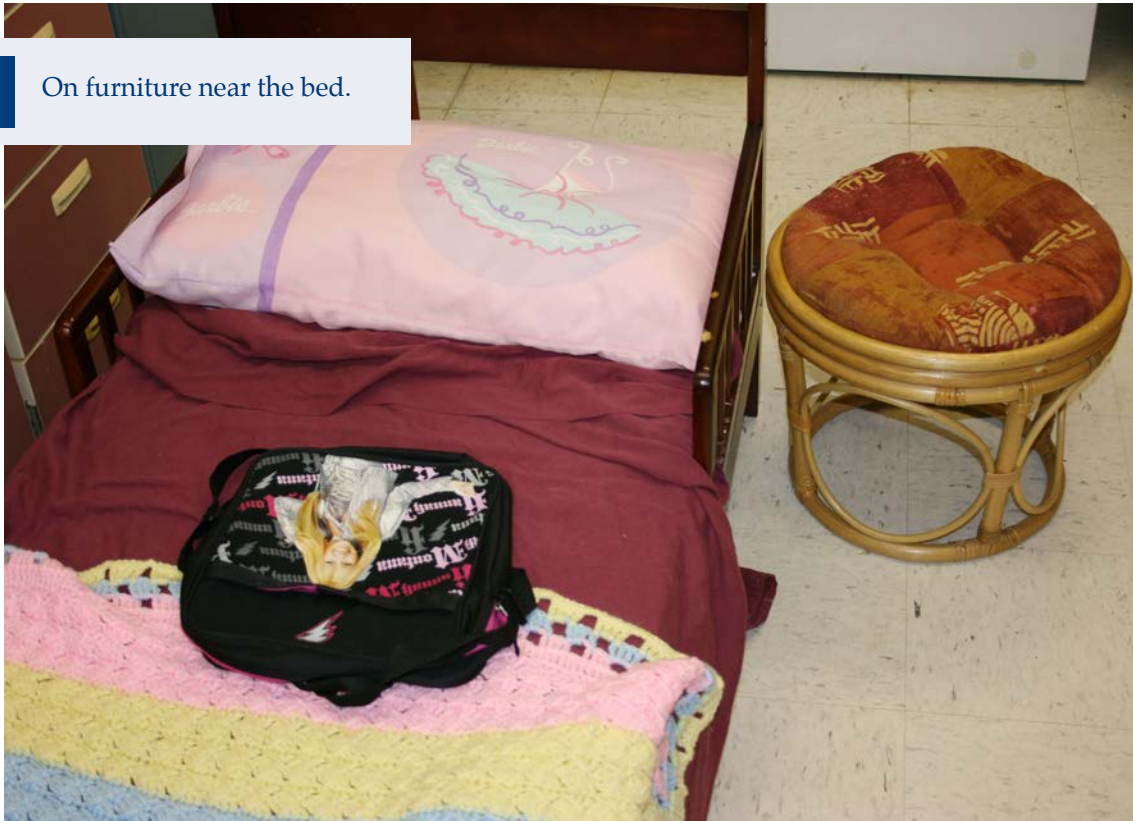


Bed bugs.



10

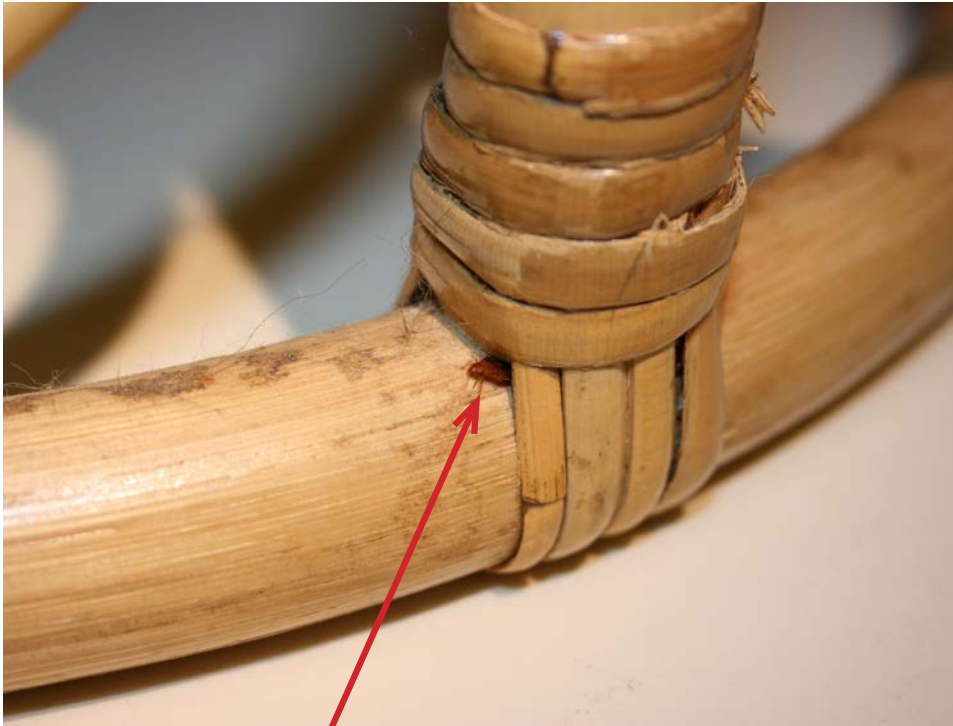
On furniture near the bed.



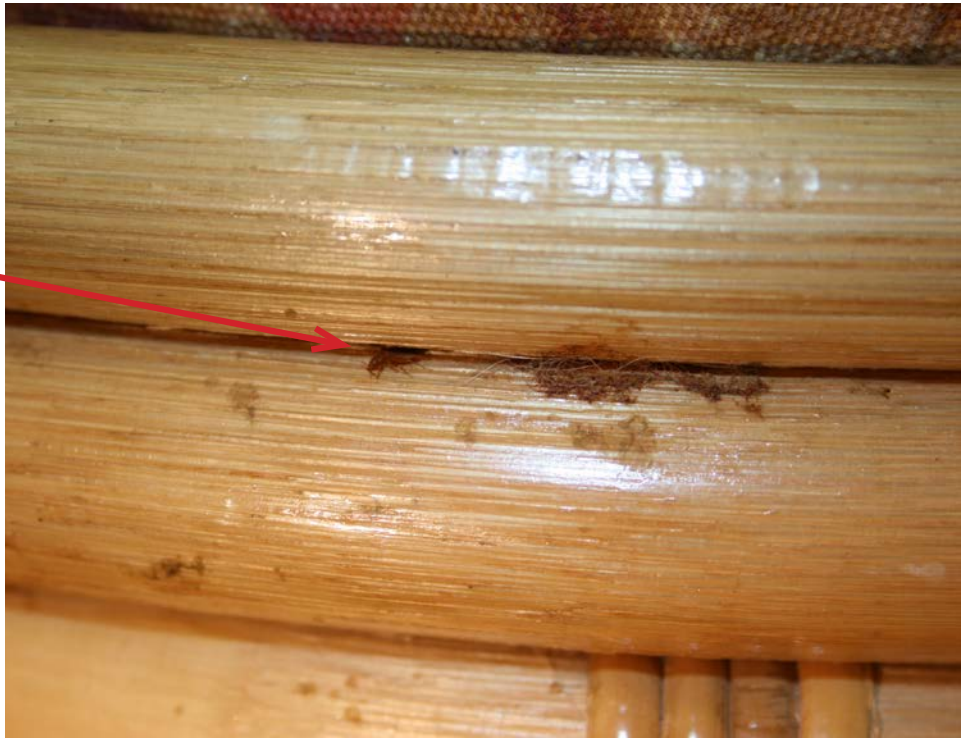
Bed bug.



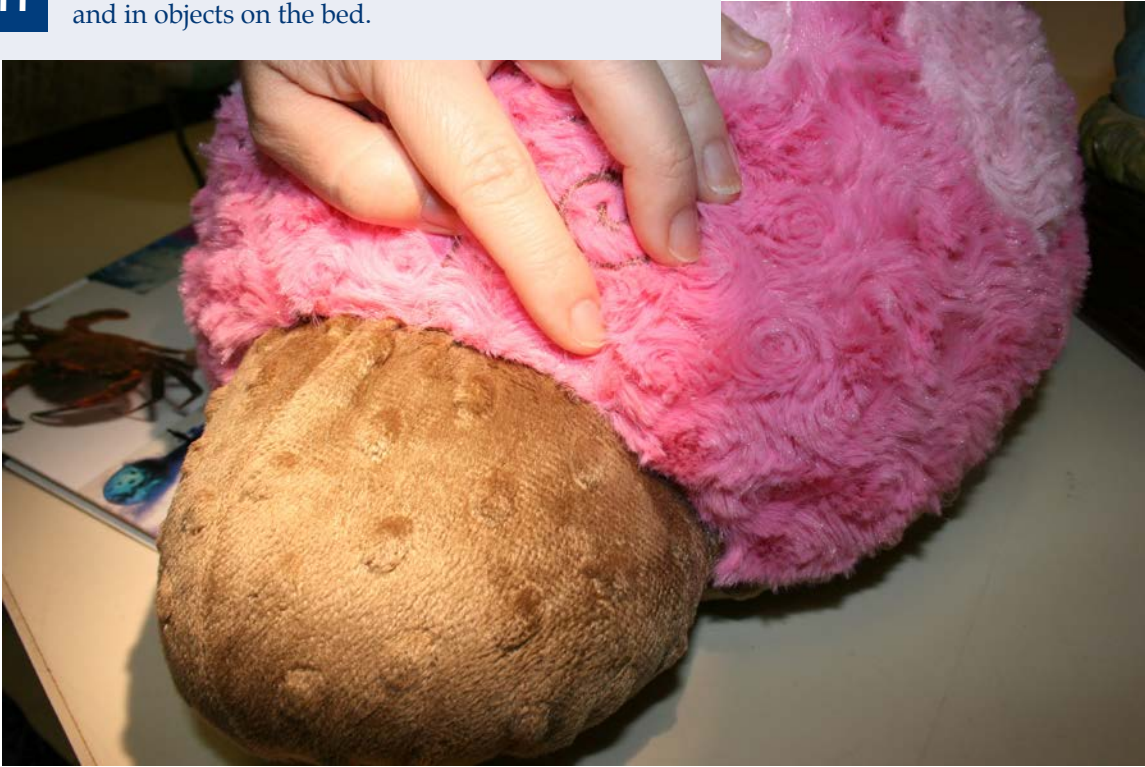
The bed bug is in the seam between the tags on the pillow.



Bed bugs.



11 In folds of bed skirts, bedding and stuffed animals and in objects on the bed.

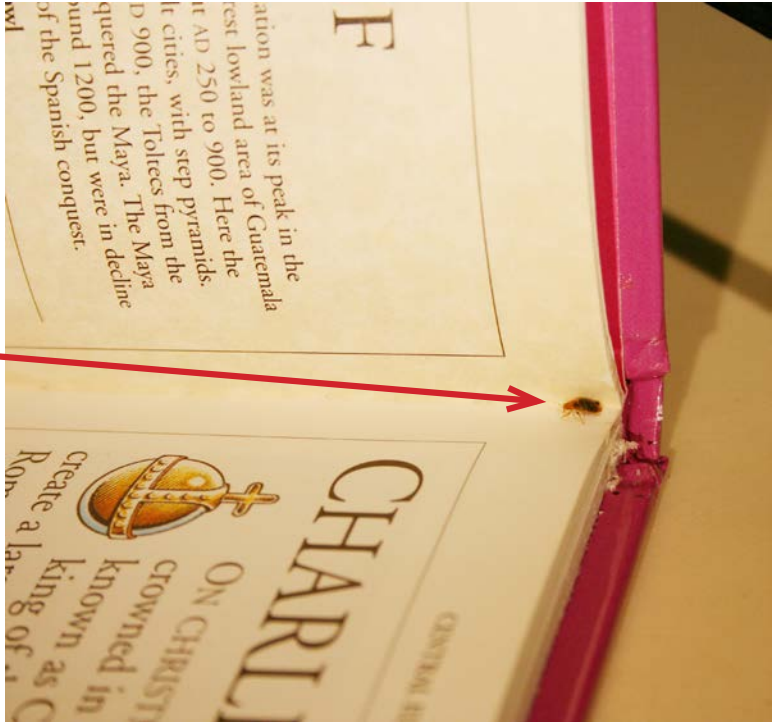


Bed bug



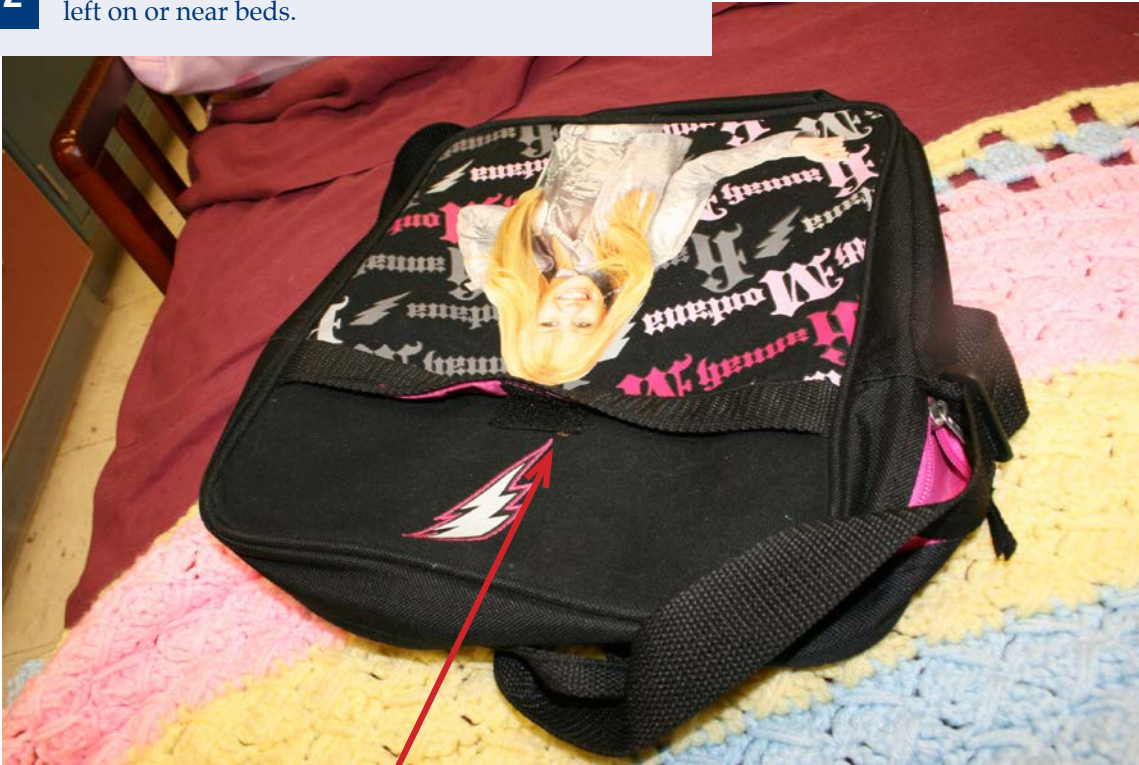


Bed bug.



12

Bed bugs will crawl in and on purses and backpacks left on or near beds.

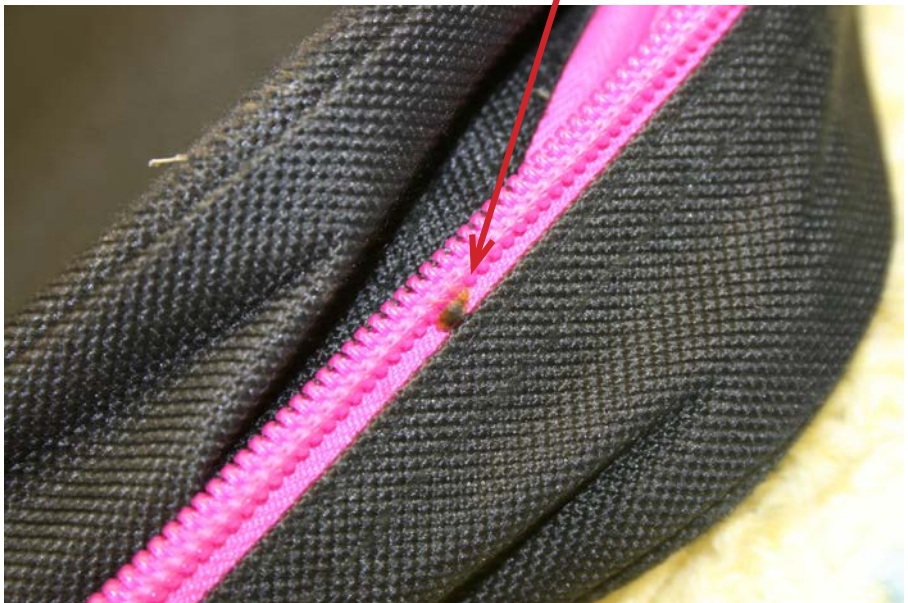


Bed bugs.





Bed bugs.



Things bed bugs cannot do:

Bed bugs **cannot** jump.

Bed bugs **cannot** fly.

Bed bugs **cannot** burrow into the skin.

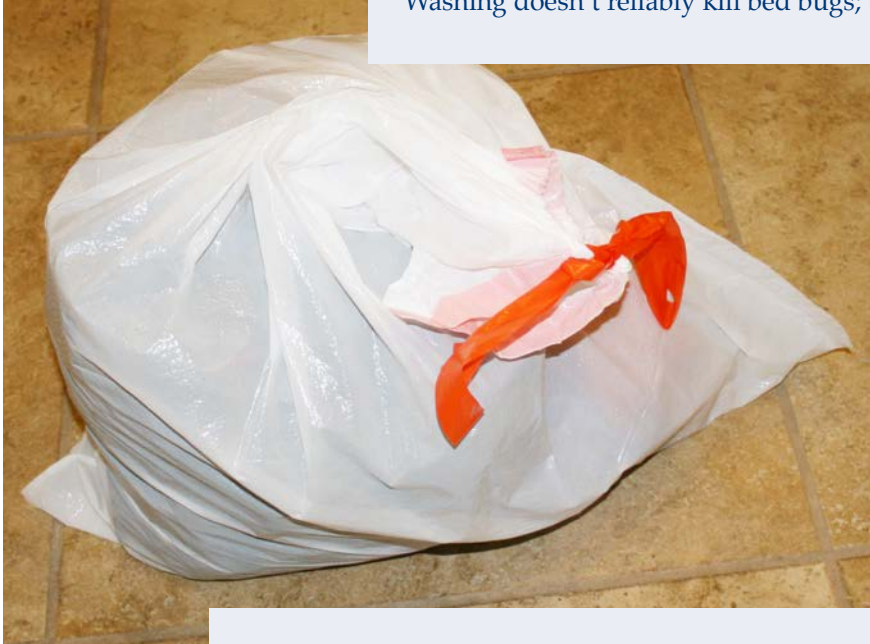


How to Avoid Inviting Bed Bugs to Stay

Change and wash bed linens every week. Clean bed quilts and blankets regularly. Use large size washers and dryers to launder large items. Check labels, some items may need to be professionally cleaned.



Put clothing or bedding into plastic bags before moving it around the home. Launder newly purchased or used clothes right away. Wash and dry, and then leave the clothes (or bedding if you are washing bedding) in the dryer for an extra drying cycle of 40 minutes. Some items can be ruined in the dryer, but complete drying is necessary to kill bed bugs. Washing doesn't reliably kill bed bugs; the dryer is a lot more reliable.



Washing and drying things kills bed bugs. Clean clothes do not need to be washed, but only dried, but it is a good idea to do both.

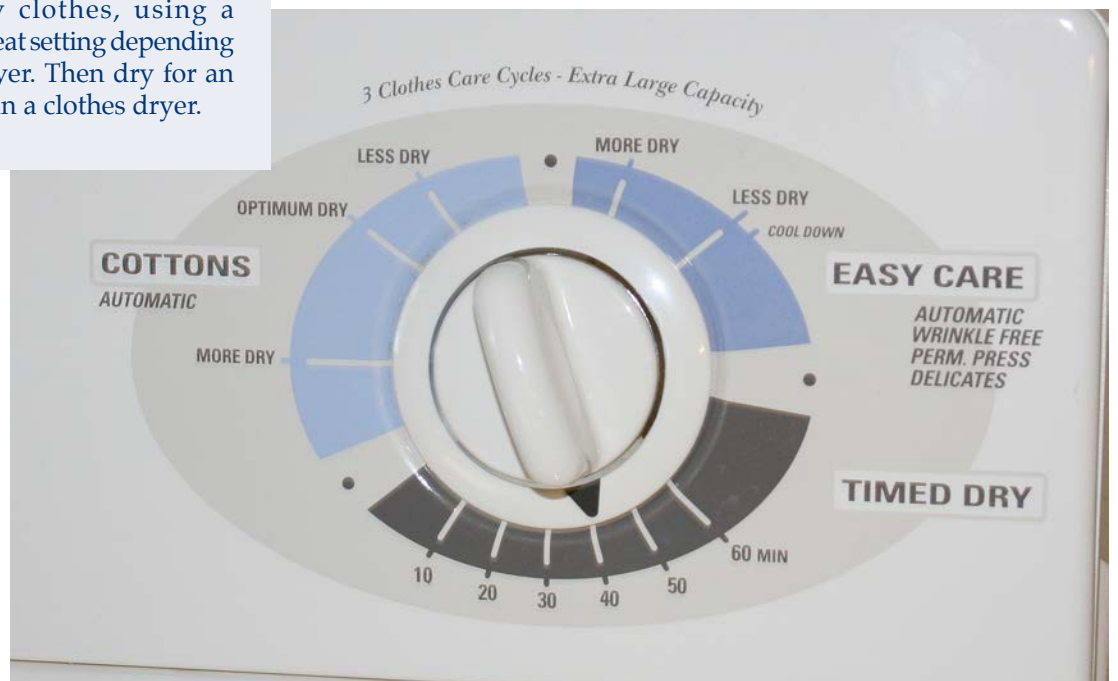


Wash in the washing machine.

Move to the clothes dryer immediately.



Completely dry clothes, using a medium or high heat setting depending on the clothes dryer. Then dry for an extra 40 minutes in a clothes dryer.



If you have been in a home that has bed bugs, check your shoes carefully and wash them as a precaution, or place in the clothes dryer to heat treat.



Bed bug.





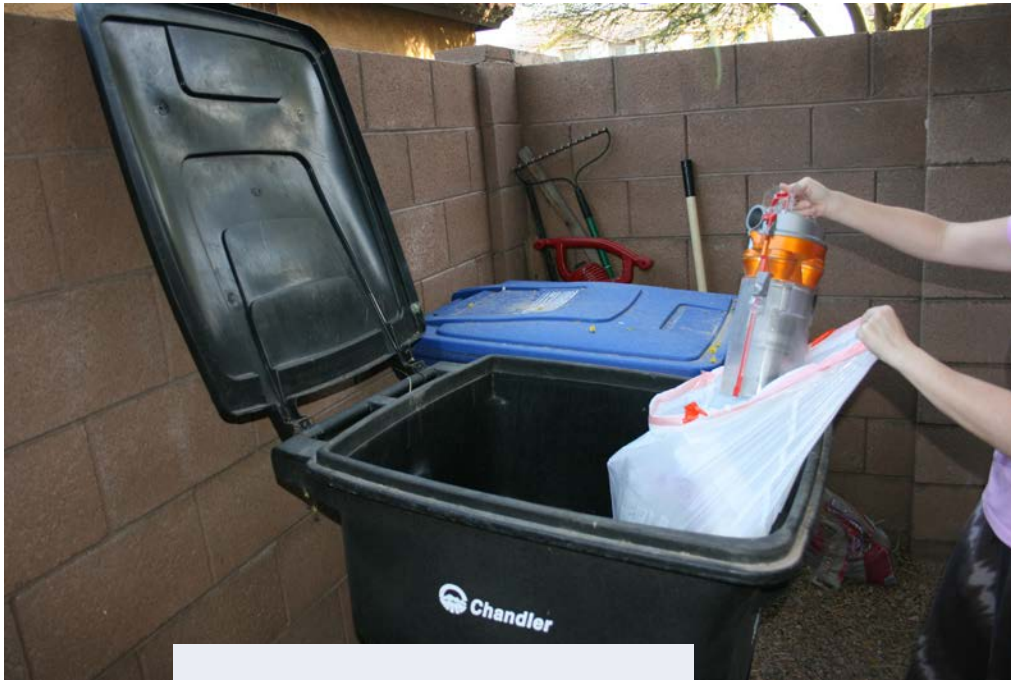
Heat-treat shoes by looping the laces over the top of the dryer door.



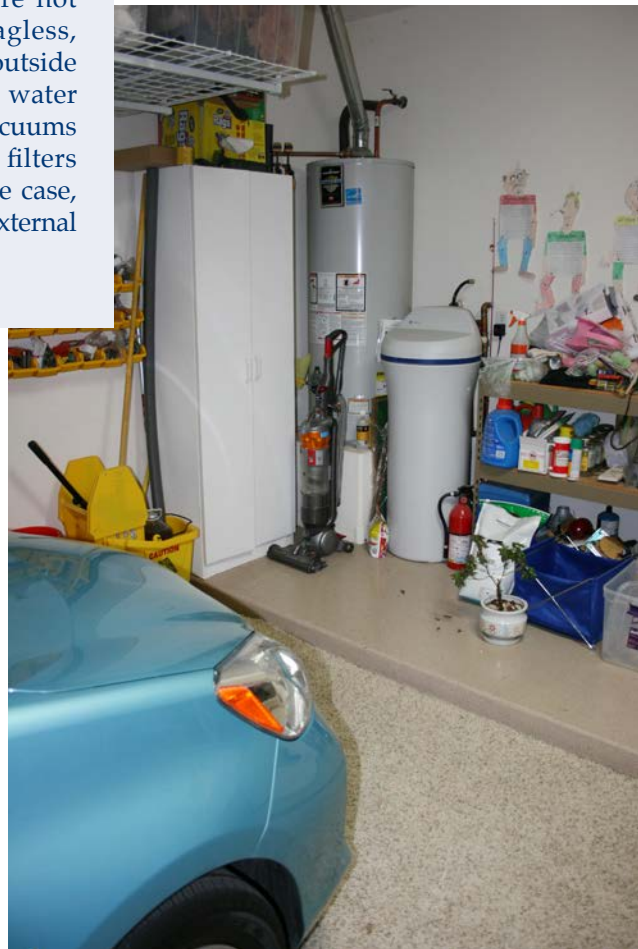


Vacuuming removes bed bugs!

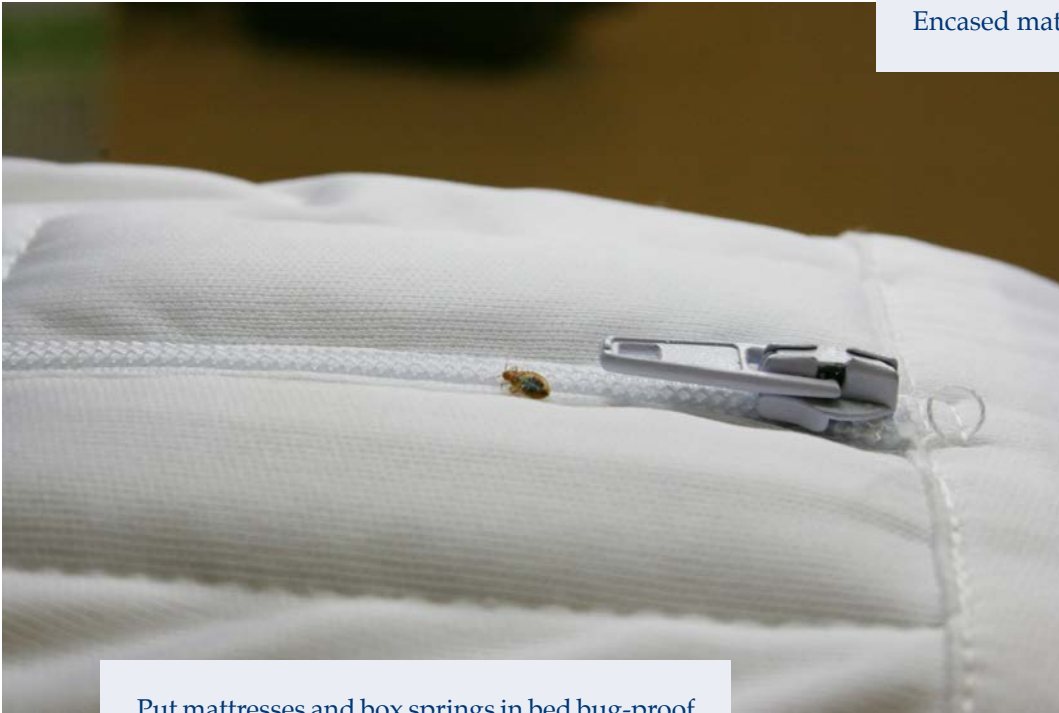




Discard the vacuum bag and keep the vacuum outside the house. Vacuums with permanent cloth bags are not suitable. If the vacuum is bagless, empty the container carefully outside the home, and wash with hot water and soap. Some bagless style vacuums cannot be washed because of filters inside the vacuum. If this is the case, store the vacuum in a garage or external storage cupboard.



Encased mattresses.



Put mattresses and box springs in bed bug-proof covers, these are often called “encasements” that do not allow bed bugs to move through them. The encasements will lock bugs in and lock bugs out of your mattress and box springs.



The box spring should be encased as well.

Purchase and place bed bug traps under bed and sofa legs (as people may fall asleep on the couch) to monitor for bugs.



Bed bugs.

Bed bug traps.



Get rid of infested items.

Carefully throw away bed bug infested items that cannot be re-used. Wrap items in plastic, and use duct tape to seal. Mark or destroy infested items, such as mattresses that are going to be thrown out. It is not necessary to throw out good mattresses as they can be encased, but if a mattress or other item is going to be thrown out, mark or destroy it to prevent the spread of bed bugs. Do not drag unwrapped items through buildings, as this can spread bed bugs.



Wrap mattresses completely in plastic before moving them out of the bedroom.

Fragile non-clothing items that cannot be heat-treated in the dryer, and delicate clothing can be sealed in plastic and placed in a freezer for 4 days. Even electronics that have been near or on a bed can be cold-treated.

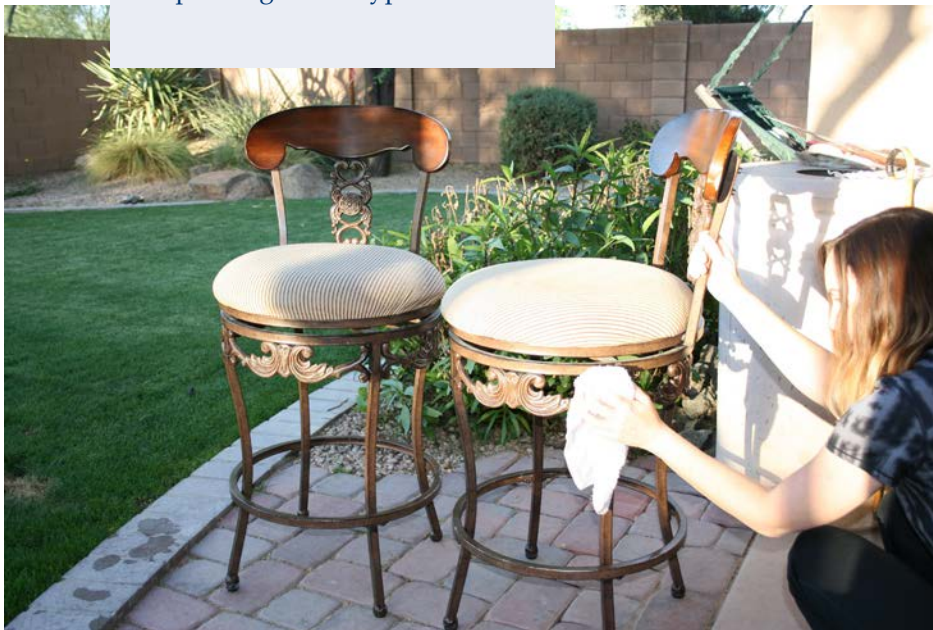


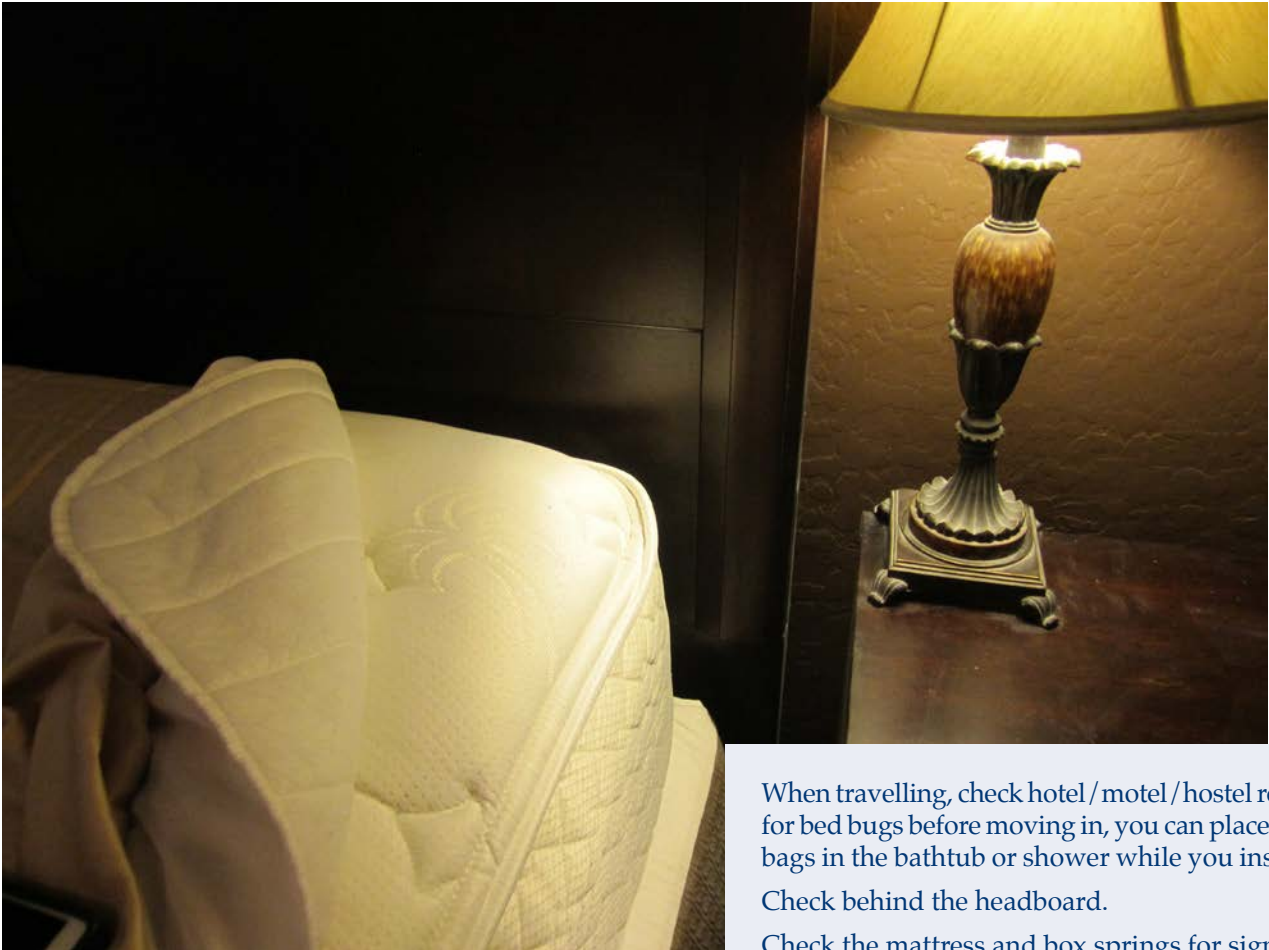


Before moving rented furniture into your home, you should carefully inspect it using a flashlight.

Wash used furniture carefully. You may want to paint or varnish used furniture to reduce the chances of acquiring bed bugs.

Consider using a polyurethane finish, varnish or shellac depending on the type of item.





When travelling, check hotel/motel/hostel rooms for bed bugs before moving in, you can place your bags in the bathtub or shower while you inspect.

Check behind the headboard.

Check the mattress and box springs for signs.

Also check where the wall meets the floor near the head of the bed.

If you find bed bugs or any evidence of bed bugs, tell the front desk staff.

Ask for another room away from the original room.



When you return from a trip, unpack your suitcases outside the home.
Bag the clothing, then wash and dry them as described earlier.
Store suitcases and luggage in large plastic bags if you cannot store them in a garage or outdoor storage cupboard.



To Avoid Bed Bugs:

- Avoid used mattresses/box springs, bedroom furniture, or stuffed furniture.
- Avoid moving bedding in and out of other homes. If bedding is taken to a childcare facility, school, hotel/motel or shelter, wash and dry all items thoroughly before returning them to your home bedroom.
- Do not place coats, backpacks, or purses on beds, recliners, or sofas when visiting friends.
- Do not sit on upholstered furniture when visiting friends if you know they have bed bugs or might have bed bugs.

If bed bugs are confirmed:

- Don't panic. Bed bugs can be killed.
- If you are in a rented apartment or home, contact the building manager or owner right away. The longer you wait, the more difficult and costly it will be to get rid of bed bugs.
- If you must control the bed bugs in your home (rather than a landlord or property manager), contact a bed bug control expert. They can confirm if you have bed bugs or not. They also have special control tools and products to use. Follow their instructions very carefully.
- Over-the-counter pesticide products are largely ineffective and may even make the problem worse.
- Use of a vacuum and canister steam machine can be helpful.
- Continue to do the things listed in *"How to Avoid Inviting Bed Bugs to Stay"*; this will help keep populations low.
- Follow the instructions of professional pest control experts.

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Please note some of the photographs have been staged so that the bed bugs could be seen easily in locations in which they are commonly found. Often they are very well hidden and bed bug poop and dirt can make it even more difficult to see them. All photos were provided by the document authors unless otherwise credited.



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