



# Practical Methods Of Controlling Bed Bugs At Home

## Frequently asked questions & how to reduce the number of bites

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*For residents battling bed bug infestations at home.*

### What are bed bugs?

The common bed bug (*Cimex lectularius*) is a parasitic insect that feeds on human blood as people sleep during the night.

### What do bed bugs look like?

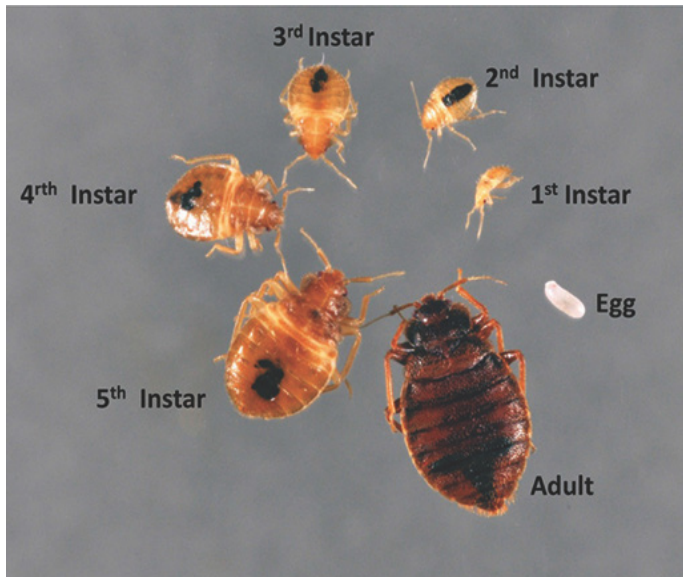


Figure 1. Bed bug life cycle. Photo by Changlu Wang, Rutgers University.

The life stages of bed bugs include the egg and 5 nymph stages before turning into an adult (Figure 1). Adults are about the same size as an apple seed and brown in color. Young bed bugs or nymph stages (1<sup>st</sup> to 5<sup>th</sup> instar nymphs) look like the adults, are smaller in size, and lighter in color. Newly hatched young are about as big as a pinhead. Bed bugs need to feed on blood at least once during each life stage.

There are other insects that look like bed bugs. There are even close relatives of bed bugs that look very similar, but are adapted to feed on other animals like bats and birds. If the bugs in your home are not closely associated with sleeping and sitting areas, they may not be bed bugs.

### How will I know if I have bed bugs?

There are a number of warning signs that indicate you may have an infestation of bed bugs. These include:

- Finding itchy bites, welts or bumps on your skin. Bites are more common on skin that is exposed while you sleep.
- Dark brown spots in the folds of bedding and along mattresses edges.
- Blood on bed sheets and pillowcases.
- Insects crawling on bedding, or clusters of insects along mattress creases and folds.
- Dead insects, exoskeleton molts, or eggs on, or in cracks and crevices close to resting areas.
- Confirmed identification through a professional or Cooperative Extension.

### Where do they come from?

Bed bugs can arrive in a home in several different ways. The most common ways are:

- Bed bugs can be accidentally brought into a home on secondhand (or rented) furniture or secondhand clothing. **Avoid bringing in discarded mattresses, beds, or other furniture.** Wash all secondhand clothing or bedding before use.

- Bed bugs may arrive with overnight guests who stay in a home.
- Residents staying in hotels, college dormitories, boarding schools or other homes can bring bed bugs home with them when they return.
- Children returning home from summer camps, sleepovers, or other homes can bring bed bugs home when they return.
- If you share a common wall or corridor with a neighbor, bed bugs can move between apartments by moving through wall voids, and along corridors.

## Did I get bed bugs from my pet?

Bed bugs prefer to feed on humans, although they will take blood meals from other animals if humans are not available. However, bed bugs are not generally introduced into homes by pets.

## Will I get sick if I am bitten by bed bugs?

Bed bugs can cause anxiety, sleeplessness, itchy bite reactions, and financial hardship, but are not known to transmit germs that cause illness under normal living conditions.

Since 2001, residential bed bug cases in the United States have been increasing. The over-use and improper use of retail pesticides and other chemicals by residents trying to control bed bugs has also increased. Unfortunately, there are a significant number of documented cases when a resident has accidentally caused themselves and/or family members harm through the misuse of pesticides.

Data regarding resident response to bed bug infestation was collected between 2007 and 2011 from individuals by phone, email, and through educational events.

- The two most commonly used pesticide tools used by residents battling bed bugs were total release foggers (bug bombs) and aerosol sprays purchased from shops or the internet. **Unfortunately, neither foggers nor aerosol sprays alone have proven useful resolving bed bug infestations.**
- In one resident training event 9% of the audience had applied gasoline, and more than 20% had applied flammable chemicals to bed mattresses. **This is highly dangerous, and a number of in-home fires have resulted.**
- 19% of people had attempted non-chemical control methods. **Laundering and vacuuming are both very helpful in reducing the number of bed bug bites on residents.**
- 89% of residents living with bed bugs indicated extreme stress, 100% indicated some level of anxiety. **Living with bed bugs can be very stressful.** People have to

cope with bites, itchy reactions, and sleeplessness; have concerns about children and elderly dependents; may have to discard belongings; deal with costs involved in being held responsible for eradication. All of these factors contribute to stress. The person responsible for covering costs depends upon the type of housing they are living in. Residents may not be responsible for control cost.

## What is the best way to get rid of bed bugs?

It is best to work with a licensed and experienced pest management company that uses an Integrated Pest Management (IPM) approach to control bed bugs. The earlier you call a pest management company, the faster and cheaper the remediation process will be.

Not all residents can afford the service costs. An increasing proportion of society now focus on reducing bed bug bites to a minimum, and have given up on eradicating the pest from their home. This is nothing to be ashamed of and no one is to blame.

## What can residents do to avoid bed bugs?

- Avoid used mattresses/box springs, bedroom furniture, or stuffed furniture. If the use of rented or used furniture is unavoidable, carefully inspect and clean items before moving them in (Figure 2).



Figure 2. Carefully inspect and clean used furniture or other items before moving them in your home.



Figure 3. If bedding and other items are taken to a childcare facility, school, home, hotel/motel or shelter, wash and dry all items thoroughly as soon as you return home.



Figure 4. Place bed bug traps/interceptors under bed and sofa legs. Check them regularly. Inspect light colored bed linens for blood spots.

- Avoid moving bedding in and out of other homes. If bedding is taken to a childcare facility, school, home, hotel/motel or shelter, wash and dry all items thoroughly as soon as you return home (Figure 3).
- Do not place coats, backpacks or purses on beds, recliners, or sofas when visiting friends or family. Items placed on a hard surface are less likely to acquire hitchhiking bed bugs.
- Try to avoid sitting on upholstered furniture when visiting friends or family, if you know they have bed bugs or may have bed bugs. If this is unavoidable, wash and dry your clothes as soon as you return home. Do not forget to inspect shoes and bags.

## Monitoring your own home

- Visually inspect beds, chairs and sofas regularly for clusters of insects. Pay special attention to seams and crevices where bed bugs hide. Early introductions can be eliminated quickly and cheaply.
- Place commercially available bed bug traps/ interceptors under bed and sofa legs. Traps/ interceptors should be checked every 1-2 weeks (Figure 4).
- Use light colored bed linens and inspect regularly for blood spots (Figure 4).

## What can residents do to reduce bed bugs and bites in a home?

- Launder bed sheets and clothing regularly. Washing does not kill bed bugs, but clothes dryers are very effective at killing the insects. Many non-washable items can still be heated in a clothes dryer or dry-cleaned safely.
- Place items that cannot be exposed to heat in a household freezer for 4 days (Figure 5).



Figure 5. Place heat sensitive items in a household freezer.



Figure 6. Wrap heavily infested items in plastic or furniture bags before moving them outside for disposal. Destroy or mark bed bug infested items so people are less likely to take and re-use them.



Figure 7. Use a steamer to clean mattress and furniture.

- If disposing of heavily infested items, wrap the items in plastic or furniture bags before moving them outside. Destroy or mark items so people are less likely to take and re-use them (Figure 6).
- Steam clean mattresses and furniture (Figure 7).
- Vacuum mattresses, box springs, bed frames, headboards, furniture, floor areas, and floor-to-wall





Figure 8. Vacuuming removes bed bugs and eggs. Vacuum mattresses, box springs, bed frames, headboards, furniture, floor areas and floor-to-wall skirting board areas. Double-bag vacuum contents and dispose of bags in outdoor garbage receptacles.

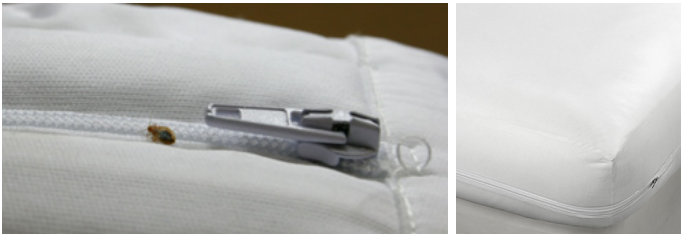


Figure 9. Install bed bug encasements on mattress and box springs.



Figure 10. Store suitcases and luggage in a garage or outdoor storage cupboard.

- Reduce clutter around bed and sofa areas. Seal cracks and crevices where bed bugs can hide.
- Install bed bug encasements on mattress and box springs (Figure 9). Encasements are covers that are designed to fit around mattress and box springs securely, preventing bed bugs from moving or biting through the covering. Most beds do not need to be discarded.
- Pull the bed away from the wall, and place bed bug interceptor traps (or glass jars with talcum powder in) under bed and furniture legs.
- Remove box spring valance and ensure that bedding does not touch the floor.
- Store suitcases and luggage in a garage or outdoor storage cupboard (Figure 10). If this is not possible, wrap them in large plastic bags.
- When returning from a trip, unpack suitcases outside the home. Bag the clothing to avoid spreading bed bugs around while transferring clothes into the washing machine. After washing, dry items in a clothes dryer **completely** before putting them away. Line drying will not kill bed bugs.

For more information about bed bugs go to:

<http://westernbedbugipm.ucanr.edu/>

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skirting board areas (Figure 8). Double-bag vacuum contents and dispose of bags in outdoor garbage receptacles (Figure 8). Store vacuums in garages or external storage areas.

- Many over-the-counter products do not work well to control bed bugs. Once a home is infested, killing the bugs you can see will not eliminate an infestation. Vacuuming removes bed bugs and eggs. **Do not spend money on aerosol spray pesticides and bug bombs, save up and get a vacuum cleaner.**

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## Literature

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