

# BED BUGS

The common bed bug (*Cimex Lectularius*) is a wingless parasite that feeds on the blood of humans and other animals. Bed bugs use their sharp beaks to pierce the skin of the host and inject a fluid that numbs the host and also makes it easier for them to feed. This fluid causes the skin to become swollen and itchy.



Bed bugs are most active at night. They often bite people who are asleep or sitting still for an extended period of time.

## Description

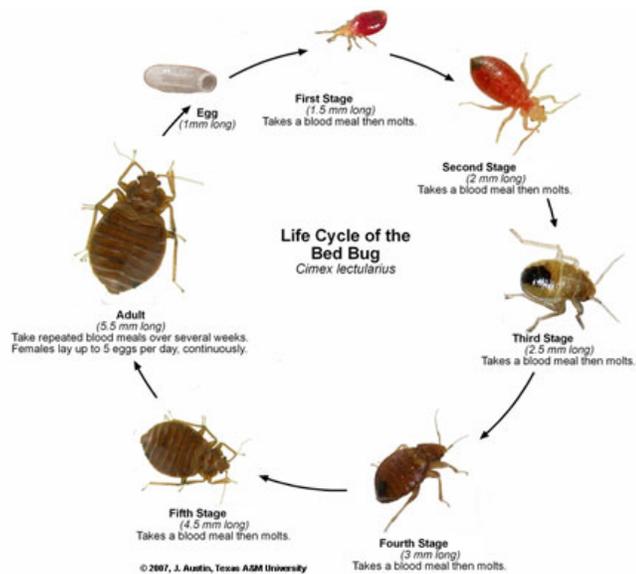
A mature bed bug is an oval-bodied insect, brown to red-brown in color, wingless, and flattened from top to bottom. Unfed bugs are 1/4"-3/8" long and the upper surface of the body has a "banded" appearance. A bug that has recently fed is swollen with blood and dull red in color.

## Life Cycle

Bed bugs change their form as they grow. The young are called nymphs. Nymphs pass through five stages before they become an adult. They must obtain a blood meal at each stage. Nymphs begin to feed as soon as they can locate a host.

Adult bed bugs lay their eggs in batches of 10 to 50 in crevices of bed frames, floors, walls and other sites. Fresh eggs are coated with a sticky substance that causes them to adhere to any object they touch. The nymphs begin to feed as soon as they can locate a host.

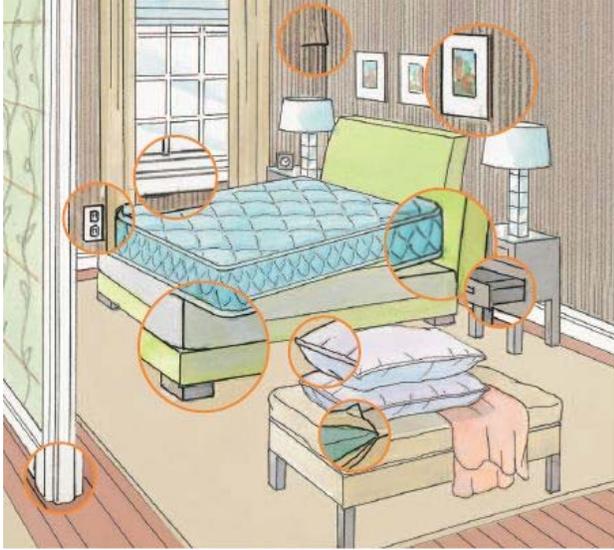
Bed bugs feed for a period of 3 to 5 minutes, after which they are engorged with blood and drop off the host. They crawl into a hiding place and stay there for several days while they digest the blood. When hungry again, they emerge from their hiding place in search of a host. If no host is available, the new nymphs may live for several weeks in warm weather, or several months in cool weather. Adult bed bugs may live up to a year without food.



## Controlling Bed Bugs

Action should be taken at the first sign of a problem. The longer an infestation goes on, the more difficult and costly it will be to control. The best way to get rid of bed bugs is to hire a professional pest management company with experience in bed bugs. Ask for references if needed. Unfortunately, professional treatment can cost upwards of a thousand dollars. If your only option is to provide treatment yourself, the following methods described below are currently used for bed bug control.

## Inspect the Area



You can often find bed bugs by looking for black or brown spots of dried insect excrement on surfaces where the bed bugs rest. Eggs, eggshells and cast skins can also be found around resting places. Areas include but are not limited to:

- mattresses and box springs
- night stands and dressers
- curtains
- window and door frames
- pictures and picture frames
- loosened wallpaper or peeling paint
- hard and upholstered furniture
- behind baseboards and electrical outlets
- places that provide a dark, narrow crevice

## Removing Clutter

Bed bug infestations are not related to how clean you keep your house or apartment. Still, you can increase your chances of getting rid of bed bugs by reducing the areas where bed bugs can hide.

## Vacuuming

Routinely vacuum cracks and crevices to remove bed bugs and eggs. You should also vacuum mattresses before you purchase mattress encasements (see below). Vacuums do not kill bed bugs or their eggs, so be sure to empty the bag or canister into a sealed trash bag after you vacuum.

## Mattress Encasements

It is not a good idea to throw out your mattress at the first sign of bed bugs. Bed bugs will follow you wherever you sleep and the cost of a new mattress is money you could spend to hire a professional pest management company. Bed bug encasements can be used to protect both mattresses and box springs. Encasements reduce hiding spots and make it easier to detect an infestation. Be sure to check the encasement from time to time for any rips or tears.

## Disposal of Infested Items

You will not solve your bed bug problem by throwing away infested items. If you discard your belongings at the first sign of bed bugs, your new belongings may also become infested. If you decide to discard a piece of furniture, you can help prevent others from becoming infested by defacing the item before putting it out with the trash. For example, you can cut, tear, or spray paint the item, or simply post a sign that the item is infested with bed bugs.

## Cleaning

Routinely cleaning up blood spots will not only provide a more sanitary environment but will also make it easier to detect new evidence of bed bugs. General cleaning will also remove bed bugs and eggs. Cleaning can also help you to distinguish between roaches and bed bugs. Bed bug excrement will smear reddish brown before washing away.

## Laundry

Laundering items on the hottest setting will kill bed bugs and eggs. Items should be allowed to dry on the hottest setting for at least 20 minutes after they appear to be fully dry. Pillows, comforters and other thick items may take longer. After laundering, store items in airtight bags to prevent re-infestation.

## Liquid Pesticides

Liquid pesticides labeled for use on bed bugs can be purchased at most local pest control or hardware stores. These liquids work best as a contact killer and will not work on hard-to-reach areas like baseboards where bed bugs may hide deep in a wall void.

## Dusts/Powders

Dusts/powders work by removing the waxy coating that protects a bed bug's exoskeleton. If bed bugs are hiding deep in a wall void, dusts/powders work best.

You can use two types of dusts/powders:

1. Silica w/Pyrethrins: This is the fastest acting and most effective treatment. Studies have shown these dusts to start working in as little as 24 hours after exposure.
2. Diatomaceous Earth: This contains no pesticides and has shown to produce a mortality rate of >90%. This product can take as long as 10 days to two weeks to work.

\* Note: Proper application is essential. Dusts should be applied in a fine layer to avoid clumping.

## Steam

Steam treatment kills bed bugs and their eggs with little exposure and leaves behind no residues. Steamers should be worked at a rate of 20 seconds per linear foot. "Wet" steam should not be used in walls because it could cause mold growth.

## Freezing

Bed bugs can survive extreme temperatures. Placing infested items outside during the winter months has proven to be ineffective. It is not recommended that you perform this type of control.

## Ambient Heat Treatment

This type of treatment requires the use of fans and a heat source to heat a space to a minimum of 120 degrees F. This treatment will kill bed bugs and eggs if performed properly. Heat treatment can be performed on the entire home. Portable heating boxes can be used to heat specific items.

\* Note: Turning up the thermostat in your home and/or wrapping items in plastic and placing them out in the sun will NOT heat the area to the recommended temperature.

## Foggers

**DO NOT** use a fogger for bed bug control. Foggers will spread the insects within your home and will also spread to neighboring properties, making it harder to get rid of the bed bugs.

## Monitors

Monitors are an important tool for early detection of a bed bug infestation. Moat style interceptors can be placed on the legs of furniture to trap bed bugs looking for a meal. Monitors are more effective than visual inspection for estimating numbers and detecting infestations.

## Bed Bug Bites and Other Bites of Arthropods

Bug bites are usually the first sign that people notice when they have bed bugs. Reactions to bites can vary widely. Bites can range from blisters and pustules to no reaction at all. Reactions to bug bites may take as little as a few minutes to as many as 14 days to appear.

It is very hard to look at a bug bite and know for sure if the bite came from a bed bug or another insect. A proper inspection is needed to confirm if your home has bed bugs.

### For more information about bed bug control:

Centers for Disease Control & Prevention: <http://www.cdc.gov/nceh/ehs/topics/bedbugs.htm>

Environmental Protection Agency: <http://www.epa.gov/bedbugs/>



Vector Control Services  
Environmental Health Services  
111 W. Hunting Park Avenue  
Philadelphia, PA 19140  
(215) 685-9009  
[www.phila.gov/health](http://www.phila.gov/health)