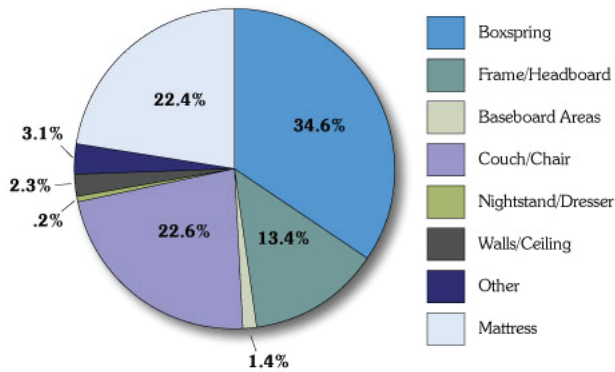


## Where to look for bedbugs

- Mattress seams and inside box springs
- Joints in hardwood floors
- Behind picture frames
- Crevices behind moldings
- Joints in furniture and bed frames
- Electrical outlets
- Behind loose wallpaper

## BED BUG HIDING SPOTS



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

## What to do if you have bed bugs

To achieve effective control of bed bugs, a pest management professional should be brought in. While cleaning, sweeping, scrubbing, and laundering may help reduce bed bug populations, it is unlikely that it will eliminate them. It is also helpful to caulk holes and cracks in walls, floors, and around pipes. Enclosing mattresses and boxsprings in seamless mattress covers designed for bed bugs has also proven helpful.

## Myths

### Bed bugs can fly

**FALSE!** Bed bugs do not have wings and therefore are unable to fly.

### Bed bugs live exclusively in mattresses

**FALSE!** Bed bugs can be found on virtually any surface including: mattresses, chairs, couches, walls, ceilings, and carpet.

### Bed bugs prefer unsanitary, urban conditions

**FALSE!** Bed bugs are nondiscriminatory and can be found from the ritziest of hotels to homeless shelters. Because effective bed bug treatments are expensive, bed bugs may be more commonly found in lower income areas.

### Bed bugs transmit disease

**FALSE!** While bed bugs have the ability to cause sleeplessness and anxiety, they are not capable of transmitting diseases to humans. Their bites, however, may lead to secondary infections.

### You can spray bed bugs away

**FALSE!** Spraying for bed bugs with over-the-counter insecticides is not an effective means of control. Chemical treatments by homeowners rarely eliminate bed bugs and could cause the bugs to move to another room of the house or apartment unit.

## Things to remember

Bed bugs do not spread disease

Avoid used furniture and mattresses

“Do it yourself” treatments are normally not effective and a professional should always be called in.

For more information, visit: [www.in.gov/isdh/24955.htm](http://www.in.gov/isdh/24955.htm)

Photo credit, front cover: Doug Ginder, ISDH



# BED BUGS:

*Biology, Detection,  
Avoidance and Control*



Indiana State  
Department of Health

## History

Bed bugs were introduced into the Americas in the 18th century by way of ships, and by the 20th century were considered to be one of the top pests in homes. When the insecticide DDT was introduced in the 1940s, bed bugs went from being a major pest to a rare pest. However, DDT was banned in the United States in 1972 due to concerns about harmful effects on people and the environment. Bed bugs were also starting to show some resistance to DDT. Today there has been a resurgence of bed bugs in the United States, and they are found in all 50 states.

## Life Cycle

- A bed bug goes through simple metamorphosis, meaning there are five nymphal or immature stages that occur before they become adults.
- Each nymphal stage must have a blood meal to molt and move onto the next stage.
- The nymphal stages look like the adults except for size and color.
- Progression from egg to adult can take place as quickly as 21 days. However, most of the time it takes between 5 and 8 weeks.
- The adult female, once she has fed and mated, will lay 5 to 7 eggs per week and around 200 to 500 in her lifetime.



*Bed Bug Life Cycle*

*Photo credit: John Obermeyer, Purdue Extension Entomology*

## Identification

Bed bugs can be identified by their shape, size, and color

- **Broad oval-shaped body**
- **Wingless**
- **Adults 1/4 inch long**
- **Piercing, sucking mouth parts**
- **Adults are a dark reddish-brown**
- **Nymphs that have just molted are straw-colored**
- **Nymphs that have fed are crimson**

## Feeding habits

Feed mainly at night but will feed whenever people are sleeping

- Humans are the preferred host
- Peak feeding time before dawn
- Adults and nymphs both feed on humans
- Bites are painless, but may leave itchy welts
- May inflict multiple bites when feeding
- Some people may have no bite reaction at all



*Bed Bugs After Feeding*

*Photo credit: Lihua Lü*

## How Bed Bugs are Spread

Bed bugs are most commonly spread by hitchhiking on clothing, belongings or used furniture. They are capable of crawling onto you or into your belongings when you are in places that are infested with bed bugs. When you return home, they may then infest your home.

### Hitchhiking commonly occurs via:

- **Used bedding**
- **Luggage/purses/book bags**
- **Used furniture**
- **Clothing**

Upon returning home from a place suspected to harbor bed bugs, place clothes and belongings in dryer on high heat for 30 minutes to kill adults, eggs and nymphs. Luggage should also be inspected on return prior to bringing it into the house.

### Signs of an infestation:

- Fecal spots on mattress seams, box springs, furniture, etc.
- Shed skins in areas where they hide
- Blood spots on bedding
- Sweet, musty “bug” smell in heavy infestations
- Appearance of the bugs themselves



*Photo credits, left to right: Lee Green, ISDH; Bryan Price, ISDH; Lee Green, ISDH*