

Bed Bug Prevention

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Bed bugs are very well adapted to living with humans; in fact, we provide everything they need to survive well. They get food and water from our blood. They live in cracks and crevices in and around the bed and other locations where we sleep at night.

If you live alone in a single-family home; don't go anywhere, do anything outside your home, never buy used furniture, and don't allow visitors into your home, it's unlikely you'll ever get bed bugs. That's because bed bugs are hitchhikers, traveling from infested places to other locations in/on objects people move from place to place.

In understanding how to prevent bed bugs, it's important to recognize locations or situations where you are most at risk of picking up bed bugs. It is also helpful to recognize locations where the chance of encountering bed bugs is very low. By recognizing these differences, we can still go about our regular activities, taking precautions where it makes the most sense and not worrying about the improbable.

People who live in multi-family dwellings or travel a lot are at greater risk of getting bed bugs because these dwellings are more likely to be infested with bed bugs. It is because the large number of people who live or spend time there. Bed bugs are not innately more attracted to apartments, dorms, retirement homes, motels, or hotels. *It is simply a matter of probability.* The more people who live in, or frequent,

a building, the greater the chance someone will bring them inside. Once inside a high-density dwelling, bed bugs can spread between units, especially if infestations are unrecognized and untreated.

Tips for Travelers

If you live in a single-family home, the most likely way you will encounter bed bugs is when you travel and stay in infested hotels or motels. The greater number of different hotels you stay in, the increased chances you'll have of encountering a room with bed bugs. Currently, there is no way to tell if hotel or motel rooms have bed bugs or not. Expensive hotels are not guaranteed to be bed bug free.

There are websites where people report bed bug infestations of hotels and motels. There is no way to know whether treatments were done to correct the problem. My assumption is no hotels and motels are immune from getting bed bugs and relying on this type of information can give the traveler a false sense of security.

Luggage. Consider using a duffel bag for traveling instead of a suitcase. Many duffel bags can be run through a dryer when you get home.

Check your hotel room. It is a good idea to check the hotel room before you settle in. Put your luggage and belongings in the bathroom while you inspect the room. Look for bed bugs and their droppings, which show up as black spots on fabric, wood, or other places where bed bugs are hiding (see photos). Pack a good, bright flashlight with you. Check the following



Bed bugs prefer tight spaces. Check along the cording of mattresses.



Bed bug spots on the underside of box springs (eggs and bed bug barely visible in crevice).

Photos Barb Ogg, UNL Extension in Lancaster County

locations near or on the bed:

- **Headboard.** Hotel headboards are often hung on the wall with hooks fastened to the wall. It is the most likely location where bed bugs will be found in a hotel room. Lift up the headboard, lay it face down on the bed and examine the back carefully, especially where there are grooves, cracks, or screw holes. Use your flashlight and examine the hooks on the wall. Use a small penknife to run through small cracks you find. If you

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Know how. Know now.



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don't find anything, carefully replace the headboard on the wall.

- **Bed.** Remove bedding, especially looking at the head of the bed and examine for bugs and droppings. Because bedding gets changed with each guest, you are not likely to find bed bugs here, but you'll need to remove it anyway to get to the mattress.
- **Mattress.** After you've removed bedding, examine the mattress and pay special attention to rounded corners, near the cording. Examine the mattress tag, if it still has one. Lift up the mattress from the bed and carefully check for bed bugs and spots between the mattress and box springs.
- **Box springs.** Bed bugs are often found in the box springs. Some box springs have plastic corner guards, check these areas carefully.

To prevent bed bugs from infesting mattresses and box springs, some hotels and motels are encasing them. These encasements often have a zip-lock tie which prevents the zipper from being unzipped. If they are encased, you cannot go any further.

If you find bed bugs or their droppings, you should ask the management for a different room, far away from the infested room. If the establishment says no other rooms are available, you should not stay there.

If everything looks okay, you can settle into the room. However, it's a good idea to take the following precautions:

- Do not place your luggage on the carpeted floor. Use the top of the dresser, a table, luggage racks, or store luggage in the bathroom overnight, when bed bugs are active.
- Be mindful of where you place camera cases, computer cases, purses, or backpacks. Don't store them on the floor and especially not near the bed.

What about sprays, etc? Some enterprising companies have developed and marketed insecticidal sprays for luggage. These sprays are pyrethroid insecticides. Unfortunately, the majority of bed bug populations are resistant to these insecticides. Studies have shown bed bugs do not seem to be repelled by these insecticides either. **We don't recommend using these.**

Do not use any insecticidal sprays on motel or hotel mattresses or box

springs. Mosquito repellents will not work either.

One company is marketing thiamine patches they claim repels mosquitoes and, because bed bugs are attracted to CO₂, they are marketing them for bed bugs also. Research studies show B vitamins (thiamine) don't repel mosquitoes. Therefore, these are unlikely to work against bed bugs either. Remember, if it seems too simple, it probably doesn't work.

Prevent entry into the house.

One other way to prevent bed bugs is to handle your luggage and its contents deliberately when you get home so bed bugs are not introduced into the sleeping areas of the house. This method is a good choice if you cannot examine the hotel room as carefully as you would like. For example, perhaps the motel room's headboard is actually screwed into the wall and you cannot remove it. Or, if you are traveling alone, and the headboard or mattress is too heavy for you to lift by yourself.

When you get home, unpack your suitcases outside the house. This could be in your garage if you have one. Or, it could be in the trunk of your car or on a porch. Remove toiletries you'll need from your luggage, examining them carefully. You can make this easier before you travel, by packing toiletries (shaver, makeup, combs, and brushes) in plastic zippered bags. Some manufacturers make extra, extra large zippered bags, which might be useful for some items.

While you are still outside, remove clothing from luggage and place in a plastic garbage bag and seal with a twist tie. When you are ready to do your laundry, take the garbage bag directly into the house and to the laundry room or Laundromat. Remove clothes from the bag and immediately launder them as you normally would with laundry detergent. Items which cannot be washed, like a wool blazer, can be placed in a medium-hot dryer for 30 minutes. Immediately discard the garbage bag in an outside trash receptacle. Remove the clothing you are wearing and launder it immediately or place it in a dryer for 30 minutes. Or, put your clothing in a garbage bag, seal it

with a twist tie, until you can do your laundry.

Shoes can be placed in a plastic bag and placed in a freezer for a few days. You can dry athletic shoes in a dryer, although it will be noisy. If you have a dryer with a drying rack, you can dry leather shoes and other items as well. If your shoes have laces, you can tie them together and catch the knot in the dryer door, with the shoes inside the dryer. It will dry them without the noise.

By now everything should be out of your luggage. Instead of bringing your luggage into the house, store it outside. Some people are storing their luggage in their garage. In the winter, you may be able to kill any potential bed bugs by leaving empty luggage outside on a porch for a few days. In the summer, you can kill bed bugs if you place it in your car where interior temperatures reach 120°F. If you must bring it inside, place it in a large garbage bag and seal it with twist ties. Store it in an area as far away from the sleeping areas as you can.

If you are using a canvas duffel bag for travel, these can be run through a dryer.

What about computer cases and purses? These cannot be run through a washer or dryer. Purses can be placed in a freezer, however. At a recent bed bug program, a woman gave me a dead bed bug in a plastic zippered bag and told me it was found inside a cell phone. Do not underestimate locations where bed bugs can be found.

Computer cases can be placed in a sealed plastic bag with Nuvan™ Prostrips. Place the bag in a warm location with a low relative humidity for 48–72 hours. Nuvan (dichlorvos, DDVP) is an organophosphate insecticide with high vapor pressure which makes it a fumigant. It was once marketed under the trademark, Vapona™. This active ingredient is not considered safe for people to breathe for extended periods of time so it should never be used in living areas of a home. This product has been tested and is effective against bed bugs. Luggage can also be fumigated in a sealed plastic bag with Nuvan™. Contact a pest control company to obtain this product.

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For frequent travelers: You might want to invest in a portable mobile heater for suitcases and other items which can't be washed/dried. These devices surround suitcases and heat them to 120°F for up to six hours. An example is the PackTite unit which runs about \$300.

Other Prevention Methods

There are several other ways bed bugs can be introduced into homes. They include:

- Used furniture. Don't even consider picking up furniture sitting by a dumpster or at the curb. If someone is throwing it away, there is probably something wrong with it. I have heard of people buying beds or chairs on Craig's List which turned out to be infested with bed bugs. Even if it looks okay, you can't always see the bed bugs inside. This is especially true with overstuffed sofas and chairs. If it is something you "have" to have, store it in the garage or another location away from the house for a period of time. Be cautious with rent-to-own furniture... you never know where the furniture has been.
- Visitors to your home can bring bed bugs with them. Be particularly cautious if they have traveled recently or if they live in multi-family dwellings. This includes college students coming home for summer break. If family members are not insulated, run their clothing through the dryer

before they settle into the house.

- If you have a job where you go into other people's homes, you could accidentally bring bed bugs home with you. Don't take any nonessential items into other homes. Don't sit on upholstered furniture; the kitchen table is a better choice. When you get home, remove clothing and run through a dryer for 30 minutes.
- Be careful with your coats and jackets. Never leave them on someone's couch or bed.
- What about buying clothes? If you are buying new clothes, you don't need to do anything about them. Run thrift store or garage sale clothing through the dryer (30 minutes) when you get home. Or freeze them.

What About Other Locations?

There have been news reports of bed bugs in office buildings, libraries, movie theaters, and other locations. Should people be so worried they stop doing ordinary activities? One way to think about this is to understand the difference between a primary and secondary bed bug infestation.

Primary infestation. A primary infestation is a location where people sleep at night (home, apartment, nursing home, hotel). Because bed bugs have unlimited access to food (us) at night, a bed bug infestation can become very large. It will double in less than three weeks. At some point, the infestation will become so large, bed bugs can't find good hiding

places. They will start showing up on sheets, on the wall, and move to other bedrooms if people sleep there. Bed bugs may crawl onto clothing or into pockets, in backpacks, purses, and diaper bags. The unfortunate person or child will inadvertently transport them to work, school, and other places where he or she goes.

Secondary infestations. These are places where people do not sleep overnight, but they are locations where bed bugs have been transported from primary infestations. If you think about all the different places people work or visit, you'll soon realize it is *possible* for just about any location where people work or spend time, including transportation vehicles (buses, trains, airplanes), to acquire bed bugs. In these locations, bed bugs do not have unlimited food at night and do not survive very well. If you find them, you will notice they are single bugs in scattered locations. If a person sits down on the chair where the bed bug is hiding, it may attach to clothing or backpacks and be taken to other locations. The chance of this happening in any one particular setting is very small.

The bottom line: people should take precautions where there is the greatest risk of encountering bed bugs (like hotels/motels) and not spend time worrying about locations where risks are low.