

**Taken from the Toronto Public Health Bed Bug Fact Sheet :
Cornell University/New York State Integrated Pest Management Program
2010**

http://www.nysipm.cornell.edu/whats_bugging_you/bed_bugs/bedbugs_faqs.asp#diaget

What Bed Bugs Are And What They Do

1. What are bed bugs?

- What does a bed bug look like?
- Can I see bed bugs?
- Do bed bugs fly, jump or burrow into skin?
- What other names do bed bugs have?

If you ever heard that nursery rhyme "Good night, sleep tight, don't let the bed bugs bite," you know these critters bite in the night. But most of us never heard of them in real life until now.



What do bed bugs look like? Briefly:
1/4" long, oval, flat, 6 legs, and reddish-brown.

Some fast facts...

- Life Stages: Eggs hatch into nymphs. Newly hatched nymphs are tiny—about 1/16th of an inch.
- Nymphs—which look like small adults—become adults in 5 weeks. They go through 5 molts to reach adult size—meaning they shed their old, smaller skin 5 times. They must feed before each molt.
- Females can produce 5-7 eggs per week, laying up to 500 in a lifetime.
- Bed bugs grow fastest and lay most eggs at about 80°F.
- They feed only on blood.
- They feed when people are sleeping or sitting quietly, often when it's dark.
- They seek shelter in cracks and crevices when not feeding.

- They poop out “blood spots.” Spots look like dots made by a fine felt-tipped marker. You’d see them near where they fed and near their hideouts.
- Adults can live over a year without a meal.
- Adults, nymphs and eggs can survive sustained heat and cold if given time to adjust.
- Can be found in the cleanest of clean places. But clutter makes them harder to get rid of.
- They have no “grooming behavior”—meaning that insecticides meant to be swallowed by roaches and flies won’t work on bed bugs.

A little more...

- **Anatomy:** A bed bug has 6 legs. Its antennae point forward and are about half as long as the body—not longer. Its head is broadly attached to its body and it has no wings. Eight legs indicate a tick or mite. Six legs and long antennae with two spikes coming off the back (cerci) might be a roach nymph. Carpet beetle larvae have hairs all over their bodies. Carpet beetle adults have two hard wings.
- **Color:** A “drop of blood with legs” is probably a recently fed bed bug. It will be red, plump, and oval. After it digests its meal, it’ll be mahogany-colored, round, and flat. Unfed nymphs are tan. Eggs are oval, white, and stick to whatever they’re laid on.
- **Size:** You can see the adults—they’re about 1/4” long. The trick is finding their hiding spots. They can wedge themselves into any crack or crevice. If the edge of a credit card can fit, so can a bed bug. Eggs and just-hatched nymphs are tiny: 1/16” (1mm) long—the size of the “R” in “LIBERTY” on a penny. They’ll plump up after feeding—just like a mosquito.
- **Behavior:** Bed bugs crawl—scurrying into dark, tight spaces to hide—they move as fast as an ant. They can’t jump or fly and you’ll never find them burrowing into your skin. If the insect you have came out on its own accord at night when the lights were out near the bed or a couch, it was probably a bed bug looking for a meal. Bed bugs aren’t social insects like ants, so they don’t need a colony. But while they group together in good hiding spots, loners could be hiding elsewhere.

More on bed bug biology (and yes, it matters): they have an odd way of making babies. It’s called traumatic insemination. Males simply stab females in the side with

their reproductive organ and inject their sperm, which makes its way to her eggs. Females recover from one mating, but several matings increase the chance of infection and death. Females may try to get away from groups of males and go off and hide alone to avoid being stabbed to death. If you don't find those females, they'll keep laying eggs and could restart an infestation: a good reason to get a pest management professional (PMP) involved. Good PMPs know how to find them and how to target every hiding place without harming people.

If the bugs you think are bed bugs come in the spring but go away during the summer they might be bat bugs. Bats in attics hibernate elsewhere during the winter. Bat bugs that are left behind and chill out for the winter, literally, but if warm weather comes before the bats return, they may seek another host to tide them over. In this scenario, inspect the attic and external wall voids for bat guano and bugs in cracks and crevices. Have a professional treat these roosts as well as the rooms bed bugs were found in. To prevent bat re-entry, repair all holes 1/4" or larger that lead to the outside.

Bed bugs are also known as: *Cimex lectularius*, chinchas de camas, chintzes or chinchas, mahogany flats, red coats, crimson ramblers, wall lice, the bug that nobody knows, lentils on legs, animated blood drops.

2. What can bed bugs do to me?

- Are bed bug bites worse for children or the elderly, compared to healthy adults?
- Can I get a disease from bed bugs?

The serious negative effects of bed bugs are more mental than physical, but the itchy bites can't be ignored either.

The mental effects are stress and lack of sleep. (And then there's delusory parasitosis—meaning the bugs really are gone, but you can't shake the feeling that they're still there.) Even if the thought of sleeping with bed bugs doesn't keep you up at night, the time and money it takes to get rid of them can stress you out.

Bed bugs can be a public relations nightmare. You'd hope customers would respect a proactive hotel, motel, or landlord who tried to educate them before a problem came in, but that's rarely the case. Simply the mention of bed bugs can deter customers.

And householders worry what friends, family, and neighbors will say if their problem becomes known. Bed bugs aren't associated with filth or social status, but many people think they are.

Bed bugs aren't known to transmit disease. And some people don't even get marks when bit. But scratching bites can lead to a secondary infection. Resist the urge to scratch. People with health problems and children are more at risk for infection because their immune systems are compromised or they can't stop scratching.

3. What does a bed bug bite look like?

- How do bed bugs feed?
- How do I tell if my bites are caused by bed bugs?
- Why do I get bites, but my significant other doesn't?

You can't describe the bites as looking only one way. Some look and feel like mosquito or flea bites. Some people don't react at all. On the opposite extreme, others get big itchy welts that take two or more weeks to heal. There's a myth that bed bug bites occur in threes ("breakfast, lunch, and dinner"), but it's not true. Bites can occur singly, in clumps, or in a line. Bites can show up within hours—or two weeks later. Confirming an infestation on bites alone is impossible. You need evidence: a bed bug.

Bed bugs usually feed while people sleep, about an hour before dawn. But if they're hungry and given the opportunity, they feed anytime. Feeding itself is painless—the bed bug's saliva numbs the skin and makes the blood easier to drink. But later, many people react to the saliva, getting itchy bumps or rashes. After feeding for about five minutes, drawing only a drop or two of blood, bugs return to their hiding places. Although bed bugs can live for over a year without feeding, they typically seek blood every five to ten days.

The only way to know for sure what bit you is to find a bug and get it identified.

Bed bugs live off only blood—like mosquitoes do. They probably prefer to feed on people. But if people move out, bed bugs can survive by feeding on rats or mice—so control these pests, too. They're attracted by warmth and the presence of carbon dioxide—what we animals breathe out. They usually feed about an hour before dawn, but given the opportunity, they may feed at other times of day or night.

Remember—not everyone reacts to bed bug bites. (Not everyone reacts to poison ivy, either.) You could get an itchy rash while your home companion gets—nothing.

If you think bed bugs bit you, have a PMP do a thorough inspection to determine whether an arthropod is in your living space, or send samples to a diagnostic lab.

4. Where did bed bugs come from?

Bed bugs may have evolved when a close relative, the bat bug, switched to feeding off cave-dwelling humans. The ancient Egyptians, Greeks, and Romans wrote about them. They were part of many peoples' lives in the U.S. and around the world before World War II.

Then DDT came along. DDT seemed wonderful at the time. Unlike most of the insecticides sold in stores today, DDT had a lasting effect—a long residual effect. Insects died when they crawled where DDT was used, even if it had been there for weeks. Though most homeowners used DDT for large pests like cockroaches, it did the bed bugs in too. When the bed bugs came out to feed, there was something there to kill them.

Modern furnishings and appliances helped too. Bed bugs don't care if a home is clean or messy. They just like good hiding spots—and food. When modern furniture came into style they had fewer hiding spots. Home appliances such as washing machines and vacuums helped keep them at bay. Bed bugs were a rarity in the US from the early 1950's through the late 1990's. A whole generation of people grew up who'd never seen one.

By the mid 1970's insecticides like DDT, which were blamed for environmental problems, were on the outs. The pest control industry began to use the environmentally friendly approaches common today. Using noninsecticide traps and monitors, blocking entry into homes, and using pest-specific, least-toxic insecticides became the staples of an integrated pest management approach.

Bed bugs had been off the radar for so long they were almost forgotten. By the time anyone noticed, they were back in a big way. Right now there are no traps or monitors proven to detect a population when it's still small. And since bed bugs travel on things such as luggage, souvenirs, and furniture we bring into our homes, it's hard to block their entry.

Fortunately, some modern insecticides work well. Because these insecticides break down quickly—making them safer for humans—they may not be around to kill the bed bugs that hatch from eggs laid before the insecticide was applied. Two or more carefully targeted applications are the best way to eliminate bed bugs. Leave insecticides to the professionals—even the right ones, used incorrectly, can scatter bed bugs to other rooms. It would take an extremely capable and dedicated person to learn and do everything necessary to get rid of bed bugs on their own.

How to Find Bed Bugs

5. Where do bed bugs live?

- Are bed bugs a sign of poor sanitation or hygiene?
- Where do bed bugs hide?

Any place with a high turnover of people spending the night—hostels, hotels near airports, and resorts—are most at risk. But the list continues... apartments, barracks, buses, cabins, churches, community centers, cruise ships, dormitories, dressing rooms, health clubs, homes, hospitals, jets, laundromats, motels, motor homes, moving vans, nursing homes, office buildings, resorts, restaurants, schools, subways, theaters, trains, used furniture outlets... Bed bugs don't prefer locations based on sanitation or people's hygiene. If there's blood, they're happy.

Bed bugs and their relatives occur nearly worldwide. They became relatively scarce during the latter part of the 20th century, but their populations have resurged in recent years, particularly throughout parts of North America, Europe, and Australia.

What about in your home? Most stay near where people sleep, hiding near the bed, a couch or armchair (if that's where you snooze)—even cribs and playpens. Their flat bodies allow them to hide in cracks and crevices around the room and in furniture joints. Hiding sites include mattress seams, bed frames, nearby furniture, or

baseboards. Clutter offers more places to hide and makes it harder to get rid of them. Bed bugs can be found alone but more often congregate in groups. They're not social insects, though, and don't build nests.

How infestations spread through a home or within an apartment building differs from case to case. Inspect all adjacent rooms. Bed bugs travel easily along pipes and wires and the insides of walls can harbor them.

Before treating, you need to confirm that you have bed bugs. The only way to do that is to find a bug and get it identified.

Look in the most likely places first. We tell you how. If you find one, freeze it for identification or put it in a sealed jar with a 1 tsp. of rubbing alcohol. Then stop looking—you don't want to disrupt the bugs—and call a professional.

6. How do I find out if I have bed bugs?

- Do bed bug-sniffing dogs work?
- How to I check a room for bed bugs?

Have these on hand during the inspection:

- **flashlight**
- **magnifier or hand lens**
- **a vial, pill bottle, or ziplock bag** to hold specimens for identification
- **tweezers or sticky tape** to help grab the bugs
- **gloves** (vinyl, latex, etc.—or even a plastic bag over your hand)
- **knife, index card, or credit card** for swiping bed bugs out of cracks
- **trash bags and tape** for bagging infested items
- **vacuum cleaner** (just in case you find a large group): keep a few for identification and suck up the rest. Since the vacuum bag will have live bugs in it, take out the bag right away. Seal it in a plastic bag and throw it away.

Look for bed bugs in all their life stages: eggs, nymphs and adults. Also look for cast skins and blood spots. But note: blood spots, hatched eggs, and cast skins may be from an infestation that's been dealt with already. Live bed bugs are the only confirming evidence. Use a flashlight—even if the area is well lit—and work systematically. A magnifying glass will help you zoom in on hard to see spots. Start with one corner of the mattress and work around the piping, down the sides, and underneath. Do the same with the box spring. If you own the bed, slowly remove the dust cover (ticking) on the bottom of the box spring and seal in a trash bag. Next, inspect the bed frame. If you can take it apart, do so. Bed bugs could be hiding in the joints.

No bed bugs yet? Work out from the bed in a systematic way (clockwise or counter-clockwise) to the walls of the room. Look in the pleats of curtains, beneath loose

pieces of wallpaper near the bed, the corners and drawers of desks and dressers, within spaces of wicker furniture, behind door, window, and baseboard trim, and in laundry or other items on the floor or around the room such as cardboard boxes. Inspect everything. Any crack, crevice, or joint a credit card edge could fit in could hide adult bed bugs. This routine gives you a systematic approach and increases the chance you'll find evidence early on.

One last way to inspect—about an hour before dawn, lift the sheets and turn on a flashlight. It might lead to a discovery, but this method can also be unsettling.

If you don't find bed bugs but bites continue or you find blood spots on bedding, contact a professional with bed bug experience and have them inspect.

Professional inspection may be done by a person or by a bed bug-sniffing dog and its handler. Dogs have a powerful sense of smell and can be trained to find bed bugs (which do give off an odor). They're best used to find infestations. If used to tell whether bed bugs are gone, they may find old evidence rather than fresh. If you hire a handler and dog, be sure they're accredited.

If you find bed bugs at home, it's best to keep sleeping in the bed—or try to find someone who will sleep there. Packing up to spend time elsewhere could bring bugs to an uninfested area. And the bugs could move to neighboring rooms in search of a meal.

7. How do I have specimens identified?

Put specimens in small, break-resistant containers such as a plastic pill bottle or a zipper-lock bag with 1 tsp of rubbing alcohol in it. Or tape them to a sheet of white paper with clear tape.

First, look at pictures on university websites. If you think it's a bed bug, package it carefully to prevent damage and send to an expert for positive identification. Bed bugs have close relatives: poultry bugs, barn swallow bugs, bat bugs, and tropical bed bugs—to name a few. They too can feed on humans and act like bed bugs do. For accurate identification, send a sample—preferably several adults—to a Cooperative Extension diagnostic lab.

If the critter is, for example, a bat bug, call a professional wildlife control operator to find and remove bats, then prevent their re-entry.

8. How did I get bed bugs in the first place?

Bed bugs come in as stowaways in luggage, furniture, clothing, pillows, boxes, and more when these are moved between dwellings. Moving out won't solve the problem, since bed bugs will just come with you. In fact, while dealing with bed bugs it's best not to sleep away from home. Used furniture, particularly bed frames and mattresses, are most likely to harbor bed bugs. Watch out for items found on the

curb! Because they survive for many months without food, bed bugs could already be present in clean, vacant apartments.

In a few cases, bats or birds could introduce and maintain bed bugs and their close relatives—usually bat bugs and bird bugs.

The source of the infestation determines where your inspection should start. Look through these scenarios and see which fits:

- Only one bedroom: inspect that room first.
- People watch TV or snooze on a couch: check it after inspecting the bedroom.
- A traveler returned home: insects can hide in luggage and then crawl out when it's dark and peaceful—begin where luggage was placed upon returning home.
- A used bed or piece of furniture (bought or from the curb) was brought into the house: inspect it first.
- The problem began after a visitor stayed overnight: inspect the beds that they slept in and where their luggage was placed. Next, inspect the nearest place where people sleep.
- An infestation persists after several treatments by a professional: bed bugs may come through the wall from a neighboring apartment. Inspect rooms that share a wall with a neighbor. (This scenario happens in large apartment complexes and hotels where management didn't get adjacent rooms treated.)
- If the building has a laundry room, inspect it too.
- Home health aides come in frequently: bed bugs may have hitched a ride on their bags.
- Backpacks go to and from school: could have bed bugs. Inspect the bed or couch nearest the spot where backpacks are kept.

How to Prevent Bed Bugs

9. Can I prevent bed bugs with insecticides?

Insecticidal dusts will remain effective if not covered by other dust. As part of the IPM approach, routine spraying of insecticides is strongly discouraged. Bed bugs do not spread disease, but insecticides do pose risks. Only use them when the pest insect is confirmed and the least-toxic steps have been tried. As a preventative measure alternative to insecticides, inspect and clean regularly, keeping bed bug-hiding spots in mind.

10. How can I avoid bed bugs when traveling?

Every traveler should learn about bed bugs. Always inspect before settling into any room. Pack a flashlight (even the keychain LED variety) and gloves to aid in your inspection. The inspection should focus around the bed. Start with the headboard, which is usually held on the wall with brackets—lift up 1 – 2 inches, then lean the top away from the wall to gain access to the back. If you're traveling alone, someone on staff should help. After checking the headboard, check sheets and pillows for blood spots. Next, pull back the sheets. Check the piping of the mattress and box spring. Finally, look in and under the drawer of the bedside table. If all these places are clear, enjoy the night. The next morning, look for blood spots on the sheets—bed bugs poop soon after they feed.

If you find evidence, but no live bed bugs, the evidence may be old and doesn't mean that the hotel is dirty. Tell the front desk discreetly what you found and ask for another room—one that doesn't share a wall with the room you just vacated. Bed bugs are a PR nightmare for the hospitality industry. If you run to a competitor (who's just as likely to have bed bugs) it makes it less likely that the industry will become more open about this issue. Communication is key. Ideally hotels and motels would pride themselves on their bed bug programs and show customers how to inspect to keep all parties bed bug free.

If you can avoid it, don't unpack into drawers and keep luggage closed on a luggage rack pulled away from the wall. Never set luggage on the bed.

11. What can I do if I just got back from a place where there might have been bed bugs?

Laundry your clothes before or as soon as these items are brought back into the home. If you found bed bugs after moving into a hotel room, you could ask the hotel to pay for laundering—and for steam-cleaning your luggage. The hotel may refuse, but it's worth asking. Regardless, once home you should unpack on a floor that will allow you to see bed bugs—stay off carpets! Unpack directly into plastic bags for taking clothes to the laundry. Suitcases should be carefully inspected and vacuumed—freeze if possible.

12. Will bed bugs actually travel on me?

It's unlikely that a bed bug would travel on you or the clothes you are wearing. You move too much to be a good hiding place. Bed bugs are more likely to be spread via luggage, backpacks, briefcases, mattresses, and used furniture.

13. What should everyone know about bed bugs?

YOU CAN STOP THEIR SPREAD

Adults are ¼", reddish-brown and flat. You can see them without magnification.

They like to hide in cracks and crevices.

Inspect sleeping areas—if you find a bed bug, STOP looking and contact a professional.

Do-it-yourself pest control could make bed bugs to spread. Launder and freeze when possible.

Live bugs or eggs may drop off while moving things from one place to another—items with bed bugs should be sealed in a bag before moving them.

Avoid used furniture and items left on the curb—they might have bed bugs!

Tell your friends! Not warning others robs them of the chance to avoid bringing bed bugs into their homes and businesses.

How to Deal With Bed Bugs

14. I have bed bugs. What do I do?

Step back a minute. Because several different kinds of insects resemble bed bugs, specimens should be carefully compared with good reference images and sent to a professional entomologist.

Next: make a plan. We'll tell you how. You want to get rid of bed bugs, limit your exposure to insecticides, and minimize costs. Don't get rid of stuff and don't treat unless you have a plan. A big part of your plan: hire an experienced professional. Trust us, it'll save you time and money in the long run. You'll still have a lot to do—just leave the insecticides to the pros. Working as a team with a professional is the quickest way to get bed bugs out of your life.

Integrated Pest Management (IPM) is the way to go for pest control. It's cost-effective, it works, and it lessens reliance on insecticides. Note: IPM doesn't mean no insecticides. You should call a professional dedicated to IPM so the least amount of insecticides can be used and still work.

Here are the basics of bed bug IPM:

Inspection: ALWAYS inspect. Proper identification helps you know what to do and where to target your efforts. Along with looking, you should write down what you do and see. Use this reporting form to track what you've done. Having a history will help if more people become involved.

Educate yourself: find out about bed bug biology and behavior to become even more effective.

Cultural and Mechanical Control: This makes your home unwelcoming to bed bugs, blocks them from feeding, or at least makes finding them easier. Don't skip these steps and go straight to insecticides. Examples:

- Choose furniture of plain design. A metal chair offers fewer places for a bed bug to hide than a wicker one.

- Don't buy or pick up used furniture.
- Choose light-colored bedding—easier to see insects and blood spots.
- Don't store things under beds. In fact, get rid of clutter anywhere near the bed.
- Use tightly fitting, zippered, bed-bug proof mattress and box spring encasements. Putting them in place ahead of time (proactively) makes bed bugs easier to see since encasements have no piping or tags and they're light-colored. Putting them on during an infestation means no need to throw away the mattress and box spring. But ... check periodically to be sure they haven't torn.
- Vacuum regularly. Use an attachment to get in cracks and crevices.
- Maintain a gap between the walls and your bedroom and living room furniture.
- Seal cracks in wooden floors.
- Repair peeling wallpaper.
- Keep bedding and dust ruffles from touching the floor. Better yet, remove the ruffles.
- When returning from a trip, unpack on a light-colored, bare-wood or vinyl floor keeping an eye out for bed bugs. Put everything that traveled in a warm dryer for an hour or a hot dryer for 60 minutes. Put things that can't be heated in a freezer for two weeks. Everything else ... inspect carefully!
- When you travel, inspect rooms, keep luggage closed and use luggage racks away from the wall—don't leave things on the bed! Take along a traveler's card to guide your inspection.
- See non-insecticidal control for more ideas.

Biological Control: No known biological control agents target bed bugs well enough to keep them at bay.

Chemical Control: Insecticides supplement but don't replace your work. Get a pest management professional (PMP) involved. Licensed PMPs know what products, in what formulations, should be used—and where. PMPs know how to be selective and effective—fewer insecticides used and best results. Any insecticide used should be labeled for the pest and location where it is being used. Many products are not labeled for mattresses.

Hire only professional pest control companies with licensed PMPs who are affiliated with a state or national association. This helps ensure that the company stays up-to-date on the current practices and only uses legal insecticides. PMPs are trained for sensitive situations: people who are ill, children, pregnant women, pets, and more.

They know how to properly apply insecticides. They also know best how to find bed bugs. PMPs will not use illegal insecticides. If you use insecticides but they don't work and then you still have to call in a professional, overall insecticide use will be higher. Plus, what you used could drive bed bugs into new areas—making removal a longer and pricier process.

Monitoring: This involves inspecting regularly to be sure:

- Control is working.
- Bed bugs haven't been brought back in.
- Encasements haven't torn.
- There isn't any way you could improve your cultural or mechanical control.

15. What shouldn't I do when trying to eliminate bed bugs?

- Do I have to throw out my mattress and furniture?

Don't panic. Although bed bugs can be annoying, you can get rid of them if you adopt a well-considered strategy.

Don't put the legs of the bed frame in kerosene or coat them with petroleum jelly. Bed bugs have been known to climb on the ceiling and drop down onto the bed. Plus kerosene is a fire hazard.

Don't depend on thyme oil. Thyme oil may discourage bed bugs, but it won't kill them. Chances are it'll spread, not fix, the problem.

Don't leave the home unoccupied through a winter as a control measure. Bed bugs have adapted to the unpredictable habits of humans. If given time to go dormant—for example, in a vacation cabin that slowly gets cooler, then cold over fall and winter—bed bugs can survive, living without a meal for many months while waiting for humans to return. The quick penetration of killing cold (or heat) is the key to any temperature treatment.

Don't turn up the heat. Exposing bed bugs to 120 °F or more an hour will kill all life stages—and whole-structure or "container heat treatments" do work. But the caution is similar to using cold. High heat must be maintained at every point in the building: the outer walls, deep in the sofa, etc. for the full hour. Professionals enclose the structure, using tools to guarantee that it reaches the right temperature. If you go with a full-structure heat treatment, consider if the heat could damage furniture, appliances, and belongings.

Don't sleep with a light on. Bed bugs feed when hosts are inactive. Usually that's when it's dark—but they'll feed under lights if they're hungry.

Don't sleep in a different room. Bed bugs will move to a neighboring room if they can't find food. And they can live months between meals. Sleeping in a different room, staying at a hotel, or moving in with friends won't solve the problem. And the

chances of carrying the bugs to a new place are good. Keep sleeping in your bed. If you have awful reactions to the bites, try to get someone to sleep in the bed.

Don't throw a bed bug-infested mattress away and buy a new mattress. Buying a new mattress won't solve the problem. Bed bugs hide in more than just mattresses. New mattresses might be transported in the same trucks that pick up used and possibly contaminated ones. If you need a new mattress, wait until the infestation is eliminated before buying a new one. (Remember: A bed bug-proof mattress and box-spring encasement kept in place for 1 ½ years will starve them to death. Inspect often for torn spots in the encasement (and evidence of bed bugs).

Don't dispose of good furniture. Infested furniture can be cleaned and treated. Placing infested furniture (particularly mattresses) into common areas or on the street could spread bed bugs to other peoples' homes. If you're getting rid of infested furniture, deface it: make it less attractive to other people. Paint a picture of a bug on it and write "bed bugs" or "chinchies." Building managers should make sure disposed furniture is in a dumpster or taken to a landfill or waste facility right away.

Don't wrap items in black plastic and leave them in the sun: it needs to get hotter than that to kill bed bugs, and heat needs to evenly penetrate the entire item.

Don't move infested items out of the room without wrapping them in plastic. Bed bugs or eggs could be knocked off into an uninfested area.

Don't apply insecticides unless you fully understand what you are applying and the risks involved. You are legally liable if you misapply an insecticide or apply it without a license to the property of others—including common spaces in apartment buildings. In most cases, landlords, owners and building managers cannot legally apply insecticides unless they are licensed to do so.

16. What do I do with my pets if I have bed bugs?

Pest management professionals (PMPs) have seen bed bugs feeding on pets, but no one knows if they prefer pets. The bugs might get caught in a pet's hair, but they won't live on pets the way fleas do. Still, a pet could carry a bed bug from one room to another.

Since bed bugs rarely feed for more than 10 minutes and their feet don't grip onto hair, Twenty minutes of grooming outside lets you rest at ease. All bedding and cage items should be inspected and washed and dried (60 minutes on hot) or frozen (for 2 weeks). Inspect furniture, floors, and walls near the pets' areas.

17. How long does it take to get rid of bed bugs?

It will take at least three weeks to be rid of bed bugs. Here's why:

Preparation usually takes about a week

Two weeks in a freezer kills the crawling bed bugs

Insecticides don't kill the eggs, which take about two weeks to hatch—the pest management professional (PMP) should reinspect and apply more insecticides if needed two full weeks after the first treatment.

The fastest IPM fix relies on the team effort of a PMP and the owner. The owner must do the necessary preparation and do the cultural and mechanical control work while the PMP handles the insecticides.

Fumigation and full-structure heat treatments work after one treatment, but are very costly. Fumigation is not the same thing as fogging.

18. What should a pest control company do for me—and vice versa?

Customer Preparation

Pest Management Professionals (PMPs) should be knowledgeable about bed bugs, educating you so you understand why time-consuming and thorough preparation is so important. If the company doesn't require you to do prep work, call the next company on your list.

PMPs may ask you to launder all clothing, bedding, and draperies; buy resealable bags for all possessions in drawers, closets, etc.; clean rooms thoroughly; and vacate rooms on all treatment days. One thing that differs by pest control company is whether callers should do anything to the bed ahead of time. There's no right way. Still, the company should be able to explain the why behind their methods.

The time and money it takes to battle bed bugs will be easier to grasp if you understand:

Clutter makes it harder for PMPs to find and treat all likely hiding spots of loner females that could restart an infestation.

Bed bugs aren't found just in beds. Any space a credit card edge could slide in is a possible hiding spot. PMPs need to treat baseboards, picture frames, bed frames, dressers, drawers, and tables. Because preparation will disturb the bugs, you should choose a pest control company and learn their operating procedure before doing much to the room.

Remember: Insecticides don't penetrate the eggs, which take up to two weeks to hatch. The follow-up treatment is usually scheduled two or three weeks after the first treatment to get those newly hatched nymphs. You want to get them before they become adults and lay more eggs. Prepare the same as for the first treatment. You can save time and money by unpacking only a few essentials until the follow-up is done.

Cost

Bed bug jobs take time and expertise. The service is justifiably costly. Prices vary by region and the type of contract. Call around to get an idea of prices in your region.

\$500 or more for the first visit and treatment and \$250 for the follow-up aren't unreasonable. It might even be cheap for an area. If you shop around and find a company that offers service at a much lower price, chances are they're less thorough.

Treatment

Technicians who inspect and treat should be able to answer questions about bed bug biology and behavior as well as explain their plans. Even if someone has already come to inspect and quote the job (some companies will quote over the phone, others inspect first and quote at that visit), technicians should always inspect before treating. At the very least, they should use a flashlight when inspecting. Proper inspection takes time and shouldn't be rushed.

And what's their plan for treatment? If it's to treat least-infested areas first, working toward most-infested areas, the plan is good. PMPs should use a range of formulations and methods, both liquids and dusts. The PMP should target cracks, crevices, and behind electrical sockets. Not every company uses a vacuum or steamer—that might be your job. Vacuuming just before the PMP arrives will get dirt out of cracks so the insecticide can get in. The PMP must take care not to spread the problem. Anything that needs to be removed from the treatment area should be covered with plastic. Once an area has been treated, only treated items should be moved back in.

If people or pets are present, they should be in a different room. Don't enter a room that has been treated with an insecticide for at least 4 hours—or whatever the insecticide label states, whichever is longer. Children's and sick people's mattresses shouldn't be treated.

Follow-Up Treatments

Count on at least one follow up treatment. Bed bugs should be gone after 2 – 3 visits. Unless the structure is fumigated (this is different from bombing!), one visit won't get rid of bed bugs. Follow up treatments should still include a full inspection, followed by insecticide if bed bugs are found.

Because complete elimination is hard to achieve for any pest, most bed bug contracts don't guarantee it. Bed bugs can be reintroduced. Companies with a good business sense can't guarantee bed bug work for a long period of time. This doesn't mean the company won't go to great lengths to help you. And yes, it is possible to eliminate bed bugs from a home.

19. How do I kill bed bugs without insecticides?

- Can cold kill bed bugs?
- Can heat kill bed bugs?
- Can steam kill bed bugs?

Cleaning: Thoroughly clean infested rooms as well as others in the residence. Scrub infested surfaces with a stiff brush to dislodge eggs and use a powerful vacuum to

remove bed bugs from cracks and crevices. This won't ensure that you've got all the eggs since they can be cemented deep in cracks. But it will help. Dismantle bed frames to expose additional hiding sites. Remove drawers from desks and dressers and turn furniture over, if possible, to inspect and clean all hiding spots.

Vacuuming: A vacuum is not a stand-alone solution. But it will suck up some bed bugs and, used frequently, help keep their numbers down. The narrowest attachment should be used along seams, cracks, and crevices. There's no guarantee it'll suck all bed bugs out of hiding. Immediately after, the bag or canister should be removed. Bed bugs in that bag will still be alive! Put the bag or canister contents into a plastic bag, freeze for two weeks, then dispose of properly. Wash the canister—be sure it's unplugged! Inspect the vacuum to be sure no bugs remain inside.

Steam: Research is underway on how well steamers work. A good steamer will kill eggs, nymphs, and adults on contact. But we're not sure how deeply killing heat penetrates wood and fabrics. And it offers no defense against reintroducing bed bugs. When using a steamer, move extremely slowly (1 foot in 15 seconds) and methodically. Don't use a small nozzle that blows bed bugs away from the treatment area—they will survive. The heat needed to kill bed bugs will burn skin. Manufacturer's instructions take priority over anything that anyone tells you. Afterward, let things dry completely. This prevents moisture or mold damage. Steam can carry electricity. Stay away from switch plates, electrical outlets, and plugged in appliances.

Heat: Extreme heat will kill bed bugs. 60 minutes on the hottest setting in a dryer kills eggs and insects. If taking belongings to a laundromat sort at home and put loads in a bag—dispose of the bag once empty. Don't use the same bag to bring clothes back. Dry cleaning kills bed bugs, but tell them that the item might be contaminated. If the clothes won't be damaged by heat and stains won't set, put them in a dryer before going to the dry cleaner. Blankets, pillows, some shoes, children's plush toys, curtains, rugs, seat cushions, and fabric bags—if the item can survive heat and tumbling and it won't damage the dryer, it can go in a dryer. Check the lint filter for bed bugs afterwards. It's another way to confirm their presence.

Freezing: More research is needed on how well freezing works. Quickly expose items to 32 °F or below and leave them there for at least two weeks. All crawling life stages will die. To kill the eggs, 30 days is needed.

Mattress Encasements: Mattresses and box springs can be permanently encased within bed bug proof zippered mattress encasements. They must stay on for a full year and a half. Inspect them often to be sure they don't have rips. If you find holes or tears, seal these completely with permanent tape or buy a new bag. Any bugs trapped within these sealed bags will eventually die.

20. How do I kill bed bugs with insecticides?

- What are the dangers of using insecticides to fight bed bugs?

Unless you have a pesticide applicator's license, you shouldn't apply insecticides to treat bed bugs. Why? If you try to get rid of the bed bugs on your own and it doesn't work, then you call a pest control company and ...

Even more insecticides get used.

The bed bugs will be in new hiding spots, making it harder for pest management professionals (PMPs) to target them.

If, despite our warning, you try over-the-counter products, **READ THE LABEL** of any product you use. If it isn't labeled for indoor use, don't use it. If it isn't labeled for use on a mattress, don't use it on a mattress. Keep records of everything you do—the date, location, and insecticide or tool used.

You have the right to know what's being applied in your home and at what concentration. The EPA registration number (EPA Reg. No.) is on the label. Material Safety Data Sheets (MSDS) are available online for the active ingredient for all products. (Your pest control company might have them too). If you're worried about children, the elderly, pregnancy, ill people, or pets, a doctor or veterinarian can use the EPA Reg. No. and MSDS to tell them what precautions to take. If the label doesn't have an EPA Reg. No., don't buy it! For more info on pesticides, call the National Pesticide Information Center (NPIC) at 800-858-7378, or go online at npic.orst.edu. Ask your pest control company about their standard operating procedures for sensitive cases. Generally, it is best to leave your things in your home or apartment when it's treated. All food, plates, silverware, etc. should be protected from insecticides.

Insecticides used to treat bed bug infestations consist mainly of:

- Insecticidal dusts, such as finely ground silica powder, which abrade an insect's waxy coat and cause it to dry out and die quickly. Some dusts are mixed with other dry insecticides. These dusts are applied in or behind permanent fixtures—walls, light switches, and the like. Piles of dust won't work. If you can see the dust, it's not being used right. Read the label!
- Contact insecticides kill the bugs shortly after they come into direct contact with the product or its residue. These products tend to knock down bugs that wander over or otherwise contact the insecticide. BUT some repel bed bugs. Use the wrong product, and bed bugs could survive the pesticide and spread to other rooms.
- Insect Growth Regulators (IGRs) affect the development and reproduction of insects. Although they can work well, they don't kill bugs quickly. PMPs often use these products to supplement other insecticides.

21. How do I kill bed bug eggs?

Eggs keep unborn bed bugs safe from insecticides. Sixty minutes in a hot dryer heat will kill bed bug eggs, and freezing (below 32°F) for 30 days will too. Fumigation (not the same as foggers or "bombs") also kills eggs. Steam is another option as long as the nozzle is moved slowly and the steamed item is given time to dry. Bed bug eggs

hatch in about two weeks. A follow up inspection after two weeks is necessary to confirm that they're gone.

Taken Directly from:

***Cornell University/New York State Integrated Pest Management Program
2010***

http://www.nysipm.cornell.edu/whats_bugging_you/bed_bugs/bedbugs_faqs.asp#didiget