



# **Bed Bug Information Package For Tenants**



# Table of Contents

<b>Facts About Bed Bugs</b>	<b>3</b>
<b>How to Identify Bed Bugs</b>	<b>4</b>
<b>Dos' and Dont's – <i>General Reference Guide</i></b>	<b>5</b>
<b>What can I do about bed bugs? - <i>Quick Reference 1</i></b>	<b>6</b>
<b>Room preparation and checklist - <i>Quick Reference 2</i></b>	<b>7</b>
<b>Cleaning and Laundry checklist - <i>Quick Reference 3</i></b>	<b>8</b>
<b>Treatment</b>	<b>9</b>
<b>Prevention</b>	<b>12</b>
<b>Inspection</b>	<b>14</b>
<b>Resources</b>	<b>19</b>

## FACTS ABOUT BED BUGS

### The Reemergence of Bed Bugs

Canada was virtually bed bug free for about fifty years; however, the situation has changed drastically in the past five to six years due to increased travel and changes in pesticide use. In the 1940s and 1950s, bedbugs were effectively eliminated in North America with the widespread use of DDT but today's insecticides, with their lower rates of toxicity are not as potent. The replacement of insecticidal sprays (which affected a variety of insects) with gels and powders that have little impact on bed bugs and no impact on their eggs, has also allowed bed bugs to flourish. There is also some concern that bed bugs may be becoming resistant to some pesticides.

In the past few years, bed bugs have been found in hotels, shelters, condominiums, jails, schools, hospitals, university residences, nursing homes, offices and on public transit.

Bedbugs are commonly transported in luggage or belongings (including purses, gym bags and briefcases), in clothing or in used furniture or electronics. Vacant apartments or rooms that appear clean and well kept may harbour bed bugs, as they can remain dormant for extended periods. Bedbugs may also move between units through cracks in drywall or plaster and through holes meant for wiring and plumbing. Tenant common areas and laundry rooms can also be sources of contamination.

Furniture and other items that are infested and being removed from buildings may also spread the insects if these items are not properly wrapped and sealed or if items are reclaimed by others and brought back indoors.



## HOWTO IDENTIFY BED BUGS

Effective bed bug control strategies start with a careful inspection and identification of the bugs.

Bed bugs are oval, flat, reddish brown insects about 3/16 of an inch long. They have three segments in addition to a rounded beak and antennae, vestigial wings and a thin coat of fine golden hairs.



MALE



FEMALE

Males have a pointed abdomen while females have a rounded abdomen. Before feeding they are flat; after feeding they become engorged and turn a darker reddish color.

Bed bugs feed only on the blood of mammals or birds. Although they prefer humans, they will also feed off other hosts including pets and rodents. The average life span is between six to nine months and a female may lay 200 to 500 eggs in her lifetime.

Small whitish eggs are laid in loose clusters and covered in a glue-like substance. Eggs hatch in about 10 days. Remnants of shells often remain after nymphs have hatched. Newly hatched nymphs must feed within 2 days or they die, although an adult can survive up to a year or more without feeding. In ideal conditions, at room temperature and feeding at regular intervals, bed bugs reach maturity in about five weeks.

The insects are nocturnal; hiding in the daytime and traveling from five to twenty feet (each way) at night to feed. They are attracted by body heat and exhaled carbon dioxide.

They can move quickly, similar to the speed of a fast moving ant. Bed bugs feed for approximately five to ten minutes and will feed every few days if a host is available. When they bite, bed bugs inject saliva, which thins the blood and prevents coagulation. This saliva contains a mild anesthetic, which initially masks the bite and delays the onset of itching.

**Tenant's area of responsibility:** Report incidents of pests in rental unit immediately to ensure early intervention efforts can happen; if a pest control treatment is necessary early notification is key to successfully eliminating pests before they get out of control. Tenant cooperation with ensuring certain protocols are followed before, during and after pest control treatments is critical to ensuring successful elimination of pests.

**Landlord's area of responsibility:** Ensure all reports of pests within rental units are followed up promptly, with a plan in place outlining the necessary steps that must be taken steps to ensure a rental unit is free of pests. Coordination and cost of pest control is the landlord's responsibility.

## **DOS AND DON'TS**

## **General Quick Reference**

### **Residents should:**

1. Report a bed bug infestation, or other pest problem, to building management within 24 hours of the pest sighting.
2. Do not attempt to control a bed bug infestation by yourself.
3. Never self treat with pesticides, especially "bug bombs", these treatments are not effective in eliminating the bugs, and serve only to temporarily drive bed bugs into adjacent rooms or units.
4. Do not remove anything from an infested room until after the room is treated by a Pest Management Professional (PMP), with the exception of laundry (refer to Quick Reference #3).
5. Cooperate fully with the recommendations provided by the Pest Management Professional (PMP) to prepare rooms for bed bug inspection and treatment. Ask your building manager for help if there are preparation steps that you cannot accomplish, such as disassembling or moving furniture. Disabled and elderly individuals should request assistance with preparation.
6. Prior to treatment, all clutter, debris and garbage from infested rooms should be placed in plastic bags and sealed. Bagged items should remain in the infested room for treatment by a PMP prior to disposal.
7. The day of the pesticide treatment, all bedding and clothing should be bagged in plastic, transported to the laundry and laundered using hot water and dried at the highest setting recommended for the article. Bags used for transport should not be re-used, but should be sealed and disposed with other infested refuse.

### **Residents' management of furnishings and materials infested with bed bugs:**

1. Do not remove infested materials designated for disposal until after the unit has been inspected and/or treated by the PMP.
2. Remove clothing, linens and materials designated for disposal from an infested room in sealed plastic bags to prevent moving the bugs to other areas.
3. Wash infested linens in hot water (washing doesn't kill bed bugs 100%) and dry using the hottest dryer setting to kill bed bugs and their eggs. Do not exceed temperature recommended on clothing labels. Alternately, delicate and woolen items, shoes, pillows, stuffed animals, and other softer items can be dried on high heat only (with no washing). Heat kills bed bugs and their eggs.
4. Dry cleaning will kill bed bugs. Infested or potentially infested items taken to a dry cleaner should be sealed in bags: the dry cleaner should be informed of the potential infestation so that bugs do not infest the business establishment.
5. If a vacuum cleaner is used, all washable components should be thoroughly cleaned in hot water and detergent. Bed bugs and eggs can be trapped in vacuum cleaner brushes and hoses and spread throughout the unit. Dispose of all vacuumed refuse and vacuum bags from infested rooms in a sealed plastic bag.
6. Have PMP determine which furniture, box springs and mattresses are salvageable. If infested items are determined to be unsalvageable, they should be made unusable, treated with insecticide and wrapped in plastic prior to disposal. Items should be clearly labeled or spraypainted as INFESTED WITH BED BUGS. Items left curbside should be left as near to pick-up time as possible to minimize the chances of being taken by others.

## WHAT CAN I DO ABOUT BED BUGS?

## Quick Reference #1

Adapted from [Guidelines for Prevention and Management of Bed Bugs in Shelters and Group Living Facilities](#) by J. Gangloff-Kauffman, J. and C. Pilcher. 2008.



Photo by:  
Jeff Hahn

### Do I have bed bugs?

Bed bugs are a growing problem in all types of living situations. If you have seen bed bugs or have itchy bites that could be from bed bugs DON'T PANIC, but seek help quickly. Bed bugs may be confused with other household insects such as cockroaches, carpet beetles, or spider beetles. If you find an insect that may be a bed bug, SAVE IT in a container for identification!

**\*\*There are many steps that you must take to help get rid of bed bugs, It is IMPORTANT that these steps are followed very carefully. . .**

**1. Seek advice.** Contact the administration office, your building manager and/or request a maintenance call to arrange for someone to check for bed bugs. If you see bugs, capture them on sticky tape or on a tissue and store them in a plastic bag in the freezer for identification. Insects found where you live could be one of many things. Don't assume that they are bed bugs. Do not move belongings until confirming that you have bed bugs.

**2. Prepare to clean** your living space thoroughly if someone confirms that bed bugs are present. Cleaning includes the following:

- Wash and dry all clothing, bed sheets, blankets and pillow cases on hot settings. Drying on HIGH for at least 30 minutes is more important than washing to kill bed bugs.
- Store cleaned items in sealed plastic bags or sealed plastic containers away from the problem
- Shoes, pillows, curtains, coats, plush toys can all be placed into a dryer at a medium to high temperature.
- Pick up and organize your personal belongings to reduce the amount of clutter in your living space.
- Provide access to all walls, closets, space around the bed and furniture for an inspector to search for and get rid of bed bugs.
- Vacuum and wash the floors, or hire a cleaning crew to clean. If a vacuum cleaner is used, all washable components should be thoroughly cleaned in hot water and detergent. Seal vacuum bags in plastic and dispose of them immediately: they contain live bed bugs.

**3. Prepare to follow** more thorough instructions given to you by the management and/or PMP. Prepare to do what is required to eliminate bed bugs as the bed bugs will not be eliminated without your help. There are no simple ways to eliminate bed bugs.

**4. Do not use** any over the counter "bug bombs" or insect killers on your own. You will only spread the bed bugs further into your living space and belongings.

**5. Do not pick up discarded items** on the street. Although there are many valuable items being tossed away, today many of these items, including clothes and shoes, are already infested with bed bugs. **Any used furniture should be carefully inspected.**

**6. Ask For assistance if you need it.**

## ROOM PREPARATION CHECKLIST

## Quick Reference #2

Adapted from [Guidelines for Prevention and Management of Bed Bugs in Shelters and Group Living Facilities](#) by J. Gangloff-Kauffman, J. and C. Pilcher. 2008.

**Preparation of a room for treatment is essential to the successful management of bed bugs.** Most pest managers prefer to conduct an inspection BEFORE any cleaning or rearranging has occurred. This gives the pest manager a sense of the full extent of the problem and prevents the disturbance and spread of bed bugs before treatment. However, once bed bugs are located and the size of the problem has been estimated, room preparation must be done, and usually by the resident. Some clients may need help and the pest control professional or building management must be sensitive to this.

### Suggested room preparation steps include:

- Remove all blankets, sheets, covers, pillows, bath towels, and drapes/curtains from the bed and room and place them into bags for transport to the laundry.
- Empty drawers and closets and place belongings into plastic bags. Place all clothing and coats into bags for transport to the laundry. Shoes, pillows, and children's plush toys should be bagged for the laundry.
- Plastic toys, books, electronics, and anything that cannot be washed should be bagged separately for inspection.
- The room should be empty of all cloth and plush items, except plush furniture. If possible, the pillows of plush furniture should be removed and laundered.
- Move furniture at least 18 inches away from the walls. People may need help with this.
- Remove outlet covers and switch plates on all walls.
- Picture frames should be removed from the walls and cleaned or treated.
- People and pets must leave the area during treatment and wait the stated amount of time before reentering, usually 4 hours.
- If there is a fish tank in the household, it should be covered with a towel or plastic, because fish are very sensitive to many pesticides.
- All clothing, linens and other items must be cleaned (free of bed bugs) and kept isolated until the bed bug problem is eliminated or until alternate arrangements are made if necessary.
- Make sure the pest control professional can get to all furniture, closets, beds, and baseboards to inspect and treat.

## CLEANING & LAUNDRY CHECKLIST

## Quick Reference #3

Adapted from [Guidelines for Prevention and Management of Bed Bugs in Shelters and Group Living Facilities](#) by J. Gangloff-Kauffman, J. and C. Pilcher. 2008.

Pesticides, alone, will not eliminate a bed bug infestation. Inspecting and cleaning the living area and all personal belongings are critical for bed bug control and elimination. Cleaning should occur before pesticides are used. Follow all the recommended steps as they apply to the individual situation:

- Seal all clothing and linens in large clear plastic bags. Clear bags are good because bed bugs can be seen inside them.
- Seal shoes, coats, pillows, children's plush toys, and small rugs and mats in large clear plastic bags.
- Personal belongings should be inspected carefully, cleaned, and sealed in plastic bags or bins. Do not use cardboard boxes, bed bugs can hide in folds and will deposit eggs there.
- Newly laundered items should be placed in fresh bags to prevent reinfestation. Commercially available dissolvable laundry bags will limit the possibility of bed bug escapes.
- All clothes, linens, pillows, shoes, coats, and children's plush toys should be placed into a HOT dryer for 30 minutes. Do not overstuff the dryer, heat must reach all items.
- Keep cleaned items separate from items that have not been checked or cleaned. Unless you are sure that there are no bed bugs on personal belongings, these should remain in the sealed bag or bin until they can be carefully inspected or washed.
- The room should be emptied of all personal belongings and floors thoroughly vacuumed with a brush attachment (which should later be washed in hot water and detergent).
- The mattress and box spring should be vacuumed to remove any live bugs and debris and immediately encased or prepared for treatment. Use caution with treatment of vacuum cleaner if used for this purpose, as bugs can remain in vacuum cleaner. (Refer to Tenant Information Package for detailed instructions on handling a vacuum used for bed bugs – page 11)
- Hard furniture, floors, and walls should be washed liberally with soapy water.
- Outlets and electrical switch plates should be opened and inspected for signs of bed bugs, but not washed!
- Wash in and around any non-electric heating units (such as steam pipes or radiators).

## TREATMENT

### Treatments for Bed Bug Elimination

Controlling bed bugs is a difficult and time and money consuming activity. However, **bed bugs can be eliminated** with a coordinated effort that includes cooperation of the residents and landlord. There is no single tool or activity that, used alone, will eliminate bed bugs, including pesticides. Multiple techniques are always required because bed bugs are small, good at hiding, and reportedly live without feeding for up to a year. In some cases, bed bugs are resistant to the pesticides used against them, meaning that many will survive treatment. **The reduction of household clutter is absolutely necessary for fighting bed bugs.** Despite the challenges, the technology of bed bug control is getting better. Pest Control Professionals (PCP) are becoming more knowledgeable as bed bugs become a greater issue. While the successful control of bed bugs must be a joint effort between landlord and tenant, the landlord is responsible for bringing in a PCP when necessary, including the cost associated with this service.

Treatment of a living area for bed bugs should focus on containment of the infestation. Do everything possible to avoid spreading bed bugs to new locations.

### A combination of the following steps will be needed for bed bug control:

- Clean and organize the bed, bedroom, other living areas, furniture and belongings, including elimination of clutter
- Physical removal of bed bugs and eggs using a vacuum
- Barriers, such as mattress encasements and sticky barriers (sticky traps may be useful for monitoring but will not help control bed bugs)
- Steam (to kill all life stages)
- Heat or cold treatments (to kill all life stages)
- Eliminate bed bug hiding spots
  - Fix peeling wallpaper and paint
  - Caulk or seal cracks and crevices around the room (notify MHCHS to provide this) and on furniture
  - Make other repairs to the living area to reduce hiding spots
- Chemical applications
  - Professional use pesticides
  - Professional fumigation
- Prevention of re-infestation

It is important to consider that a bed bug infestation in a living area (apartment bedroom, living room, etc) might spread to adjacent units. This is especially true if the bug population is high or if pesticides are used in the original unit. Adjacent units will be inspected and if bed bugs are found or residents notice bites, they will be treated as if infested.

## Housekeeping Procedures

Thorough cleaning, in the form of vacuuming and washing floors and furniture, is essential for bed bug and cockroach control. Cleaning, alone will not eliminate bed bugs but is necessary to crash high populations. Cleaning removes debris that may contribute to allergies and asthma, and removing bugs, droppings, and cast skins allows the inspector to spot new activity. Vacuuming does not easily remove eggs and bugs hiding in cracks.

Cleaning for bed bugs should focus on sleeping and lounging areas, (whereas cockroach control depends on sanitation in cooking and eating areas). However for cleaning to have any impact, the resident must cooperate by reducing clutter, organizing, and bagging their belongings. Be certain every item is bagged until it can be cleaned of bed bugs.

A cleaning procedure for bed bugs begins with vacuuming, using a HEPA-equipped vacuum that is dedicated only to pest control. Although a regular vacuum is acceptable, a HEPA- equipped vacuum will reduce the spread of allergens. A crevice tool will be needed to focus suction in small spaces, cracks and crevices. Use the crevice tool with a scraping motion to dislodge bugs and eggs, because bed bugs cling to wood and fabric and the eggs are cemented to the surface where they are laid. A brush attachment can also be used but must be cleaned carefully to prevent the spread of bugs. See below for proper handling of the vacuum cleaner and vacuum bags.

## Cleaning and organizing a room or home

Cleaning and organizing a room or home for bed bug management can be as burdensome as changing residences, It is, however, an extremely important first step to control bed bugs, because bed bugs will thrive in a cluttered living area. Vacuuming and cleaning should be done before a pesticide application. Cleaning should be carried out in a systematic way, beginning with removing items from the infested room or home. Soap or detergent will aid in the clean up of bed bug debris and allergens, making the environment healthier and more tolerable for those living there. Essential oil soaps (pine, orange or lemon), enzyme soaps, and sudsy detergents are good choices. Bleach and ammonia do not kill bed bugs and should not be used to combat them. Their vapors can also be harmful.

### Steps to follow include:

- Scan the room for items on the floor. Make a plan for each item, and how it will be quarantined (closed into a plastic bag, for example), inspected, sanitized of bed bugs, and stored until further notice.
- Place clothes, shoes, plush toys, pillows, and bedding into large clear plastic bags and seal them tightly to be laundered. Place the bags away from the infestation site.
- Alternatively, plastic tote bins that have an airtight seal can be used for items that cannot be laundered, such as hard toys, electronics, books, breakable items, etc. Be prepared to store these items for a period of time until they can be thoroughly inspected or enough time has passed that bed bugs are dead – at least a year.

## Vacuuming:

- Once the room has been "stripped" of all personal belongings, begin vacuuming the bed, paying special attention to the mattress seams.
- Use a crevice tool and a scraping motion.
- Remove the mattress and box spring from the bed frame and inspect and vacuum all surfaces, removing all loose debris and visible bed bugs.
- Flip the bed frame over and vacuum and crevices where bed bugs may hide. This is especially important for wooden bed frames and captain's beds.
- Vacuum inside and under drawers of night stands, dressers, and other furniture in the room.
- Turn over each piece of furniture and vacuum the under sides of each.
- Pay attention to screw and nail holes, using a credit card crevice tool.
- Vacuum along the bottoms of all walls and the moldings. If molding or wallpaper is loose lift or remove and vacuum beneath.
- Make sure to vacuum around heating units.
- Vacuum along carpet edges.
- Vacuum plush furniture with a carpet beater attachment or by patting the furniture while vacuuming to flush out bed bugs.
- If a vacuum brush attachment is used it is possible some live bugs or eggs could be caught in the brush bristles. Wash the vacuum brush with hot water and detergent if this is a concern.



Bed bug eggs and fecal stains along the edge of the carpet. Photo by R. Cooper.

### Handling a vacuum used for bed bugs:

A vacuum used for bed bugs can have live bed bugs inside and it will be important to avoid transferring bed bugs to new locations.

- After each use remove the vacuum bag and dispose of it in a sealed plastic bag.
- Clean the brush attachment with hot water and detergent.
- Stuff a paper towel in the hose end, or other solution to seal hose and prevent bed bugs caught in the hose from escaping.
- Store the vacuum in a large plastic garbage bag or container that is closed tightly.
- Inspect the vacuum before each use to be sure no live bed bugs are on the outside.

### **Washing Surfaces and Furniture:**

- Wash all furniture (non-plush) and hard surfaces in the room using an orange, lemon, or pine based soap or detergent cleanser. Pay attention to crevices and spaces in the frame.
- After removing the mattress and box spring from the bed frame, wash the bed frame liberally with soap and water.
- Wash cribs and children's bed frames rather than using pesticides.
- Wash the floors, moldings, window sills, and walls generously.
- Steam or hot water heating units can be washed as well. Do not wash electrical heating units.

### **Rugs and carpeting:**

- Many small rugs can be placed into the dryer on a hot setting for 30 minutes.
- If the room has a large area rug, the rug can be steam cleaned within the same time frame that other bed bug control measures are taking place, although steaming should be done before pesticide applications are made. Rugs can be sent out for professional cleaning, as well. Wrap in plastic for transport and warn the cleaning company.
- Wall to wall carpeting can harbor bed bugs and should be removed, especially in a heavy infestation, or steam cleaned, paying very close attention to the edges. Previous inspection will help determine where to concentrate steaming efforts. Carpeting may also be treated with a labeled pesticide.
- The carpet tack strip left behind after wall-to wall carpet is removed should also be removed for safety purposes, as well as bed bug management.

# PREVENTION

## Furniture and Room Guidelines

Bed bugs thrive under certain conditions which are enhanced by the availability of hiding spots close to their human hosts. Bed bugs have a strong preference for paper and wood, over metal and plastic. Porous surfaces provide more humidity and egg-laying locations. Furniture choices can greatly contribute to the control of bed bugs.

### Guidelines for furniture include:

- Replace wood frame beds with metal frame beds to discourage bed bug hiding and egg-laying on beds.
- Eliminate head boards completely. Bed bugs hide and thrive in head boards.
- Replace all plush furniture with metal and plastic, or items easily cleaned with soap and water.
- Adding smaller cushions that can be placed in a dryer is one way to make residents more comfortable. Cushions should be dried on a hot setting if bed bugs are an issue.
- Use only white or light colored sheets.
- Use wooden baby cribs, but choose models that are painted white. Paint existing wood colored cribs white. Fill gaps in the frames with silicone caulk. This will allow for much better inspection and reduce need for treatment. Avoid using pesticides on baby cribs!
- Vinyl-covered or seamless mattresses are recommended for adult beds and cribs.
- If vinyl mattresses have holes, consider repairing them with tape or discarding them.
- Do not discard regular (non-vinyl) mattresses, only to replace them with other regular mattresses. Bed bugs will reinfest the new bedding quickly. Use mattress encasements. If a box spring is being used, be sure to encase it too. The box spring is more likely to harbor bed bugs than the mattress.
- Wooden dressers, wardrobes, tables and other furniture can be painted white for easy inspection. Any crevices where a credit card will fit should first be sealed with silicone caulk to eliminate hiding spots.

## INSPECTION

A thorough inspection is important to determine how widespread the infestation is and the best way to manage bed bugs, and also to ensure ongoing efforts to prevent bed bugs are being successful. Adult bed bugs can hide in any spaces as thin as a piece of paper. Young bed bugs are even smaller. When conducting an inspection, move slowly and avoid disturbing hiding bugs, so they don't scatter. Keep in mind that in a low infestation, the bed bugs will be concentrated close to sleeping areas. Items away from the sleeping area will be at a low risk of infestation.

### The recommended inspection tool kit includes:

- Magnifying glass
- Strong flashlight
- Plastic zip-top bags for collecting specimens
- A probe, such as a "credit card tool", made by cutting any plastic card into a long triangle, for checking in narrow spaces.
- Pyrethrin or compressed air (for cleaning computers) for flushing bed bugs from cracks and crevices
- Screwdrivers for removing light switch and electrical plates
- Other tools (a small tool kit) for disassembling furniture
- Alcohol, glass-cleaning or baby wipes, for evidence that stains are bed bug droppings (see below).
- Cotton swabs for checking stains in crevices
- Sticky traps may be useful if placed under the bed and checked regularly.



### Signs of bed bugs:

- Live bed bugs of all sizes (poppy seed to apple seed size)
- Confirm that what you find is a bed bug
- Droppings in the form of dark colored stains on cloth or bumps on hard surfaces
- Shed skins
- Eggs, although very small, will be found among droppings or in crevices where adults hide.

## Inspecting the bed

Inspection for bed bugs starts in the place where people sleep and moves out from there to other parts of the room. This should be conducted before room preparation steps are taken.

### Mattress inspection:

- Along the top and bottom seams, and along each side of the piping material sewn onto these edges
- Under mattress handles and along or inside air holes
- Between the mattress and box spring, platform or frame
- Inside folds of material and under buttons
- Bed bugs may be found along piping seams, under pillow tops, between the mattress and box spring, inside air holes, or underneath mattress handles. Do not overlook tears in the fabric or stitching holes when inspecting for bed bugs.
- If mattresses are covered in vinyl plastic, look inside seams and rips in material.
- Use alcohol or baby wipes to rub suspected bed bug droppings. If the spots dissolve into a reddish brown color, this could indicate bed bug droppings and should be a reason to continue inspecting until a live bed bug is found.



Photos by J. Gangloff-Kaufmann.



### Box spring inspection

- Points where the box spring sits on the bed frame, (lift slowly to avoid scattering bed bugs)
- The top surface of the box spring, inside folds of material
- Along seams and where the material is tacked to the frame
- Turn over the box spring and remove the thin cloth layer on the underside. ○ Use a flashlight, a hand lens and a crevice tool to check the spaces between ○ box spring frame parts.
- Look around and beneath furniture staples and tacks.
- Use a flushing agent to chase bed bugs out of hiding spots.
- Double faced tape or carpet tape can be placed on the underside of furniture to capture wandering bed bugs. This is a monitoring tool, not a control strategy.
- Check between the mattress and box spring and along every fold of material for signs of bed bugs



Photo by D. W. Coard.

## Bed frame and head board inspection

- Wood beds (especially captain's beds) and head boards (especially wicker) are preferred hiding spots for bed bugs over metal bed frames, but bed bugs will hide in crevices on metal and plastic or where a mattress touches a metal frame.



Tiny spaces in the bed frame and other furniture, such as a peg hole for a shelf, are ideal hiding spots for bed bugs. Photos by J. Gangloff-Kaufmann.

- Visually inspect and use the crevice tool in all joints of the frame where parts meet.
- Turn the frame over and inspect from the underside.
- Check screw and nail holes for bed bugs.
- Take the bed apart to check between parts.
- Remove the headboard from the bed and check for bed bugs along the joints and on the wall behind it.
- Wicker furniture provides infinite hiding spots for bed bugs. Anything made of wicker should probably be discarded. See below for disposal of infested items.

## Inspecting other furniture and storage areas:

Furniture, such as night stands, will be likely places to find bed bugs, since they can easily crawl to distant hiding spots. As the bed bug population grows, overcrowding may cause them to wander. Furniture near the bed can become infested and infestation can quickly spread away from the bed if no control measures are taken.

- Empty drawers and shelves of the furniture closest to the bed.
- Place items into plastic bags to be inspected and cleaned.
- Pull out drawers and inspect every corner and the undersides, using the crevice tool to check under the metal drawer guide.
- Use the crevice tool to inspect gaps wherever the tool will fit, such as between the shelf and bookcase frame.
- Turn over all furniture to inspect the underside.
- Be sure to inspect screw and nail holes.
- Plastic and metal furniture may harbor bed bugs, follow the same inspection procedures.
- Electronics, such as lamps, remote controls, alarm clocks, and radios should be placed into plastic bags for further inspection. If bed bugs are found in the frame of the furniture where the radio or clock sits, further inspections of those items and possible treatment are warranted.
- Office-style chairs should be inspected by turning them over and looking under seams where fabric attaches to the frame. Also check screw holes.



Bed bugs hiding in the screw hole of an office chair. Photo by L. Sorkin.

## Furniture

Plush furniture, such as a couch, will harbor bed bugs, even if residents are not sleeping there. In these cases, inspection will be more difficult due to the many inaccessible hiding spots.

- Inspect pillows and cushions, particularly the seams and the folds around zippers.
- Look at and under legs of chairs and couches.
- Turn over the furniture and remove the thin cloth backing under each piece.
- Pay special attention to staples and where material is stapled to the frame.
- Look inside at all wood parts of the frame.
- If the piece is highly infested, consider disposing of it in a proper manner (see below for furniture disposal guidelines).



Bed bugs & debris on underside of upholstered chair. Photo by L. Sorokin.

## Inspecting the room perimeter:

Once established, bed bugs will spread toward the perimeter of the room, including walls, moldings, and rugs.

- Look at moldings or the joint between the floor and wall closest to the bed.
- Use the crevice tool to check behind moldings. The tool will chase bed bugs out of hiding if used in a sweeping upward motion.
- Fold back the edges of wall-to-wall carpets to inspect for signs of bed bugs.
- Pay attention to the tack strip of carpets.
- Look under the edges of area rugs.
- Using a screwdriver, remove electrical switch and outlet, and phone jack plates to inspect. If bed bugs are hiding in these areas, signs may be evident along the edges and on the back of the plate.
- Inspect everything hanging on the walls. If framed art or photos are present and there is evidence of bed bugs nearby, open the frame to inspect inside or under the paper backing.
- Check under loose wallpaper and areas of peeling paint.
- Take down curtain rods and inspect inside them and underneath hardware on the walls.
- Look at closet, bathroom and other door frames, along hinges, and in the bore hole for the latch on each door.
- Make a note if bed bugs are found on walls.
- Ceiling lights and fixtures with bed bugs could indicate that they are moving from the upper floor unit.
- If bed bugs are on walls, they may hide under ceiling moldings and in smoke detectors.



Base molding next to the wood leg of a bed. Photo by J. Gangloff-Kaufmann.



Phone Jack next to the bed. Photo by J. Gangloff-Kaufmann

## Inspecting unusual locations

Bed bugs may turn up in unexpected places in moderate and large infestations. If the infestation is large, every object in the affected area should be carefully inspected.

Bed bugs have been found in such locations as:

- Television and other remote controls, in the battery compartment
- Telephones, cell and cordless phones
- Lamps and alarm clocks
- Computers and other electronics
- Cardboard boxes in closets and under the bed
- Children's toys and stuffed animals
- Jewelry boxes
- Brick walls and "popcorn" or other textured ceilings
- Books, magazines, newspapers, and files
- Inside hollow doors
- Ceiling light fixtures, smoke detectors
- Heating units, air conditioners and ducts
- Wheelchairs



Bed bugs hiding in the tab of a dictionary. Photo by P. Stravino.

## RESOURCES

California Department of Public Health. 2007. Guidelines for the control and prevention of bed bug infestations in California.  
<http://ww2.cdph.ca.gov/HealthInfo/discond/Documents/BB%20Guidelines.pdf>

Gangloff-Kauffman, J. and C. Pilcher. 2008. [Guidelines for Prevention and Management of Bed Bugs in Shelters and Group Living Facilities](#). NY State IPM Program. Cornell University.  
[http://www.nysipm.cornell.edu/publications/bb\\_guidelines/](http://www.nysipm.cornell.edu/publications/bb_guidelines/)

Kells, S. 2006. Control of bed bugs in residences: information for pest control companies. University of Minnesota Extension Service.  
[http://www.ipmctoc.umn.edu/Control\\_of\\_bed\\_bugs\\_in\\_residences\\_US\\_Commercial.pdf](http://www.ipmctoc.umn.edu/Control_of_bed_bugs_in_residences_US_Commercial.pdf)

### ADDITIONAL RESOURCES

Kells, S. and J. Hahn. 2006. Control of bed bugs in residences: information for homeowners and tenants. University of Minnesota Extension Service. 5 pp.  
[http://www.ipmctoc.umn.edu/Bedbugs\\_Homeowners\\_and\\_Tenants.pdf](http://www.ipmctoc.umn.edu/Bedbugs_Homeowners_and_Tenants.pdf)

Pollack, R and G. Alpert. [Bed Bugs ~ \*Cimex lectularius\* \(Cimicidae\): Biology and Management](#). Harvard School of Public Health.  
[http://www.hsph.harvard.edu/bed\\_bugs/](http://www.hsph.harvard.edu/bed_bugs/)

Pinto, L.J., R. Cooper and S.K. Kraft. 2008. *Bed Bug Handbook: the Complete Guide to Bed Bugs and Their Control*. Pinto and Associates. Mechanicsville, MD. 266 pp.

Massachusetts Department of Public Health. 2009. Frequently Asked Questions about Bed Bugs (in English, Spanish and Portuguese)  
[http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Consumer&L2=Community+Health+and+Safety&L3=Environmental+Health&L4=Environmental+Exposure+Topics&L5=Pesticide+Spray&sid=Eeohhs2&b=terminalcontent&f=dph\\_environmental\\_sanitation\\_bedbugs&csid=Eeohhs2](http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Consumer&L2=Community+Health+and+Safety&L3=Environmental+Health&L4=Environmental+Exposure+Topics&L5=Pesticide+Spray&sid=Eeohhs2&b=terminalcontent&f=dph_environmental_sanitation_bedbugs&csid=Eeohhs2)

The Community Bed Bug Committee **AND Woodgreen Community Services, Toronto. October 2008.** *A guide to Preventing, treating and Coping with bed bugs*