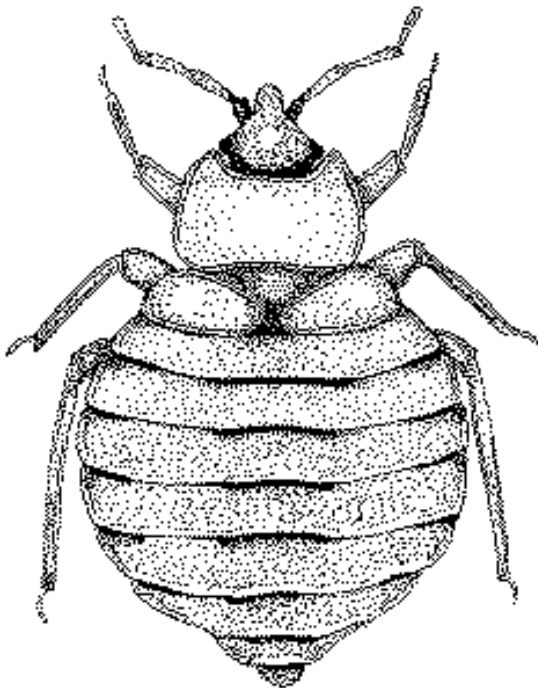


Training for Apartment Staff

Looking for Bed Bugs in Central Ohio

*Do you know what to do if bed bugs are found
on your property?*



Why Bother?

In the past 10 years, bed bugs have begun making a comeback across the United States. Their diet consists only of blood. Bed Bugs feed like mosquitoes by extracting blood from their meal source whether it is humans, animals or birds. They are totally incapable of eating food like other insects or mammals. Ant and roach baits have no impact. Aerosol bombs for fleas or other insects don't work either other than making the bugs scatter to different areas of the same room or to adjacent rooms. International travel and commerce have facilitated the spread of these insect hitchhikers that have been found on airplanes, ships, trains and buses.

Bed bugs are most frequently found in dwellings with a high rate of occupant turnover. Hotels and motels certainly fall into that category along with college dormitories and apartment complexes to just mention a few.

Eradicating bed bugs is more difficult and more costly than dealing with other types of pests. Residents inadvertently bring bed bugs home with them when they go away for vacation and/or business. Moving from one apartment community to another can also help spread the problem. Traditional pest control methods, which emphasize the routine application of pesticides often ignore the root causes of infestations, allowing bed bug populations to persist. Effective management and treatment involves the commitment of both the resident and landlord. An Integrated Pest Management Plan promotes the prevention of infestation through education, inspection, and other preventative measures.

Consistent information to both landlord and tenant, early detection, and application of treatment to targeted sites, will help prevent spreading the problem, make for happier tenants and a better "bottom line."

Inspection/Prevention

Since eradicating bed bugs is costly, prevention and early detection is essential. It is highly recommended that maintenance and apartment staff be properly trained to identify bed bugs and their common hiding places. An inspection of a unit should be conducted prior to occupancy and can be conducted periodically throughout a lease term. Since bed bugs can be brought into a building by "hitch hiking" on the belongings of residents, residents should be provided a copy of the Central Ohio Bed Bug Task Force handout, "Bed Bug Identification and Guidelines for Residents" prior to taking occupancy. This will empower residents to take an active role in preventing bed bugs from entering the premises and proper notification to a landlord if they are later discovered.

Bed Bug Basics/Fact or Fiction

Susan C. Jones, PhD., The Ohio State University Department of Entomology has provided a basic informational tutorial:

Bed bugs are making a comeback! Although infestations were common in the U.S. before World War II, the advent of long-lasting pesticides drastically reduced the number of infested buildings in the U.S. However, bed bugs remained at high population levels in many areas of the world. Bed bugs are excellent hitchhikers that can be easily transported in furniture, personal items, luggage, bedding, etc. Several reasons for the resurgence of bed bugs in the U.S. in the past decade have been suggested: increase in international travel and commerce, high tenant turnover, changes in pesticide use, and insecticide resistance.

Fact or Fiction - how much do you know about bed bugs? Are the following statements true or false?

- Bed bugs are only a problem in low-income neighborhoods. False! There is an unnecessary stigma associated with bed bugs. The truth is that bed bugs prefer human blood, and they will feed on anyone, regardless of their cleanliness or socio-economic status.
- Bed bugs carry disease. False! There is no conclusive evidence that bed bugs transmit disease.
- Any insecticide will kill bed bugs. False! The pesticides and other treatments that are effective against pests such as cockroaches are not necessarily effective bed bugs. For example, boric acid kills cockroaches, but it is ineffective against bed bugs because it is a stomach poison that must be fed upon (remember that bed bugs only feed on blood). Some pesticides will kill bed bugs that are out in the open and if the insects are sprayed directly. However, the majority of bed bugs in an infested building are hiding and will not be killed by these contact pesticides.
- Household bug bombs that are meant for flying insects will kill bed bugs. False! Bug bombs will not kill the majority of bed bugs in an infested room, and these insecticides typically cause bed bugs to scatter so that they can avoid the irritating effect of the spray. The scattering effect from bug bombs makes the bed bug infestation much worse!

Bed Bug Basics:

Identification:

1) What are bed bugs? Bed bugs are parasitic insects. Human blood is their preferred food, but they will also feed on rodents, bats, birds and pets, if humans aren't available.

2) How do bed bugs grow and develop? During its life cycle, a bed bug hatches from an egg into a nymph and molts (sheds its old skin) five times before becoming a full sized adult, about the size of an apple seed. Eggs are glued onto a surface by the adult female bed bug. All nymphal stages and adults require blood meals.

3) What do bed bugs look like? Adult bed bugs are small, but visible to the naked eye. An adult bed bug is from 1/4 - 3/8 inches long and reddish brown. Bed bugs have an oval shape with a flattened body when unfed; their body becomes swollen after they have fed. The young nymph (immature) that has just hatched from the egg is less than 1/10 inches long and nearly colorless, but it becomes red after taking a blood meal. There are five nymphal stages, with each stage slightly larger than the preceding one. Nymphs typically are yellowish brown to reddish brown.

4) How do bed bugs move about? Bed bugs cannot fly, but they can walk very fast. They are able to cling tightly to surfaces, and they can fit into very small cracks and crevices where they often hide during the day.

5) Where are bed bugs found? Bed bugs can be found in places that are frequented or occupied by humans. Bed bugs are most commonly found in dwellings with a high rate of occupant turnover, such as hotels, hostels, dormitories, apartment complexes, movie theaters, and the like. Bed bugs also can infest private dwellings. Bed bugs can infest airplanes, ships, trains, and buses.

6) Where do bed bugs hide? Bed bugs will hide in mattresses and box springs, bed frames, dressers, upholstered furniture and other furniture, cracks and crevices, electrical outlets, carpet tack strips, baseboards, window and door casings, drapery pleats, wall hangings, ceiling moldings, seams in wallpaper, etc. Bed bugs prefer to contact fabric, wood, and paper surfaces--all of which are common in human dwellings.

7) What are the tell-tale signs of bed bugs? The most obvious signs of bed bugs are small black spots (feces) that are deposited in and near bed bug hiding places. Shed bed bug skins and egg shells and live bed bugs also may be found. Blood stains typically occur when a bug is squashed. Itchy red welts may be the result of bed bug bites, but other insects and arthropods and other medical conditions can produce similar bite reactions. It is important to confirm whether the bites were caused by bed bugs by conducting an inspection and finding bed bugs or their evidence.

8) When do bed bugs feed? Bed bugs typically bite at night. However, they also can feed during the daytime.

9) What do bed bug bites look like? Bed bug bite reactions vary from person to person. Humans often exhibit a range of reactions to the bed bugs injected saliva, and some exhibit no reaction whatsoever and others experience a raised itchy red welt at the site of the bite. Bed bug bite reactions often appear as two or more bites in a row. They often occur on exposed areas of the body, such as the face, neck, arms and shoulders. Bed bug bites may resemble bite reactions caused by other insects and other medical conditions.

10) How do I treat bites? Consult your physician. Anti-itching medications and antibiotic salves that are applied to the skin may be helpful.

Prevention:

1) How are bed bugs spread? Bed bug nymphs and adults are adept crawlers, and they hitchhike from place to place by tucking away in peoples clothing and shoes; in backpacks, purses, and briefcases; in luggage; in used furniture, mattresses, bedding, etc. Eggs that are laid on these items also can allow bed bugs to be spread from place to place. When there are multiple units in a building such as in hotels, dorms, and apartments, bed bugs can easily crawl to other units and spread beyond the site of the initial infestation.

2) How can I protect myself and my family from bed bugs? Knowing what to look for can keep you from carrying bed bugs into your home. Be on the lookout for the tell-tale signs of bed bugs when traveling or buying used furniture and bedding and other used items. In a work setting, where bed bug exposure is possible, follow the safety precautions prescribed for your work place.

Eradication:

1) What are the components of effective bed bugs eradication?

- An integrated pest management (IPM) approach of sanitation and non-chemical and chemical measures is required to combat a bed bug infestation.
- Use a variety of sanitation and non-chemical measures including:
 - Minimize clutter
 - Launder all bedding, clothing, etc. in hot water (at least 120F) and dry on a hot setting for at least 15 minutes
 - Encase mattresses and box springs in plastic covers that have a sealed zipper
 - Caulk or seal cracks and crevices
 - Vacuum
- Chemical treatment requires a licensed pesticide control applicator who should:
 - Apply insecticides to targeted sites
 - Rotate insecticide
 - Use a variety of insecticides

2) Do not consider an infested unit in a building in isolation. Bed bugs move quickly and can easily spread beyond the site of the initial infestation, especially in hotels, dorms, and apartment buildings. Be sure to inspect, and treat if necessary, all units that share a common wall with the infested unit.

Beginning the Search

A bed bug infestation can be recognized by

- Blood stains from crushed bugs or
- Rusty (sometimes dark) spots of excrement on sheets and mattresses and walls.
- Fecal spots, eggshells and shed skin may be found near their hiding places.
- An offensive, sweet, musty odor from the bed bug scent glands may be detected when infestations are severe.
- Additional information and photographs can be found at the Central Ohio Bed Bug Task Force Web site (www.centralohiobedbugs.org) or The Ohio State University Department of Entomology Fact Sheet (<http://ohioline.osu.edu/hyg-fact/2000/2105.html>).

They're Great at Hiding

Bed bugs do a great job of hiding so closely examine many areas of a room. An initial inspection prior to occupancy and periodic inspections for bed bugs of an occupied unit by maintenance staff is strongly recommended. An inspection checklist is attached for your convenience. A copy of this checklist should be made a part of the resident's file. Concentrate on:

- **Mattresses** and box springs. Look around the mattress seams and undersides of box springs. Note: the muslin wrap on the bottom of the box spring may need to be removed. Seek consent of resident prior to doing so.
- **Bedding**, including sheets, a comforter and blanket can show evidence.
- **Upholstered furniture** around seams, edges of cushions and undersides of chairs.
- **Wood furniture** on the undersides and interiors of chests where drawers slide.
- **Bed frames** around metal joints and lips.
- **Window and door frames**
- **Cracks and crevices**
- **Carpet tack strips at the wall**
- **Baseboards**
- **Remove and inspect outlet and switch plates.**
- **Inspect smoke detectors, thermostats**
- **Drapery pleats or other window coverings**
- **Loosened wallpaper**
- **Check ceiling/wall junctions/ceiling moldings**

Landlords may want to provide a copy of this manual to select vendors such as carpet installers or painting vendors. Landlord could impose notification requirements on these vendors if bed bugs are discovered.

If bed bugs are found in a unit, all adjoining units should be immediately inspected. Make sure inspection results are documented.

Don't Be Part of the Problem

- Make it a habit to visually check yourself for bed bugs crawling on your person before entering and exiting a unit. Check your tool bag/box or anything else you are taking in or out of a unit. If you have co-workers with you, check each other. There are some non toxic sprays that you can use that are effective for killing unseen hitchhikers. Make sure that any such spray be OK'd by the company prior to using.
- Consider having a bright LED-type flashlight with you.
- Consider having a 10 power magnifying glass with you.
- Bring a supply of tie-type plastic garbage bags with you to contain infected areas.
- Vacuum cleaners should be of the bag less type – empty into a plastic bag and seal after every use. If the vacuum is of the bag type, seal bag in plastic bag immediately upon finishing and throw away. **DO NOT REUSE THE BAG!**
- Remove any wild animal roosts and bird nests that may be on or around the home or apartment. Bed bugs like these areas of harborage.
- Do not allow residents to retrieve abandoned furniture/mattresses/box springs at the dumpster or from a “set out.”
- Keep your eyes alert for any bed bugs during normal routine maintenance and notify your company's manager immediately if activity is spotted.

Complaint By Resident

Act quickly on any bed bug complaint by a resident. Inspect the resident's unit as soon as possible as well as adjacent units if bed bugs are discovered. Follow manual and company protocol and seek professional help.

Bed Bugs Discovered; Now What?

This problem cannot be overlooked. Ignoring signs of bed bugs will increase the cost of extermination, increase the invasiveness of extermination, and increase potential liability. If bed bugs are discovered, notify your manager immediately. Your company should seek prompt professional help from a licensed exterminator. The Ohio Department of Agriculture licenses pesticide companies. You can discover if an applicator company is properly licensed by going to:

1. www.agri.ohio.gov
2. Click on Pesticide Regulation; search for pesticide company
3. Click on online services

Be sure the company you select is experienced in bed bug eradication. You may want to talk with fellow landlords who have dealt with bed bugs. Unfortunately, single treatments are rarely effective and multiple treatments may be required. Depending on the severity of the bed bug problem and the company you select, written notice should be provided to the resident notifying them when the bed bug treatment will be performed and what the tenant needs to do to prepare for the treatment. Although treatment protocol varies from company to company, attached exhibit ___ provides common requirements. It is highly recommended that the notice provide the tenants name, proper address and the date the notice was delivered.

Maintain a copy of this notice in tenant's file. Over the counter chemicals are available to treat bed bugs but apartment staff may be prohibited from using certain chemicals unless the employer is licensed by the state of Ohio. Also improper treatment may cause the problem to spread and become worse not better. It may also be important to inspect and/or treat adjacent unit (beside/below/above).

The Central Ohio Bed Bug Task Force is composed of a group of industry, education, public safety and health professionals in the Columbus, Ohio area. www.centralohiobedbugs.org.



**VISIBLE SIGNS OF INFESTATION CHECKLIST
UNOCCUPIED UNITS**

Completed By: _____ **Date:** _____

Unit: _____ **Complex:** _____

The Purpose of this Checklist is to determine whether or not there are any visible signs of infestation in the above described unit as of the date when the unit was inspected. Please consult with the pamphlet "Looking for Bed Bugs in Central, Ohio" on file with the leasing or management office for further details about treatment options.

A bed bug infestation can be recognized by

- Blood stains from crushed bugs or
- Rusty (sometimes dark) spots of excrement on sheets and mattresses and walls.
- Fecal spots, eggshells and shed skin may be found near their hiding places.
- An offensive, sweet, musty odor from the bed bug scent glands may be detected when infestations are severe.

Additional information and photographs can be found at the Central Ohio Bed Bug Task Force Web site (www.centralohiobedbugs.org) or The Ohio State University Department of Entomology Fact Sheet (<http://ohioline.osu.edu/hyg-fact/2000/2105.html>).

In occupied apartments, a minimal amount of clutter is necessary in order to check properly. If the apartment is too cluttered the time spent will not be beneficial. To do a thorough check, all apartments above and below and side-to-side should be inspected.

The following is a list of places that you are required to check for visible signs of infestation. Check NVSI (No Visible Signs of Infestation) if you do not see visible signs. Check VSI (Visible Signs of Infestation) if you see visible signs.

BEDROOMS:

VSI _____ NVSI _____ Drapery pleats or other window coverings

VSI _____ NVSI _____ Loosened wallpaper

VSI _____ NVSI _____ Check ceiling/wall junctions/ceiling moldings

LIVING & DINING AREAS:

VSI _____ NVSI_____ Carpeting in all rooms can be pulled away from wall & tack strip—visually check.

VSI _____ NVSI_____ Check any cracks in wooden molding (bed bugs like wood); Check cracks in walls or behind any peeling or chipped paint.

GENERAL:

VSI _____ NVSI_____ Remove all outlet and switch plate covers—check back and front of covers.

VSI _____ NVSI_____ Removing baseboards (selectively) may reveal bed bugs. Bed bugs tend to congregate in certain areas but you may find isolated one and two's.

VSI _____ NVSI_____ Check electronic items; inspect smoke detectors, thermostats, phones, clocks, etc.

VSI _____ NVSI_____ Check ceiling/wall junctions for visual evidence of bed bugs.

VSI _____ NVSI_____ Loose wallpaper should be examined

VSI _____ NVSI_____ Window and door frames

VSI _____ NVSI_____ Cracks and crevices

VSI _____ NVSI_____ Carpet tack strips at the wall

VSI _____ NVSI_____ Check inside, around and behind all appliances, in all closets and utility rooms, and in and around any exterior patio areas.

**IN THE EVENT THAT YOU CHECK ANY OF THE VSI SECTIONS ABOVE,
CONTACT YOUR PROPERTY MANAGER AND A PROFESSIONAL
EXTERMINATORY IMMEDIATELY!**

VISIBLE SIGNS OF INFESTATION CHECKLIST OCCUPIED UNITS

Completed By: _____ **Date:** _____

Unit: _____ **Complex:** _____

The Purpose of this Checklist is to determine whether or not there are any visible signs of infestation in the above described unit as of the date when the unit was inspected. Please consult with the pamphlet "Looking for Bed Bugs in Central, Ohio" on file with the leasing or management office for further details about treatment options.

A bed bug infestation can be recognized by

- Blood stains from crushed bugs or
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The following is a list of places that you are required to check for visible signs of infestation. Check NVSI (No Visible Signs of Infestation) if you do not see visible signs. Check VSI (Visible Signs of Infestation) if you see visible signs.

BEDROOMS:

VSI _____ NVSI _____ Check tuft lines all around top and bottom of mattress. If the mattress has holes, rips or tears in the covering, bed bugs may be inside—

VSI _____ NVSI _____ Remove muslin wrap on bottom of box spring and thoroughly check underneath of box spring.

VSI _____ NVSI _____ Remove all contents of dresser and chest of drawers—take drawers out of their home and inspect thoroughly inside and out—top and bottom.

VSI _____ NVSI _____ Dismantle (if possible) and check all parts of bed frames particularly if frame is wood—bed bugs have an affinity for wood and fabric more than metal or plastic.

VSI _____ NVSI_____ Headboards need to be checked-if fastened to wall, remove and inspect behind.

VSI _____ NVSI_____ Bedding, including sheets, a comforter and blanket can show evidence.

VSI _____ NVSI_____ Drapery pleats or other window coverings

VSI _____ NVSI_____ Loosened wallpaper

VSI _____ NVSI_____ Check ceiling/wall junctions/ceiling moldings

LIVING & DINING AREAS:

VSI _____ NVSI_____ Check top, sides and underneath of all furniture pieces to include seams, tufts, skirts and crevices. This should include couches, recliners, easy chairs, end tables, coffee tables.

VSI _____ NVSI_____ Carpeting in all rooms can be pulled away from wall & tack strip—visually check.

VSI _____ NVSI_____ Check any cracks in wooden molding (bed bugs like wood); Check cracks in walls or behind any peeling or chipped paint.

GENERAL:

VSI _____ NVSI_____ Remove all outlet and switch plate covers—check back and front of covers.

VSI _____ NVSI_____ Removing baseboards (selectively) may reveal bed bugs. Bed bugs tend to congregate in certain areas but you may find isolated one and two's.

VSI _____ NVSI_____ Check electronic items; inspect smoke detectors, thermostats, phones, clocks, etc.

VSI _____ NVSI_____ Check ceiling/wall junctions for visual evidence of bed bugs.

VSI _____ NVSI_____ Picture frames and loose wallpaper should be examined

VSI _____ NVSI_____ Window and door frames

VSI _____ NVSI_____ Cracks and crevices

VSI _____ NVSI_____ Carpet tack strips at the wall

**IN THE EVENT THAT YOU CHECK ANY OF THE VSI SECTIONS ABOVE,
CONTACT YOUR PROPERTY MANAGER AND A PROFESSIONAL
EXTERMINATORY IMMEDIATELY!**

NOTICE TO RESIDENTS

Your residence will be treated for bed bugs on:

Please prepare for bed bug treatment by performing the following:

- Remove all personal items (except furniture) from floors in rooms and closets to be treated.
- Place clothing and other personal items into large plastic bags for alternate treatment* and temporary storage away from treatment zones. [*Bagged items must either be hot-washed and dried, or dry-cleaned, or heat-treated (130° F for 1 hour) or fumigated before replacing in treated rooms and closets.]
- Vacuum floors and carpets in rooms to be treated for bed bugs.
- Vacuum all surfaces and cushion seams of upholstered furniture.
- Remove blankets, quilts and linens from mattresses.
- Wash and dry bed coverings using HOT settings / cycles of washer and dryer, or dry clean if needed.
- Infested mattresses and box springs must either be:
 - wrapped in plastic sheeting and discarded – posted as “BED BUG INFESTED” (to prevent re-use by others); or, if saved,
 - encased in Protect-A-Bed™ encasements (available from <http://www.protect-a-bed.com/categories.asp?cat=26>), following treatment by the service technician.
- Discard older, infested upholstered furniture and wood bed frames, if possible, in the same manner as described for mattresses and box springs. [*Note: Discarded bed bug-infested furniture must not be available for re-use by others!*]

Treatment Description

- The service technician(s) will apply a residual liquid insecticide formulation to the cracks, crevices and seams of the mattresses, bed frames, upholstered furniture, infested draperies, night stands and baseboards.
- An insecticide dust formulation will be injected into the lower utility penetrations in the walls of your residence.
- You may re-occupy and return items to treated areas 3 to 4 hours following service. The strategic treatment process poses negligible risk to occupants.
- You may continue to see a few bed bugs for several after your residence is treated. This is normal. However, if pest activity persists 14 days after treatment, please call your resident manager to schedule a follow-up service.

Thank you in advance for your cooperation.

NOTICE TO RESIDENTS

PREPARING FOR BED BUG TREATMENT

Please prepare as follows:

1. Be ready to leave your residence when technician arrives and remain out of the residence for 3 hours after application in apartment.
2. Unplug ALL electronics.
3. Remove ALL items 3 feet from walls in ALL rooms.
4. Bag ALL personal/sensitive items such as:
 - ALL clothes (wash/dry on HOT settings) and shoes
 - ALL personal documents/papers
 - ALL children's toys/clothes
 - ALL medications
5. ALL food must be stored in cabinets or refrigerator.
6. Vacuum
 - ALL rooms on ALL floors
 - ALL furniture
 - ALL mattresses and box springs
 - DISPOSE OF VACUUM BAG IMMEDIATELY AFTER!!!!!!
7. Remove ALL bedding such as:
 - Comforters
 - Sheets
 - Quilts
 - BlanketsAnd wash/dry on HOT settings
8. May need to dispose of and destroy infested mattresses/
box springs/furniture

>The service technician will apply insecticide to bed frames, mattress seams, furniture seams, wall voids, and baseboards along room perimeter where bed bug activity is found/probable.

>Activity may continue as bed bugs emerge over the next 2 weeks and come in contact with the insecticide treatment.

*******ACTIVITY AFTER FOUR WEEKS MUST BE REPORTED
IMMEDIATELY FOR FOLLOW UP TREATMENT*******