

BED BUGS

PUBLIC HEALTH ISSUE:

The common bedbug (*cimex lecturlarius*) is the species most commonly found in human living environments. This species is found in temperate climates throughout the world and feeds on blood. The bedbug belongs to the family **Cimicidae** because it lives by hematophagy which means that this insect feeds on the blood of humans and other warm-blooded hosts. This insect is named after the habitat that it prefers to reside in which is the mattresses of beds.

Adult bedbugs are reddish-brown, flattened, oval and wingless, with microscopic hairs that give them a banded appearance. These insects are visible with the naked eye. Adults grow to 4 to 5 mm (1/8th – 3/16th of an inch) in length. Newly hatched nymphs are translucent, lighter in color and become browner as they molt and reach maturity which takes about 5 weeks. Bedbugs are often compared to lentils or apple seeds in size.

When feeding, bedbugs typically feed just before dawn with a peak feeding period just before sunrise. They can be observed to feed at anytime during the day or evening. They can reach their host by crawling, and sometimes, they climb the walls to the ceiling and jump down on a location by feeling a heat wave. They are attracted to warmth and the presence of carbon dioxide from their hosts. The insect pierces the skin of its host by two hollow tubes. With one tube, it injects saliva, which contains anticoagulants and anesthetics, while with the other tube, it withdraws the blood. The insect typically has a feeding period of approximately 5 minutes. The bites are not usually felt for minutes or hours later.

Bedbugs can live up to a year to eighteen months without a feeding. They normally try to feed every 5 to 10 days. Bedbugs that go dormant from lack of food can live longer than a year while well-fed bedbugs live between 6 to 9 months. A host may have bites on sites in a variety of places on the body and the bite patterns may be in a row or in clusters. The bites appear as raised bumps or a flat welt and are often accompanied by intense itching. The raised bump or welt is a result of an allergic reaction to the bite and may not appear until approximately 9 days later than the initial feeding.

There have been no known cases of bedbugs passing disease from host to host. There has been extensive testing conducted in a laboratory setting to determine that bedbugs cannot pass disease from one host to another. Bedbugs are considered to be more of an annoyance than a disease causing entity.

Bedbugs were thought to be eradicated about 50 years ago in the United States and elsewhere with widespread use of DDT. The cause of the resurgence of bedbugs is still uncertain, but most believe it is related to increased international travel and the use of new pest-control methods that do not affect bedbugs. The use of baits instead of the use of insecticide sprays is believed to have contributed to the increase of prevalence of the bedbug population.

ROLE OF THE HEALTH OFFICER:

Health officers can serve a role in the detection of bedbugs and provide technical assistance in regards to providing recommendations for licensed pest extermination companies to treat and exterminate the bedbugs if found in a dwelling. Health officers can conduct the appropriate enforcement actions in accordance with RSA 48A:14 for Minimum Housing Standards for Rental Property for the infestation of pests. (Please refer back to the Housing section of this manual for RSA48A:14.) The infestation of bedbugs may be enforced differently in the cities and larger towns depending upon their housing codes (if applicable).

Bedbugs thrive in places and dwellings that have high occupancy levels such as hotels, motels, or bed and breakfasts where people can carry the bedbugs back to their homes in their luggage. When coming back from traveling, people should thoroughly inspect their luggage and clothing before putting items away. People can inadvertently pick up bedbugs by purchasing used furniture, mattresses or clothing that is infested and bringing those products back to their household. If an area is severely infested, bedbugs may actually crawl onto the clothing of a visitor and be carried away in people's clothing so health officers need to take special care when conducting inspections in places of heavy infestation to assure that they do not carry that infestation to their own homes. Bedbugs may travel between units in multi-unit dwellings and be carried between households via pets

Bedbugs like to hide in the daylight hours so it may be difficult to locate them on the initial inspection if there is not a heavy infestation. There has been recent use of dogs to sniff out the hiding places of bedbugs. Bedbugs like to hide in dark places like mattress ribbing and around the label of the mattress as well as in the mattress interior. They also like to hide in bed frames, nearby furniture, in the baseboard, electrical outlets, lighting fixtures, walls and in any clutter that is in the bedroom that may be near the host, but they can also travel up to 100ft to feed.

For more information contact:

<p style="text-align: center;">NH Division of Public Health Services 29 Hazen Drive Concord, New Hampshire 03301 1-800-852-3345 ext. 4781, or (603) 271-4781</p>



BED BUGS DO NOT DISCRIMINATE **Common Sense Advice for Everyone**

Bed Bugs don't discriminate. Anyone can get Bed Bugs. These insects do not care what race you are, your age, or your economic status; they are simply looking for their next meal. Help remove the stigma associated with Bed Bugs and participate in the solution.

Know the facts about Bed Bugs. Bed bugs are very successful hitchhikers, moving from an infested site to furniture, bedding, baggage, boxes, and clothing. Bed Bugs feed exclusively on blood. Depending on the conditions of your home, each Bed Bug may feed once every 5 to 10 days. They are quite resilient and are capable of surviving over a year without feeding. Bed Bugs are usually active late at night - not during typical home visits. Bed Bugs do not carry disease. This factsheet provides guidance on the precautions you can take to prevent the spread of Bed Bugs.

**Protect yourself. Get informed.
Stop the Spread.**

www.nhbedbugs.com

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- ❑ **Contact a Pest Professional.** Do NOT treat the situation yourself. Treating Bed Bugs with over the counter remedies may make it worse. Contact a pest management professional immediately. If you are a tenant, contact your landlord immediately. If your landlord is not responsive contact your local code enforcement officer.
- ❑ **Vacuum your mattress, box spring, headboard, and floors daily.** Empty the vacuum after each use, putting the vacuum cleaner bag into a sealed plastic bag and throwing it in the trash outside (to save money you can put the vacuum cleaner bag in a sealed plastic bag in your freezer to kill the Bed Bugs. Empty the dead bugs in the trash and you can re-use the bag!).
- ❑ **If you throw out furniture.** Write BED BUG INFESTED in HUGE letters with spray paint or a marker so that someone else does not pick it up. If you are not taking the furniture directly to the dump yourself, contact your local trash department and schedule a pickup immediately.
- ❑ **Cover the mattress and box spring with Bed Bug proof mattress encasement.** Purchase covers for *both* the mattress and box spring. If you can only afford to purchase one encasement, choose to cover the box spring.
- ❑ **Prepare the area well before the pest management company arrives.** Gather all clothing and bedding and put them in the dryer on high heat (at least 140 degrees) for at *least* 20 minutes to kill Bed Bugs. Do not over pack the dryer. Put cleaned items in sealed plastic bags until after treatment.
- ❑ **Do NOT change where you sleep.** Make your bed a Bed Bug free “island” by pulling the bed away from the wall. Do not let the bedding touch the floor. Sleeping in this “safe zone” will reduce the Bed Bug spread and help improve control.
- ❑ **Place Bed Bug traps under the feet of your beds and other infested furniture.** Called a Climbup®, these devices will trap Bed Bugs and prevent them from getting into your bed.
- ❑ **Remove the Clutter:** Clutter is a Bed Bug's best friend and a pest management professional's worst enemy. Do not store items under the bed.
- ❑ **Tips for traveling.** In hotel rooms, use luggage racks to hold your luggage when packing or unpacking rather than setting it on the bed or floor. Upon returning home, unpack directly into a washing machine and inspect your luggage carefully.





BED BUGS DO NOT DISCRIMINATE

Common Sense Advice for Home Visitors

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- ❑ **Carry in to the home only what is necessary.** Minimize the amount of personal items you bring into the home. Leave your coat, pocketbook, briefcase and other excess items in the car.
- ❑ **Be smart about where you sit.** Sit on a hard chair or bring a portable stool. Sit in the middle of the room away from carpets (preferably an area with a hard type of flooring). Sitting on upholstered furniture or beds will put you and the next family you visit at risk.
- ❑ **Set your belongings on a table.** By putting your belongs on the bed or upholstered furniture, you run the risk of taking a Bed Bug home. Place your belongings on a table or on a solid surface floor.
- ❑ **Inspect yourself before you get in your car.** Inspect your clothes upon leaving for Bed Bugs. Don't forget to inspect your shoes and shoelaces. Inspect your personal office and living area for signs of Bed Bugs on a regular basis.
- ❑ **Keep an extra set of clothing (including shoes) in your vehicle.** Keep a change of clothes and shoes in case Bed Bugs are found on you (or seen walking around the home). Put the contaminated clothes into a sealed plastic bag or tote and then directly into your dryer. Dry clothes in a dryer and/or steam-clean your shoes.
- ❑ **Protect your car from unwanted hitchhikers.** After each home visit, place all your clothing, bags, and shoes in to a plastic storage tote with airtight lid. This will confine hitchhiking bugs to your "home visiting bags and toolkit".
- ❑ **Decontaminate your clothing.** After a visit, gather all your clothing, bags, and shoes and put them in the dryer on high heat (at least 140 degrees) for at *least* 20 minutes to kill Bed Bugs.
- ❑ **Vacuum your vehicle after a home visit.** Vacuum your vehicle after a home visit using a local carwash vacuum cleaner. This will prevent you from contaminating your personal vacuum.
- ❑ **Decontaminate your home vacuum.** If you use your own vacuum, suck up some talcum powder prior to and immediately after vacuuming a vehicle. Remove the vacuum cleaner bag outside of the home or office and seal it in a plastic bag. Dispose of the vacuum bag in a trash receptacle outside of the home or office. Inspect all vacuum attachments and brushes for any signs of Bed Bugs and eggs.
- ❑ **Insect repellants applied to your skin or clothes DO NOT repel Bed Bugs.** Bed Bugs will feed through skin covered in DEET and are NOT repelled by any insect repellant labeled for biting insects (or ticks).
- ❑ **Know how to recognize bed bugs.** Adult Bed Bugs are visible but the nymphs – youngest ones and eggs are very small in size. Eggs are glued to objects by female Bed Bugs. For photos or additional information, visit Bed Bug Central at www.bedbugcentral.com.



BED BUGS DO NOT DISCRIMINATE **Common Sense Advice for Landlords**

Bed Bugs don't discriminate. Anyone can get Bed Bugs. These insects do not care what race you are, your age, or your economic status; they are simply looking for their next meal. Help remove the stigma associated with Bed Bugs and participate in the solution.

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- ❑ **Inspect all units prior to rental.** Inspect all units thoroughly for signs of Bed Bugs prior to renting to a new tenant. In your inspection, look behind baseboards, window and door casings, behind electrical covers, in telephones or other electronic devices and in any small crack or crevice in the wall or floor. If inspecting an occupied unit include headboards and bed frames, inside box springs, behind wall hangings, between curtain folds, in drawers and drawer rails, behind and underneath furniture, under and around floor clutter.
- ❑ **Interview your prospective tenants.** Ask all incoming tenants if they have had exposure to Bed Bugs in the past in their own apartment or through a neighbor. Remind them – in non-threatening terms – how easy it is to transport Bed Bugs into their new apartment.
- ❑ **Provide Bed Bug education to tenants.** Share with them printed information about Bed Bugs and how to prevent infestations. Explain that they may be inadvertently bringing Bed Bugs into the unit if they are leaving an infested apartment or building. Taking precautions before moving in will save both the landlord and the tenants the costs and disruption of dealing with an infestation.
- ❑ **Develop a Bed Bug policy for the building.** Specify in the policy that tenants are to immediately contact the landlord if they see a Bed Bug. Be sure to specify a time frame and how the notification is to be submitted. If the tenant does not notify you immediately, the problem will take longer to control and will be more difficult.
- ❑ **Contact a pest professional.** If notified by a tenant about Bed Bugs, contact a certified pest management professional IMMEDIATELY. Getting on top of the problem within the first two weeks of an infestation will increase the likelihood of success. Do NOT treat the situation yourself. Treating Bed Bugs with over the counter remedies may make it worse.
- ❑ **Prepare the area well before the pest management company arrives.** Ask the pest control company how the tenant should prepare for the treatment. Communicate these instructions clearly to the tenant. Make sure the tenant prepares properly for the treatment. If there have been no tenant complaints of Bed Bugs in neighboring apartments, have the exterminator inspect all surrounding apartments (above, below and on either side of the infested unit) to see if Bed Bugs are in these units. Have tenant gather all clothing and bedding and put them in the dryer on high heat (at least 140 degrees) for at least 20 minutes to kill Bed Bugs. Put cleaned items in sealed plastic bags until after treatment.
- ❑ **Interview your pest control company.** If your pest control company cannot provide a detailed plan for addressing the infestation, including a schedule of treatments and an Integrated Pest Management strategy for the tenants, look else where for a professional who can. Check out Bed Bug Central for a list of pest management professionals in your area who have been certified Bed Bug FREE. Visit them at www.bedbugcentral.com/bedbugfree

RECOMMENDATIONS FOR TREATING A DWELLING FOR BED BUGS

For the treatment of Bud Bugs, you will need:

Several sturdy trash bags with ties

Vacuum; HEPA vacuum is best

Dust mask

Diatomaceous earth

Mattress and pillow covers/encasements (Use Protect-A-Bed[®] or similar quality)

Available laundry facilities

Interceptors – bed leg traps (1 per leg, Climb up[®] or similar quality)

Caution: Be sure that all children and any person with asthma or other respiratory concerns are out of the house for 6 hours during cleaning and dusting. Follow manufacturer's instructions when using Diatomaceous earth.

Recommendations:

- 1) Have a pest professional identify the insect you have collected in plastic bag or vial to be certain that insect is actually a bed bug you are treating for.
- 2) Using sturdy trash bags, bag up all bedding, clothing, and washable materials from all rooms (including bathroom throw rugs, curtains, dish towels). Seal bags. Start in the room with the largest infestation.
- 3) Vacuum all surfaces. A strong suction, HEPA style vacuum is best if available. This includes walls, floor crevices, around heating units, all furniture and mattresses. Be sure to *immediately* discard vacuum cleaner bag in to a sealed trash bag. Discard immediately in to an *outside* trash dumpster.
- 4) Remove box spring dust cover fine mesh on the underside of box spring. Vacuum inside of box spring. Using Diatomaceous earth, dust up into the corners of the box spring where the box spring covering material is gathered. Encase box spring into mattress encasement. Use Protect-A-Bed[®] or similar quality encasement.

- 5) Dust carpet edges and gaps around baseboards. Pull carpet off tack strips around edges of room. Vacuum up bed bugs, dust with a fine layer of Diatomaceous earth and replace carpet back onto tack strips.
- 6) Vacuum mattress thoroughly, paying particular attention to the binding that runs along the edges. Cover mattress with encasement using Protect-A-Bed® or similar quality. If only one encasement is affordable, encase the box spring only.
- 7) Wash all laundry in hot water and dry in a hot dryer. Launder all pillows, plush toys, slippers, sneakers and anything else that can be dried, especially those items stored near or under the bed. Note that foam style pillows cannot be dried in a hot dryer and should be disposed.
- 8) Throw away all used trash bags used to carry the items to be laundered into the outside dumpster. *Do not* place clean clothes in the used bag. Seal clean clothes in bags or bug proof rubber tote containers.
- 9) Wall coverings, pictures, items made of material should also be inspected and treated because bugs could be hiding behind or in these items.
- 10) Install bed bug leg traps under the four legs of the bed. Use Climb up® brand or similar quality traps. Use traps under legs of couch or other upholstered furniture if furniture is contaminated with bed bugs.
- 11) Treat entire apartment/dwelling thoroughly, during one session. Treating over a period of days is less effective and risks re-contaminating treated areas. If bed bugs are seen, bites continue or there is evidence of ongoing bugs in bed bug traps, re-treatment is necessary.

TITLE III

TOWNS, CITIES, VILLAGE DISTRICTS, AND UNINCORPORATED PLACES

CHAPTER 48-A

HOUSING STANDARDS

Section 48-A:14

48-A:14 Minimum Standards Established. – No landlord, as defined by RSA 540-A:1, I, renting or leasing a residential dwelling in a municipality which has not adopted ordinances, codes or bylaws pursuant to this chapter shall maintain those rented premises in a condition in which:

I. The premises are infested by insects and rodents where the landlord is not conducting a periodic inspection and eradication program;

I-a. The premises are infested by bed bugs and the landlord is not conducting a periodic inspection and remediation program. In this paragraph "remediation" means action taken by the landlord that substantially reduces the presence of bed bugs in a dwelling unit for a period of at least 60 days;

II. There is defective internal plumbing or a back-up of sewage caused by a faulty septic or sewage system;

III. There are exposed wires, improper connectors, defective switches or outlets or other conditions which create a danger of electrical shock or fire;

IV. The roof or walls leak consistently;

V. The plaster is falling or has fallen from the walls or ceilings;

VI. The floors, walls or ceilings contain substantial holes that seriously reduce their function or render them dangerous to the inhabitants;

VII. The porches, stairs or railings are not structurally sound;

VIII. There is an accumulation of garbage or rubbish in common areas resulting from the failure of the landlord to remove or provide a sufficient number of receptacles for storage prior to removal unless the tenant has agreed to be responsible for removal under the rental agreement and the landlord has removed all garbage at the beginning of the tenancy;

IX. There is an inadequate supply of water or whatever equipment that is available to heat water is not properly operating;

X. There are leaks in any gas lines or leaks or defective pilot lights in any appliances furnished by the landlord; or

XI. The premises do not have heating facilities that are properly installed, safely maintained and in good working condition, or are not capable of safely and adequately heating all habitable rooms, bathrooms and toilet rooms located therein, to a temperature of at least an average of 65 degrees F.; or, when the landlord supplies heat in consideration for the rent, the premises are not actually maintained at a minimum average room temperature of 65 degrees F. in all habitable rooms.

Source. 1979, 305:7, eff. Aug. 21, 1979. 2013, 48:2, eff. Jan. 1, 2014.

How to Move and Leave Bed Bugs Behind

If you think that moving will automatically eliminate your bed bug problem, *think again!*

Unless you take the right precautions, your bed bugs are likely to move with you, causing more trouble in your new living space. However, if you must move to a new home before your bed bug infestation has been eliminated, you can take these measures to avoid bringing bed bugs with you:

Packing:

- Place all belongings in clear plastic bags and seal tightly. Sort items by type (clothes, towels, sheets and blankets) and keep things that are known to be infested away from clean items.
- Wash and dry all fabric items on the hottest recommended setting and then seal them in clear plastic bags labeled "Clean".
- Put items that cannot be sanitized inside sealed clear plastic bags (electronics, appliances, books, etc.) and ask a professional pest manager how these items should be treated.
- Purchase bed bug proof mattress covers for the beds of each member of the household. Also cover box springs.
- If you decide to throw away infested furniture or mattresses, wrap them in plastic and clearly paint or write "Bed Bugs" on them, so neighbors won't bring the items into their homes. You may want to go even further and physically slash or destroy the items as well.

Moving Day:

- Have each person shower and change into clean clothing and shoes and bag up the current (possibly infested) clothes for laundering.
- Give pets a bath to ensure that they are bed bug free before taking them to your new home.
- All furniture should be sanitized. Furniture such as night stands and bookshelves can be most effectively sanitized and treated when they are empty. If you are moving furniture items that may be infested, you should first remove and pack the contents of the furniture. The empty furniture should then be treated by a licensed pest management professional before moving into your new residence.

Unpacking:

- Before personal belongings can be accessed in the new home, they **MUST** be bed bug free, or the new home will likely become infested as well.
- Launder any items not labeled "Clean" before using.
- If you acquire any new or used furniture, inspect it carefully before bringing it into your home to make sure it is bug free.
- Educate yourself about bed bugs and what to look for using fact sheets from <http://www.michigan.gov/emergingdiseases>
- Contact your building manager immediately if you notice any signs of bed bugs in your new home. The earlier an infestation is detected, the easier it will be to treat.

