

BEDBUGS

Monmouth County Health Department

Michael A. Meddis Health Officer
Public Health Coordinator

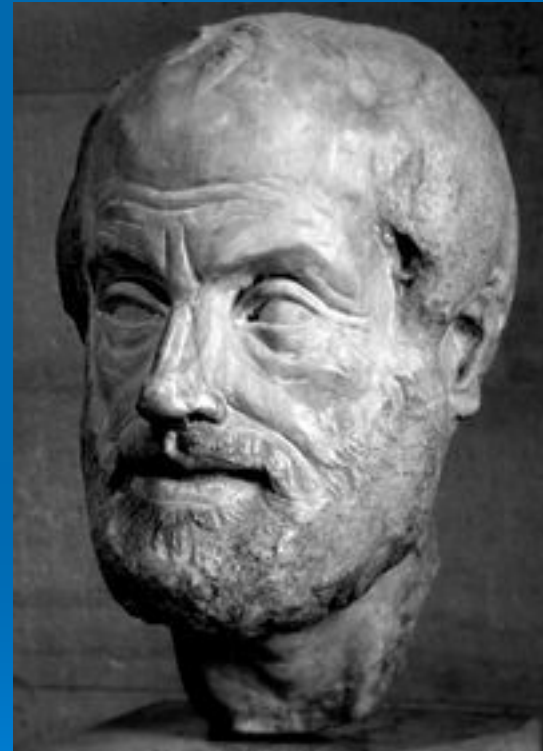


A Brief History

- *“Goodnight, Sleep Tight, & Don’t Let the Bedbugs Bite”*
- Scientists believe that bedbugs have followed us from the cave to the tent to the house
- Evidence includes a fossilized 3500 year-old bed bug found in an Egyptian village

A Brief History

- References to bedbugs have been found in the works of Aristotle, Pliny and Aristophanes



A Brief History

- Bed bugs have been around for centuries. Documentation from the 17th century spoke about infestations of bed bugs
- According to *legend*, 19th century Gentlemen would travel with a pig when they were due to stay at unfamiliar hotels. They would put the pig to bed first letting the bed bugs get their fill, before they retired for the evening

A Brief History

- In the United States, bed bugs were very common until about World War II
- Many feel that a decrease in infestations occurred with the introduction of such pesticides as DDT
- But DDT was banned in 1972, because of its negative impact on our environment

A Brief History

- Bedbugs were not an issue” for around 30-40 years
- It was not until the last decade that reported cases gave an indication of a possible rise in bed bug infestations
- Today there is a new generation of professionals who have never had to deal with a bedbug infestation before:

Such as Exterminators, Researchers, Scientists, Landlords, Tenants, Entomologists, Building Managers, Public Health, Housing & Code Officials

A Brief History

- Why are we seeing a rise in bedbug activity now?
- Several theories:
- Increased international travel especially to exotic places. Bedbugs travel with people, sometimes in luggage
- The DDT ban of 1972
- Unfamiliarity with the pest

A Brief History

- Pesticides in use today are less toxic and possibly more pest specific. DDT was a “broad spectrum” pesticide
- Today many pest control experts use baiting tactics for in home infestations of such things as ants, roaches, and spiders
- Baiting tactics work well for their intended subjects, but bed bugs are *blood feeders*

What is a Bedbug?



What is a Bedbug?

- Simply put, a bedbug is a small insect that feeds on the blood of mammals and sometimes birds.
- They are straw colored to reddish brown, wingless insects with an oval shaped body.
- Adults are about $\frac{1}{4}$ " long and flat, which is why they can fit into narrow crevices

What is a Bedbug?

- Bedbugs are attracted to carbon dioxide and body heat but **not** to odors
- Bedbugs prolific breeders. They are able to “repopulate” and re-infest a room in as little as 3 months
- Easy to see with the naked eye, but difficult to find when they are hiding

What is a Bedbug?

- Bedbugs feed through two hollow tubes that pierce the skin. One tube injects saliva containing an anesthetic that numbs pain, and an anticoagulant that helps keep blood flowing. Blood is drawn up into the second tube
- But an irritation or bite experience in bed may not **necessarily** be due to bedbugs

Cimex lectularius


Immature bedbugs and “castings”
Straight pin used for size reference



Where Are They Found?

- Bedbugs are opportunistic.
- Bedbugs have been found from the finest hotels to the most modest accommodations
- Bedbugs do not recognize “clean” or “dirty”
- Bedbugs do not care who you are, where you live or what kind of car you drive
- They are truly “equal opportunity infesters”

How Do Bedbugs Reproduce?

- Bedbugs lifespan is 10 months to a year
 - Because they live indoors, bedbugs can breed all year long.
 - During her lifespan, depending upon temperature and food, the bedbug may lay 200-400 eggs
 - Eggs hatch in about 10 days
- 

How Do Bedbugs Reproduce?

- Young reach adulthood in 5-8 weeks
- Bedbugs will shed their skins (sometimes called “castings”) five times before reaching adulthood
- Young bugs must take a blood meal in order to shed their skins and grow
- Like a mosquito, the female needs a blood meal before she can reproduce

Immature Bedbugs

Immature bedbug “casting” next to a common penny



Bedbug Bites

- Bedbugs *prefer* to feed on humans, but will feed on mice, rats, bats, rabbits, guinea pigs and birds
- Pets such as dogs and cats are **not** a major host
- Bedbugs feed for about 5-10 minutes, then crawl to a secluded area where they will digest their meal for several days

Bedbug Bites

- Bedbug bites are *not known* to spread disease!
- People may have varying reactions to the bite
- Some may not recognize that they have been bitten at all
- Some may have an allergic reaction to the saliva from the bite and develop itching and swelling

Bedbug Bites



Bedbug Bites

- Because individuals reactions vary, people in the household may have different opinions about how “Bad” the infestation is, or whether there is an infestation at all
- But bedbugs are a nuisance
- Bedbug problems do cause stress and sleeplessness

Recognizing the Problem

- Because bedbugs are nocturnal, early stages of infestation with low numbers of bedbugs are usually not recognized immediately
- You may see small bloodstains from crushed bugs, dark spots from bedbug droppings, welts or marks on the body, or the bugs themselves

Recognizing the Problem

Insect droppings (feces) on a mattress



Recognizing the Problem

Insect droppings (feces) on a mattress



Recognizing the Problem

- Bugs often hide in or near beds or bedroom furniture, in the tufts, seams and folds of the mattress
- In more severe infestations, bugs may spread to the cracks & crevices in bed frames, behind headboards, inside nightstands, behind baseboards & casings/moldings, pictures, loosened wallpaper etc

Recognizing the Problem

- In severe infestations bugs may be found in other areas of the home.
- In and on couches and chairs, behind pictures, in electrical outlets.
- Bugs may also hide in piles of books, papers, boxes, clothing and other clutter near the sleeping area

Where Did They Come From?

- In most cases bedbugs are transported from infested to non-infested areas when they cling to someone's clothing or crawl into luggage furniture or bedding that is then brought into homes
- Some literature suggests that bedbugs may travel along electrical wires and conduit, but they **prefer** to remain close to their host (i.e. food supply)

What Should I Do Now?

- THE TENANT(S) OR AFFECTED PERSON(S) ARE THE ONES WHO MUST PERFORM THE BULK OF THE WORK REQUIRED TO SUCCESSFULLY ADDRESS A BEDBUG PROBLEM.

Elimination requires cooperation between the homeowner or owner of the building, the occupants and a licensed pest control operator

Chemical Control

- Employ the services of a licensed Pest Control Operator (Exterminator), or report the problem to the landlord, if you are a tenant.
- The exterminator should make a careful inspection of the area and adjoining rooms and identify possible hiding places
- He will treat with appropriate pesticides
- *Only* spraying will absolutely ***not*** solve the problem

Physical Removal

- Treatment and removal of infested furniture and mattresses may be necessary
- Wash all bedding, draperies and clothing in hot water. Dry in a hot drier. Bedbugs will die at temperatures of over 140 degrees
- Check clothing in stored areas for bugs

Physical Removal

- Vacuum carpets and furniture.
- Vacuum the floor/wall junctions of the rooms to remove potential debris and material which would prevent the pesticide from reaching into the voids
- Frequent vacuuming removes numbers of bugs, Cleaning objects removes eggs which are glued in crevices

Physical Removal

- Wipe away or vacuum all dust from the bed frame, nearby furniture, floors and carpets
- Seal the vacuum bag in plastic and dispose in an outside dumpster or garbage can
- Vacuum every day or two until the bugs are gone

Bedbug Control

- Bedbugs can be distributed to other sites by the equipment used to remove them.
- When possible, the vacuum should be bagged and used only for the purpose of removing bugs

Bedbug Control

- Find, then clean areas where bedbugs hide
- Remove clutter from bedrooms and any other furniture that people may sleep or nap on
- Place the clutter into a garbage bag, seal it tightly
- If you need to save it, make sure it stays sealed for a year

Bedbug Control

➤ ***The Mattress***

- Throw it away and replace with a new one
- Or if you must, enclose it in a “dust mite mattress cover” (allergy supplies) until the bedbugs are eradicated
- Bedbugs can live for 2 months to a year without a food supply

Bedbug Control

- Do NOT have the mattress treated with residual insecticides.
- Bugs may still be present in the Box Spring. The box spring should be thoroughly inspected and either treated or replaced as necessary

Bedbug Control

- If you must keep the mattress, make sure any wet treatment dries thoroughly, then bag as mentioned previously
- Be very cautious about using pesticides! MCHD recommends homeowners hire a Pest Control Operator licensed by NJDEP
- Incorrect use of over the counter pesticides could seriously harm you or your family

Temperature Control

- Cold treatment, although largely impractical *can* be used to kill bedbugs on some delicate materials
- Exact times and temperatures are hard to accurately determine
- One university says that 5 days in a 10 degree F walk in refrigerator will work
Another cite says 32 degrees for 2-4 days

After Treatment

- After treatment, Make your bed an “Island”
- Move the bed away from the wall
- Don't let the linens, bed skirt and blanket touch the floor. This will make it harder for the bedbugs to crawl into the bed.
- Bedbugs can not fly or jump
- Complete control is often difficult to achieve with the first treatment

After Treatment

- Popular remedies of the early 1900's included smearing petroleum jelly on the bed legs or standing the legs in jars of soapy water. Some now suggest wrapping the bed legs with double sided sticky tape or silicon tape
- However these techniques may damage the bed and their effectiveness is questionable

Prevention

- Some problems can be prevented by washing clothing and bedding immediately after returning from a trip
- Inspect all used furniture & bedding before you bring it into your home
- **Never** bring discarded bed frames, mattresses, box springs or upholstered furniture into your home

Monmouth County Health Department
3435 Hwy # 9 North
Freehold NJ 07728
(732) 431-7456