

Bed Bugs 101

by Cathy Crowe, RN

What are bed bugs?



Bed bugs are nocturnal bloodsucking insects that attack humans and other mammals like dogs and cats. The common bed bug, *Cimex lectularius*, is a wingless bloodsucking insect, oval in shape and roughly 4-5 mm long when fully grown – about the size of an apple seed. They are a light tan color, but turn dark-reddish brown once they have fed on blood. Bed bugs can be easily seen with the naked eye but they hide in mattresses, bedding, furniture, cracks and crevices in walls and floors, and even behind loose wallpaper. Their eggs are whitish, pear-shaped, about the size of a pinhead.

Why are they a problem?

1. Health effects

Bed bugs cause both physical and psychological discomfort. The bug's blood-sucking habit causes physical reactions ranging from welts and itchiness to secondary skin infections that might require antibiotic treatment. Bed bugs have a beaklike piercing-sucking mouthpart system. They inject a fluid into their host that contains an anticoagulant (blood thinner) to help them get their blood meal. This fluid makes some people more sensitive to bites, causing irritation, itching and inflammation. For people with a chronic illness such as diabetes or for those whose immune systems are weakened, the risk of infection is serious.

To date, there is no evidence that bed bugs spread other disease (hepatitis B, hepatitis C or HIV); although some argue that there is the possibility of an infection spread.

The physical discomfort and the social stigma that accompany bed bug infestations can lead to sleeplessness, anxiety, worry and stress for those infested.

For the elderly, people with disabilities and those with pre-existing physical or mental health conditions, bed bugs pose an additional health challenge.

2. The cost

Bed bugs are very difficult to eliminate and require a combination of chemical and non-chemical approaches. This is known as 'Integrated Pest Management' – a combination of repeated pesticide spraying, preparation of your home by moving furniture away from walls, intense vacuuming and laundry, steam-cleaning, and in some cases the replacement of damaged mattresses, box springs and bedding. This takes time and money.

For the most part, authorities such as public health professionals do not consider bed bugs a 'health hazard' or a public health concern because they might not transmit disease. Instead, they consider bed bugs a 'nuisance' and a pest control problem. This disregard by officials is in part responsible for why city wide public education and prevention strategies are not yet on the public agenda – let alone funded – strategies that would have certainly minimized the growth of this problem.

For recipients of social assistance there might be some help available to cover costs like mattresses, if items have to be replaced.

Bed bug history

Do you remember this nursery rhyme?

Night, night, sleep tight, don't let the bed bugs bite!

This rhyme that many of us recite in jest makes light of an old problem.

Bed bugs were a common problem in homes prior to World War II. For the last 40 years, they have been rarely seen outside of cramped living quarters. The reduction in the incidence of bed bug infestations is thought to be related to improved sanitation, widespread use of pesticides and intolerance towards indoor pests.

Often thought of as a disease of the poor, bed bugs can thrive in clean environments and are not necessarily a reflection on cleanliness or personal hygiene.

Bed bugs have made a comeback globally. In Canada, reports of bed bugs by pest control companies began in 2001 in Toronto. By 2003, Toronto shelters, hostels and social housing buildings reported dozens of infestations. By 2006 there were reports of bedbugs in communities from Vancouver to Winnipeg and Halifax. A recent Ontario Non-profit Housing Association survey reported that more than 50% of buildings in mega cities have had a bed bug problem.

Theories of why bed bugs made such a strong comeback include: the decreased use of insecticides such as DDT, the development of bed bug resistance to pesticides, increased global travel, increased urban population density, and the diminished quality, availability and upkeep of housing in congregate living situations.

In North America, bed bugs have been reported in hotels, motels, emergency shelters, hospitals, student residences, rooming houses, social housing, co-ops and condos, as well as community centres, movie theatres, cruise ships, taxis and public transit. These are places with high rates of occupancy or turnover, and the bed bugs are being brought home!

How are they spread?

Bed bugs do not jump or fly so they either **crawl** or '**hitch hike**' from place to place on a wide range of articles including clothing, luggage, furniture, knapsacks and purses. They can stow away in boxes that are being moved, shipped or delivered. They can arrive in second-hand furniture, household items or clothing – for example from items bought at flea markets or at swaps. Bed bugs are known to crawl up to 20 feet at any one time and they can travel along pipes and electrical wires. Once established in a home they can travel from room to room or unit to unit.

How do they multiply?

Bed bugs breed all year. They usually feed at night. The female needs a blood meal before laying eggs and can lay between 200 and 500 eggs in her lifetime, which can be over a year. Eggs are deposited in batches of 10-50 and hatch in about 10 days, taking about two months to mature into adults. Bed bugs can survive up to a year without a human feed.

Where do they hide?

Bed bugs feed off of humans and animals, usually at night and spend the day hidden. They hide and lay eggs in cracks and crevices. Their flattened shape lets

them squeeze into narrow places in bed frames, headboards, in bedside furniture, behind baseboards, beneath decorator pillows or behind wall hangings and draperies, under buttons on mattresses and box springs, behind pictures and switch plates, in clock radios, phones, or in a book by the side of the bed, etc.

How to Prevent Bed Bugs

Prevention is smarter and cheaper!

Don't bring them home!

- Think twice before you bring second hand furniture, sofas, beds, mattresses, bedding or clothing or appliances into your home.
- Don't bring in furniture from the street.
- Carefully inspect for bed bugs and their eggs when buying used furniture or clothing at garage sales, second-hand stores, rummage sales or swap tables.
- Upholstered furniture and mattresses should be vacuumed and/or steamed before using.
- Be careful where you place your coat, knapsack, purse or briefcase when you are in a place that many people use

Don't let someone deliver them to your home!

- When shopping for a new mattress, sofa or other furniture ask if the delivery truck also takes away people's old mattresses, etc. There have been reported cases of people ordering new items, only to have their new purchase infested in the delivery truck.
- If you order your groceries or other items online, make sure the company is not using cardboard boxes, reused from other deliveries. Insist they move to plastic delivery boxes.

Household tips

- Vacuum carpets, bedroom furniture and upholstered furniture on a regular basis.
- Reduce clutter, especially boxes and piles of things in your bedroom. This will reduce hiding places for bedbugs and make it easier for treatment.
- Caulk cracks and crevices in the building exterior and also repair or screen openings to exclude birds, bats, and rodents that can serve as alternate hosts for bed bugs.
- Caulk and fill holes that may be present around your baseboards.
- If you are in the market for a new bed, consider a bed frame with metal legs and headboard which make it harder for bed bugs to climb.

- Move your bed an inch or two away from walls and keep blankets and sheets off the floor.
- If you have a wooden bed frame, the following are suggestions: apply a one-inch band of petroleum jelly (eg. Vaseline) around each wooden leg; place each leg of the bed in a clean, polished metal can; wrap each leg in metal tape; wrap double-sided tape around the bed legs; use carpet tape under the bed legs, place an insect glue trap under each bed leg. These measures can prevent bed bugs from crawling up.
- Bed bugs have a hard time climbing up bed frames, especially if the legs are wiped with a cloth to keep them shiny. If in the market for a new bed consider a metal frame.
- Use a mattress cover. Sealing the mattress and box spring in a fitted vinyl cover minimizes the places where bed bugs can hide.

When you travel

- Examine the bed for tell tale signs of bed bugs: speckles of dried blood excrement that can be found on the sheets or mattress. Examine bed headboards, wall paper and/or moldings around headboards.
- In the hotel room use the metal framed suitcase rack that is supplied for your suitcase.
- Keep suitcases, bags and clothing away from your bed and other furniture, both in the hotel room and when you first come home from a trip. Carefully inspect your suitcase upon return, vacuum and scrub it with a stiff brush.

Laundry and common areas

- Washing and drying clothes is important – especially the dry cycle.
- Heat and steam can kill them! Your building should make sure it has enough dryers and you may wish to order a professional steamer (with temperatures that can reach 70 Celsius).
- Be careful where you place your clothes in laundry rooms so as not to pick up bed bugs that may have fallen off someone else's laundry.
- Do not place clothing donation boxes in multi-use places like laundry or meeting rooms. Instead, encourage people to wash, label and donate clothing in a different manner.

Other building issues

- Consider tile or linoleum versus carpet in common areas.
- Consider a special fund to assist elderly, disabled, chemically sensitive and other tenants/members who need external assistance for prevention or treatment measures.
- Contract with a reliable Integrated Pest Management Company that can provide treatment and offer other solutions for your building.

What to do if you have bed bugs

The best method to deal with bed bugs is called **Integrated Pest Management (IPM)**. This term refers to a variety of techniques which include both chemical and non-chemical methods. Major components of IPM include vacuuming, cleaning, the use of pesticides, heat or steam to kill bed bugs and the elimination of entry points such as furniture or clothing donation sources.

Take Action Right Away! Let your building manager know immediately so they can support you and help with the steps to rid your home of bed bugs.

1. Cleaning

- Vacuuming is an effective way to remove bed bugs and eggs and it must be done thoroughly for days. Examine your mattress and bed frame and vacuum all areas of your mattress every day with a nozzle attachment. Concentrate on seams, creases and folds. Vacuum the furniture, the bed frame, floor and baseboards. Empty the vacuum right away and put the vacuum bag in a sealed plastic bag and throw it in the outside garbage.
- Scrub your mattress seams to get rid of the eggs and any bugs.
- Seal your pillows and mattresses with a plastic cover.
- Wash all your clothes and bedding in hot water and dry on high heat for at least 30 minutes.
- Clean and get rid of clutter that can be their hiding place.
- Steam also kills bedbugs but a professional steam machine is required.

2. Chemical and non-chemical treatments

- When the company comes to spray, you and your animals must be out of your home for several hours. You can also ask about less toxic products.
- Prepare for the spraying: Put all washed clothes in a plastic bag, seal the bag and leave there until a pesticide company has sprayed.
- The pesticide chemical spraying will need to be repeated to kill for any eggs that have yet to hatch.
- Adhesive traps are one of many tools that assist in bed bug control.

3. Be thorough

- It only takes one surviving fertile female or a few eggs to start the cycle all over again, even after the best efforts!
- Ask for help if you need it – it's a big job.

Recommended additional sources:

Structural Pest Management Association of Ontario
www.spmao.ca

Ontario Non-Profit Housing Association
www.onpha.on.ca (enter bed bug in the search function)

HEALTH Canada pamphlet
www.pmra-arla.gc.ca/english/pdf/pnotes/bed_bugs-e.pdf