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Bed Bug Management in Healthcare Environments

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Bed Bugs

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Introduction to Bed Bugs

Bed Bug Identification

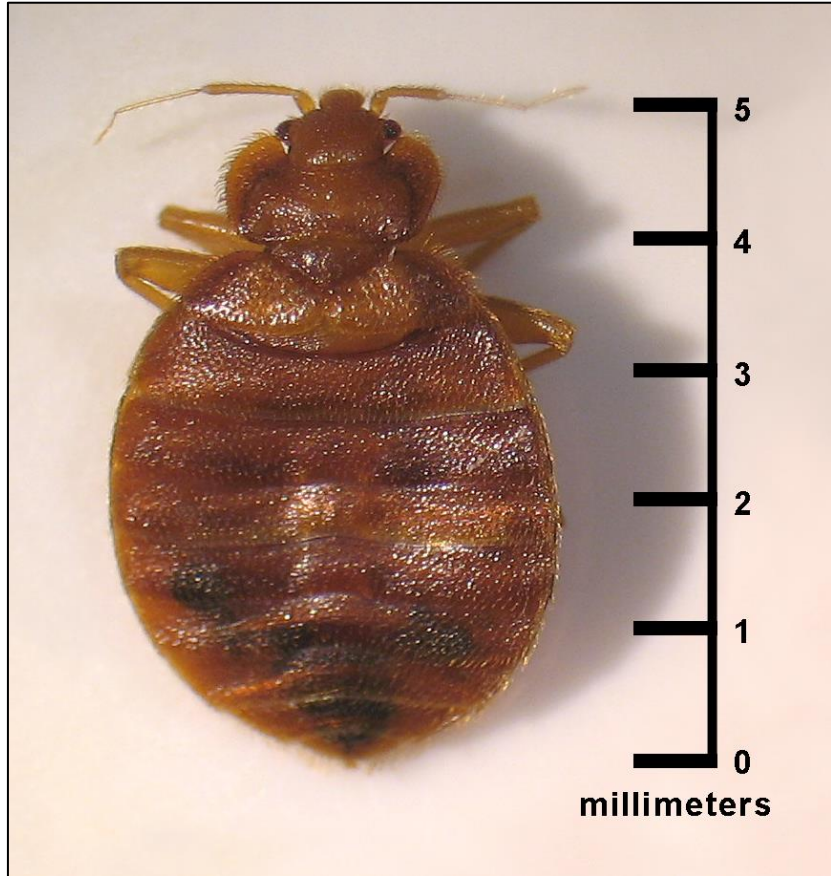


Photo by Blaine Mathison, CDC. Public Domain.

- ❖ Wingless
- ❖ Oval shaped
- ❖ Reddish-brown in color
- ❖ Flattish (except when engorged)
- ❖ Small
 - ❖ Adults are about 1/4-inch long
 - ❖ Nymphs much smaller



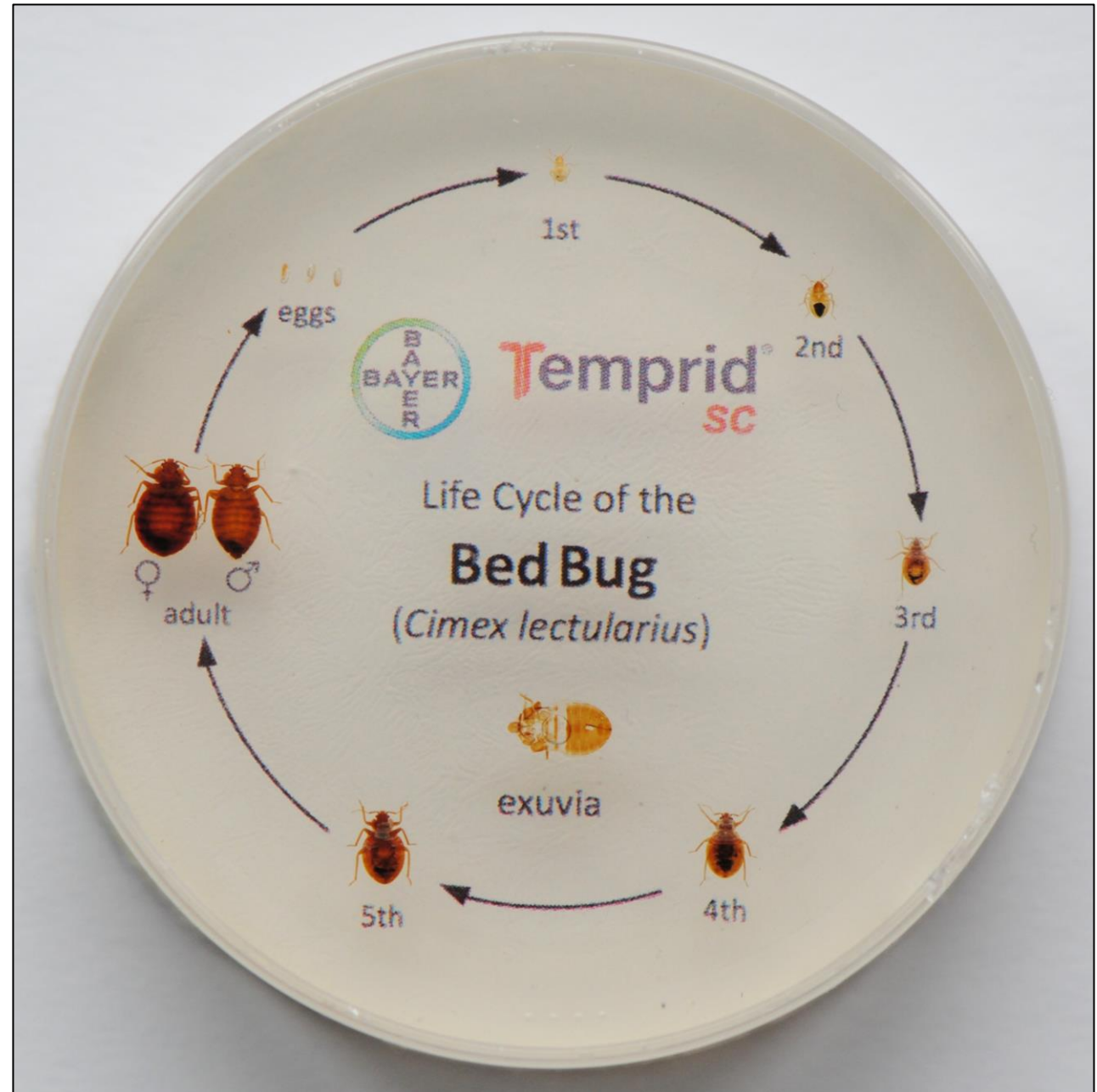
Photo by Daniel D. Dye II

Bed Bug Life Stages

❖ Egg

❖ Nymph

❖ Adult



Bed Bug Eggs

- ❖ Tiny (about 1 mm)
- ❖ Whitish to pale pink
- ❖ Stuck to surface



Photo by Reiner Pospischil, Bayer



Photo by Josh Shoemaker

Bed Bug Nymphs

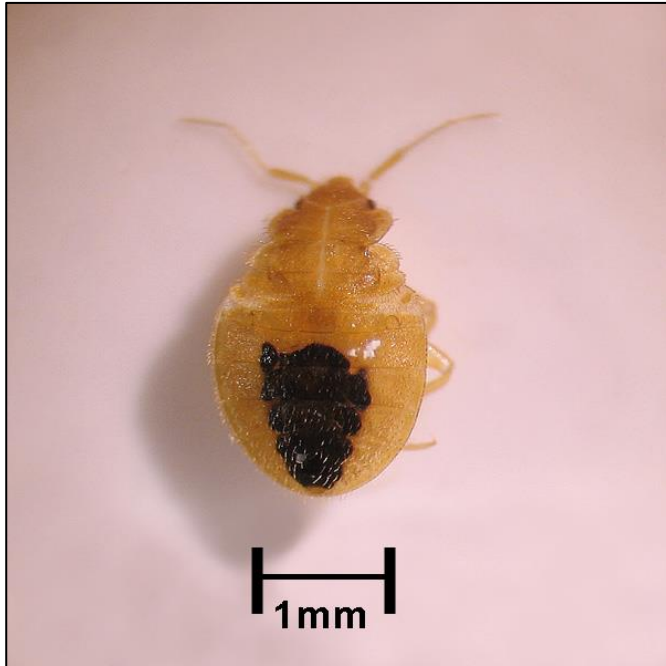


Photo by Blaine Mathison, CDC..



Photo by Josh Shoemaker



Photo by Joe Grippi.

Bed Bug Reproduction



Photo by Reiner Pospischil, Bayer

- ❖ Female may lay up to 500 eggs during her lifetime
- ❖ Typically lay 2-5 per day
- ❖ *It is important to discover an introduction as soon as possible*

Bed Bug Behaviors

- ❖ Can move rapidly
- ❖ Primarily active at night
- ❖ Prefer to remain in secretive locations when not feeding



Photo by Josh Shoemaker

Bed Bug Harborage & Clustering

- ❖ Bed bugs spend most of their time hiding in harborages, areas hidden and away from activity
- ❖ Bed bugs are often found clustering together



Photo by Joe Grippi

Signs of an Infestation

❖ Eggs

❖ Cast skins
Old exoskeletons from molting

❖ Fecal blood stains
Rusty colored spots that may be found on bedding, clothing or other items



Photo by Josh Shoemaker

Bed Bugs are Ectoparasites

- ❖ Only food is blood
- ❖ Humans are primary host
- ❖ Blood is required for the bed bug to develop and reproduce



Photo by Daniel D. Dye II

Bed Bug Feeding

- ❖ Generally occurs while people are sleeping
- ❖ Attracted to CO₂ and heat
- ❖ Bite is essentially painless
- ❖ Feed on exposed skin



Photo by Josh Shoemaker

Bed Bug Bites

❖ Bite reactions vary significantly



Photo by Josh Shoemaker



Photo by Gordy Braness

Bed Bug Bites

- ❖ Many people present with a raised, reddish welt that may look similar to a mosquito bite (and possibly itch as well)
- ❖ Some people have allergic reactions

however...



Photo by Josh Shoemaker

Bed Bug Bites

- ❖ Some people don't react
- ❖ Others may have delayed reactions

So, often by the time bed bugs are discovered, the population is well established



Photo by Scott Broaddus

Skin Assessments



Photo by Josh Shoemaker

- ❖ Skin markings alone are not generally a reliable indicator of bed bugs
 - ❖ People react differently
 - ❖ Reactions can resemble many other skin issues
- ❖ Identification can be aided if the patient reports an infestation in their home
 - ❖ However, even if a patient knows of an infestation, they may be unwilling to be forthcoming about it
 - ❖ It is also possible that individuals may have an infestation and not know it

Bed Bugs and Pathogens

- ❖ Over 50 human disease agents have been found on or in bed bugs
- ❖ Research is still being done to determine if bed bugs are capable of transmitting human pathogens
- ❖ To date no published studies have demonstrated evidence of bed bugs in the environment vectoring pathogens among humans

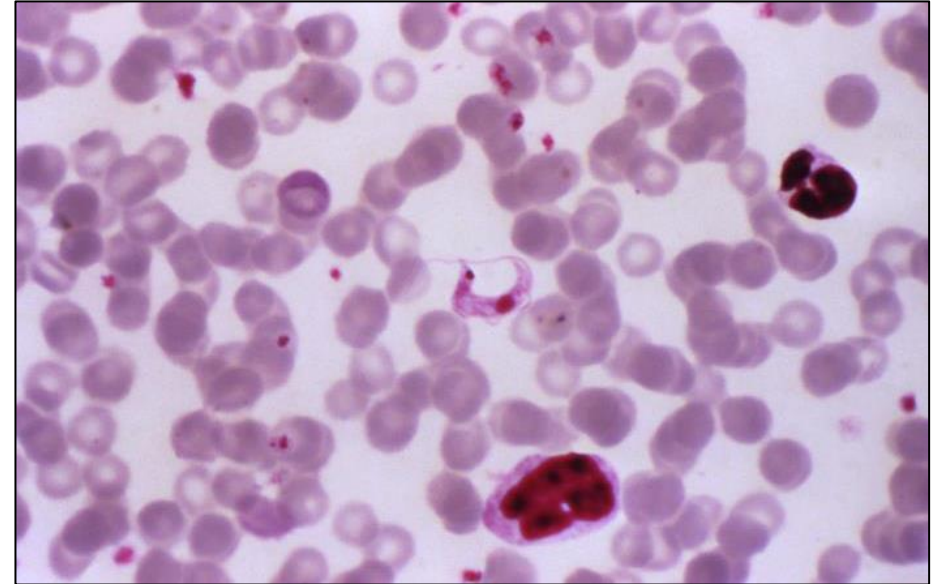


Photo by Dr. Mae Melvin

Bed Bug Impacts on Mental Health

- ❖ The impact of bed bug infestations on mental health has been well studied and documented
 - ❖ Effects related to social stigma, including
 - ❖ *social isolation*
 - ❖ *shame*
 - ❖ *embarrassment*
 - ❖ Increased anxiety and depressive symptoms
 - ❖ Sleep disturbances in some people
 - ❖ Poor school performance for children

Bed Bug Sources

- ❖ Schools and Students
- ❖ Luggage and personal items
- ❖ Aircraft, buses, ships
- ❖ Transient Housing
- ❖ Movie Theaters
- ❖ Used bedding/furniture
- ❖ Anywhere people congregate



Photo by Jon Tyson on Unsplash

Bed Bugs Dispersal



Photo by Josh Shoemaker

- ❖ Bed bugs will crawl into belongings
 - ❖ More likely in areas with large infestations
 - ❖ Bed bugs transported to new potential breeding sites
- ❖ Starved bed bugs will travel into other rooms or areas seeking a blood meal
- ❖ Please do not bring in belongings if bed bugs have been found in your home

Procedures if Bed Bugs are Found

- ❖ Follow the policy
- ❖ Immediately inform the responsible individual(s) of the possible presence of bed bugs

Gotham General Hospital

Bed & Bat Bug Action
Plan and Procedures

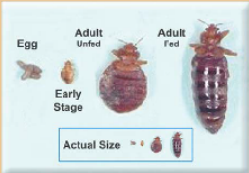
Prevention Measures

- ❖ Immediately report any possible introduction
- ❖ Identify and eliminate areas of clutter
- ❖ Report any needed repairs
- ❖ Do not reuse disposable equipment
- ❖ Limit personal items brought in the facility
- ❖ Supply bug information sheet

Bed bugs

Bed bugs are small brownish insects. They're about 4 mm long (1/8 in.) and visible to the naked eye. They're active at night and can usually be seen along the seams of mattresses. They feed on human blood.


Bed Bug Life Stages



Bed bug infestations may cause irritating, itchy bite reactions, and anxiety. Over the past few years, bed bugs have been spreading in large cities worldwide.

How to detect them

Itchy skin and insect bites are clues that you may have bed bugs in your home. You'll usually see three or four bites in a straight line or grouped together. Exposed areas of your arms, legs and back are more susceptible to bites. Also look for small black stains "blood spots" on your sheets, pillows, or mattress seams. Bed bugs may also be hiding in cracks and crevices in your furniture.



How they spread

Bed bugs are usually brought into your home in suitcases and handbags and on clothing and furniture, especially previously used mattresses and other items.

They can also travel between apartments in a building. There's no need to be embarrassed if these bugs end up moving in with you. Bed bugs are not necessarily associated with dirty environments, but they flourish in clutter.

How To Prevent Them


Vacuum your home regularly. If you do have bed bugs, make sure you close the vacuum bag tightly and dispose of it outside your home.

Avoid picking up used mattresses or second-hand upholstered furniture because it's hard to see whether they harbor bed bugs.

Other used furniture must be carefully inspected and cleaned before you bring it home. Scrub furniture with soapy water or a household cleaning product to remove any possible bed bugs or their eggs.

Second-hand clothing should be placed in a sealed, plastic bag and emptied directly into the washing machine. Wash in hot water and dry on hot setting to kill bed bugs and their eggs.

When visiting hotels inspect the room for signs of bed bugs prior to unpacking luggage.



Important

Avoid bringing home discarded furniture, it may be infested with bed bugs. Also inspect any used item for bed bugs before bringing it into your home.

Pest Management

To ensure successful treatment, your cooperation and that of your landlord and the pest management professional are key.

The important thing is to act fast. As soon as you see these bugs, call your landlord, who will then contact a qualified, licensed pest management professional.

Preparing your home for the pest management professional

This step is extremely important. Closely follow the pest management professional's guidelines. Below are a few tips to keep in mind.

- Remove clutter as it provides hiding places for bed bugs.
- Place all bedding (sheets, mattress covers, bedspreads) in a sealed, plastic bag. Wash all bedding in hot water.
- Vacuum and dispose of the vacuum bag (outside the home). If a bagless vacuum is used, deposit all contents of the container into a plastic bag, seal and dispose of outside. Rinse collection container outside before re-attaching to vacuum.
- Empty dresser drawers and closets and place contents in a sealed, plastic bag. Wash and/or dry clothes on high heat setting.
- Don't bring home new furniture until bed bugs are eliminated.



Thank You

Photo by Josh Shoemaker