

BED BUGS



ADULT MALE
(engorged with blood)



ADULT FEMALE

Sleep Tight? Bed Bugs (*Cimex lectularius* L.)

Description:

- Adults are small, wingless, 1/4 inch long, oval shaped, and flattened from top to bottom (unless engorged with blood)
- Reddish brown in color, do not fly, but do crawl readily
- Nymphs look like smaller sized adults
- Eggs are visible with slight magnification, are yellowish white in color and about 1/32 inch long, and glued by secretions into cracks and crevices
- Bed bugs gather into aggregations known as brood centers; these are characterized by reddish brown fecal and blood smears, and the bed bugs and eggs themselves
- Aggregations have a distinct odor association, variously described as sweet and/or musty
- Both males and females feed; nymphs also feed; human blood is the preferred food source but warm blooded mammals in general can host bed bugs
- Generally active at night, but can be active in daylight when there is a large infestation or a host present



Left: Adult female bed bug, pictured here next to an apple seed to show size. (photo credit: Dr. Michael Potter, University of Kentucky)

Lifecycle:

Egg >>> Molt through a series of five Nymphal stages >>> Adult

- ▶ The process requires four to 16 weeks, depending on room temperature and relative humidity; warmer temperatures increase this process
- ▶ Females lay five eggs per day (up to 500 eggs in her lifetime) which hatch in six to 10 days, but in cool areas it may take as long as 30 days (and can take longer)
- ▶ Typically three to four generations occur per female per year
- ▶ Bedbugs can survive for more than a year without a blood meal



Mating couple



Egg capsules and frass (feces)



1st instar nymph (engorged)



Adult female

(photo credit: Dr. Harold Harlan, private collection)

DON'T LET THE BED BUGS BITE



Bite reactions are highly individual, depending upon the person's sensitivity, much like a spider bite or a bee's sting. Usually a localized red swelling occurs and this is an allergic reaction to the bed bug bite saliva.

Bed bugs are not known to transmit any infectious agents.

Left: Three examples of bed bug bites. (photo credit: Department of Medical Entomology, ICPMR, Westmead Hospital, Hardin, M.D.)

Where to Look:

- Behind a bed's headboard
- On the mattress
- Inside the hollow areas of a bed
- In the coils of a bed
- Inside a box spring
- Behind peeling wallpaper
- Behind walls and baseboards
- Near the edge and underneath of rugs and in closets
- Within curtains and draperies and curtain and shower rods
- Within electrical equipment like lamps, clock radios, smoke alarms, irons, and phones
- Within and on the exterior of sofas and chairs or their upholstery (especially around seams and zippers)
- Within and on the exterior of furniture cabinets and drawers
- Around access panel doors
- Within popcorn ceiling cavities
- At wall floor and wall ceiling junctions.

What to Look For:

- Fecal stains
- Blood spots
- An uniquely sweet raspberry-like or musty odor emitted by the bed bugs
- The bed bugs or eggs themselves
- Cast exoskeleton skins from molting



How to Look:

- Every nook and cranny must be thoroughly analyzed for bed bug presence and treatment
- Bed bugs are opportunists and great at finding harborage in even the smallest of cracks and crevices

Bed Bug Habits:

- Bed bugs usually seem to prefer to live in a substrate that is dry, rough and has partial darkness
- Wood/paper surfaces are usually preferred to stone, plaster, metal or textiles
- Bed bugs usually do not like drafts or cold metal objects

Left: In addition to beds and mattresses, bed bugs are often found in the seams or zippers of upholstered furniture. (photo credit: Dr. Michael Potter, University of Kentucky)

MANAGEMENT OPTIONS:

- Identify the pest correctly. Cockroaches, ticks, bat bugs and globular spider beetles are all often misidentified as bed bugs
- Educate and break through the client's mythology. Many people think bed bugs are simply an old nursery rhyme — not a real threat
- Fumigate
- Bake furniture in a heat chamber (120° F core temperature held constant for three or more hours)
- Deep freeze furniture (at 0° F held constant for four to seven days)
- Microwave
- Vacuum; then remove and get rid of the bags to prevent re-infestation
- Steamclean
- Only use pesticides labeled for the site or bed bugs themselves
- Be proactive
 - Vinyl slip covers that zip over mattresses (Tape zippers shut)
 - Metal bed frames or hospital beds



(photo credit: Dr. Gary Alpert, Harvard University)