

# INTEGRATED PEST MANAGEMENT: **BED BUGS**



Common before the 1950s, bed bugs are back, showing up in homes, apartment buildings, dorm rooms, hotels, child care centers, and family child care homes. Adult bed bugs are flattened brownish-red insects, about ¼-inch long, the size of an apple seed. They're fast movers, but they don't fly or jump. They feed only on blood and can survive several months without a meal.

## When are bed bugs a problem?

Thankfully, bed bugs do not spread disease. However, when people think they have bed bugs, they may sleep poorly and worry about being bitten.

### Bed bug bites:

- ▶ Can cause swelling, redness, and itching, although many people don't react at all.
- ▶ Are found in a semi-circle, line, or one-at-a-time.
- ▶ Resemble rashes or bites from other insects such as mosquitoes or fleas.
- ▶ Can get infected from frequent scratching and may require medication prescribed by a health care provider.

## How do bed bugs get in a child care center?

They usually arrive with a child who has an infestation at home by attaching to clothing, blankets, backpacks, or soft toys. Bed bugs will infest spotlessly clean rooms as well as messy or dirty ones. Since bed bugs are so good at hiding, the more clutter you have, the harder it is to find them and the more likely their numbers will increase.

## Bed bug life cycle

Young bed bugs, called nymphs, look like small versions of adult bed bugs. The youngest nymphs are the size of a poppy seed and turn dark red after they feed. As a nymph grows to the next stage, it sheds its skin. The skins accumulate where the bugs hide. Bed bugs live in groups. Once females mate, they often wander away to lay their eggs somewhere else. This is sometimes how the bugs end up in other rooms. Eggs are tiny, pale, see-through, and hard to find. Eggs stick to surfaces, especially wood, cardboard, and fabric which is why you should check furniture, cardboard boxes, and clothing for bugs, their droppings, shed skins, and eggs. You'll find bed bugs year-round. Bed bugs usually move around and feed at night, but visit daytime nappers.

## How to check for bed bugs

- ▶ Prepare an inspection kit that includes a good flashlight and magnifying glass to look for bed bugs, eggs, droppings, bloodstains, or shed skins.
- ▶ Inspect the nap area regularly. Use a flashlight to examine nap mats, mattresses (especially seams), bedding, cribs, and other furniture in the area.
  - ▷ Check under buttons of vinyl nap mats.
  - ▷ Roll cribs on their side to check the lower portions.
  - ▷ Scan the walls and ceiling and look behind baseboards and electrical outlet plates for bugs, eggs, droppings, bloodstains, and shed skins. The dark spots or bloodstains may look like dark-brown ink spots.
  - ▷ Examine upholstered furniture and wall-mounted items such as clocks, pictures, and mirrors.
- ▶ Collect any suspicious insects or shed skins for an expert to identify. Bring samples to your local UC Cooperative Extension or agricultural commissioner's office. Use a small pill vial or clear packing tape for this purpose. Photographs of suspicious bloodstains may also help identify the bugs.

## IPM Strategies

### 1 DON'T SPRAY!

If you're worried that your center has bed bugs, resist the impulse to spray pesticides. Setting off foggers and bug bombs will not prevent infestations. The pesticides will not reach places where the bugs are hiding.

- ▶ Do not try to take on bed bugs yourself. This is a job for an expert.
- ▶ Avoid spraying pesticides on bed linens, pillows, stuffed animals, clothing, or people. Don't use pesticide-containing mattress covers; instead, use a mattress encasement.

[IPM Strategies continued]

## 2 HIRE A PEST MANAGEMENT PROFESSIONAL (PMP)

Make sure you actually have bed bugs before any treatment starts. Be prepared to work closely with your PMP, who will explain how you can prepare for treatment by reducing clutter, vacuuming, cleaning, and laundering. Mention what you've seen, collected, or photographed. If you don't have a PMP and you're concerned about bed bugs, hire a PMP who is licensed, insured, and has experience working with bed bugs. (See [www.pcoc.org](http://www.pcoc.org) to find qualified PMPs in your area). Many PMPs prefer treating bed bugs with heat rather than spraying pesticides because heat reaches places where bed bugs hide. Expect 2-4 visits to be sure the bed bugs are gone.

## 3 KEEP YOUR THINGS

Don't throw anything away, even nap mats and mattresses. You can easily clean these, especially if you've caught the infestation early.

- ▶ **Mattresses.** Vacuum thoroughly, especially around seams and anywhere a small, flat bug could hide. Enclose the mattress in a high-quality mattress encasement. Encasements are machine-washable covers that snugly wrap around mattresses. Good encasements have bug-tight zippers and are made of strong but flexible fabric that won't easily tear.
  - ▶ If bed bugs already live in a mattress, the encasement will trap them inside so they won't bite the sleeper.
  - ▶ Bed bugs can live on top of an encasement, but they'll be easier to find. (They can still live elsewhere in the room and bite sleepers).

- ▶ The following encasements have bed bug-proof fabric and zippers: Allergy Luxe®, National Allergy® BedCare Elegance, and Mattress Safe®. All come in crib mattress size.

- ▶ **Nap mats.** Vinyl mats: vacuum and then wash with soapy water, especially along seams and under buttons. Soft, washable mats: machine-wash and then place in a hot dryer for at least 20 minutes.
- ▶ **Soft items.** Pillows, linens, blankets, and stuffed animals: machine wash and then place in a hot dryer for at least 20 minutes. If the item isn't washable, tumble in a hot dryer for 20 minutes.

## 4 PREVENT

- ▶ Reduce clutter! Store toys, stuffed animals, and dress-up clothes in plastic boxes with tight-fitting lids.
- ▶ Seal cracks and crevices to eliminate hiding places for bed bugs and other pests. Caulk and paint wooden baseboards or molding around ceilings.
- ▶ Vacuum the nap area frequently using a crevice tool around molding, the area between wall and ceiling, and the seams of mattresses. Vacuuming is the most important thing you can do to catch stray bed bugs.
- ▶ Wash bedding frequently. Every few days, toss pillows and blankets into a hot dryer for 20 minutes. Enclose crib mattresses in high-quality mattress encasements.

## ACTION PLAN FOR BED BUGS

WHEN TO TAKE ACTION	NONPESTICIDE PRACTICES	LAST RESORT
<ul style="list-style-type: none"> <li>▶ When you see bed bugs, eggs, droppings, bloodstains, or shed skins.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Vacuum.</li> <li>▶ Clean mattresses, nap mats, bedding, and other soft items.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Seal cracks and crevices.</li> <li>▶ Hire a pest management professional.</li> </ul>

### RESOURCES

- Centers for Diseases Control and Prevention, Emerging Infectious Disease [www.cdc.gov/ncidod/EID/](http://www.cdc.gov/ncidod/EID/)
- California Department of Pesticide Regulation, Bed Bugs are Back! [www.cdpr.ca.gov/docs/pestmgmt/pubs/childcare/bedbugs\\_color.pdf](http://www.cdpr.ca.gov/docs/pestmgmt/pubs/childcare/bedbugs_color.pdf)
- California Childcare Health Program (CCHP), *Bed Bugs – What You Need To Know* [cchp.ucsf.edu/BedBugs-FAM](http://cchp.ucsf.edu/BedBugs-FAM)
- U.S. Environmental Protection Agency, Bed Bugs: Get Them Out and Keep Them Out [www2.epa.gov/bedbugs](http://www2.epa.gov/bedbugs)

California Childcare Health Program, University of California, San Francisco School of Nursing • [cchp.ucsf.edu](http://cchp.ucsf.edu)



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