



# Bed Bug Basics

Missouri Department of Health and Senior Services  
Division of Community and Public Health  
Section for Disease Prevention

2017

# Brief Bed Bug History

- \* Widespread problem before the 1950s
- \* New pesticides available, used widely in the 50s, 60s, & 70s
  - \* DDT was very effective for a few years, but later outlawed in the 70s
- \* 1990s – Now → bed bugs on the rise!
  - \* Change in routine pest management practices
  - \* More global travel
  - \* Less knowledge/awareness of bed bugs

**PROTECT YOUR CHILDREN**  
Against Disease-Carrying Insects!

**TRIMZ DDT**  
CHILDREN'S ROOM  
WALLPAPER and Ceiling  
Paper

**KILLS FLIES, MOSQUITOS, ANTS**  
... as well as meths, bedbugs, silverfish and other household pests after contact!

**MEDICAL SCIENCE KNOWS** many common insects breed in fifth, live in fish, and carry disease. Science also recognizes the dangers that are present when these disease-carrying insects invade the home. Actual tests have proved that one fly can carry as many as 5,000,000 bacteria! Imagine the health hazard—especially to children—from flies seriously suspected of transmitting such diseases as scarlet fever, measles, typhoid, diarrhea... even diphtheria! Some types of mosquitoes carry malaria and yellow fever. And any mosquito bite is painful and easily infected when scratched.

**NON-HAZARDOUS** to children or adults, to pets or clothes. Certified to be absolutely safe for home use. Tested and commended by *Parents' Magazine*.

**GUARANTEED** effective against disease-carrying insects for 1 year. Actual tests have proven the insect-killing properties still effective after 2 years of use.

**NO SPRAYS! NO LIQUIDS! NO POWDERS!** So convenient, so safe because the DDT is fixed to the paper. It can't rub off.

**BEAUTIFUL!** "Jack and Jill" or "Crazy Faverio"—any new patterns that protect as they beautify a child's room.

**DOT CEILING PAPERS, TOO!** Extra protection for your children's room—for every other room in the house. Choice of ten tints.

**TESTED AND COMMENDED**  
PARENTS' MAGAZINE

**READY-PASTED!**  
Just Dip in Water and Hang!  
Anyone can put Trimz Wallpaper up without help or previous experience. Millions have done it—proved it's quick, clean, easy! Nothing to get ready—no tools, paste or mess. Just cut strips to fit, dip in water and hang. It's dry in 20 minutes! Guaranteed to stick—guaranteed to please or money back. And so inexpensive!

You can protect your child for \$8 to \$12—depending on size of room.  
Trimz DDT Children's Room Wallpaper, Trimz DDT Cedar Closet Wallpaper now available at Department, Chain, Hardware, Paint, and Wallpaper stores everywhere.

Many beautiful new patterns are also available in regular Trimz Ready-Pasted Wallpaper at \$1.99, \$2.49, \$2.99 per roll.

**TRIMZ READY-PASTED WALLPAPER**

Another Product of TRIMZ CO., INC., DIVISION OF **UNITED WALLPAPER**

World's Leading Designer and Largest Manufacturer, Merchandise Mart, Chicago 54, Illinois

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Woman's Home Companion

# What are Bed Bugs?

- \* Small, wingless insects
  - \* Range in size from a poppy seed to an apple seed
  - \* Flat when unfed
- \* Experts at hiding and hitchhiking!
  - \* Seek out cracks, crevices, folds when not feeding
  - \* Can fit in a space as thin as a credit card
- \* Generally most active at night (home setting)
  - \* Can be active during the day if blood meals are more readily available
  - \* Adults can survive for long periods of time (i.e., months!) without a meal



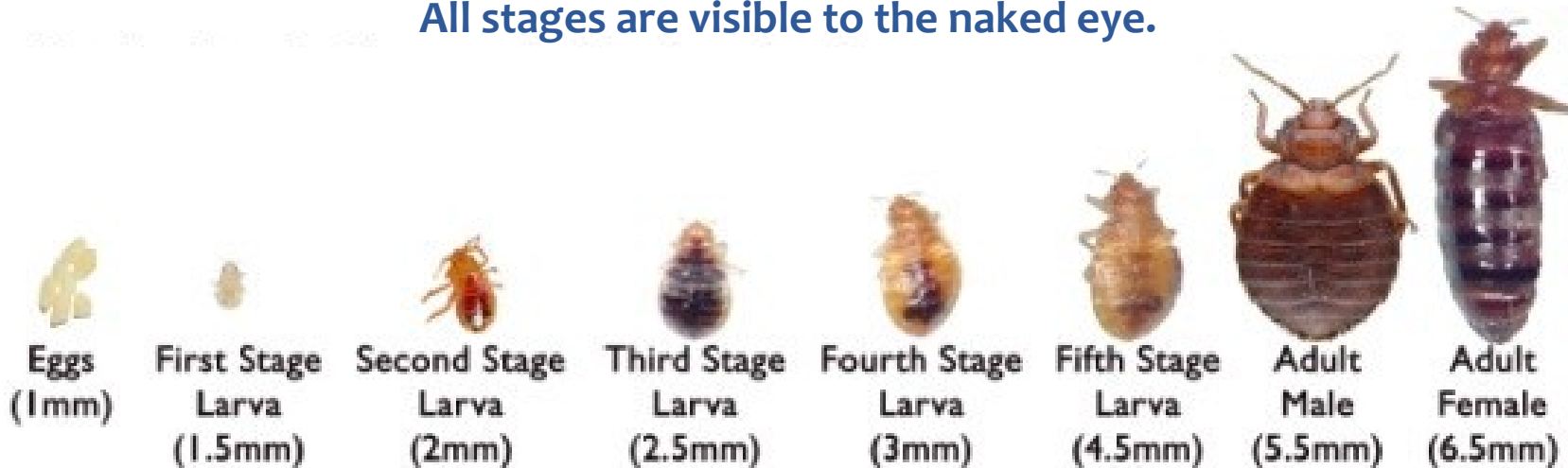
# Are Bed Bugs a Health Concern?

- \* Feed exclusively on blood (usually from humans)
  - \* Drawn to heat and carbon dioxide release
- \* Do not spread disease!
  - \* Pathogens like HIV, Hep B → can be infected but not transmit
- \* Can cause:
  - \* Red, swollen bites → secondary skin infections
  - \* Anxiety, stress, fear
  - \* Loss of sleep/insomnia

# Bed Bug Life Cycle

After hatching, bed bugs need to take a blood meal before they can molt and mature to the next stage.

All stages are visible to the naked eye.



# Where Can Bed Bugs Be Found?

Bed bugs feed on people, so . . .

- \* Private homes/apartments
- \* Hotels/motels
- \* Nursing centers
- \* Daycare centers
- \* Resort facilities
- \* College dormitories
- \* Public transit
- \* Schools
- \* Churches
- \* Movie theaters
- \* Restaurants
- \* Retail shops/dressing rooms
- \* Community centers
- \* Hospitals
- \* Workplaces
- \* And more. . . .



# What Signs Should I Look For?

- \* Live bed bugs (may be adults or larvae)
- \* Eggs and casts (empty “skins”)
- \* Dark spotting/staining on mattresses or other furniture



University of Kentucky



Bedbuganswer.com



# Can Fido Sniff Out Bed Bugs?

- \* Dogs can be trained to detect the presence of bed bugs
  - \* Bed bugs emit pheromones → can be detected, even at low levels
  - \* May be most useful in areas where bed bugs are unpredictable
    - \* Movie theaters, auditoriums, large office buildings
- \* How successful is canine detection?\*
- \* 11 human-canine teams were evaluated
  - \* All claimed  $\geq 95\%$  accuracy for detection when promoting their “product”
- \* Actual success rates varied significantly (~43% on average)
  - \* Training scenarios are controlled; vary from real-life situations
- \* More expensive, less successful in many cases than monitoring devices

\*Cooper, R., Wang, C., & Narinderpal, S. (2014). Accuracy of Trained Canines for Detecting Bed Bugs (Hemiptera: Cimicidae). *Journal of Economic Entomology*, 107(6), 2171-2181.





# I'm Worried I Have Bed Bugs – What Can I Do?

- \* In small numbers, bed bugs can be very difficult to detect
  - \* May be few signs, if any, in the beginning
  - \* Not everyone reacts to bites, so this is also not a reliable sign
- \* Things to consider if you've been in an area with bed bugs:
  - \* Use monitors in your home to help you detect them
  - \* Declutter – eliminate hiding places for bed bugs
  - \* Consult with a pest control professional

# Bed Bug Monitors



# I Have Bed Bugs – Now What?

## The “**Don’t Do**” List

- ⊗ Panic
- ⊗ Ignore the problem
- ⊗ Throw out your furniture
- ⊗ Take chemical treatments into your own hands



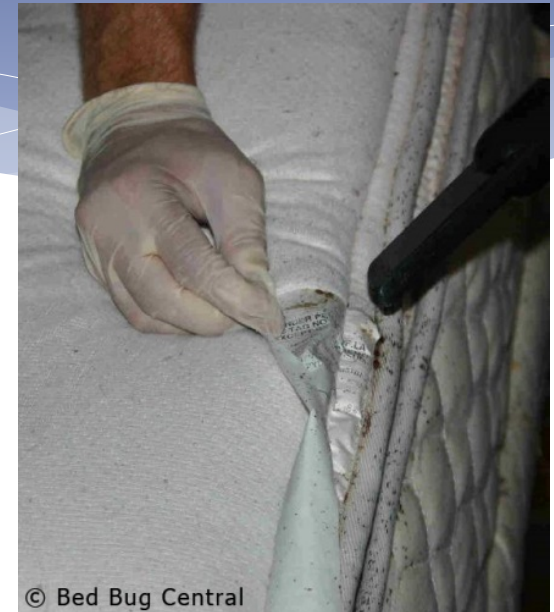
## The “**To Do**” List

- ✓ Remain calm
- ✓ Maintain your routine
- ✓ Eliminate clutter
- ✓ Consult an expert to discuss treatment options

**If it is confirmed that you have bed bugs:  
Anything that is removed from the home should be destroyed to  
prevent others from getting bed bugs!**

# Treatment Options for Bed Bugs

- \* Manual/physical removal
  - \* Vacuum
- \* Chemical treatments
  - \* Dusts or sprays
  - \* Fumigation
- \* Heat treatment
  - \* Kills all stages (including eggs)



© Bed Bug Central



# Dealing with Bed Bugs at Home

Top Recommendation: Work with a Professional

- \* Pest control professionals can be specialized/trained in bed bug detection and treatment
- \* Treatment preparation is critical
  - \* Many companies have a checklist of items to be done prior to any treatment
- \* Keep expectations realistic
  - \* Multiple treatments/visits likely

# Dealing with Bed Bugs at Home

## “DIY” Steps

- \* Stay on top of home maintenance
  - \* Address cracked flooring & walls, peeling wallpaper
  - \* Seal around baseboards and moldings
- \* Install mattress/box spring encasements
- \* Make your bed an island
  - \* Pull away from wall, use interceptor monitors and encasements, keep blankets and bedding off the floor

# Dealing with Bed Bugs at Home

## “DIY” Steps

- \* Declutter as much as possible
- \* Laundry
  - \* Wash and then dry on high heat for 30 minutes
  - \* Place items in sealable plastic bins or bags, keep closed!
- \* Inspect, vacuum, and clean
  - \* Not a cleanliness issue, but will help to identify hiding spots
  - \* Focus on areas where bed bugs are most likely to hide. . .

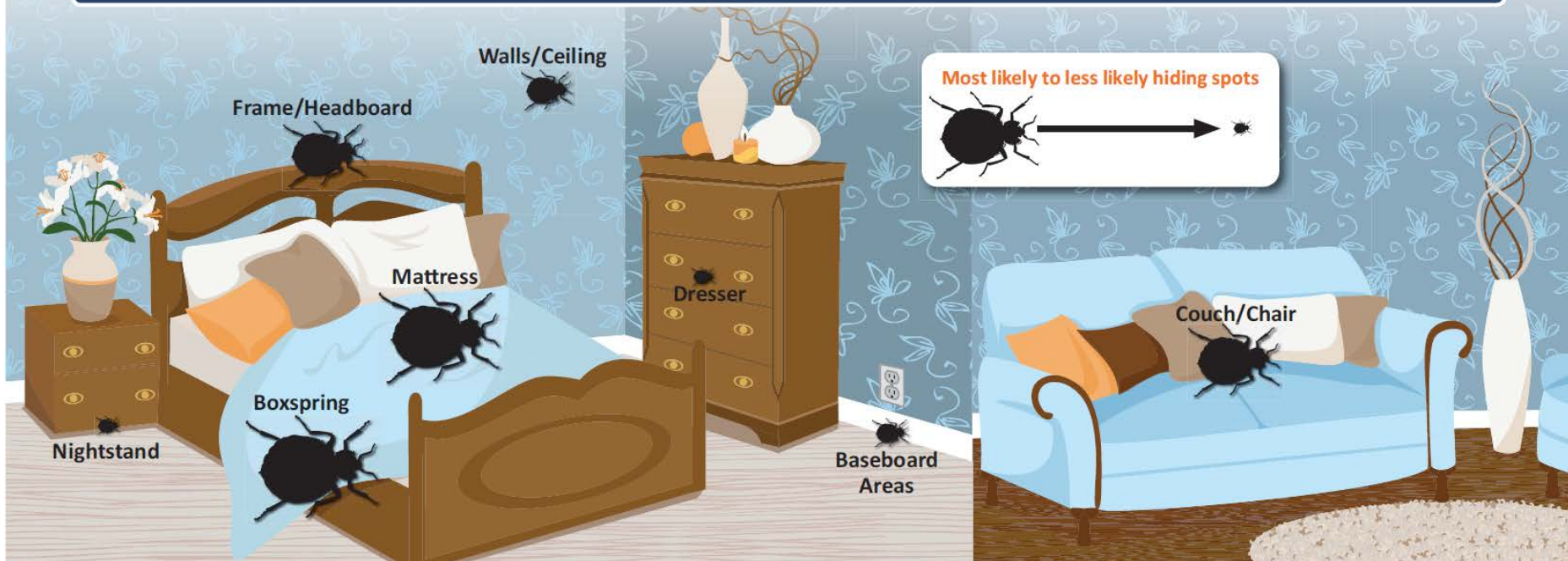




# Dealing with Bed Bugs at Home

## Likely Hiding Places

Bed bugs hide in cracks and tight spaces within 6 to 8 feet of the sleeping areas – above, under and around.



# Dealing with Bed Bugs at Home

## Pesticides & Precautions

- \* **Be cautious about DIY use of pesticides in the home**
  - \* Many over-the-counter products are not effective (e.g., “bug bombs”)
  - \* Inexperience in technique or application can cause bugs to spread
    - \* DIY treatments can interfere with professional treatments
  - \* Overuse of pesticides can be dangerous
    - \* Children, pets, immunocompromised family members
  - \* Read product labels carefully and completely
- \* **“All natural” or alternative treatments**
  - \* No evidence of efficacy, can be high risk



# Dealing with Bed Bugs at Work

- \* Workplaces are not a bed bug's "first choice"
  - \* But, the problem is becoming more common
- \* Bed bugs in the workplace present many challenges
  - \* Early detection is difficult
  - \* Visual inspections likely to be unproductive
  - \* Bed bugs can travel easily
  - \* Identifying source is challenging
    - \* **No blame approach is best!**

# Integrated Pest Management (IPM) for Bed Bugs

- \* Approach the issue with multiple strategies
  - \* Monitoring & identification
  - \* Education/awareness
  - \* Changes in environmental practices
  - \* Use of various control tactics
  - \* Evaluation of progress/outcomes
- \* Combination of tactics will vary depending upon circumstances



# Preventing Bed Bugs

**Stay Bed Bug Aware!**

## When close to home:

- \* Think carefully about thrift shop or garage sale items
  - \* Inspect thoroughly!!
- \* Be mindful of shared laundry facilities
  - \* Safest to fold/sort in your home
- \* Kids in college?
  - \* Do a quick inspection of any items they bring home!



# Preventing Bed Bugs

**Stay Bed Bug Aware!**

## When traveling:

- \* Keep luggage and other belongings away from walls, beds, and other resting areas
  - \* Ideal if these items can be kept on tile
- \* Check hotel rooms thoroughly for evidence of bed bugs
  - \* Headboard, mattress, nightstands
  - \* Couches, chairs, curtains
- \* Keep clothing/items in your suitcase
  - \* Avoid drawers/closets
  - \* Pack plastic bags for dirty laundry



# Preventing Bed Bugs

**Stay Bed Bug Aware!**

## When returning home:

- \* Before bringing your items inside, prepare a place to unpack!
  - \* Lay out a clean sheet or piece of plastic first
  - \* Unpack items onto the sheet or plastic and inspect for bed bugs
- \* Remove clothing from the luggage; place all items that can be dried immediately into the dryer
  - \* Dry on high heat for 20-30 minutes → kills all stages
- \* Inspect luggage carefully for signs of bed bugs
  - \* Special attention on seams, pockets, zippers, and wheels/feet
  - \* Vacuum all surfaces of the luggage (inside and out!) to dislodge any bed bugs or eggs
  - \* Replace the bag or empty the vacuum bin when done





# Bed Bug Resources

- \* **Getting the Bed Bugs Out – A Guide to Controlling Bed Bugs in Your Home (Michigan)**
  - \* [https://www.michigan.gov/documents/emergingdiseases/Getting\\_the\\_Bed\\_Bugs\\_Out\\_Guide\\_442175\\_7.pdf](https://www.michigan.gov/documents/emergingdiseases/Getting_the_Bed_Bugs_Out_Guide_442175_7.pdf)
- \* **Bed Bug Control in Residences (University of Minnesota)**
  - \* [https://www.bedbugs.umn.edu/sites/bedbugs.umn.edu/files/y2017m04d15\\_bed\\_bug\\_control\\_in\\_residences.pdf](https://www.bedbugs.umn.edu/sites/bedbugs.umn.edu/files/y2017m04d15_bed_bug_control_in_residences.pdf)
- \* **Hiring a Pest Management Professional for Bed Bugs (EPA)**
  - \* <https://www.epa.gov/bedbugs/hiring-pest-management-professional-bed-bugs>
- \* **Everyday Bed Bug Prevention Tips (PestWorld)**
  - \* <http://www.pestworld.org/all-things-bed-bugs/bed-bug-prevention/everyday-prevention-tips/>

# Contact Me!

If you have questions or would like additional information,  
give me a call or stop by!

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