

The Secret Lives of Bedbugs



FACTS VS. FICTION

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Bedbugs: Facts vs Fiction



- **1. Bedbugs are so small, we can't see them.**
- Fiction – Bedbugs, even eggs and freshly hatched nymphs can be seen and are easily identifiable.
- Often mixed up with dust mites
- **2. Throwing away infested items will eliminate bedbugs**
- Fiction – This is critical for administrators and facility managers to understand
- Bedbugs will persist in the structure
- Can further the spread of insects in the community

Signs of a Bedbug Infestation



Bedbug Society



Bedbugs: Facts vs Fiction



- **3. Bedbugs occur because people are dirty**
- Fiction – This might be the biggest myth of all! We must ALWAYS consider the food source
- **4. A doctor can reliably diagnose bedbug bites**
- Fiction – *People will always react differently based on their immune system. Must have a specimen!
- Up to 30% of the population won't react to the anesthetic enzymes in a bedbugs saliva
- 10% can have extreme reactions

Bedbugs: Facts vs Fiction



- **5. Bedbug bombs solve bedbug infestations**
- Fiction – In fact, it can make getting control of the infestation more difficult
- Can cause rapid dispersal/deeper harborage
- **6. Heat treatments are the only effective way to get rid of bedbugs**
- Fiction – It is a very effective tool, but not 100%
- Bedbugs have the potential to escape the heat
- It takes skill and expertise, monitoring airflow

Heat Treatments and Cool Spots



Self-Treatment Examples



Bedbugs: Facts vs Fiction



- **7. Bedbugs are resistant to insecticides**
- Fiction – There are dual active ingredient products available to licensed professionals that work well.
- Biologically, bedbugs are well adapted to survive
- **8. Bedbugs do not spread disease**
- Fiction – They cannot via bites, however any bacteria on the skin can be rubbed into the wound
- Mental, emotional and psychological reactions occur
- Consider the students home environment
- We are still dealing with human blood.



Bedbug Bites are Problematic

- Physical reactions
- Emotional issues
- Psychological trauma
- Relationship problems
- Economic stresss (loss of income and production at work)
- Isolation
- Anxiety
- Sleeplessness
- Secondary infections

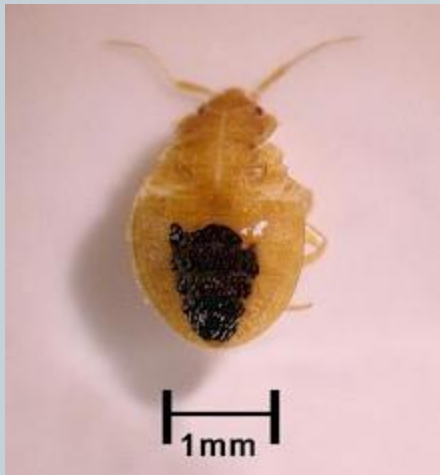


Bedbug Identification



- **Bedbug Nymph**

- Very small/can be clear until it has a blood meal
- Still visible with the naked eye



- **Bedbug Adult**

- About the size of a watermelon seed
- Emits an “obnoxiously sweet” odor



Various Life Stages

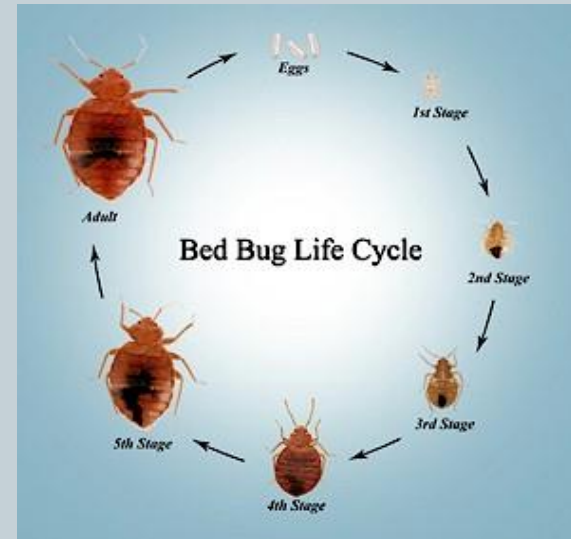


Bedbug Biology

- Females usually lay 3-8 eggs a day, maximum up to 12
- Up to 500+ in a lifetime
- Traumatic insemination
- Threshold for egg laying and development is 55-59 degrees
- Below 55, semi hibernation
- Above 60, very active



- Developmental time (egg to adult) is 21 -120 days
- Gradual metamorphosis (5 instars)
- Must have a blood meal between each instar
- Feeding last about 3-10 minutes
- Usually feed at night but will adjust



Bedbug Biology



Bedbug Biology



Bedbug Biology



Bedbug Biology



Bedbug Habits



- Harbor in cracks and crevices (80-90% of their lives)
- Typically found in mattresses, box springs, bed frames, nightstands and in “stuff”
- 95/5 Rule
- Will travel considerable distances to obtain a blood meal (up to 30 ft. in a night)
- Introduced into a structure via. used furniture, or in belongings of somebody living in an infestation



Typical Harborage Areas



Typical Harborage Areas



Typical Harborage Areas



Untreated Infestations



Untreated Infestations

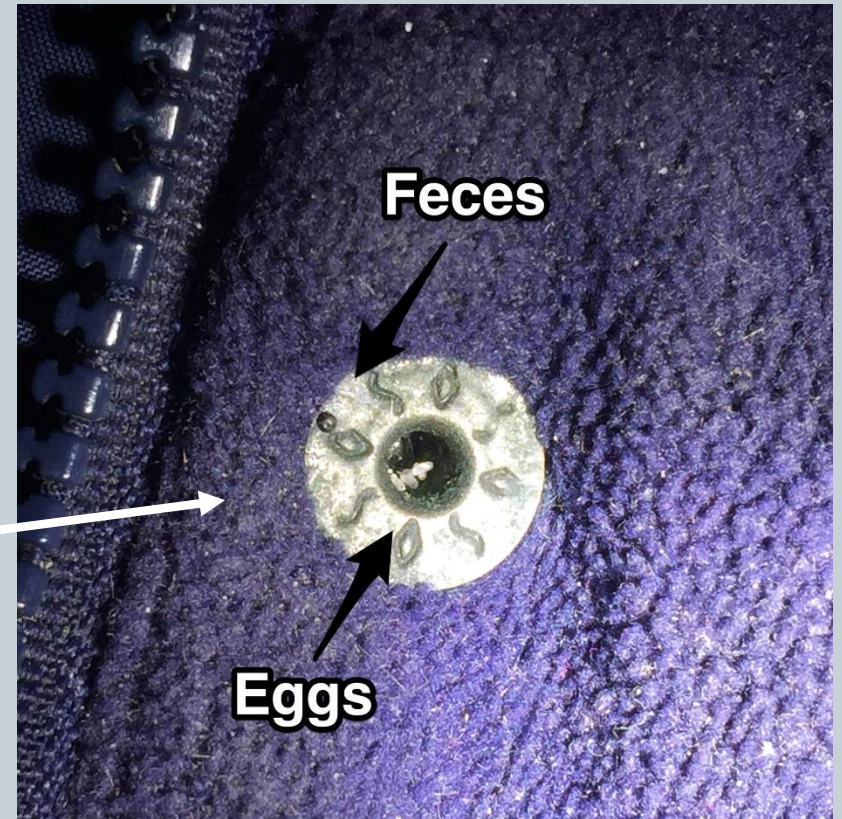


Why Do We Have So Many Bedbugs Now?

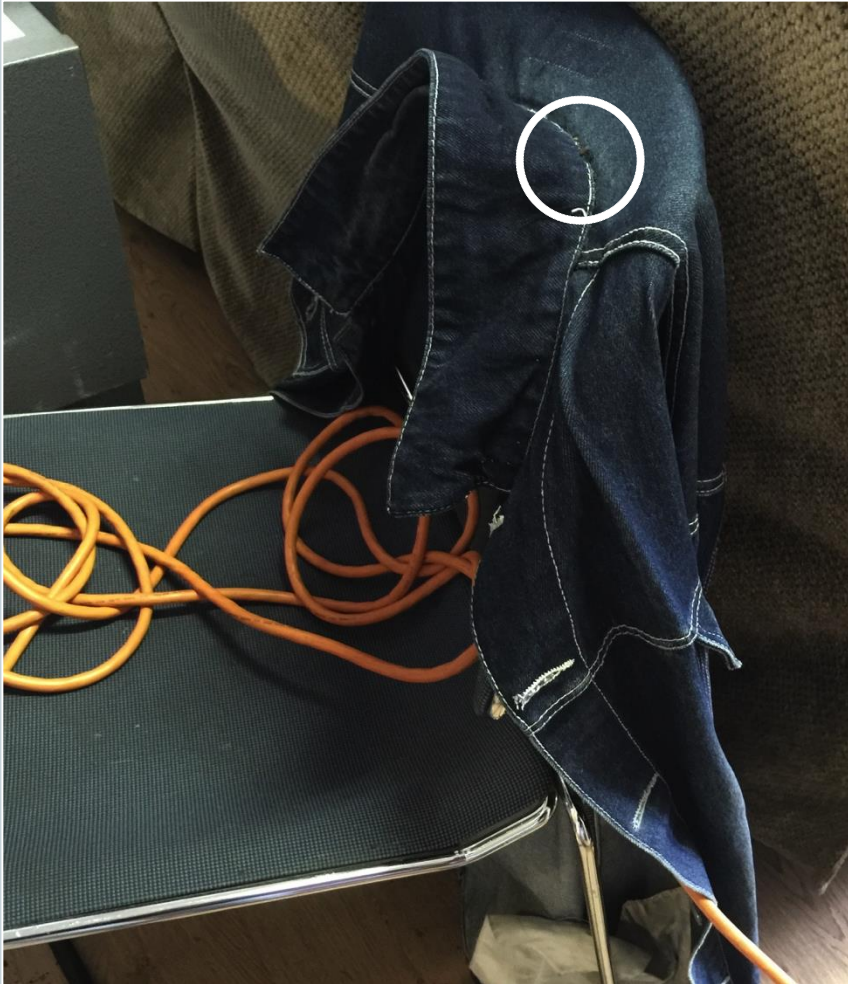


- Common Unawareness
- Easily Transported / Unnoticed Populations
- Changes in Pest Management Practices
- Underestimate Problem/Seriousness
- Increase in International Travel/Immigration
- Densely Populated Urban Areas
- Resistance to Products Used/Available
- Biological Advantages
- Combination of Several Factors?

Bedbug Movement



Bedbug Movement



Bedbug Movement



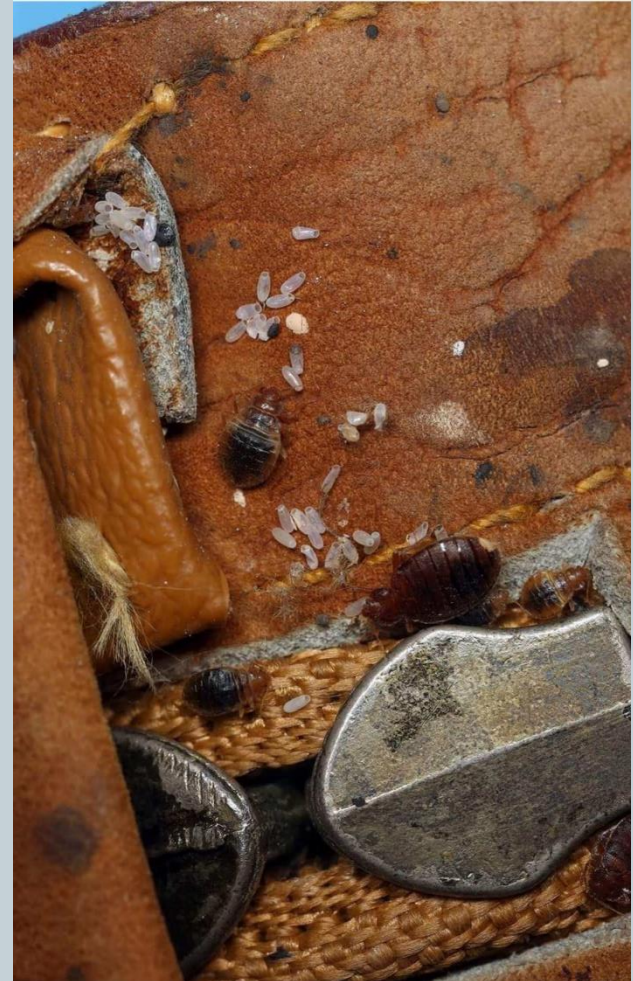
Bedbug Movement



Bedbug Movement



Bedbug Movement



Bedbug Movement



Bedbug Movement



Bedbug Movement



Administrators, Teachers and Staff



- **Develop a Plan!**

- Do it in advance of any problems
- Specific procedures and responsibilities for sightings, incidents and suspected bites
- School Response Flowchart
- Who do I contact?
- Be proactive
- Education/Awareness*
- This is the new reality!

Educate Everyone!



- Basic biology, identification and habits
- Roles and responsibilities of all parties regarding bedbug control
- District philosophy on proactive bedbug pest control?
- *More eyes that are focused on the issue = positive results
- Early detection and a prompt response will help avoid larger, more costly problems

Things To Avoid



- Over reactions- A bedbug incident is not an infestation
- Closing the school- This is unnecessary and would create further issues and public pressure
- Singling out or excluding students
- Immediate pesticide applications
- Don't keep it a secret

Suspect Bedbugs?



- Be respectful and discreet!
- Collect a specimen for proper identification
- Visit the nurse for inspection of clothing and belongings
- Have a plan to manage the case (include parents, councilor, health professionals and students)
- Have a plan to manage “stuff” until the problem is resolved (intake items)

Prevention



- Avoid storing personal items in close quarters (to the extent possible)
- Limit items that move between school and home
- Regularly reduce classroom clutter
- Regularly remove all cardboard
- Store classroom items in clear plastic totes
- Inspect, inspect, inspect!

Inspection



- Correct tools- flashlight and magnifying glass
- Clothing, backpacks, jackets, hats, lockers and desks
- Problem classrooms- frequent, documented inspections
- Faculty lounges, offices, upholstered items, books, nurses station

Management



- Have a proactive plan in place
- Follow the plan (eliminates an emotional response)
- Include all stakeholders
- Over communicate
- Use all tools and resources available
- Bag and remove infested items
- Include or consult with a pest professional (lowers liability)
- Document everything!

How Do I Protect Myself?



- Be aware of your surroundings
- Only bring what you need into your classroom
- Be suspicious of upholstered furniture
- Be strategic where you store purses, backpacks, jackets and other personal items
- Ask open ended, probing questions if you suspect something
- Inspect your clothing, shoes and personal items
- Change your clothes if you're concerned
- Report the problem if you become aware of it

The Silver Lining



- This is an insect that doesn't jump
- They can't fly
- Bedbugs are primarily nocturnal (can adjust)
- They spend up to 90% of their entire life hiding in cracks and crevices
- They are relatively slow moving (provoke movement)
- Every life stage is easily observed and identifiable
- You are now aware of what to look for!

Questions?



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