

More nightmare fuel: Bedbugs create cesspool of poop and histamine in your bed

Histamine levels in infested homes were 20X higher than normal.

[Beth Mole](#) - 2/14/2018, 3:56 PM



[Enlarge](#) / A typical bed bug aggregation showing blood-fed and unfed bed bugs and fecal spots that contain histamine (photo credit: Matt Bertone)

[DeVries et al.](#)

It's official: pooping the bed is not the worst thing you can do. Letting bedbugs do it is worse.

As the creepy critters bite you while you slumber, they also squeeze out poops loaded with histamine, a chemical that our own bodies push out during an inflammatory response to allergens. Histamine can trigger itchiness, watery eyes, sneezing, trouble breathing, headaches, and asthma attacks, among other problems. [Homes with bedbug infestations can become histamine Dutch ovens](#), according to a new study led by entomologists and health experts at North Carolina State University. The researchers found that histamine levels in infested homes were at least 20-times higher than levels

in bed-bug free homes.

And that's not all. Researchers writing in *PLOS ONE* also found that those histamine levels linger. In infested homes that were heat treated—which involves circulating hot air (~50°C) into a home to wipe out the bugs—histamine levels remained high for months afterward.

In fact, the effective treatment may make the butt blasts worse. The researchers speculate that the rush of hot air could stir up poop storms that spread histamine from infested mattresses and sofas to the rest of the house—a "poop hitting the fan" scenario, if you will.

The authors, led by entomologist Zachary DeVries, conclude that the study's findings are "substantial, because exogenous histamine can provoke allergic responses and asthma." They call for more research on the bugs' butt-asplisions and the fallout.

"The intimate association of bed bugs with humans and the spatial distribution and persistence of histamine in homes suggest that histamine may represent an emergent indoor environmental contaminant whose impact on human health should be investigated," they write.

Since the early 2000s, bedbugs have reemerged and become a global scourge. The tiny critters aggregate in the creases of mattresses and seams of couches (or any other good hiding spot) and come out to feast on your blood while you snooze. Their size, hiding skills, and high level of resistance to some insecticides make them incredibly difficult to eradicate.

That said, while infestations are irritating, the bugs are not generally thought to pose a significant health risk. Unlike other blood suckers, such as ticks and mosquitoes, they're not known to spread infectious diseases. Their bites simply cause skin irritation and [may haunt your dreams forever](#)—not cause severe illnesses or injuries.

But the new study from DeVries and colleagues may challenge that notion.

A few years ago, Canadian researchers noted that [bedbugs excrete histamine](#) among a potpourri of pheromones that attract their kind to coveted crevices for lurking. DeVries and colleagues wondered if that could cause health problems. To begin to answer the question, they set out to see if histamine levels are even a measurable problem in infested houses.

They analyzed poopy dust samples from 14 bedbug-infested apartments and 10 un-infested apartments in the same building. Because of the risk that the un-infested apartments might be peripherally affected or previously infested, they also looked at dust samples from five apartments in a bedbug-free building eight kilometers away. They took dust samples repeatedly for weeks. The researchers sampled heat-treated apartments for 12 weeks after the treatment.

In the end, they found that infested apartments averaged 54 micrograms of histamine per 100 milligrams of dust. Un-infested apartments in the same building averaged 2.5 μ g per 100mg of dust, and the distant, bedbug-free apartments averaged 0.3 μ g per 100mg of dust. The researchers noted that the apartment categories didn't have significantly different amounts of dust. They also noted that heat treatments did not significantly flush histamine levels in the subsequent 12 weeks.

The health effects of the 54 μ g of histamine per 100mg of dust are so far unclear. Earlier experiments in which people breathed in histamine found that just 24.5 μ g could affect breathing. And the level in the bedbug infested house dust is roughly 10-fold higher than what the Food and Drug Administration allows in fish. (When fish spoil at high temperatures, bacteria can form histamine, causing [the potential for poisoning](#).) But that limit is based on ingesting histamine, not breathing it.

The researchers say far more work needs to be done to confirm their findings and to determine if there are other, confounding sources of histamine. They

also want to understand the health effects of those histamine levels and figure out effective ways to lower them.

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