

# One-Third of Your Pillow Weight May Be Dust Mites and Bug Droppings

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## STORY AT-A-GLANCE

- › Dust mites are curious little creatures that live off your dead skin cells and are responsible for allergic reactions in at least 10% of the population
- › Mites and their droppings are not the only hazards residing in your pillows; you may be spending up to one-third of your life breathing fire-retardant chemicals used in your bedding
- › One healthy option to reduce toxic chemicals and bug populations in your bedroom is to use wool pillows and duvets

***Editor's Note: This article is a reprint. It was originally published April 12, 2017.***

Dust mites are curious tiny creatures that feed off your dead skin cells and thrive in warm, humid environments. They don't bite, and they don't spread disease, but they are responsible for allergic symptoms and have been linked to the development of asthma in children.<sup>1</sup>

An estimated 10% of the population is allergic to the dust mite's fecal pellets and body parts. Your pillow is one of the more common places to find large numbers of mites, as the environment is exactly what they need to grow and multiply.

In fact, pillows and down comforters can become a dust mite reservoir. And, though you may think you've finally found the perfect pillow for a great night of sleep, it may be time

to pitch the one you have and get a new one.

Ideally, your pillow should fill the gap between your head and shoulders when you lie down. Your pillow will serve two functions – support for your neck and upper back and provide a level of comfort you wouldn't experience without a pillow.

Support is the more important function as your spine is naturally curved at the neck and a well-placed pillow will maintain proper alignment. Although comfort is slightly more subjective, support plays a role in the comfort factor as a lack of support reduces comfort.

For those with a spinal disorder, proper support is essential to [sleep quality](#) and musculoskeletal comfort.<sup>2</sup> One study found orthopedic pillows kept spinal alignment best, while feather pillows were the worst; individual support is the deciding factor in your pillow choice.

## Your Allergies May Stem From Your Pillow

Dust mites are a fact of life. Even though you may not see them, you are their main source of food, so they are anywhere you live. In fact, brand new bedding may be completely colonized within six weeks!<sup>3</sup>

The video demonstrates how pervasive the mite population in your home may be, and why your allergy symptoms may be worse in the morning. There are 13 species of dust mites, all of which have adapted to living inside the average home.<sup>4</sup>

They thrive when temperatures are between 68 and 77 degrees Fahrenheit and humidity levels are between 70% and 80%. There are more dust mites in your bedroom and your bedding than anywhere else in your home.

So, if you have a dust mite allergy and can control the population of dust mites in your bedroom, you may also reduce your [allergy symptoms](#). After two years without cleaning, one-third of the weight of your pillow could be from a thriving dust mite population and its droppings.<sup>5</sup>

# Pillows May Increase Your Exposure to Flame-Retardant Chemicals

However, by changing one pillow for another, you may be changing one health challenge for another. Bedding is a common household material where fire-retardant chemicals are used with the idea that by slowing a burning fire, you have a better chance of escaping the flames.

Research shows that [fire-retardant chemicals](#) expose you to greater health risks, both before and during a fire. Mattresses, pillows, couch cushions and even electronics may be doused in fire-retardant chemicals, many of which have been linked to serious health risks,<sup>6</sup> including cancer, infertility,<sup>7</sup> birth defects and reduced IQ.

Although some of these chemicals are slowly being phased out, they are being replaced with others. The materials infused with older retardants are filling landfills, and chemicals are leaching into the groundwater, slowly making their way back into the food supply.

In 2006, the U.S. government moved to phase out polybrominated diphenyl ethers (PBDEs), as multiple studies showed it interfered with the endocrine system and led to neurodevelopmental problems.<sup>8</sup>

A 2017 study suggests the levels of PBDEs in humans have stopped declining, plateaued and may even be higher in certain populations.<sup>9</sup> The study's lead author, a research associate with the Cancer Prevention Institute of California, points out that once these chemicals have reached the environment, they are virtually impossible to destroy.

The Environmental Working Group (EWG) reports replacement chemicals are quietly taking the place of those being phased out and have not yet undergone scrutiny.<sup>10</sup> The extent of the trend was not clear until scientists found a major increase in exposure to chlorinated tris in the past decade.<sup>11</sup>

Tris has been added to many types of foam furniture, including pillows – this is despite the fact that tris is a known carcinogen that may cause neurological damage. California has now classified it as a chemical known to cause cancer.

## **What You Might Not Know About Fire-Retardant Chemicals**

Among the strongest opponents of fire-retardant chemicals are the firefighters who are forced to breathe the chemicals when they respond to a fire. Not only are the fumes toxic, but the chemicals are also ineffective.

The National Institute for Occupational Safety and Health released the results of more than five years of data demonstrating firefighters face difficult health challenges.<sup>12</sup>

Their study evaluated over 30,000 firefighters across the U.S. and found this population suffers a greater number of **cancer** diagnoses and deaths than the general population. Types of cancers included digestive, oral, respiratory, urinary and blood cancers.

Occupational exposure to toxic gases during a fire was the likely culprit. Following past studies, fire-retardant chemicals have been removed from children's pajamas in response to concerns about cancer, but continued to be used in furniture and foam cushions.

These chemicals were originally developed in the 1970s when cigarettes were a major source of house fires. Under pressure to make fire-safe cigarettes, the tobacco industry pushed for federal standards for fire-retardant furniture instead.

As of July 1, 2007, all U.S. mattresses are required to be highly flame-retardant, to the extent that they won't catch on fire if exposed to a blowtorch.<sup>13</sup>

This means manufacturers are dousing them with highly toxic flame-retardant chemicals, which do NOT have to be disclosed in any way. This is probably the most important piece of furniture you want to get right, as you are spending about one-third of your life on it.

Unless you've recently remodeled using only natural materials, it's likely you have **flame-retardant** lurking in your home right now. You can help to reduce your exposure using these tips:

**Know the date of manufacture** — Be especially careful with polyurethane foam products manufactured prior to 2005, such as upholstered furniture, mattresses and pillows, as these are most likely to contain PBDE flame retardants.

If you have any of these in your home currently, consider replacing them. At the very least, inspect them carefully and replace ripped covers and/or any foam that appears to be breaking down. Also, avoid reupholstering furniture by yourself, as the reupholstering process increases your risk of exposure.

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**Use caution during carpet removal** — Older carpet padding is another major source of PBDEs, so take precautions when removing old carpet. You'll want to isolate your work area from the rest of your house to avoid the chemical from spreading, and use a HEPA filter vacuum to clean up.

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**Take care with electronics** — You may also have older sources of PBDEs known as Deca in your home. These chemicals are so toxic they are banned in several states. Deca PBDEs can be found in electronics like TVs, cell phones, kitchen appliances, fans, toner cartridges and more.

Wash your hands after handling electronics, especially before eating, and at the very least, be sure you don't let infants mouth any of these items (like your TV remote control or cellphone).

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**Consider naturally safe replacements** — As you replace PBDE-containing items around your home, select those that contain naturally less flammable materials, such as leather, wool and cotton.

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**Consider organic or "green" materials** — Look for organic and "green" building materials, carpeting, baby items, mattresses and upholstery, which will be free from these toxic chemicals and help reduce your overall exposure.

Furniture products filled with **cotton**, wool or polyester tend to be safer than chemical-treated foam; some products also state that they are "flame-retardant free."

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**Clean dust carefully** – PBDEs are often found in household dust, so clean up with a HEPA-filter vacuum and/or a wet mop often.

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## How to Get a Restful Night of Sleep

Getting a restful night of sleep is important to your overall health and wellness, and sleeping position is just one of the factors that makes a difference in how rested you may feel in the morning. More than 90% of Americans claim a comfortable pillow is important to how well they feel in the morning.<sup>14</sup> You may have a preference for the type of pillow you like prior to sleep, but if you're waking with back and neck pain, it may be time to make an adjustment.

On your back is the best sleep position as it maintains your head and spine in a neutral position, reduces symptoms of acid reflux and may even prevent wrinkles.<sup>15</sup> When on your back, the best pillow is no pillow at all, but rather a flat rolled towel or ultra-thin pillow that will not push your head and neck forward, impacting your breathing.

While the position you use at night affects how well-rested you feel in the morning, I provide additional tips to improve the quality of your sleep, from timing and lighting to temperature, in my article "[Top 33 Tips to Optimize Your Sleep Routine](#)."

## Risks Associated With Poor Sleep

A lack of quality sleep may lead to sleep deprivation, which has been linked to a number of different health conditions. Just some of the problems associated with sleep deprivation are listed here. As you can see, they may affect your productivity at work, your relationships, your finances and your health.

Poor emotional balance

Reduced **immune function**

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Worsened constipation	Increased risk of car accidents
Increased accidents at work	Reduced ability to perform tasks
Reduced creativity at work or in other activities	Increased risk of <b>depression</b>
Slowed reaction time	Increased risk of Type 2 <b>diabetes</b> , obesity, cancer, high blood pressure, osteoporosis and cardiovascular disease
Altered gene expression. Research has shown that when people cut sleep from 7.5 to 6.5 hours a night, there were increases in the expression of genes associated with inflammation, immune excitability, diabetes, cancer risk and stress <sup>16</sup>	Contribute to premature aging by interfering with your <b>growth hormone</b> production, normally released by your pituitary gland during deep sleep
Reduced brain plasticity and ability to learn new concepts	Reduced motor (physical/athletic) performance
Worsened <b>behavioral difficulties in children</b>	Exacerbated or increased risk of stomach ulcers
Intensified chronic pain. In one study, poor or insufficient sleep was found to be the strongest predictor for pain in adults over 50 <sup>17</sup>	Increased risk of depression. In one trial, 87% of depressed patients who resolved their insomnia had major improvements to their depression, with symptoms disappearing after eight weeks
Exacerbated or increased risk of chronic diseases such as, <b>Parkinson's</b> , Alzheimer's, multiple sclerosis (MS),	Harm your brain by halting new cell production. Sleep deprivation can increase levels of corticosterone (a

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gastrointestinal tract disorders, kidney disease and cancer

stress hormone), resulting in fewer new brain cells being created in your hippocampus

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## **Are You Ready to Replace Your Pillow?**

Failure to change your pillow every six months to a year may also increase your risk of acne breakouts.<sup>18</sup> Pressing your face into old dirt, oil and dead skin cells may increase your risk of clogging pores and developing whiteheads. Down pillows and comforters attract the most debris and cannot be cleaned conventionally to rid the product of dust mites.

Wash your pillows regularly by putting two pillows in the washing machine at a time to balance the load. Add as little detergent as possible. Run them through the rinse cycle twice and then tumble dry. During the summer months consider hanging the pillows out on sunny days to reduce humidity in the pillow.

The National Sleep Foundation recommends replacing pillows every one to two years,<sup>19</sup> and extending the life of your pillow by washing it every six months. You'll know it's definitely time to replace your pillow when it becomes lumpy, the shape and comfort no longer resemble a new pillow, or you fold it in half and it doesn't quickly bounce back.

## **The Wonders of Wool**

The alternative bedding you may have been searching for is made from a sustainable product, naturally repels dust mites, doesn't contain fire-retardant chemicals and supports your body temperature changes throughout the night. That product is wool.

It may sound like your pillows and comforters would smother you in heat, as woolen jackets have long been what you sought after in the deeply cold winter months. But, for the same reason wool jackets work so well in the winter to protect your body heat, they



also work in your bedding to provide you with exactly what your body needs for a restful sleep. Wool fibers trap your body heat, helping you to maintain a steady temperature.

Other types of bedding trap warm air, creating a humid environment, ripe for dust mites. However, wool releases the humidity and helps maintain a steady temperature unique to your body's needs. Wool also naturally passes federal fire testing, requiring no additional chemicals.<sup>20</sup> Wool is machine washable, hypoallergenic and supports farmers who provide a sustainable product. It can be harvested from sheep, alpaca, angora rabbits and camels.<sup>21</sup>

Creating a restful and safe environment in your bedroom is important to your health and wellness. By reducing your exposure to dust mites and fire-retardant chemicals, and by making small changes to your nightly routine, you may experience greater productivity during the day and improved health overall.

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