

Dust mites and their allergens

Everything you need to know
about house dust mite allergy,
its causes and its impacts



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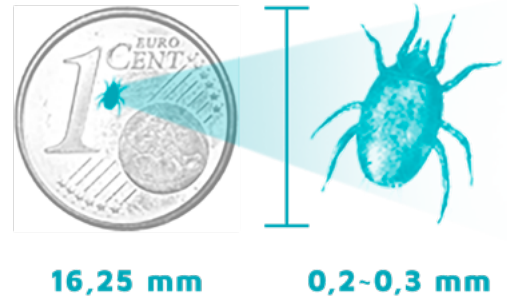
Your home's first line of defense against dust mite infestation



What are dust mites?

Related to spiders, ticks and scorpions, dust mites are **tiny, translucent arachnids barely visible to the naked eye**. They have 8 legs and range between 0.2 to 0.3 mm in length. There are two main species of house dust mites in our houses:

- *Dermatophagoides farinae*: American house dust mite
- *Dermatophagoides pteronyssinus*: European house dust mite



Dust mites don't bite but they eat your dead skin cells and drink your sweat!

Dust mites have life cycles 65 to 100 days long. In that time, each dust mite produces 2,000 droppings and female mites lay up to 80 eggs each. In just a few weeks, females house dust mite can cause a population explosion of up to one million mites.



Up to 80 eggs



2,000 droppings

Where do they live?

House dust mites are associated with human living spaces, since they rely on us for food. They are cosmopolitan, meaning **they are found all over the world**. But because they need higher temperatures and humidity to survive and breed, they are less prevalent in extremely cold or dry environments.

Thanks to better insulation and the ability to seal our homes from outside conditions, house dust mites find our houses perfect for feeding and breeding. They like temperatures between 20 and 25 degrees Celsius and humidity levels of 60 to 70%.

Your mattress is likely to contain 2,000,000 dust mites producing 40,000,000 droppings a day.

Nearly all of your favourite places in the house are home to dust mites, including **mattresses, carpets, bedding, pillows and sofas**. In fact, the more you use a piece of furniture, the more skin cells and sweat you'll leave behind to feed the next generation of crawly little arachnids.



Your mattress is dust mite heaven

Your mattress may well be the perfect home for dust mites, as your sweat increases the humidity of the mattress, and the skin cells you shed provide a feast. (a human loses 0.5 to 1.5 gr/day and feeds +/- 1 million mites for several days). When darkness falls, the dust mites living in your mattress migrate to the surface – **right next to your skin** – to feed, leaving their shells and droppings behind. When the sun begins to rise, they return to the dark, protected, inner layers of the mattress.

Chemical signals called **pheromones allow dust mites to communicate with each other**, enabling them to gather in protective clusters during the day to stay moist.

Are dust mites seasonal?

Even though house dust mites are present year round, **populations tend to explode in the fall and winter** – when we open the windows less and turn up the heat more frequently. Moisture from cleaning, cooking and laundry remains in your home during these seasons, making it even more likely to host dust mites.

Over time, dust mite faeces and exoskeletons add significantly to the weight of your mattress.

What are dust mite allergens?

Allergens are particles and proteins that cause allergic reactions. We aren't allergic to dust mites themselves, but to **substances in the shells and faeces** that they leave behind every day.

Dust mites at a glance

- tiny arachnids that do not bite or burrow into the skin
- eat dead skin cells and drink sweat
- reproduce rapidly: 1 to 1,000,000 in weeks
- prefer warm, dark, humid environments like mattresses
- produce large amounts of shells and faeces that may cause allergic reactions



What is an allergy?

An allergy is the exaggerated response of an **overactive immune system** to normally harmless substances in food, air and our surrounding environments. These harmless substances, often proteins and enzymes, are called **allergens**.

Common allergens

- dust mite shells and faeces
- pollen
- insect stings
- latex
- foods such as shellfish and nuts



When an allergic person is exposed to allergens, their immune system, which protects the body from viruses, bacteria and other disease-causing factors, goes into overdrive. This can lead to **swelling, mucus production, inflammation, itching and irritation**. Depending on the tissues exposed to the allergen, allergic reactions can affect the digestive, respiratory or circulatory systems.

AIRWAY SYMPTOMS	SKIN-RELATED SYMPTOMS	DIGESTIVE SYMPTOMS
<ul style="list-style-type: none">• runny nose (allergic rhinitis)• conjunctivitis (eye inflammation)• sinusitis• bronchitis• asthma and wheezing	<ul style="list-style-type: none">• hives• redness• itching• swelling• atopic dermatitis (flaky skin rash)	<ul style="list-style-type: none">• vomiting• diarrhea• pain• bloating

What are the symptoms of dust mite allergy?

Because dust mite droppings and shells are mainly found in our bedding and furniture, our skin and nasal passages are in contact with these allergens for up to 8 hours per day. Do you sleep with your face in your pillow? You're probably inhaling dust mite faeces with each breath! Every time you make your bed and dust and vacuum your home, you're stirring up dust mite allergens, making them airborne.



1 in 4 people suffers from dust mite allergy symptoms.



DUST MITE ALLERGY SYMPTOMS

- allergic rhinitis (Blocked or runny nose)
- red, itchy, inflamed eyes, sometimes with discharge
- asthma, wheezing, difficulty breathing
- red, itchy, flaky skin

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COLD

- sneezing
- stuffy nose with greenish mucus
- may be associated to fever
- sore throat
- sinusitis
- conjunctivitis

ALLERGY

- repeated sneezing
- stuffy nose with clear, watery mucus
- No pain, No temperature
- itchy, watery eyes
- asthma attacks
- wheezing

Do I have a cold, or am I allergic?

The symptoms of colds vs. allergies can be very similar, since they both cause swelling in nasal passages. But it's the progression of your symptoms that's important to think about.

A **cold** usually begins with sneezing, progressing quickly to a stuffy nose and the nasal discharge will become colored. Possibly sore throat or signs of sinusitis may appear. You may have a fever with a cold. An **allergy** never causes fever, but is characterised by repeated sneezing and itchy, watery eyes and nose. Your nasal discharge will be clear and thin.

Are there impacts beyond skin and lung problems?

Constant sneezing, coughing and nose-blowing – especially at night – is sure to interrupt your sleep. Long periods of poor-quality sleep **can lead to full-blown sleep disorders**, which cause debilitating indirect problems for both children and adults. Recent medical studies have shown that these problems are very common – and that they negatively affect our quality of life.



**Secondary effects of dust mite allergy**

- concentration disorders
- lower performance in school or at work
- fatigue
- mood disorders
- social problems
- unwell appearance

Not sure if you're allergic to dust mites? Ask these questions.

- Do you have a family member with a diagnosed dust mite allergy?
- Do you (or your child) frequently have a runny nose with clear mucus?
- Do you (or your child) cough often, mostly at night?
- Do you (or your child) sneeze frequently?
- Do you (or your child) suffer from an itchy nose, eyes or throat?
- Do you (or your child) suffer from a blocked nose?
- Do those symptoms become worse after exposure to dust?
- Do those symptoms occur year round?

If you answered 'yes' to two or more of these questions, an allergy to dust mites is possible. Make an appointment with your doctor or pharmacist.



I think I'm allergic to dust mites. How can I be certain?

It's important to realise that **allergy is a progressive disease**. Early diagnosis is crucial in controlling it and preventing it from worsening, possibly evolve into asthma and causing additional secondary symptoms that add up over time. For more insights into your symptoms...

Take the dust mite allergy self evaluation at www.dustmiteallergy.org
Do the **ExAller® Self Test** in the comfort of your home.
Schedule an allergy test with your doctor or allergist.



It's confirmed: I have a dust mite allergy. Is there a solution?

There are 3 ways of alleviating and even avoiding dust mite allergy symptoms:

- 1 removing the source,
- 2 treating symptoms with **medication**
- 3 and **immunotherapy**.

Removing the source of allergens: the first essential step for all allergic people the easiest and cheapest approach.

Preventing symptoms from ever occurring is definitely preferable over treating symptoms you're already suffering. Clinical dust mite allergy symptoms can be relieved by reducing the number of dust mites in your environment. Best of all – this approach causes zero side effects!



"Avoiding the allergen and the source of the allergen is undoubtedly the first step in treating allergy."

Dr. X. Van der Brempt, leading allergist



There are a number of behaviours and actions that you can easily take to make your home a difficult place for dust mites to live.

- Don't air dry clothing in bedrooms. This increases the humidity of the room, which encourages dust mite breeding.
- Use a dehumidifier to keep humidity levels in bedrooms below 50-60%.
- Ventilate bedrooms, especially when the weather is cool and dry. Doing so keeps temperatures and humidity levels too low for dust mites to thrive.
- Replace your mattress every 10 years.
- Store clothing and stuffed animals in plastic containers. This prevents dust mites from infiltrating them.
- Avoid (using) carpets, rugs, upholstered furniture and other fabrics in bedrooms. These provide ideal homes for dust mites.



Our solution

ExAller®: Treats and prevents dust mite allergy by removing the source.

ExAller® is a clinically tested safe and 100% natural product recommended by world-leading allergists that extracts and eliminates 99% of allergenic dust mites living in carpet, furniture and mattresses. Experience allergy relief after just one use.

Learn more about **ExAller®** on our website: exaller.com

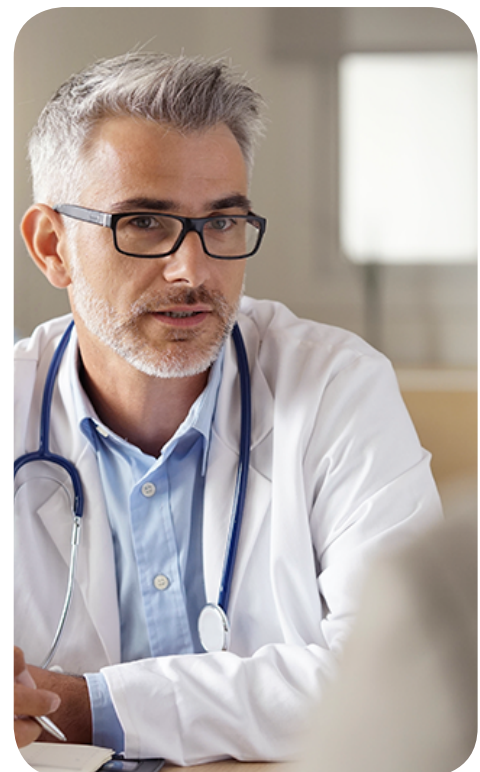
Treating symptoms with medication: an ongoing ordeal

There are also a number of over-the-counter and prescription medications that effectively treat dust mite allergy symptoms.

- **Antihistamines** relieve allergic nasal symptoms like itching, sneezing and runny nose.
- **Decongestants** relieve nasal swelling, for easier breathing.
- **Corticosteroids** reduce the inflammatory immune response in nasal passages.
- **Leukotriene modifiers** are allergy-specific drugs that prevent the immune system from producing extra mucus and tightening muscles in the airway.

The use of medication can relieve symptoms, but they cannot eliminate symptoms or cure a dust mite allergy. Symptoms may return after the drug is stopped. Moreover, some medication can cause uncomfortable side effects (eg. somnolence).

Taking medication can be useful to reduce acute symptoms, but it is generally not recommended to use it on a recurrent basis without medical advice.





Immunotherapy

For adults and children suffering from intense allergy symptoms that have big impacts on their daily lives, immunotherapy is an option when dust mites elimination and medication are not enough. Immunotherapy can be taken:

- as regular **injections**;
- **sublingually** (under the tongue).

Like a vaccine, immunotherapy doses gradually increase exposure to an allergen, causing the body to develop tolerance. This means that each dose is given according to a strict schedule that lasts from 3 to 6 months, followed by a maintenance phase of up to 3 to 5 years.

Immunotherapy decreases the symptoms of many allergies, including dust mite allergy, and can stop allergies from developing into asthma in children. However, these courses of injections or sublingual drops can be expensive.

What is the purpose of treating my allergy?

- Treatment should control symptoms
- Treatment should preserve cognitive and academic performance
- The treatment should allow normal daily activities (school...)
- The treatment should have the minimum number of side effects
- Treatment should «prevent» the development of «comorbidities»: asthma in the rhinitis stage
- The treatment should have the best cost-effectiveness ratio

Why is it important for me to treat my allergy?

We've already mentioned that allergy is a progressive disease, meaning that **it becomes worse over time if it is not treated appropriately**. As primary symptoms continue, they add up.

Failing to treat dust mite allergy does not desensitise sufferers – it does the opposite. Your allergy may evolve into a severe form with greater impacts on your daily life, and which may become more difficult to treat. There is also a risk that your untreated allergic rhinitis will develop into asthma. Indeed, symptoms affecting your upper airways can go down to the lower airways and affect your lungs. In children, some studies have indicated that early exposure to dust mite allergens can cause asthma later in childhood. And if your child already suffers from asthma, leaving the causes untreated can even lead to uncontrollable, life-threatening asthma attacks.

This is why it is important to diagnose and treat allergic rhinitis as rapidly as possible.

Moreover, people with allergies may be more susceptible to viruses, and continuously blocked, swollen sinuses can lead to continuous sinus infections. So, on top of the burden of allergy symptoms, you could also be suffering from the effects of viral infections — a double penalty that can lead to a vicious cycle.

If atopic dermatitis – red, itchy, flaky skin – is one of your symptoms, failing to treat it can open the door to bacteria as you scratch and pink at the affected area.

In short: diagnose and treat your allergy as soon as possible to prevent it from developing into asthma



My child is allergic to dust mites. How can I help them?

When it comes to managing allergy symptoms in children, **controlling their environment** is key to ensuring a high quality of life.

STEP 1 Kick out the culprits

Before considering any medical treatments for your child's house dust mite allergy, your first line of defense is to eliminate allergens and other symptom triggers from your child's living space. Keep their environment simple, easy to clean, decluttered and free of moisture.

STEP 2 Notify the people around your child

To extend your child's well-being beyond your home, tell friends, family, relatives, teachers and other people who come in contact with your child that they suffer from a dust mite allergy. This will help others keep your child top of mind when it comes to providing safe spaces that don't cause allergies.

STEP 3 Educate your child

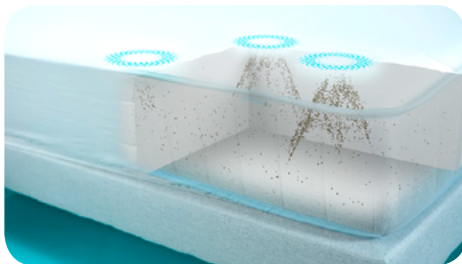
Tell your child about the cause of their allergies, and about what steps they can take themselves to avoid triggers. [Download our educational dust mite comic, 'Zack and the dust mites', and share it with your child](#) (only available in French and Dutch).





Your home's first line of defense against dust mite infestation

The **ExAller**® anti-dust mite spray is a 100%-natural, safe, affordable and effective way to rid your home of dust mites and their allergens. It is clinically proven to allow you to remove of 99% of dust mites from treated areas, including:



- bedding
- mattresses
- carpets
- upholstered furniture
- clothing and stuffed animals
- ...and more.

100% natural

Composed of plant extracts, **ExAller**® does not contain any harsh chemicals or insecticides. It is 100% safe for children, adults and pets.

Affordable

One 300 mL bottle of **ExAller**® anti-dust mite solution treats a single bed 16 times, or a double bed 8 times, at a cost of EUR 3.12 per month/person. For the first three weeks of use, apply once per week. After three weeks, applying the solution once per month is enough.

Effective

ExAller® mimics the chemical signals that dust mites use to communicate with each other and group together. When it is sprayed on a cotton sheet covering the treated area, it is clinically proven to attract 99% of dust mites to the sheet which you can remove and wash at 60 degrees Celsius to eliminate the mites.

Learn more about
ExAller® on our website:
exaller.com

