Mould Allergy
Patient Information

Merck KGaA
Darmstadt, Germany
Mould Allergy

An allergy is a condition which manifests as an exaggerated defence reaction of the body to allergens. Mould allergies are caused by the spores or fungal filaments (mycelium) of moulds that are introduced into the body via the airways, mould-contaminated foodstuffs or skin contact. The following symptoms may be triggered:

Nose: Sneezing attacks, running nose, mucosal swelling (stuffy nose, difficulty breathing) = rhinitis
Eyes: Itching, redness, watering, swelling = conjunctivitis
Airways: Cough, phlegm = bronchitis, acute shortness of breath, asthma
Skin: Itching, rash (eczema, nettle rash, neurodermitis)
Gastrointestinal tract: Flatulence, nausea, diarrhoea, vomiting and abdominal pain
Head: Migraine

The patient’s medical history is the key to the suspected diagnosis “mould allergy”. Fungal spores may occur as “indoor allergens” as well as “outdoor allergens”. “Indoor allergen” moulds are found most often in damp, warm and poorly ventilated rooms, damp basements, bathrooms, damp and cold exterior walls, wallpapers, rear panels of cupboards and picture frames, humidifiers, air-conditioning systems, pot plants, hydroponics, refrigerators, and household waste. Some mould species frequently contaminate foodstuffs such as bread and other bakery products, vegetables, fruit or cheese. Mould enzymes are also used in the food industry for the refining of food.

As “outdoor allergens”, mould spores and pollen together are widely dispersed by the air over long distances. Furthermore, they are found on lawn, compost, foliage or dung and on the soil or grains. When one or more of these contaminations are present, after detailed documentation of the disease manifestations the suspected mould allergy is verified by the results of skin, blood and/or challenge tests.

Measures for the prevention and treatment of mould allergies

1. The following sanitation measures are recommended when the house has been contaminated by moulds:
   • Relative humidity in the flat should not exceed 60%.
   • Rooms should be adequately heated.
   • Remove mould infestations. This task often requires specialists.
   • Ventilate the rooms at regular intervals. However, permanently tilted windows do not guarantee adequate air exchange and may lead to waste of energy. The preferred method is intensive ventilation (2 to 4 times per day) to replace the damp interior air by fresh air.
   • Ventilate the bathroom by a window or exhaust fan and dry afterwards. Keep the bathroom door closed while taking a bath, so that water vapour does not distribute over the whole flat.
   • Do not dry damp laundry inside your flat.
   • Do not use air-conditioning systems or humidifiers.
   • Remove pot plants. Regularly check hydroponics for mould contamination, but they are less often contaminated.
   • Regularly dispose household waste.
   • Do not store biological waste inside your flat, because this type of waste contains particularly high mould levels.

2. Handling of foodstuffs contaminated by moulds:
   • Immediately and totally discard foodstuffs contaminated by moulds! To cut away the visibly infested parts is not sufficient.
   • Peel fruit and vegetables.
   • Clean the refrigerator at regular intervals.
3. Recommendations for outdoor activities and the sporulation period of moulds:

- Please observe all information on time periods when spores are airborne. Seek information on the sporulation period of moulds you react allergic to. You will find some helpful information in the table.
- Avoid gardening and handling of compost.
- Avoid irritants such as fog or industrial and traffic fumes (smog), because they may worsen your complaints.

4. Allergy sufferers should abstain from smoking.

5. Treatment of complaints (symptomatic therapy)

Depending on the location, form and intensity of the symptoms, appropriate anti-allergic medications (e.g. antihistamines, corticosteroids) are given as an acute immediate measure. This eliminates, alleviates or suppresses the symptoms caused by the allergy, but only as long as the medication is being used.

6. Treatment with specific immunotherapy

- The aim of specific immunotherapy (hyposensitization) is to build up the body’s allergen tolerance through regular administration of the allergyinducing substances.
- This treatment is the only means of influencing the immune system, whose reactions have been altered by the allergy. It thus gets to the root cause of the disease and results in regression/reduction of the symptoms.
- Specific immunotherapy should be initiated as early as possible in the course of the disease.
- Treatment involves preparations (in the form of injections or drops) which are specifically designed to target the allergens making ill. Therapy is ongoing and takes at least three years.
- Mould allergies should be taken seriously, as the so-called “allergic march” (progression of rhinitis to asthma) may occur during the course of the disease.

### Occurence of the most common allergy inducing moulds:

All moulds listed below may occur indoors all year round.

<table>
<thead>
<tr>
<th>Mould</th>
<th>Outdoor occurrence</th>
<th>Indoor occurrence</th>
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<tbody>
<tr>
<td>Alternaria</td>
<td>Throughout the world. Found on grains, grasses, plants, in soils, on decaying wood.</td>
<td>House dust, waste, compost, damp buildings, air-conditioning systems, textiles, foodstuffs</td>
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<tr>
<td>Aspergillus</td>
<td>Throughout the world. Found in soils, on decaying plant materials, composting sites.</td>
<td>House dust, waste, compost, damp buildings, potting soil, birdcages, foodstuffs</td>
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<tr>
<td>Cladosporium</td>
<td>Throughout the world. Found on grasses, leaves, particularly marked in good weather, on withering plants, in soils.</td>
<td>House dust, waste, compost, damp buildings, air-conditioning systems, foodstuffs</td>
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<tr>
<td>Penicillium</td>
<td>Throughout the world. Found in soils and hay, on decaying plant materials.</td>
<td>House dust, waste, compost, foodstuffs (fruit and bread in particular)</td>
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<td>Phoma</td>
<td>Throughout the world. Found on withering plants, in soils.</td>
<td>Fruit, vegetables, damp walls in particular</td>
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<tr>
<td>Botrytis</td>
<td>Throughout the world. Found on plants, in soils, primarily in humid climates, often on grapes and strawberries.</td>
<td>Sauna, damp buildings, fruit, vegetables</td>
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<tr>
<td>Rhizopus</td>
<td>Throughout the world, more common in humid climates. Found on seeds, in the air, on vegetables and fruit, on fresh and withering leaves, bird’s nests</td>
<td>Vegetables, fruit, bread, nuts, often in children’s sandpits, house dust</td>
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