

# Allergen Guide



Tips  
to reduce  
allergen  
exposure

Most relevant indoor  
and outdoor allergens

# Introduction

Allergy is a disease in which your pet's immune system reacts abnormally to everyday harmless substances.

Your pet can be exposed to these substances, also called allergens, by inhalation or ingestion, but most often due to direct contact of the allergen with the skin.

After exposure, the body recognises and labels these allergens as 'foreign' and starts producing inflammatory mediators which will initiate the allergic reaction.

The most common indoor and outdoor allergens are described in this brochure.



For more information about allergy, please read our Pet Allergies brochure.



# Mites

These tiny spider-like insects are barely visible to the naked eye and found in almost every home all over the world. The droppings contain proteins that cause frequent and continuous allergic reactions in pets.

Mites thrive best in an environment with a high humidity and temperature. There are two main types of mites, **house dust mites** and **storage mites**.



# House dust mites

House dust mites feed on skin flakes of humans and animals. Favorite areas are mattresses, bedding, upholstered furniture, carpeting and any other household fabrics, such as curtains and drapes.

## Most common species

### House dust mite

*Dermatophagoides pteronyssinus*



- Indoor allergen
- Allergy symptoms all year round

Because this house dust mite seems to be more abundant in Europe than in America, it is also called the European house dust mite.



**Ideal humidity 70-85%**



**Ideal temperature 22-30°C**

### Farinae mite

*Dermatophagoides farinae*



- Indoor allergen
- Allergy symptoms all year round

Pets are most often allergic to this house dust mite. The Farinae mite is the little brother of the House dust mite or *Dermatophagoides pteronyssinus*.



**Ideal humidity 70-85%**



**Ideal temperature 22-30°C**



# Tips to reduce exposure to house dust mites

Unfortunately it is impossible to eliminate all house dust mites in your home, but some things can be done to limit exposure.

1

Keep your pet out of your bedroom as mites love mattresses and bedding.

2

Consider using a mite-proof pet bed and encase bedding with mite-proof covers.

3

Wash bedding and stuffed toys weekly in a 60°C hot water.

4

Dust and vacuum regularly using double layer micro filtration dust bags.



5

Minimise the use of carpets, upholstered furniture and other household fabrics, such as curtains. Smooth floors and blinds can be cleaned easily.

6

Maintain a relative humidity of less than 45% with the help of a dehumidifier.

7

Maintain a room temperature of 21°C or less.

8

Pet's Relief® **Allergone** is an innovative allergen neutralising spray designed to reduce the exposure to house dust allergens. It provides long term protection of 5 months after a single application.



9

Regular grooming and bathing may remove house dust mite droppings from your pet's fur and skin. Consult with your vet for the right shampoo.

10

Change air filters for the furnace and air conditioning regularly or replace them for allergen-control filters.

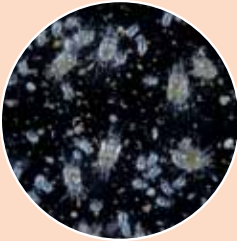
# Storage mites

Moulds that grow in foods, as well as the food itself are consumed by storage mites. They are found in poorly stored plant and animal foods.

## Most common species

### Copra mite

*Tyrophagus putrescentiae*



- Indoor allergen
- Allergy symptoms all year round

The copra mite is found in cheese, bread, fruits, straw, decaying animals/vegetable matter, dried milk and ham.



Ideal humidity 70-85%



Ideal temperature 25-32°C

### Hay mite

*Lepidoglyphus destructor*



- Indoor allergen
- Allergy symptoms all year round

Hay mites are found where plant or animal foods are processed and/or stored at a high humidity.



Ideal humidity 70-90%



Ideal temperature 23-27°C

### Grain mite

*Acarus siro*



- Indoor allergen
- Allergy symptoms all year round

Main food sources are flour, other grain products, cheese, hay, and dried fruit.



Ideal humidity 70-85%



Ideal temperature 22-25°C

# Tips to reduce exposure to storage mites

Storage mites are difficult to control, just like house dust mites. These environmental control tips can be helpful in limiting exposure.

1

Use airtight containers to keep food tightly closed and store in a cool, dark and dry environment.

2

Throw food packages away immediately, do not keep them in a bin indoors.

3

Reduce food stockpiles by buying smaller amounts. Maximum storage time should be less than one month.

4

Store pet food and treats in the freezer until needed.

5

Vacuum sites regularly where food is consumed and use double layer micro filtration dust bags.



6

Wipe your pet's face with a damp cloth after they finish eating to remove food remains.

7

Clean food bowls every day with detergent and hot water.

8

Maintain a relative humidity of less than 45% with the help of a dehumidifier.

9

Maintain a room temperature of 21°C or less.

10

Regular grooming and bathing may remove storage mite droppings from your pet's fur and skin. Consult with your vet for the right shampoo.

11

Change furnace filters regularly.

# Pollens

Pollens are reproductive cells of grasses, crops, plants and trees. These super small pollen granules can be distributed by the wind for many kilometers. Millions of pollens can float in the air, especially on warm and windy days.

Pets are most often exposed to pollens through inhalation and skin absorption. The allergy symptoms are mainly seasonal and can be different for each grass, weed or tree.

## Grasses

Grasses are flowering plants that release pollens mainly from June until September. Grasses include cereal grasses, bamboos, grasses of natural grassland, cultivated lawns and pasture.

### Most common species

#### Orchard grass

*Dactylis glomerata*



- Outdoor allergen
- Found worldwide

Orchard grass is a common grass which grows on roadsides, lawns, fields, banks, meadows and waste land.

It is mostly used for pasture and hay, but it is also planted for ground cover and soil stabilisation.

Orchard grass can grow 20-150 cm tall and the green-grey coloured leaves can reach a length of 35 cm. The spikelets can be 5-9 mm.

J F M A M J J A S O N D

Flowers:

#### Timothy grass

*Phleum pratense*



- Outdoor allergen
- Found worldwide

Timothy grass is one of the most common grasses and grows in fields, meadows and on roadsides. In cooler, humid climates.

Timothy grass is commonly found in hay and is sown in pastures for forage. It is the most extensively cultivated grass of meadow grasses.

This grass can grow 50-150 cm tall and the flowers can be 75-150 mm long and 6-13 mm broad.

J F M A M J J A S O N D

Flowers:



### Perennial ryegrass

Lolium perenne



- Outdoor allergen
- Found worldwide

Perennial Ryegrass is common on disturbed sites, pastures, meadows, fields, lawns, roadsides and even in clearings.

Perennial Ryegrass is used as a winter season pasture and forage grass, this is due to its high resistance.

The plant grows 30-60 cm tall and it produces unbranched stems with spikelets on alternating sides.

#### Flowers:

J F M A M J J A S O N D

### Kentucky bluegrass

Poa pratensis



- Outdoor allergen
- Found worldwide

Kentucky bluegrass is found in prairies, fields, forests and mountain meadows. It is common along roadsides, dunes and lawns.

Kentucky bluegrass is a highly palatable pasture grass and is also used for lawns and turf.

This grass grows 30-70 cm tall with 10 to 30 cm long leaves. It prefers cool, humid climates. It produces green or purple panicles.

#### Flowers:

J F M A M J J A S O N D

### Bermuda grass

Cynodon dactylon



- Outdoor allergen
- Found worldwide

Bermuda grass is a common tropical grass and is found on waste sites, roadsides, pastures, agricultural fields, riparian areas and orchards.

Bermuda grass is used as a lawn and pasture grass, especially in dry areas.

This grass will grow about 20-50 cm high. It produces 2-5 narrow 2-6 cm flowering spikes at the top which are clustered together.

#### Flowers:

J F M A M J J A S O N D



# Crops

A crop is a plant that can be grown and harvested extensively for profit or subsistence. Most crops are cultivated in agriculture. Crops flower from spring to summer, depending on the species.

## Most common species

### Cultivated oat

*Avena sativa*



- Outdoor allergen
- Cultivated worldwide

Oats may escape cultivated fields and can be found in dry wasteland and meadows, especially in heavier soils.

Oats are used to make oat-meal and cereals, but are also used to make beer and other alcoholic beverages.

This annual grass grows 120 cm tall and the seeds ripen in August. The two-flowered spikelets are up to 2.5 cm long.

#### Flowers:

J F M A M J J A S O N D

### Cultivated rye

*Secale cereale*



- Outdoor allergen
- Cultivated worldwide

Rye can escape cultivated beds and be found along roadsides, wastelands and open rangeland.

Rye is used for flour, bread, beer and other alcoholic beverages such as whiskey, beer and vodka.

This grass grows 1-1.5 m tall. The bushy spike is a 7 to 15 cm flower head. The kernels are about 8 mm, oblong and light-brown.

#### Flowers:

J F M A M J J A S O N D



# Weeds

Weeds are flowering plants that are often unwanted in farm fields, gardens, lawns, and parks. They release pollens mainly from June until October.

## Most common species

### Common mugwort

*Artemisia vulgaris*



- Outdoor allergen
- Found worldwide

Mugwort is most common on rubbish heaps, roadsides, sites of demolished buildings and a variety of other disturbed environments.

Mugwort is difficult to control. It is used for pain relief, treatment of fever and used as a diuretic agent.

This weed grows about 1-2 m tall. The dark green leaves are pinnate and 5-20 cm long, with dense white hairs on the underside.

#### Flowers:

J F M A M J J A S O N D

### Stinging nettle

*Urtica dioica*



- Outdoor allergen
- Found worldwide

Nettle is found in open areas and meadows often near buildings. It has been used for salads, soups, tea, colouring and as a curdling agent.

Stinging nettle is a fast-growing weed and can reach a length of 1-2 m.

The leaves are covered with poison-filled hairs which discharge their poison when touched. This results in a burning sensation and a rash.

#### Flowers:

J F M A M J J A S O N D

### English plantain

*Plantago lanceolata*



- Outdoor allergen
- Found worldwide

English plantain is found on grasslands, roadsides and cultivated ground. It often invades lawns and gardens.

This perennial weed can reach a maximum height of 50 cm. The 5-40 cm dark green leaves are oblong or lance-shaped.

The spike stands on a grooved stem which is greenish-brown and flowers from the bottom to the top.

#### Flowers:

J F M A M J J A S O N D

### Lamb's quarter

*Chenopodium album*



- Outdoor allergen
- Found worldwide

Lamb's quarter or common Pigweed is found in horticultural, wild landscapes, roadsides, but also in pastures and forages.

It is not only regarded as a weed in crop fields, but can also be cultivated and used for animal feed.

This 15-150 cm weed has oval-spearhead-shaped leaves with dense, coarse hair. The green-grey flowers are produced by 5-20 cm panicles.

#### Flowers:

J F M A M J J A S O N D

### Dandelion

*Taraxacum officinale*



- Outdoor allergen
- Found worldwide

Dandelion is an abundant weed found in lawns, meadows, fields, roadsides and wastelands. It is sometimes cultivated.

This weed is used to make dandelion wine, salads, medicines and coffee substitutes.

It has deeply toothed leaves and grows 50 cm tall. It can flower again in autumn. In warmer climates it can flower all year.

#### Flowers:

J F M A M J J A S O N D



### Sheep or red sorrel

Rumex acetosella



- Outdoor allergen
- Found worldwide

Sheep sorrel is commonly found on acidic, sandy soils in lawns, fields, pastures, meadows, wasteland and along roadsides.

The leaves have a lemony, spicy flavor and are used in salads, soups and as garnish.

This weed grows about 10-60 cm tall and produces small orange-yellow or red-orange flowers. The leaves often turn red in autumn.

#### Flowers:

J F M A M J J A S O N D

### Common ragweed

Ambrosia elatior



- Outdoor allergen
- Found worldwide

Common ragweed is found in woodland and wasteland. It grows on dry fields and pastures, along roadsides and in disturbed soil.

The pollens are very small and easily distributed by the wind. In the afternoon the pollen release is at its highest.

Common ragweed can grow up to 70-90 cm. The soft leaves are pinnately divided and hairy. They can have a length of 3-13 cm.

#### Flowers:

J F M A M J J A S O N D



# Trees

Trees are perennial plants with an elongated, wooden trunk that support branches and leaves. Depending on the species, flowering occurs at the end of the winter or spring.

## Most common species

### Birch

*Betula pendula*



- Outdoor allergen
- Found worldwide

Birch grows in woods, particularly where the soil is lighter. It often grows in heath lands and clearings and is also planted in gardens.

The bloom is usually short. Before they unfold their leaves, they shed enormous quantities of pollens.

They have a silvery, smooth bark. It can grow 20-25 m tall. The flowers (catkins) produce winged seeds and are widely distributed by the wind.

#### Flowers:

J F M A M J J A S O N D

### Hazel

*Corylus avellana*



- Outdoor allergen
- Found worldwide

This shrub can be found at forest sides, but is also cultivated for its nuts. It grows both in the shade and in the sun.

Hazel can reach 2-7 m and is an aggressive spreader. It not only distributes by pollens, but also by nut-eating birds.

The flowers (catkins) are produced before the leaves. Hazelnuts grow in clusters on the Hazel tree. The leaves are 6-12 cm long.

#### Flowers:

J F M A M J J A S O N D

### Elm

*Ulmus americana*



- Outdoor allergen
- Found worldwide

Elm grows in woods and hedges, meadows, fields, shores of rivers or lakes, swamps, growing on moist land.

This tree was often planted in urban settings as ornamental. It can grow up to 40 m tall.

Droping, greenish-red flowers appear in late winter or early spring. The 1.5 cm long fruit is oval and flat and has papery wings.

#### Flowers:

J F M A M J J A S O N D

## Willow

*Salix viminalis*



- Outdoor allergen
- Found worldwide

Willow grows in wet environments, such as riverbanks, lake shores and in drier sites where bare soil becomes available.

Willow is a deciduous shrub or small tree that can grow 8 m high. The flowers (catkins) appear in Spring.

The fruit is small and contains seeds. The seeds have long, silky, white hairs, which allow the seeds to be distributed by the wind.

### Flowers:

J F M A M J J A S O N D

## Sycamore

*Platanus occidentalis*



- Outdoor allergen
- Found worldwide

Sycamore is a deciduous tree which is native to lowland areas, typically reaching its largest size along streams, rivers and flood plains.

Sycamore was formerly extensively planted as a shade tree and can grow up to 30 to 40 m high.

Yellow-red, small flowers give way to fruit balls which gradually disintegrate during Autumn. Seeds disperse with the wind.

### Flowers:

J F M A M J J A S O N D

## Black alder

*Alnus glutinosa*



- Outdoor allergen
- Found worldwide

Black alder thrives in moist soils near rivers, ponds and lakes. Sometimes it grows in mixed woodland and on forest edges.

This deciduous tree grows under favourable circumstances to a height of 20 to 30 m.

The buds are purplish-brown and have short stalks. Catkins form in autumn and remain dormant during the winter. The catkins flower in March.

### Flowers:

J F M A M J J A S O N D



## Olive

Olea europea



- Outdoor allergen
- Found worldwide

Olives grow in plantations, woods, and as shrub in dry, rocky places. It is grown on 5 continents and it is famous for its fruits and oil.

The olive is very commonly cultivated in Mediterranean climates. It develops small, white, feathery flowers.

Olive trees are small and can grow up to 8–15 m. The silvery green leaves are 4-10 cm and oblong. Olives are harvested in the green to purple stage.

### Flowers:

J F M A M J J A S O N D





# Tips to reduce exposure to pollens

Because pollens are airborne, it is not possible to completely avoid them. The following tips can help to limit the exposure.

1

Know which pollens are responsible for your pet's symptoms, so they can be avoided as much as possible. If they are unknown, your vet can perform a blood or skin test to find out which allergens your pet is allergic to.

2

Keep windows closed as much as possible on windy and dry days. For fresh air, it is best to open windows when there is a low pollen count: after a rainfall, in the morning or in the evening.

3

Keep your pet indoors when local areas are being mowed.

4

Keep an eye on the pollen forecast.

5

Dust and vacuum regularly using double layer micro filtration dust bags.

6

Change car and air conditioning filters regularly or replace them for allergen-control filters.

7

Dry clothes and bedding indoors instead of outdoors.

8

Regular grooming and bathing may remove pollens from your pet's fur and skin. Consult with your vet for the right shampoo.



# Moulds

Pets are sensitive to the spores. Moulds release spores to reproduce and can be easily distributed by the wind. Moulds are mainly found outdoors, but can also grow indoors when spores enter houses through windows.

Moulds give allergy symptoms throughout the year with a peak in spring and autumn. They can be found on damp surfaces such as walls, ceilings, floors, windows and window frames.

## Most common species

### **Alternaria alternata**

Alternaria alternata

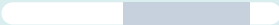


- Outdoor and indoor allergen
- Found worldwide

Alternaria occurs on soil, food, plants, textiles, on walls and window frames in damp environments.

#### **Airborne:**

J F M A M J J A S O N D



### **Aspergillus fumigatus**

Aspergillus fumigatus



- Outdoor and indoor allergen
- Found worldwide

Aspergillus occurs in soil, stored foods and on wet surfaces (bathrooms, basements and refrigerators).

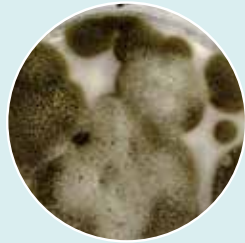
#### **Airborne:**

J F M A M J J A S O N D



### **Cladosporium herbarum**

Cladosporium herbarum

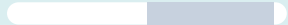


- Outdoor and indoor allergen
- Found worldwide

Cladosporium grows on soil, but also on leather, rubber, paper and wood.

#### **Airborne:**

J F M A M J J A S O N D



# Tips to reduce exposure to moulds

Moulds are very common in the air, but they do not often cause allergic reactions in pets. If your pet is allergic to moulds, follow these tips to limit the exposure.

1

Remove moulds from damp environments and surfaces with a fungi cleaner.

2

Find the cause of damp spots and solve them.

3

Lower the humidity and increase ventilation indoors, especially in damp areas.

4

Check indoor plants for moulds: hydroponics and soil of plants that require a lot of water.



5

Avoid forest walks in autumn or in humid weather.

6

Dry clothes and bedding indoors instead of outdoors.

7

Maintain a room temperature of 21°C or less.

8

Change furnace, car and air conditioning filters regularly.



9

Regular grooming and bathing may remove spores from your pet's fur and skin. Consult with your vet for the right shampoo.

# Malassezia

Malassezia is a yeast which is naturally found on the skin and in ear canals of healthy pets and humans.



Normally Malassezia causes no harm, but weakened skin allows yeast to multiply and cause non-seasonal symptoms in allergic pets.

Malassezia can be found by your vet by examining skin scrapings under the microscope. They can be recognised by their shape of a peanut shell.



# Tips on skin support and how to limit the reproduction of Malassezia

It is important to support the skin, as Malassezia multiplies when the skin is weakened. The tips below can help to limit the exposure.

1

Bathing with special Malassezia shampoo can give improvement. Consult with your vet for the right shampoo.



2

Pet's Relief® ATOPi-3 is specially developed to support the skin. It is a complete and well-balanced dietary supplement of essential fatty acids (omega-3 oil), vitamin A, vitamin C, vitamin E, zinc and MSM (Methylsulfonmethane).

These nutrients not only provide nourishment, but also have an important role in different processes of the skin. ATOPi-3 can be purchased from your veterinary practice.



# Other allergens

## Fleas

**Fleas are small external itching parasites that live on animals with hair. Pets who are often exposed to fleas may develop a flea allergy which is the most common type of allergy.**



When these blood consuming insects bite, they leave a small amount of flea saliva behind in the skin. With a flea allergy, pets are sensitive to the saliva proteins. Just 1 bite can be enough for a severe allergic reaction.

A flea allergy can give similar symptoms as atopy and mainly occur late summer, early autumn or in some cases throughout the year.

## How do I know my pet has fleas?

Check your pet for fleas with a flea comb. Fleas are commonly found in warm spots like neck, armpits and groins. Sometimes only flea droppings can be found. These can be recognized as black sand grains in the fur.

**Test (to confirm flea droppings):** rub the black sand grains over wet paper. If the paper turns red, they are flea droppings.



# Tips to reduce exposure to fleas

After finding fleas or flea droppings it is important to treat all your pets and their surroundings. Follow the tips below to reduce exposure to fleas.

1

Consult your vet for a complete flea control and prevention strategy. All pets and their indoor and outdoor surroundings should be treated.

2

Vacuum all living quarters, including carpets, pet bedding and furniture. Dispose of the vacuum cleaner bag outside.

3

Mop all floors frequently to remove eggs and flea larvae.

4

Wash pet bedding and stuffed toys with 60°C hot water.



## Cockroach

**Cockroaches are 5 cm reddish-brown insects that eat almost everything, from glue in furniture to drainpipe waste to other insects. They can be found worldwide, but prefer climates with higher temperatures.**



They live both inside and outside and infest buildings, drainage pipes and sewage systems. They have wings, but they seldom fly. It hides during the day in sheltered, dark places and forages for food at night.

## Signs of a cockroach infestation

These fast-moving insects can be seen in dim areas. Their droppings and eggs can be found in basements, laundry rooms and kitchens, as well as behind appliances or underneath cabinets. The droppings look like mouse droppings and the dark colored egg capsules are about 7 mm long. Cockroaches can also be recognized by their "musty" smell.



# Tips to reduce exposure to cockroaches

Maintaining a clean and sanitary home is very important to reduce exposure to cockroaches.

1

Keep counters, sinks, tables and floors free of clutter and crumbs.

2

Don't leave dishes piled up in the sink or spills to marinate on the counter.

3

Store food in airtight containers and avoid leaving pet food out in the open.

4

Vacuum at least once a week to remove food particles.

5

Ventilate crawl spaces to prevent moisture buildup.

6

Keep all plumbing traps of sinks, bathtubs and showers filled with water.

7

Contact a Pest Control Professional, because cockroaches are hard to control.



# Why Artuvetrin® Therapy?

Complete allergen avoidance is not practical in most cases. Not only are most of the allergens difficult to avoid, allergy to multiple allergens is challenging to address through avoidance.

Therefore, the premier choice for treating allergy is Artuvetrin® Therapy.

## What is Artuvetrin® Therapy?

Artuvetrin Therapy is a medical treatment where very small amounts of allergens (pollen, mites, moulds, etc.) to which your pet is allergic are injected subcutaneously (beneath the skin) in increasing amounts.

The goal is to change the immune system's response so that it becomes less sensitive or not sensitive at all to those allergens. As a result, the allergic reaction and symptoms will decrease or disappear, as well as the need for other short-term medications.

More information about this treatment can be found in the Pet Allergies brochure.

Artuvetrin® Therapy is the only licensed immunotherapy in Europe\*.

\*Licensed in the Netherlands



# What else can be done in combination with Artuvetrin® Therapy?

## **Short-term symptomatic medication**

With Artuvetrin® Therapy, most pets show improvements within a few months, but can take up to 12 months before the treatment gives noticeable results. Therefore it might be necessary to give short-term symptomatic medication at the beginning to ensure your pet is comfortable and its symptoms are under control. Consult with your veterinarian how to control your pet's itchiness in the meantime.

## **Supplements and shampoo**

Dietary skin supplements and baths can also improve your pet's skin and reduce allergy symptoms. Consult your veterinarian for the most suitable products for your pet.





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