



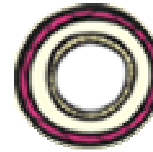
INHALED TRIGGERS Dust Mites, Pollens and Pets.



The air we breathe is full of microscopic particles of dust, water and pollution from factories and motor vehicles. The amount and type of particles varies between different places (houses, offices, schools, workplaces, countryside and cities) and at different seasons of the year.

The difficulty when you have asthma is some people are allergic to many of these microscopic particles. For example:

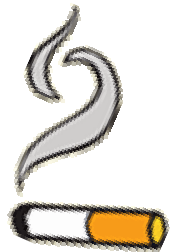
- house dust mite
- dander (skin & scales) from animals
- insect debris
- food dust
- pollens
- moulds



Inflamed Air ways

Normal Air ways

There is also other matter in the air that although not an allergy can make your asthma symptoms worse by irritating the airways (irritants). This includes tobacco smoke, wood fire smoke, perfumes, paint, chemicals and gases (e.g. unflued gas heating).



Inhaled allergens and irritants are referred to as triggers and cause the airways of the person with asthma to narrow and become inflamed making it harder to breathe. Some people have sneezing, blocked nose, itchy eyes and throat (hay-fever, sinusitis, and rhinitis) or develop skin rashes (eczema or urticaria).

HOW TO FIND OUT WHAT YOU ARE ALLERGIC TO!

Take note of when and where you are when your asthma symptoms become worse and how severe they are:

House dust mite allergic people tend to have asthma and/or rhinitis all year round.

Pollen allergic people have problems during spring and summer. Symptoms occur depending on what type of pollen they are allergic to. Grass pollens occur in spring and early summer, trees and certain weeds (like plantain) may occur in late summer or early autumn. But this may vary.

Pet and mould allergies can usually be identified when sensitive people come in direct contact with these allergens.

MANY ALLERGIES CAN BE CONFIRMED BY:

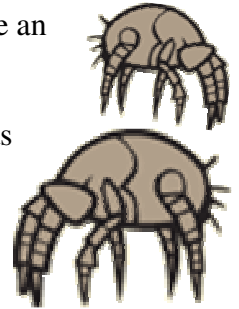
Skin pricks testing. Your doctor will arrange for a medical laboratory to do the test. The nurse puts a series of allergen solutions (e.g. cat extract, pollen extract) along your arm and pricks the skin under each solution. If you are allergic you will have a small reaction similar to a mosquito bite. There is also a blood test to see if you are allergic, called the Radioallergosorbent test (**RAST** test.) Neither of the tests are 100% accurate because what happens on your skin may not happen in your lungs or your nose, but it is a starting point and a very good indicator.

Information compiled by National Asthma Campaign Australia.

HOUSE DUST MITES

Thousands of these microscopic creatures live in warm, moist places and feed on the dead skin which all of us shed.

They are found mainly in our beds, carpets and soft furnishings. Many people have an allergy to their droppings, which are tiny particles about the size of a pollen grain. Dust mites love warm humid climates such as New Zealand. Therefore dust mites can't be found in extremely dry areas like the Sahara desert or extremely cold areas like Greenland.



CONTROLLING HOUSE DUST MITES

- ❑ Dust mite barrier bedding covers such as MiteGuard2 completely enclose the mattress, pillow or duvet, providing immediate protection from the dust mite allergen in the bed. Your normal sheets and covers are fitted over the top of the allergen barrier covers. Electric blankets can be used safely with allergen barrier covers.
- ❑ Continued protection from allergen is best achieved by washing your bed linen each week in hot water. (Dust mites are killed in hot water at temperatures above 55°C). Barrier covers can be wiped with a damp cloth or vacuumed at this time to remove any accumulated dust mite allergen. Asthma Anew Zealand recommends that barrier covers are washed in hot or cold water at least once each month.
- ❑ If possible expose blankets, quilts and bedspreads to direct sunlight for several hours each week and wash once a month. Choose pillows and quilts that can stand this – avoid wool. Smaller items and fluffy toys can be put in a plastic bag and frozen overnight each fortnight. Avoid lots of fluffy toys. Hot tumble-drying is also an effective way to kill dust mites.
- ❑ Dust all surfaces 2-3 times a week with a damp cloth.
- ❑ Make sure rooms are light and well ventilated. Avoid damp and poorly ventilated houses.
- ❑ Have hard floor surfaces and scatter rugs rather than wall to wall carpet e.g. vinyl, cork, or wood. Wet mop floor weekly. If it is not possible or practical to remove the carpet, vacuum carpets and soft furnishings 2-3 times a week with a vacuum cleaner that has a good filter system (triple internal, HEPA or replaceable electrostatic) or one that is ducted outside. Put scatter rugs out in the sun for 3 hours each month and beat thoroughly.

SUMMARY OF DUST MITE AVOIDANCE MEASURES

Most Effective	✓	Effective	✓
Barrier Dust Mite Covers Pillow Duvet Mattress Avoid sheepskins and wool		Expose blankets, quilts and bedspreads to direct sunlight for several hours each week and hot wash (55°C) once a month	
Hot washing of bed linen of 55°C, each week kills the dust mite and removes the allergen. This is usually only possible in front loading washing machines, as the water can be heated separately in the washing machine. Tumble drying also helps destroy the dust mite		Change bed linen each week and cold wash if using top loading washing machine. (It is not recommended that the hot water cylinder temperature be set higher than 55°C for safety reasons) Cold washing removes 90% of the allergens	
Vinyl/wood/tile flooring in bedroom. Wet mop floor weekly Use of HEPA Filtered vacuum cleaner Various models are available on the market with HEPA filters, such as Miele, Electrolux, AEG, Nilfisk, Dyson Leave windows open during vacuuming and for 20 minutes after to flush out the allergen floating in the air		Synthetic carpets are slightly less attractive to mites than woollen carpets. Use a vacuum cleaner with a disposable, double walled bag. Vacuum carpet at least once a week, 2-3 times per week is better. Opening doors and windows to circulate air may help reduce humidity and control mites. Put scatter rugs in sun for 2-3 hours each week and wash if possible	
Leather and vinyl surfaces are generally less attractive to mites		Vacuum soft furnishings weekly and wash covers. Curtains can be vacuumed each month.	
Damp dust all surfaces 2-3 times each week			
Wash soft toys in hot water		Freeze soft toys for 24 hours each fortnight and then cold wash	

WHAT IS A HEPA FILTER?

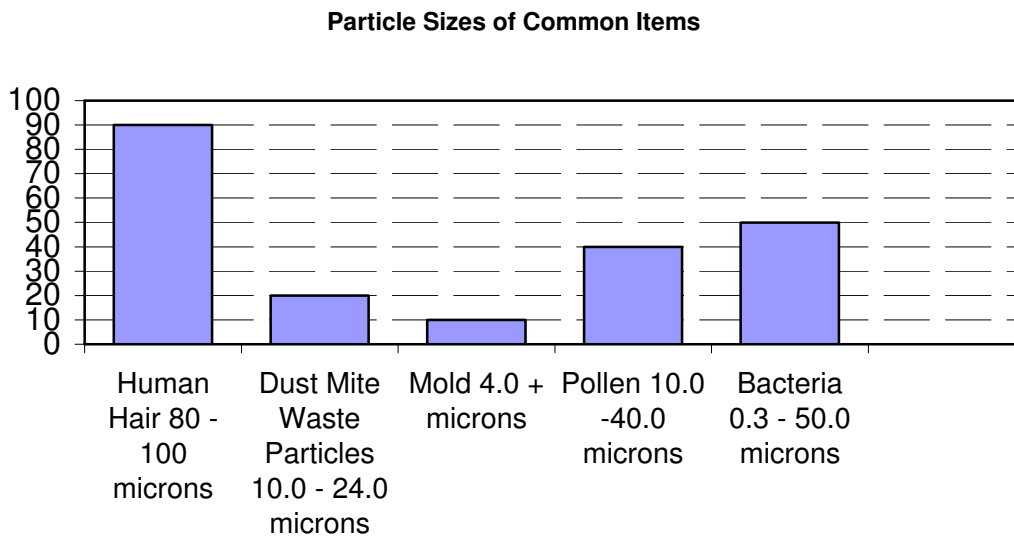
The word “HEPA” stands for High Efficiency Particle Air and in order for a filter to be so named, it must retain particles to 0.3 microns in size at an efficiency rating of 99.7%. These filters were developed by the Atomic Energy Commission during World War II to effectively remove radioactive dust from plant exhausts without redistribution. Since its inception, HEPA filtration has become a requirement for such important industrial applications as the cleaning of NASA’s Space Shuttle cargo bay, asbestos and nuclear hazard clean up and pharmaceutical and microelectronic clean rooms. Recently, physicians and the Asthma Society have been recommending HEPA filtration to their people with asthma.

WHY USE HEPA FILTERED ALLERGY VACUUMS?

For people with allergies, vacuuming can turn into a never ending battle between the need to clean and the sneezing and wheezing that is caused by submicron-sized dust escaping back into the air through a vacuum’s exhaust.

First, let’s look at some important facts pertaining to particle sizes;

Small particles are generally measured in fractions of a metre or “microns”. One micron equals one millionth of a metre. The following chart contains the particle sizes of some common items:



NOW A FEW FACTS

- ❑ Particles below 10 microns are invisible to the human eye and are respirable.
- ❑ The most common airborne particle size is 2.4 microns.
- ❑ The most harmful Respirable Size Particle (RSP) is 0.3 microns.
- ❑ The average vacuum cleaner only filters particles from 30-50 microns, thus exhausting harmful respirable allergens back into the air.
- ❑ Water filtration vacuums have been proven to dissolve allergens, then emit allergen particles through a mist.
- ❑ The efficiency rating of a filter is as important as particle size when determining the vacuum's filtration capability. It refers to a filter's ability to retain particles at a specified size. For example, a vacuum that filters to 0.3 microns may be 99.99% efficient, making it great for allergy sufferers or 75% efficient, making it problematic for allergy sufferers. Make sure you see both numbers.
- ❑ A true HEPA filter must retain 99.97% of all particles to 0.3 microns in size, three ten thousandths of a millimetre.
- ❑ Asthma and other unpleasant allergies can come onto us at any stage in life. Buying an allergy vacuum now, is insurance for the future, for you and your family.

NILFISK FILTRATION SYSTEM

In order to have a fighting chance against indoor pollutants, a Nilfisk HEPA-filtered Allergy Vacuum is the best, most cost-effective way to control your environment.

The Nilfisk filtration system is unique because it is gradual. Dirt passes through four layers of filters, each capturing smaller particles as the air passes through the filter's media. Graduated filtration increases the life of the HEPA filter, thus saving it for critical particle retention. Due to their filtration and reputation, Nilfisk (TELLUS) vacuums have been a household name worldwide for decades.

Several recent studies have proven that the HEPA-filtered Nilfisk Allergy Vacuum effectively retains allergens without redistributing them back into the air. True HEPA H13 filtration is standard on Nilfisk GM410, GM420, GM430 and G90 Allergy Vac. GM400 can be easily upgraded to HEPA.

BEWARE

Some brands/models of vacuum cleaners using HEPA filtration do not offer the protection of sealable/disposable bags, such as Original Nilfisk Bags. Dust released into the air when emptying such containers may be harmful to allergy sufferers.

NILFISK HEPA FILTRATION

1 and 2

Original NILFISK 2 ply disposable dust bag.

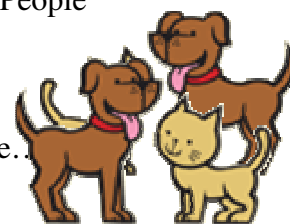
3 Gauze pre filter supplied with each packet of new bags (GM400 Series) or large cloth filter (G90AV).

4 NILFISK AIR CARE HEPA FILTER

It is worthy to note that the criteria for HEPA filters is that they trap 99.97% of all particles to 0.3 microns (3 ten thousandths of a mm). All Nilfisk HEPA filters are HEPA H13, retaining 99.997% of 0.3microns – 10 times more effective.

PETS

Some people are allergic to the sweat, saliva and dander (skin cells) from animals. They can react when they touch the animal or just by being in the same room. People are more likely to be allergic to cats than any other animal.



TO CONTROL PET ALLERGENS

- ❑ Pets should be avoided, so remove the pet from the home. If this is possible.
- ❑ Remove carpets or vacuum carpets and upholstery twice a week.
- ❑ Wash pet once a week – check with your vet before doing this.
- ❑ Keep the pet out of the house or if that is not possible – out of the bedroom.
- ❑ Avoid water-filtered vacuum cleaners, as pet allergen is water-soluble and can “spray” out through the filters of some machines.

OTHER POINTS

- ❑ Pet allergen can be carried on clothing and transferred on to furnishings.
- ❑ It can take 3-4 months of regular intensive cleaning before cat allergen is removed from the house once the cat is removed. This is important to remember if you move in to a house that once had a cat.

MOULDS

Moulds are tiny fungi, which form slimy or cottony growths in places that are damp and dark. Mould occurs in laundries, bathrooms, drip trays of the fridge, the topsoil of indoor plants, in mulch and compost heaps and gutters full of leaf litter.

It can be found on walls, under wallpaper, in cupboards, on clothing (like leather shoes), in wardrobes and on food. Most moulds produce millions of spores that become airborne easily. When the mould growth is heavy you can smell a musty odour.

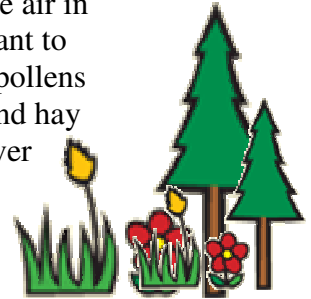
TO CONTROL MOULD

Control Dampness

- ❑ Make sure your house has good ventilation (airflow).
- ❑ Clear out gutters and keep yards free of leaves.
- ❑ Clean out drip tray of fridge often.
- ❑ Throw out old food from the fridge.
- ❑ Vent airflow from laundry dryers to the outside.
- ❑ Wash and / or air out clothing and shoes often.
- ❑ Use a dehumidifier
- ❑ Put indoor plants outside from time to time or change the topsoil.
- ❑ Clean up food spills quickly.
- ❑ Clean “evaporative” air-conditioners yearly.
- ❑ Clean car air-conditioner filters often.
- ❑ Treat any mould with bleach solution – **take care not to inhale fumes.**

POLLENS

Pollens are produced by plants for fertilization. Some pollens travel through the air in order to fertilize other plants while other pollens are carried by insects from plant to plant. It is the airborne pollens that mostly affect and cause allergy. The grass pollens (e.g. Rye, Couch, Veldt, Barley, Oats) are the most potent trigger for asthma and hay fever but certain weeds (e.g. plantain) and bushes (e.g. privet) or trees (e.g. silver birch) can present a problem.



TIPS FOR AVOIDING ALLERGENS IN THE POLLEN SEASON

- ❑ Close windows in cars and use the car's air-conditioning or use re-circulated air.
- ❑ Close windows on windy days or when humidity is high and at night.
- ❑ Arrange outdoor activities for early afternoon when pollen levels are lowest.
Pollen is usually emitted between 5.00am and 10.00am. Grass pollen is released when the weather is dry and sunny and has usually risen high into the atmosphere by noon, descending again when the air cools, towards the evening.
- ❑ Use wrap-around sunglasses when outdoors.
- ❑ Have a shower after spending time outside as pollen can collect on skin and hair.
- ❑ Avoid hanging sheets and clothes outside to dry as they will collect pollen.
- ❑ Choose pretty, brightly coloured flowering plants, as these tend to attract bees and other insects to transfer the pollen rather than becoming airborne. A selection of recommended plants for the garden can be obtained from "Low Allergen" garden books.
- ❑ Holidays near the beach, at the height of the pollen season may be less symptomatic.
- ❑ Avoid freshly mown grass. Arrange to have lawns mown often to avoid flowering.
- ❑ Pollen calendars are available from Allergy New Zealand or Asthma New Zealand to help identify the pollen seasons of different trees, weeds and grasses.

New Zealand Pollen Calendar

SPECIES

												SPECIES
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Wattle (Acacia)*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Macrocarpa (Cupressus)*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Pinus radiata*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hazelnut (Corylus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Gorse (Ulex)*+
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Willow (Salix)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Alder (Alnus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Poplar (Populus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Meadow Foxtail (Alopecurus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Other Pinus species*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Oak (Quercus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Native Beech (Nothofagus)*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Coprosma species*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Elm (Ulmus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Naples, Sycamore (Acer)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Birch (Betula)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Plane (Platanus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Walnut (Juglans)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Mulberry (Morus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Plantain (Plantago)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Sweet Vernal (Anthoxanthum)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Cocksfoot (Dactylis)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yorkshire Fog (Holcus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Ryegrass (Lolium)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Native Podocarps eg Rimu*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Eucalyptus/Manuka*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hedge Privil (Ligustrum)+
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Native Milkwoods*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Nettles (Urtica)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Dock, Sorrel (Rumex)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Artemisia
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Tall Fescue (Festuca)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Prairie Grass (Bromus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Dogstail (Cynosurus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Browntop (Agrostis)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Pohutukawa/Rata (Metrosideros)

SPECIES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
												Chenopod Weeds eg fathen
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Crested Dogstail (Cynosurus)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Timothy (Phleum)
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Fungal Spores
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Fern Spores*
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Tree privit†
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Typha (bullrush)

*Suspected to be allergenic (belong to taxonomic groups where allergenicity is known for Northern Hemisphere representatives).

† The scent may be allergy/asthma provoking.