

A Guide to Environmental Air Pollution and its impacts on Asthma

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For more information on asthma please visit
the National Asthma Education Programme
web site at: www.asthma.co.za
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Do you experience the following symptoms:

- Wheezing
- Chest tightness
- Breathlessness
- Coughing, with or without phlegm, especially late at night or early in the morning.
- Sometimes a runny or stuffy nose, watery or prickly eyes.

If yes, you could have ASTHMA, a disease which results in the narrowing of the airways in the lungs.

Are your symptoms:

- Worse when you spend long periods indoors?
- Worse when you notice strange odours around you home?
- Worse around people who use strong perfumes, when filling petrol in petrol stations or other strong smells?
- Worse when you are around people who are smoking?
- Improved when you have been away from home (or work) for several days (for example when you are on holiday)?

If yes, you could have ENVIRONMENTALLY-RELATED ASTHMA. In most instances this is pre-existing asthma that is made worse by exposure to different types of air pollution. This does not necessarily mean that these exposures have **CAUSED** your asthma, but by knowing which pollutants make your symptoms worse, and by you restricting your exposure to these pollutants as much as this is within your control, then you are likely to improve your asthma control.

What are environmental air pollutants?

- Air Pollution is thought to be important in the development of asthma, in causing asthma to persist and in causing attacks of asthma.
- Pollution can occur inside home (indoors) and outdoors, from different sources.

Who within our communities are at greatest risk?

Theoretically anyone exposed to these pollutants are at risk for developing respiratory problems, but certain groups are at greater risk:

- Children, particularly those with pre-existing asthma or having a genetic or family history of asthma
- Unborn children when their pregnant mothers are exposed
- Adults with pre-existing asthma
- The elderly with pre-existing respiratory disease

What are the indoor pollutants that we need to be concerned about?

Cigarette smoke

- Exposure to cigarette smoke is the most important environmental risk factor for asthma
- Children are particularly at risk for developing asthma or having poorly controlled asthma, if.....
 - o their mothers or primary caregivers smoke
 - o their mothers smoked during pregnancy
 - o other adults smoking within the home regularly

Other indoor pollutants

- Other seemingly innocent indoor home activities can aggravate asthma

- Use of paraffin, wood, coal animal dung or other biomass for cooking and heating or generators is a major problem in rural or informal communities. These are made worse when homes are poorly ventilated.
- Common household cleaning agents contain substances which are extremely irritant to the lungs.
- Use of over-the-counter pest control agents must be used sparingly, in ventilated areas, keeping children out.
- Vapours from newly painted walls, new carpets with underfelts, new furniture, glues, cosmetics and perfumes aggravate asthma.
- Hair treating agents, wood preservatives, condoms and rubber gloves can trigger asthma attacks.
- Fungi and moulds in damp areas in the home could trigger asthma.
- Informal work and hobbies at home are a risk for asthma. These include panel beating and spray painting, welding, woodworking.

What are the outdoor pollutants that are important?

- Outdoor pollutants are capable of causing reactions in individuals. Examples are particulate matter, sulphur dioxide, oxides of nitrogen, ozone and carbon monoxide, volatile organic compounds
- *Particulate matter* is soot and smoke from factories, incinerators, burning of fields, tyres and other fires..
- *Sulphur dioxide* (SO₂) is produced by power stations, petroleum refineries and paper manufacture.
- *Nitrogen dioxide* (NO₂) and Carbon Monoxide are found in motor-vehicle exhaust fumes.
- *Ground level ozone* is produced by pollution and sunlight

- All of these pollutants can cause an aggravation of symptoms of asthma

Can the frequency of symptoms of environmentally-related asthma be reduced? YES:

- Firstly, if you believe your asthma to be related to environmental exposure, consult a specialist (see contact details of clinics below).
- Develop strategies to reduce exposure to pollutants, especially if there are children, asthmatics or pregnant women in the household.
- Stop all smoking in the household, near doors and windows of the home,
- If you have to use biomass fuel for heating or cooking, then ensure that this is outdoors.
- Use cleaning agents and pesticides sparingly, according to instructions, with good ventilation.
- If there are new carpets or furniture, newly painted walls in the home, ensure the windows are open as often as possible, Children and asthmatics should not sleep in these rooms for at least 5-6 days.
- Treat damp, mouldy areas immediately.
- Hazardous hobbies or informal work must be done outside the house.
- Reducing symptoms due to outdoor pollutants depend on the commitment of industries to reduce pollution.
- Identify signs of elevated outdoor pollution, such as:
 - o Early warning systems from industry
 - o Suspicious outdoor smells associated with industrial pollution
 - o Flaring from stacks of refineries and other industries.

- o Smoke and burning smells from open fields or farms
- Once elevated pollution is suspected, trying to reduce exposure is important through:
 - o Spending as much time indoors, with closed windows;
 - o Keeping asthmatic children out of school for the day

General information brochures on asthma and medications are available from the National Asthma Education Programme. (NAEP).

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Visit the NAEP website for a more detailed version of this pamphlet

Public Sector Occupational Medicine Clinics:

Kwazulu Natal	Occupational Medicine Clinic, King Edward Hospital	031 260 4471
Gauteng	Occupational Medicine Clinic, National Institute for Occupational Health	011 712 6420
Western Cape	WorkHealth Occupational Diseases Clinic, Groote Schuur Hospital	021 404 4369



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