

# Clean air for better breathing

Air Quality and Asthma School Audit

*Identifying potential asthma triggers*

*caused by poor air quality in and around the school*



## INTRODUCTION

Although we don't know what causes asthma, we do know that under certain circumstances the airways react and asthma symptoms develop. We refer to the stimuli that can lead to asthma as 'triggers'.

Different people react to different asthma triggers and many people with asthma react to a variety of triggers. Avoiding or reducing exposure to known asthma triggers for an individual is an important form of control but this is not possible for all asthma triggers. Asthma preventer medications can help with long term control of asthma.

Poor indoor and outdoor air quality as a result of sources such as vehicle emissions, chemical smells, wood smoke, dust and pollens is a known asthma trigger. By undertaking an audit of air quality issues in and around the school that could be potential asthma triggers, schools can identify whether there are actions that they can take to isolate, contain, reduce or remove the risk of asthma triggers.

Undertaking this audit as a classroom activity allows students to find out more about local air quality issues as they relate to asthma and be actively involved in the decision-making of real solutions to improve the quality of air in and around the school and local community.

### PLEASE NOTE

*This audit ONLY includes asthma triggers as they relate to air quality.  
This audit DOES NOT include the following potential asthma triggers:*

- *colds and flus*
- *exercise/activity*
- *animals/pets*
- *changes to weather/air temperature*
- *food/additives*
- *certain medications*
- *emotions.*

*A further audit would need to be undertaken to address the above potential asthma triggers.*



## MATERIALS NEEDED FOR AUDIT

- Large map of the local area around the school (your school may have its own map or you may like to print a map of the school from Google Maps or from a street directory so that you can look at the school in relation to major roads, nearby industry etc)
- Air pollution icons
- Recording sheet
- Quick reference guide
- Clipboards
- Pens
- Camera/s (if available)
- Action Plan template



## AUDIT PROCESS STEPS

- 1) Organise students into groups to investigate a particular air quality issue or issues.
- 2) Each group is to have the following materials to use for the audit:
  - recording sheet
  - Quick Reference Guide - Students
  - clip board
  - pen/s
  - camera (if available)
- 3) Groups use the Quick Reference Guide – Students use questions to assist them in locating air quality issues in and around the school. Groups use their knowledge of the local area and examine the school buildings and grounds investigating each of their issues.  
Some questions may require students to ask particular people in the school (the principal, teachers, other students) or community (parents, local council) to gain the information they need.
- 4) Groups record their findings on the record sheet, detailing the location/s of the air quality issue/s and any notes.
- 5) Each group reports back to the class to indicate their findings and show the location/s of their specified air quality issue/s on the school map, using the air pollution icons provided.
- 6) As a class group or in separate groups discuss possible solutions to the identified air quality issues/asthma triggers (teachers can refer to the prompts on the Quick Reference Guide – Teachers). Record the agreed solutions on the Action Plan template along with a timeframe for action and any comments.
- 7) You may decide to present this action plan to the student representative council, governing council and staff meetings to gain any feedback and other ideas before finalising. Doing this will also provide the opportunity for responses from students and teachers who have asthma.
- 8) Take action! Work through each of the actions and proceed with resolving the air quality issues identified as potential asthma triggers.



## QUICK REFERENCE GUIDE - STUDENTS

Air quality issue	Prompting questions
Vehicle emissions	Is the school located near busy roads?
	Is there traffic congestion at student pick up/drop off zones in the mornings and/or afternoons?
Smoke (wood smoke, bushfires)	What types of heating are used in your local area during winter?
	Do you notice wood smoke in the air (by smelling or seeing it) in your local area during the winter months?
	Does/could bushfire smoke impact on the school?
Cigarette smoke	Is cigarette smoking prohibited on school grounds and at school run activities (eg weekend sports)?
Pollens	Are there local sources of pollens from areas of grasses, trees, weeds or flowers?
	Are there pollen producing plants in the school grounds?
	Are flowers displayed in the school?
	Is the grass mown out of school operating hours?
	What is the 'pollen count' and how can you access this?
Dust & dust mites	Do dust storms occur in the area?
	Are there barren, unplanted areas in the school grounds?
	Are there carpets in the school?
Mould	Are there wet areas in the school buildings where mould is visible or a damp smell exists?
	Are there garden areas where potting soil, mulch, compost or leaf litter are used?
Deodorants/ perfumes	Have you even coughed or sneezed after using a strong smelling personal hygiene product?
	Where are you likely to come across lots of people using these at once?
Chemicals	Where are art and tech studies supplies kept and used? Is there adequate ventilation? What do the warning signs say on the supplies?
	Are there cleaning products stored on the premises? Are there strong smells emitting from this area? Do classrooms / other areas have strong smells after cleaning?
	Are there any new furnishing or floorings that are emitting strong fumes?
	Are there fumes coming from photocopiers or printers? Is this equipment located in ventilated areas?
Gas emissions	Are there any unflued gas appliances in the school buildings (ie heaters, cook tops)?
Industry	Are there any odours or pollution coming from nearby industry or businesses?
Other factors: Wind direction and air flow	Is there a prevalent wind direction(s) in the school area?
	Does this direct particles or emissions from any of the above sources towards the school?
	Which of these are natural and which are man-made?
	Can these be controlled or minimised?
	How might air flow in and out of school buildings impact on indoor air quality?

## QUICK REFERENCE GUIDE - TEACHERS

Air quality issue	Prompting questions	Possible actions
Vehicle emissions	Is the school located near busy roads?	Promoting sustainable transport use (public transport, cycling, walking, car-pooling).
	Is there traffic congestion at student pick up/drop off zones in the mornings and/or afternoons?	Non-idling policy for parent drop offs and pick ups, buses, deliveries, etc
Smoke (wood smoke, bushfires)	What types of heating are used in your local area during winter?	Raising awareness in the local community of the efficient use of wood heaters.
	Do you notice wood smoke in the air (by smelling or seeing it) in your local area during the winter months?	Introducing a policy to undertake PE and other activities indoors on days when there is bushfire smoke in the air.
	Does/could bushfire smoke impact on the school?	
Cigarette smoke	Is cigarette smoking prohibited on school grounds and at school run activities (eg weekend sports)?	Enforcing no-smoking policies in the school grounds. Adopting no smoking policies for all school based activities, especially sports (role models).
Pollens	Are there local sources of pollens from large areas of grasses, trees, weeds or flowers?	Not leaving windows open on high pollen count days and during thunderstorms (when large quantities of pollen are released into the air).
	Are there pollen producing plants in the school grounds?	Giving the option of indoor PE and activities on high pollen count days.
	Are flowers displayed in the school?	Not keeping wind pollinating plants in the classroom or school grounds.
	Is the grass mown out of school operating hours?	Not mowing sports fields and grassy areas during school hours.
	What is the 'pollen count' and how can you access this?	Planting non-wind pollinating trees and shrubs around the school to trap dust and pollen.
Dust and dust mites	Do dust storms occur in the area?	Closing windows and staying indoors when dust storms occur.
	Are there barren, unplanted areas in the school grounds?	Re-surfacing any barren areas (ensure allergy free plants are used).
	Are there carpets in the school? When and how are they cleaned?	Regularly dusting and cleaning surfaces and floor coverings.
	Are the carpets ever damp?	Ensuring carpets are not damp.

## QUICK REFERENCE GUIDE - TEACHERS

Air quality issue	Prompting questions	Possible actions
Mould	Are there wet areas in the school buildings where mould is visible or a damp smell exists?	Ventilating wet areas to ensure there is no mould build-up inside.
	Are all wet areas well ventilated?	Use non-spore producing gardening products.
	Are there garden areas where potting soil, mulch, compost or leaf litter are used?	Using gloves and masks if handling spore producing gardening materials. Avoiding sweeping or blowing spore producing materials.
Deodorants/ perfumes	Have you even coughed or sneezed after using a strong smelling personal hygiene product?	Not using personal hygiene products when they pose a health risk to others.
	Where are you likely to come across lots of people using these at once?	Developing school policy around the use of personal hygiene products (many schools now ban the use of deodorants)
		Using natural products where possible.
Chemicals	Where are art and tech studies supplies kept and used? Is there adequate ventilation? What do the warning signs say on the supplies?	Choosing water based supplies and finishes.
	Are there cleaning products stored on the premises? Are there strong smells emitting from this area? Do classrooms / other areas have strong smells after cleaning?	Ensuring product warnings are followed.
	Are there any new furnishing or floorings that are emitting strong fumes?	Using environmentally friendly cleaning agents. Changing timing of use of strong smelling cleaning agents (and ensuring period of ventilation after).
	Are there fumes coming from photocopiers or printers? Is this equipment located in ventilated areas?	Choosing natural floorings and furnishings as opposed to treated materials.
	Installing ventilation in print areas.	Researching Occupational Health and Safety regulations.
Gas emissions	Are there any unflued gas appliances in the school buildings (ie heaters, cook tops)?	Ensuring gas appliances are flued.



## QUICK REFERENCE GUIDE - TEACHERS

Air quality issue	Prompting questions	Possible actions
Industry	Are there any odours or pollution coming from nearby industry or businesses?	Writing to the organisation to express school's and student's concerns.
Contributory factors: Wind direction and air flow	Is there a prevalent wind direction(s) in the school area?	Contacting the EPA for air quality report for the area.
	Does this direct particles or emissions from any of the above sources towards the school?	Using the report to express any concerns to appropriate local and state government and environment groups.
	Which of these are natural and which are man-made?	Checking and cleaning filters on air conditioning.
	Can these be controlled or minimised?	Ensuring air flow into school buildings is restricted when high levels of particles or emissions are present outdoors.
	How might air flow in and out of school buildings impact on indoor air quality?	





## RECORDING SHEET

AIR QUALITY FOCUS \_\_\_\_\_

IDENTIFIED ISSUE	LOCATION	COMMENTS



## ASTHMA TRIGGERS/AIR QUALITY ACTION PLAN

IDENTIFIED AIR QUALITY RELATED ASTHMA TRIGGERS	ACTION TO BE TAKEN	DUE DATE OF ACTION	COMMENTS





A collaborative project between the Environment Protection Authority  
and the Asthma Foundation of South Australia

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