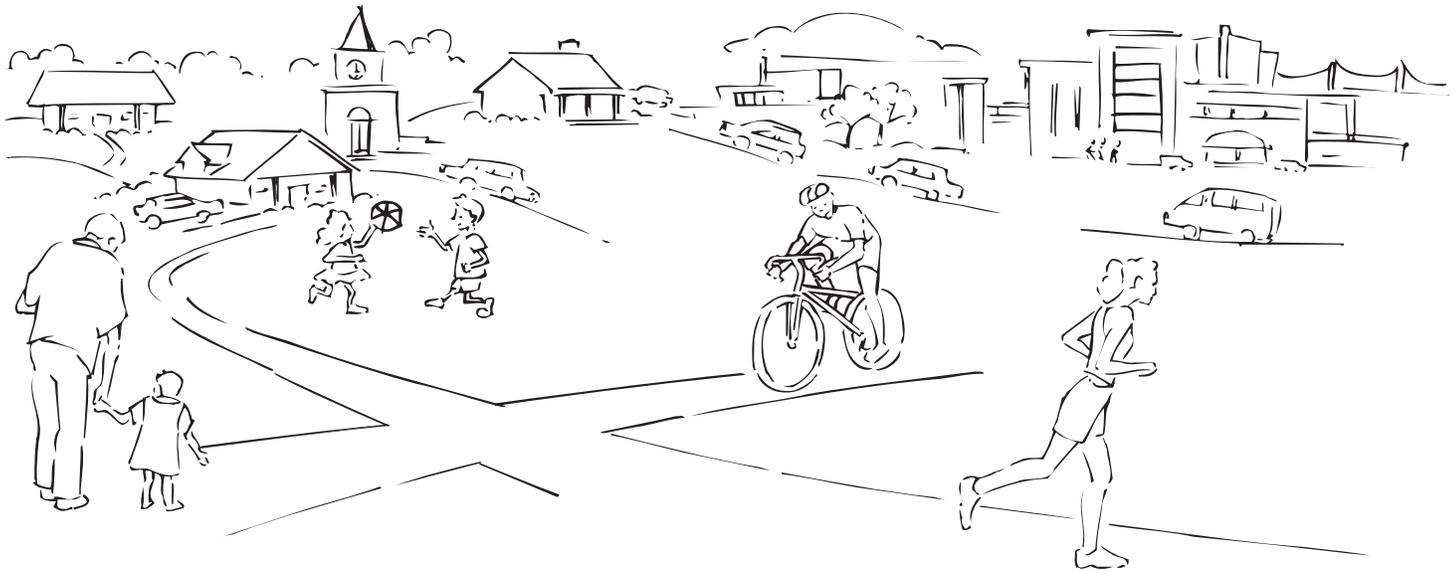


# ASTHMA AND OUTDOOR AIR POLLUTION



## 1 Air pollution can make asthma symptoms worse and trigger attacks.

If you or your child has asthma, have you ever noticed symptoms get worse when the air is polluted? Air pollution can make it harder to breathe. It can also cause other symptoms, like coughing, wheezing, chest discomfort, and a burning feeling in the lungs.

Two key air pollutants can affect asthma. One is *ozone* (found in smog). The other is *particle pollution* (found in haze, smoke, and dust). When ozone and particle pollution are in the air, adults and children with asthma are more likely to have symptoms.

## 2 You can take steps to help protect your health from air pollution.

### ► Get to know how sensitive you are to air pollution.

- Notice your asthma symptoms when you are physically active. Do they happen more often when the air is more polluted? If so, you may be sensitive to air pollution.

- Also notice any asthma symptoms that begin up to a day *after* you have been outdoors in polluted air. Air pollution can make you more sensitive to asthma triggers, like mold and dust mites. If you are more sensitive than usual to indoor asthma triggers, it could be due to air pollution outdoors.

### ► Know when and where air pollution may be bad.

- *Ozone* is often worst on hot summer days, especially in the afternoons and early evenings.
- *Particle pollution* can be bad any time of year, even in winter. It can be especially bad when the weather is calm, allowing air pollution to build up. Particle levels can also be high:
  - Near busy roads, during rush hour, and around factories.
  - When there is smoke in the air from wood stoves, fireplaces, or burning vegetation.

► **Plan activities when and where pollution levels are lower.** Regular exercise is important for staying healthy, especially for people with asthma. By adjusting when and where you exercise, you can lead a healthy lifestyle and help reduce your asthma symptoms when the air is polluted. In summer, plan your most vigorous activities for the morning. Try to exercise away from busy roads or industrial areas. On hot, smoggy days when ozone levels are high, think about exercising indoors.

► **Change your activity level.** When the air is polluted, try to take it easier if you are active outdoors. This will reduce how much pollution you breathe. Even if you can't change your schedule, you might be able to change your activity so it is less intense. For example, go for a walk instead of a jog. Or, spend less time on the activity. For example, jog for 20 minutes instead of 30.

► **Listen to your body.** If you get asthma symptoms when the air is polluted, stop your activity. Find another, less intense activity.

► **Keep your quick-relief medicine on hand when you're active outdoors.** That way, if you do have symptoms, you'll be prepared. This is especially important if you're starting a new activity that is more intense than you are used to.

► **Consult your health care provider.** If you have asthma symptoms when the air is polluted, talk with your health care provider.

- If you will be exercising more than usual, discuss this with your health care provider. Ask whether you should use medicine before you start outdoor activities.

- If you have symptoms during a certain type of activity, ask your health care provider if you should follow an asthma action plan.

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### 3 Get up-to-date information about your local air quality:

Sometimes you can tell that the air is polluted—for example, on a smoggy or hazy day. But often you can't. In many areas, you can find air quality forecasts and reports on local TV or radio. These reports use the Air Quality Index, or AQI, a simple color scale, to tell you how clean or polluted the air is. You can also find these reports on the Internet at: [www.epa.gov/airnow](http://www.epa.gov/airnow). You can use the AQI to plan your activities each day to help reduce your asthma symptoms.

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### 4 For more information:

#### **Air quality and health:**

- EPA's AIRNow website at [www.epa.gov/airnow](http://www.epa.gov/airnow)
- Call 1-800-490-9198 to request free EPA brochures on: *Ozone and Your Health*, *Particle Pollution and Your Health*, and *Air Quality Index: A Guide to Air Quality and Your Health*.

#### **Asthma:**

- Centers for Disease Control and Prevention (CDC) Web site at [www.cdc.gov/asthma](http://www.cdc.gov/asthma)

#### **Indoor air and asthma:**

- EPA's asthma website at [www.epa.gov/asthma](http://www.epa.gov/asthma)



United States  
Environmental Protection Agency  
EPA-452-F-04-002

# ENVIROFLASH FACT SHEET

## What is EnviroFlash?

EnviroFlash is a system that sends e-mails about your daily air quality forecast. The message is the same air quality information that the local radio or television stations provide, plus suggested safety measures when levels are unhealthy. This service is provided by your state or local environmental agency and the US Environmental Protection Agency.

## Why is EnviroFlash important?

Exposure to high levels of air pollution can aggravate heart disease, asthma and other respiratory diseases. By being aware of the air quality levels, you can take precautions to protect your family.

## How does EnviroFlash work?

Air quality monitors located all over the United States take in information that is used to calculate the current Air Quality Index value. State and local environmental agencies then issue air quality forecasts based on measured air quality and weather information. The forecast is then provided to local radio and television stations, posted online and sent out through EnviroFlash.

## For additional information or to sign up, visit:

[www.enviroflash.info](http://www.enviroflash.info)

## What is the Air Quality Index?

<b>Good 0-50</b>	Air quality is considered satisfactory, and air pollution poses little or no risk.
<b>Moderate 51-100</b>	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
<b>Unhealthy for Sensitive Groups 101-150</b>	Members of sensitive groups* may experience health effects. The general public is not likely to be affected.
<b>Unhealthy 151-200</b>	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
<b>Very Unhealthy 201-300</b>	Health alert: everyone may experience more serious health effects.
<b>Hazardous 301-500</b>	Health warnings of emergency conditions. The entire population is more than likely to be affected.

\* Sensitive groups include active adults, people with heart or lung disease (including asthma), older adults and children.

# Air Quality Guide for Ozone

Ground-level ozone is one of our nation's most common air pollutants. Use the chart below to help reduce your exposure and protect your health. For your local air quality, visit [www.airnow.gov](http://www.airnow.gov)

Air Quality Index	Who Needs to be Concerned?	What Should I Do?
Good (0-50)		It's a great day to be active outside.
Moderate (51-100)	Some people who may be unusually sensitive to ozone.	<b>Unusually sensitive people:</b> Consider reducing prolonged or heavy outdoor exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. <b>Everyone else:</b> It's a good day to be active outside.
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include <b>people with lung disease such as asthma, older adults, children and teenagers, and people who are active outdoors.</b>	<b>Sensitive groups:</b> Reduce prolonged or heavy outdoor exertion. Take more breaks, do less intense activities. Watch for symptoms such as coughing or shortness of breath. Schedule outdoor activities in the morning when ozone is lower. <b>People with asthma</b> should follow their asthma action plans and keep quick-relief medicine handy.
Unhealthy (151-200)	<b>Everyone</b>	<b>Sensitive groups:</b> Avoid prolonged or heavy outdoor exertion. Schedule outdoor activities in the morning when ozone is lower. Consider moving activities indoors. <b>People with asthma</b> , keep quick-relief medicine handy. <b>Everyone else:</b> Reduce prolonged or heavy outdoor exertion. Take more breaks, do less intense activities. Schedule outdoor activities in the morning when ozone is lower.
Very Unhealthy (201-300)	<b>Everyone</b>	<b>Sensitive groups:</b> Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. <b>People with asthma</b> , keep quick-relief medicine handy. <b>Everyone else:</b> Avoid prolonged or heavy outdoor exertion. Schedule outdoor activities in the morning when ozone is lower. Consider moving activities indoors.
Hazardous (301-500)	<b>Everyone</b>	<b>Everyone:</b> Avoid all physical activity outdoors.

**Note:** If you don't have an air conditioner, staying inside with the windows closed may be dangerous in extremely hot weather. In these cases, seek alternative shelter.

## Key Facts to Know About Ozone:

- Ozone in the air we breathe can cause serious health problems, including breathing difficulty, asthma attacks, lung damage, and early death.
- Ozone forms in the sun, usually on hot summer days. Ozone is worse in the afternoon and early evening, so plan outdoor activities for the morning.
- You can reduce your exposure to ozone and still get exercise! Use the Air Quality Index (AQI) at [www.airnow.gov](http://www.airnow.gov) to plan your activity.

## What is ozone?

Ozone is a colorless gas that can be good or bad, depending on where it is. Ozone in the stratosphere is good because it shields the earth from the sun's ultraviolet rays. Ozone at ground level, where we breathe, is bad because it can harm human health.

Ozone forms when two types of pollutants (VOCs and NOx) react in sunlight. These pollutants come from sources such as vehicles, industries, power plants, and products such as solvents and paints.

## Why is ozone a problem?

Ozone can cause a number of health problems, including coughing, breathing difficulty, and lung damage. Exposure to ozone can make the lungs more susceptible to infection, aggravate lung diseases, increase the frequency of asthma attacks, and increase the risk of early death from heart or lung disease.

## Do I need to be concerned?

Even healthy adults can experience ozone's harmful effects, but **some people may be at greater risk**. They include:

- People with lung disease such as asthma
- Children, including teenagers, because their lungs are still developing and they breathe more air per pound of body weight than adults
- Older adults
- People who are active outdoors, including outdoor workers

## How can I protect myself?

Use the Air Quality Index (AQI) to plan outdoor activities. To keep the AQI handy, sign up for EnviroFlash emails, get the free AirNow app, or install the free widget on your website. Find all of these tools at [www.airnow.gov](http://www.airnow.gov).

Stay healthy: exercise, eat a balanced diet, and keep asthma under control with your asthma action plan.

When you see that the AQI is unhealthy, take simple steps to reduce your exposure:

- Choose a less-strenuous activity
- Take more breaks during outdoor activity
- Reschedule activities to the morning or to another day
- Move your activity inside where ozone levels are usually lower

## Can I help reduce ozone?

Yes! Here are a few tips.

- Turn off lights you are not using
- Drive less: carpool, use public transportation, bike or walk
- Keep your engine tuned, and don't let your engine idle
- When refueling: stop when the pump shuts off, avoid spilling fuel, and tighten your gas cap
- Inflate tires to the recommended pressure
- Use low-VOC paint and cleaning products, and seal and store them so they can't evaporate
- Watch for Air Quality Action Days in your area



# Air Quality Guide for Particle Pollution

Harmful particle pollution is one of our nation's most common air pollutants. Use the chart below to help reduce your exposure and protect your health. For your local air quality forecast, visit [www.airnow.gov](http://www.airnow.gov)

Air Quality Index	Who Needs to be Concerned?	What Should I Do?
Good (0-50)		It's a great day to be active outside.
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	<b>Unusually sensitive people:</b> Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. <b>Everyone else:</b> It's a good day to be active outside.
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include <b>people with heart or lung disease, older adults, children and teenagers.</b>	<b>Sensitive groups:</b> Reduce prolonged or heavy exertion. It's OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath. <b>People with asthma</b> should follow their asthma action plans and keep quick relief medicine handy. <b>If you have heart disease:</b> Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.
Unhealthy (151-200)	<b>Everyone</b>	<b>Sensitive groups:</b> Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. <b>Everyone else:</b> Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.
Very Unhealthy (201-300)	<b>Everyone</b>	<b>Sensitive groups:</b> Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. <b>Everyone else:</b> Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.
Hazardous (301-500)	<b>Everyone</b>	<b>Everyone:</b> Avoid all physical activity outdoors. <b>Sensitive groups:</b> Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.

## Key Facts to Know About Particle Pollution:

- Particle pollution can cause serious health problems – including asthma attacks, heart attacks, strokes and early death.
- Particle pollution can be a problem at any time of the year, depending on where you live.
- You can reduce your exposure to pollution and still get exercise! Use daily Air Quality Index (AQI) forecasts at [www.airnow.gov](http://www.airnow.gov) to plan your activity.

## What is particle pollution?

Particle pollution comes from many different sources. Fine particles (2.5 micrometers in diameter and smaller) come from power plants, industrial processes, vehicle tailpipes, woodstoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers) come from crushing and grinding operations, road dust, and some agricultural operations.

## Why is particle pollution a problem?

Particle pollution is linked to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. It also is linked to early death.

## Do I need to be concerned?

While it's always smart to pay attention to air quality where you live, **some people may be at greater risk from particle pollution.** They include:

- People with cardiovascular disease (diseases of the heart and blood vessels)
- People with lung disease, including asthma and COPD
- Children and teenagers
- Older adults
- Research indicates that obesity or diabetes may increase risk.
- New or expectant mothers may also want to take precautions to protect the health of their babies.

## How can I protect myself?

**Use AQI forecasts to plan outdoor activities.** On days when the AQI forecast is unhealthy, take simple steps to reduce your exposure:

- Choose a less-strenuous activity
- Shorten your outdoor activities
- Reschedule activities
- Spend less time near busy roads

**When particle levels are high outdoors, they can be high indoors – unless the building has a good filtration system.**

Keep particles lower indoors:

- Eliminate tobacco smoke
- Reduce your use of wood stoves and fireplaces
- Use HEPA air filters and air cleaners designed to reduce particles
- Don't burn candles

## Can I help reduce particle pollution?

Yes! Here are a few tips.

- Drive less: carpool, use public transportation, bike or walk
- Choose ENERGY STAR appliances
- Set thermostats higher in summer and lower in winter
- Don't burn leaves, garbage, plastic or rubber
- Keep car, boat and other engines tuned

