

## APPENDIX B

# Air Quality and Outdoor Activity Guidance for Schools

Regular physical activity — at least 60 minutes each day — promotes health and fitness. The table below shows when and how to modify outdoor physical activity based on the Air Quality Index. This guidance can help protect the health of all children, including teenagers, who are more sensitive than adults to air pollution. Check the air quality daily at [www.airnow.gov](http://www.airnow.gov).

Air Quality Index	Outdoor Activity Guidance
 <p>green</p> <p>GOOD</p>	<p>Great day to be active outside!</p>
 <p>yellow</p> <p>MODERATE</p>	<p>Good day to be active outside!</p> <p>Students who are unusually sensitive to air pollution could have symptoms.*</p>
 <p>orange</p> <p>UNHEALTHY FOR SENSITIVE GROUPS</p>	<p>It's OK to be active outside, especially for <b>short activities</b> such as recess and physical education (PE).</p> <p>For <b>longer activities</b> such as athletic practice, take more breaks and do less intense activities.</p> <p>Watch for symptoms and take action as needed.*</p> <p>Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.</p>
 <p>red</p> <p>UNHEALTHY</p>	<p>For <b>all outdoor activities</b>, take more breaks and do less intense activities.</p> <p>Consider moving <b>longer or more intense activities</b> indoors or rescheduling them to another day or time.</p> <p>Watch for symptoms and take action as needed.*</p> <p>Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.</p>
 <p>purple</p> <p>VERY UNHEALTHY</p>	<p>Move <b>all activities</b> indoors or reschedule them to another day.</p>

### \* Watch for Symptoms

Air pollution can make asthma symptoms worse and trigger attacks. Symptoms of asthma include coughing, wheezing, difficulty breathing, and chest tightness. Even students who do not have asthma could experience these symptoms.

#### If symptoms occur:

The student might need to take a break, do a less intense activity, stop all activity, go indoors, or use quick-relief medicine as prescribed. If symptoms don't improve, get medical help.

### Go for 60!

CDC recommends that children get 60 or more minutes of physical activity each day. [www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm](http://www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm)

### Plan Ahead for Ozone

There is less ozone in the morning. On days when ozone is expected to be at unhealthy levels, plan outdoor activities in the morning.

## Questions and Answers

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### How long can students stay outside when the air quality is unhealthy?

There is no exact amount of time. The worse the air quality, the more important it is to take breaks, do less intense activities, and watch for symptoms. Remember that students with asthma will be more sensitive to unhealthy air.

### Why should students take breaks and do less intense activities when air quality is unhealthy?

Students breathe harder when they are active for a longer period of time or when they do more intense activities. More pollution enters the lungs when a person is breathing harder. It helps to:

- ✓ reduce the amount of time students are breathing hard (e.g., take breaks; rotate players frequently)
- ✓ reduce the intensity of activities so students are not breathing so hard (e.g., walk instead of run)

### Are there times when air pollution is expected to be worse?

**Ozone pollution** is often worse on hot sunny days, especially during the afternoon and early evening. Plan outdoor activities in the morning, when air quality is better and it is not as hot.

**Particle pollution** can be high any time of day. Since vehicle exhaust contains particle pollution, limit activity near idling cars and buses and near busy roads, especially during rush hours. Also, limit outdoor activity when there is smoke in the air.

### How can I find out the daily air quality?

Go to [www.airnow.gov](http://www.airnow.gov). Many cities have an Air Quality Index (AQI) *forecast* that tells you what the local air quality will be later today or tomorrow, and a *current* AQI that tells you what the local air quality is now. The AirNow website also tells you whether the pollutant of concern is ozone or particle pollution. Sign up for emails, download the free AirNow app, or install the free AirNow widget on your website. You can also find out how to participate (and register your school) in the School Flag Program ([www.airnow.gov/schoolflag](http://www.airnow.gov/schoolflag)).

### If students stay inside because of unhealthy outdoor air quality, can they still be active?

It depends on which pollutant is causing the problem:

**Ozone pollution:** If windows are closed, the amount of ozone should be much lower indoors, so it is OK to keep students moving.

**Particle pollution:** If the building has a forced air heating or cooling system that filters out particles then the amount of particle pollution should be lower indoors, and it is OK to keep students moving. It is important that the particle filtration system is installed properly and well maintained.

### What physical activities can students do inside?

Encourage indoor activities that keep all students moving. Plan activities that include aerobic exercise as well as muscle and bone strengthening components (e.g., jumping, skipping, sit-ups, pushups). If a gymnasium or open space is accessible, promote activities that use equipment, such as cones, hula hoops, and sports balls. If restricted to the classroom, encourage students to come up with fun ways to get everyone moving (e.g., act out action words from a story). Teachers and recess supervisors can work with PE teachers to identify additional indoor activities.

### What is an asthma action plan?

An asthma action plan is a written plan developed with a student's doctor for daily management of asthma. It includes medication plans, control of triggers, and how to recognize and manage worsening asthma symptoms. See [www.cdc.gov/asthma/actionplan.html](http://www.cdc.gov/asthma/actionplan.html) for a link to sample asthma action plans. When asthma is well managed and well controlled, students should be able to participate fully in all activities. For a booklet on "Asthma and Physical Activity in the School," see <http://www.nhlbi.nih.gov/health/resources/lung/asthma-physical-activity.htm>.