

Air Quality and Outdoor Activities: Recommendations for Schools

Air Quality Index (AQI) Chart for Ozone (8-hr standard)

ACTIVITY	0 to 50 GOOD	51 to 100 MODERATE	101 to 150 UNHEALTHY FOR SENSITIVE GROUPS	151 to 200 UNHEALTHY	201 to 300 VERY UNHEALTHY
Recess (15 min)	No Restrictions	No Restrictions	Make indoor space available for children with asthma or other respiratory problems.	Any child who complains of difficulty breathing, or who has asthma or other respiratory problems, should be allowed to play indoors.	Restrict outdoor activities to light to moderate exercise.
P.E. (1 hr)	No Restrictions	No Restrictions	Make indoor space available for children with asthma or other respiratory problems.	Any child who complains of difficulty breathing, or who has asthma or other respiratory problems, should be allowed to play indoors.	Restrict outdoor activities to light to moderate exercise not to exceed one hour.
Scheduled Sporting Events	No Restrictions	Individuals who are unusually sensitive to ground-level ozone should limit intense activities.	Individuals with asthma or other respiratory or cardiovascular illness should increase rest periods and reduce activities to lower breathing rates.	Consideration should be given to rescheduling or relocating event.	Event should be rescheduled or relocated indoors.
Athletic Practice and Training (2 to 4 hrs)	No Restrictions	Individuals who are unusually sensitive to ground-level ozone should limit intense activities.	Individuals with asthma or other respiratory or cardiovascular illness should increase rest periods and reduce activities to lower breathing rates.	Activities over 2 hours should decrease intensity and duration. Add rest breaks or substitutions to lower breathing rates.	Sustained rigorous exercise for more than one hour must be rescheduled, moved indoors or discontinued.

HOW TO USE THIS CHART

This chart is for restrictions of outdoor activities affected by ground-level ozone pollution. It should be used to modify plans for outdoor activities such as recess, lunch, and physical education class. It is best used in conjunction with ozone air quality forecasts. If a code red ozone day is expected, consider moving prolonged or vigorous activities inside or rescheduling them to morning hours to decrease exposure to ozone pollution. Next day air quality forecasts are updated by 5 pm Eastern Time and the ozone maps or measured air quality levels are updated hourly. Both can be viewed at www.airnow.gov.

Here's an example of how this chart may be used to determine changes for a Friday afternoon physical education program:

Step 1: Thursday afternoon, check the air quality forecast for Friday at www.airnow.gov. While there, sign up for EnviroFlash at www.enviroflash.info, to receive the forecast by e-mail.

Step 2: If the air quality forecast for Friday is Orange, or Unhealthy for Sensitive Groups, make arrangements to have indoor space available for children with asthma or other lung diseases.

Step 3: On Friday before class, check the current Air Quality Index (AQI) at www.airnow.gov. If the AQI in your area is Good (Green) or Moderate (Yellow), no action is needed. If the AQI is Unhealthy for Sensitive Groups (Orange), children with asthma who complain of breathing difficulties should play indoors. If the AQI is Unhealthy (Red), note that even children without respiratory problems may complain of breathing difficulties and they should play indoors as well.

The health benefits of regular exercise are well documented. The intent of this chart is to help children continue to exercise while protecting their health when air quality is poor. Even when air quality is poor, exercise can be continued indoors. Indoor air can have significantly less ozone than outdoor air.

Health Effects of Ground-level Ozone (O₃)

- Constriction of airways forcing the respiratory system to work harder to provide oxygen
- Coughing, pain when taking a deep breath, wheezing and inflammation of the airways including the deep portions of the lungs
- Increased fatigue
- Reduced athletic performance
- Aggravated lung disease

Long-term exposure to polluted air can have permanent health effects including decreased lung function, possible development of diseases such as asthma and bronchitis, or a shortened life span. Ground-level ozone reaches its highest level during the afternoon and early evening.

Please note: Before cancelling a scheduled outdoor athletic event, call your local air quality agency for up-to-date information for your specific location.

Resources: AIRNOW (www.airnow.gov), EnviroFlash (www.enviroflash.info)

* For wildfires or other air pollution episodes, it may be necessary to modify these recommendations to minimize outdoor physical activities. In this situation, contact your local Air Quality Agency for more details.