



International
Council on
Active Aging



Outdoor exercise and air quality

by Patricia Ryan, MS

When you listen to the nightly news or read the newspaper, you are likely to hear a short announcement of the air quality index. This number may be followed by a caution for people who are sensitive to air quality.

Who are the “sensitive” people and what are the health risks?

Older adults are more susceptible to respiratory conditions that are related to air quality because the immune system functions less efficiently as part of the aging process. People with heart conditions, asthma, chronic obstructive pulmonary disease (COPD) and high blood pressure are also more sensitive to poor air quality (American Lung Association, Centers for Disease Control and Prevention).

Poor air quality, often called air pollution, is caused by particles, chemicals and environmental influences in the air. Older adults, like most people, are most likely to feel health effects from ground-level ozone (pollutants from cars, refineries and other sources reacting chemically in sunlight) and airborne particles (from car exhaust, dust, ash from fires). Air quality tends to be poorer in cities and during hot, dry summer (Environmental Protection Agency).

Air pollution can lead to difficulty breathing, wheezing and coughing, symptoms which will go away in most healthy people when the air quality improves. People with heart conditions or lung disease may have their conditions triggered by air pollution.

In 2006, 34% of Americans ages 65 and older lived in counties that experienced poor air quality for any air pollutant, according to the Interagency Forum on Aging Statistics. On the bright side, this was a decrease from 55% in the year 2000. In 2006, 24% of people ages 65 and over lived in counties with poor air quality for



This poster is available as a free download from the AIRNow web site.

ozone, and 21% lived in counties with poor air quality for particulate matter. In both cases, levels of these riskiest pollutants have declined in the past few years.

Air quality is a concern when planning exercise programs. During physical activity, people breathe more deeply, bringing more air into their lungs. The best defense for older adults is to avoid the locations and times of day when air pollution is more likely.

- Plan walks and encourage outdoor exercise early in the morning and later in the day.
- Caution people to avoid busy streets and highways where automobiles, trucks and buses are releasing exhaust.
- Move indoors. Promote indoor activities at the wellness center, and consider offering free fitness classes on days with poor air quality.
- Make available options that can be performed indoors and do not require

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heavy breathing. For example, offer flexibility classes or Tai Chi.

- Be prepared to relocate walking groups indoors. You could arrange transportation to a nearby mall, create an indoor walking trail along corridors or move people onto treadmills.
- If exercising outdoors, shorten the usual time spent in physical activity. For example, instead of a one-hour walk, choose a half-hour walk outside and go indoors to walk the next half hour on a treadmill. Or, reduce the intensity of a planned walk and break it up with intervals of stretching, discussion or photography.

Measuring air quality

The Air Quality Index (AQI) used in the United States was developed by the federal Environmental Protection Agency to measure five conditions in the air: ground-level ozone, particle pollution (also known as particulate matter), carbon monoxide, sulfur dioxide and nitrogen dioxide. The Environmental Protection Agency established national standards for each of these pollutants; the index is the AQI value of the single pollutant that has the highest measurement.

The lower the number, the cleaner the air. A number below 100 means the air is clean

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Air Quality Index, US

Health effects can occur within a few hours or days after breathing polluted air.

Index	Rating	Meaning
0-50	Good	Air quality is considered satisfactory, and air pollution poses little or no risk.
51-100	Moderate	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. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.
101-150	Unhealthy for sensitive groups	The general public is not likely to be affected. Members of sensitive groups may experience health effects. For example, people with lung disease are at greater risk from exposure to ozone, while people with either lung disease or heart disease are at greater risk from exposure to particle pollution.
151-200	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
201-300	Very unhealthy	Health alert: everyone may experience more serious health effects.
> 300	Hazardous	Health warnings of emergency conditions. The entire population is more likely to be affected.

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and of little health risk for most people unless they are highly sensitive. Fortunately, the AQI in most US cities is below 100 most times of the year, according to the Environmental Protection Agency. Once the number is 100 or higher, air quality is considered progressively unhealthy.

A new Air Quality Health Index is being piloted by Environment Canada. The new index uses a 10-point numbering system to categorize health risk. The lower the number, the lower the risk.

This new index will replace the current Air Quality Index that is used throughout Canada. The current index reflects the rating for the single worst pollutant, while the new Air Quality Health Index reports health risks based on a sum of multiple pollutants. More information on the two indexes and the pilot study is available from Environment Canada.

By paying attention to the air quality indexes, you can adapt your physical activity programs and educate participants on what actions to take when air quality is poor.

Encourage healthy exercise choices

Physical activity has many health benefits for older adults. Even when the air quality is poor, they can choose activities that maintain an active lifestyle while reducing the risk of breathing problems. When the air quality is at a healthy level, then it's an opportunity for professionals to encourage outdoor activity and more vigorous pursuits.

Patricia Ryan is editor of ICAA's Functional U.

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Resources

Air Quality
Environment Canada
www.ec.gc.ca/default.asp?lang=En&n=941684CD-1

Air Quality Index
AIRNow
<http://airnow.gov>

Air Pollution and Exercise
American Lung Association
www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=36292

Older Adults and Air Quality
AIRNow
Fact sheets, posters
<http://airnow.gov/index.cfm?action=static.olderadults>

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