Are you at risk from ground-level ozone?

Several groups of people are particularly sensitive to ozone - especially when they are active outdoors - because physical activity causes people to breathe faster and more deeply.

Active children are the group at highest risk from ozone exposure because they often spend a large part of the summer playing outdoors. Children are also more likely to have asthma, which may be aggravated by ozone exposure.

Active adults of all ages who exercise or work vigorously outdoors have a higher level of exposure to ozone than people who are less active.

People with asthma or other respiratory diseases that make the lungs more vulnerable to the effects of ozone will generally experience health effects earlier and at lower ozone levels than less sensitive individuals.

People with unusual susceptibility to ozone.

Scientists don’t yet know why, but some healthy people may experience health effects at more moderate levels of outdoor exertion or at lower ozone levels than the average person.

In general, as concentrations of ground-level ozone increase, more and more people experience health effects at more moderate levels of outdoor exertion or at lower ozone levels than the average person.

What is ozone?

Ozone is a gas that occurs both in the Earth’s upper atmosphere and at ground level. Ozone can be good or bad, depending on where it is found.

Ozone occurs naturally in the Earth’s upper atmosphere - 10 to 30 miles above the Earth’s surface - where it shields us from the sun’s harmful ultraviolet rays.

Ozone is formed when pollutants emitted by cars, power plants, chemical plants, and other sources react chemically in the presence of sunlight. Ozone pollution is a concern during the summer months when the weather conditions needed to form ground-level ozone - lots of sun and hot temperatures - normally occur.

Ozone may cause permanent lung damage. Repeated short-term ozone damage to children’s developing lungs may lead to reduced lung function in adulthood. In adults, ozone exposure may accelerate the natural decline in lung function that occurs as part of the normal aging process.

Are there always symptoms?

Ozone damage also can occur without any noticeable signs. People who live in areas where ozone levels are frequently high may find that their initial symptoms go away over time - particularly when exposure to high ozone levels continues for several days. Ozone continues to cause lung damage even when the symptoms have disappeared.

The best way to protect your health is to find out when ozone levels are elevated in your area and take simple precautions to minimize exposure even when you don’t feel obvious symptoms.

How can you avoid unhealthy exposure to ozone?

Your chances of being affected by ozone increase the longer you are active outdoors and the more strenuous the activity you engage in. If you’re involved in an activity that requires heavy exertion, you can reduce the time you spend on this activity or substitute another activity that requires more moderate exertion (e.g., go for a walk rather than a jog).

In addition, you can plan outdoor activities when ozone levels are lower, usually in the morning or evening.

Examples of activities that involve moderate exertion include climbing stairs, playing tennis or baseball, simple garden or construction work, and light jogging, cycling, or hiking. Activities that involve heavy exertion include playing basketball or soccer, chopping wood, heavy manual labor, and vigorous running, cycling, or hiking. Because fitness levels vary widely among individuals, what is moderate exertion for one person may be heavy exertion for another. No matter how fit you are, cutting back on the level or duration of exertion when ozone levels are high will help protect you from ozone’s harmful effects.
Air Quality Index

The Air Quality Index, or AQI, is a scale used to report actual levels of ozone and other common pollutants in the air. The higher the AQI value, the greater the health concern. As shown in the table above, the AQI scale has been divided into categories that correspond to different levels of health concern.

A specific color has been assigned to each AQI category. For example, red means “unhealthy” conditions. This color scheme can help you quickly determine if air pollutants are reaching unhealthy levels in your area.

You may see the AQI for ozone reported in your newspaper or on your local television or radio station.

South Carolina has a problem with ground-level ozone.

Ozone forms when two chemicals - nitrogen dioxide and volatile organic compounds react in sunlight, on hot sunny days. These chemicals are emitted from cars, trucks, smoke stacks, and natural sources like trees.

What can I do to help?

Using the latest forecasting tools, we can predict which days are likely to have higher concentrations of ground-level ozone. This process, called ozone forecasting, runs May 1 through September 30. For today’s ozone forecast, go to: www.state.sc.us and click on “Today’s Ozone Forecast.”

On these days, small changes in daily activities can help reduce the formation of ground-level ozone.

Tips to reduce Ozone
- Combine trips and limit unnecessary ones.
- Carpool
- Keep your vehicle properly maintained
- Use gasoline powered lawn equipment after 6 p.m.
- Refuel after 6 p.m. and don’t top-off the tank
- Walk or ride a bike on short trips
- Save electricity
- Avoid driving during peak hours
- Don’t drive above the speed limit
- Take the bus

Air Quality Index

<table>
<thead>
<tr>
<th>Index Values</th>
<th>Descriptors</th>
<th>Cautionary Statements for Ozone</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 50</td>
<td>Good</td>
<td>None.</td>
</tr>
<tr>
<td>51 to 100</td>
<td>Moderate</td>
<td>Unusually sensitive people should consider limiting prolonged outdoor exertion.</td>
</tr>
<tr>
<td>101 to 150</td>
<td>Unhealthy for Sensitive Groups</td>
<td>Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.</td>
</tr>
<tr>
<td>151 to 200</td>
<td>Unhealthy</td>
<td>Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.</td>
</tr>
<tr>
<td>201 to 300</td>
<td>Very Unhealthy</td>
<td>Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.</td>
</tr>
</tbody>
</table>

AIRNOW (www.epa.gov/airnow) is an Internet site that gives daily information about ozone and how it may affect you. The air quality data is provided to EPA by the states participating in this project.

AIRNOW Web site is available on the AIRNOW Web site.

Maps that provide daily information about ozone levels are available on the AIRNOW Web site.

www.scdhec.net/BAQ   (803) 898-4123