

Oregon Air Quality Activity Guide for Children and Youth

Use this guide to protect children and youth (18 years and younger) from fine particle air pollution (PM2.5). Everyone in this age group is sensitive to PM2.5 exposure. Apply this guide to all outdoor activities, including recess, child care outdoor play, sports events, camps, and field trips.

Check current and forecasted air quality at AirNow.gov or oregonsmoke.org.

Outside Air Quality Index (AQI): PM2.5



Activity Duration: 15 minutes to 1 hour (such as recess, PE, classes typically held outside, biking or walking to school)

No restrictions	Allow children and youth with health conditions to opt out or stay indoors. Limit the intensity of activities for these children and youth if needed.	Limit to moderate intensity activities outside. For children and youth with health conditions, further limit intensity or move to an area with safer air quality.	Cancel outdoor activity or move to an area with safer air quality. Limit to light intensity activities indoors if indoor PM2.5 levels are high.
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Activity Duration: 1 to 4 hours (such as athletic events and practices, transit time in buses with open windows)

No restrictions	Allow children and youth with health conditions to opt out or stay indoors. Limit the intensity of activities for these children and youth if needed.	Limit to light intensity activities or a 1-hour total duration with moderate intensity. If intensity and time can't be changed, consider canceling or moving to an area with safer air quality. For children and youth with health conditions, further limit time or intensity if needed.	Cancel outdoor activity or move to an area with safer air quality. Limit to light intensity activities indoors if indoor PM2.5 levels are high.
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Activity Duration: Over 4 hours (such as outdoor school or camp)

No restrictions	Move children and youth with health conditions to an area with safer air quality. Allow children and youth without health conditions to opt out or stay indoors and limit the intensity of activities.	Limit to light intensity activities and under 4-hr total duration. If intensity and time can't be changed, cancel outdoor activity or move to an area with safer air quality. For children and youth with health conditions, further limit time or intensity if needed.	Cancel outdoor activity or move to an area with safer air quality. Limit to light intensity activities indoors if indoor PM2.5 levels are high.
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Additional considerations

- Some children and youth are more sensitive to poor air quality. This includes those with asthma, lung or heart disease, diabetes, or respiratory infections.
- Indoor spaces with filtered air are safer. Air filtration can lower indoor PM2.5 (See page 2).
- If you move activities indoors, close windows and doors. Watch for heat: extreme heat and poor air quality can make health problems worse.
- If a building is burning nearby, limit activity or stay indoors. Smoke from buildings can be more dangerous than wildfire smoke.

Sources of PM2.5	The primary source of PM2.5 in warmer months is wildfire smoke. In colder months, PM2.5 sources include woodstoves, fireplaces and prescribed burning. Other sources include vehicle exhaust and industrial emissions.
Children's health and increased risk	Children and youth are more sensitive than healthy adults to PM2.5. Children breathe more air for their body weight than adults. This increases their exposure to air pollution. The respiratory system also develops until about age 21. Children and youth who have health problems like asthma, lung disease, heart disease, or diabetes are more likely to need emergency care or hospitalization. Exposure to PM2.5 can also put children and youth at risk of lower school performance, problems with brain development, and health issues when they grow up. Children with asthma should follow their Asthma Action Plan .
Symptoms	Symptoms of PM2.5 exposure include burning eyes, coughing, throat and nose irritation, fatigue, headache, wheezing, and shortness of breath. Symptoms can continue or appear in the week following exposure to PM2.5. Anyone experiencing symptoms should contact a health care provider. Call 911 in an emergency.
Physical activity	Safe outdoor play when PM2.5 levels are high, especially for days or weeks, requires precautions. CDC recommends children and youth 6-17 years old exercise an hour or more every day as an important part of health. However, people breathe deeper and take more air into their lungs when exercising. This means they take in more air pollution. See CDC's guidance How to Measure Physical Activity Intensity and the Youth Compendium of Physical Activities for more details on the intensity of activities.
Mental health	Poor air quality and wildfires can impact mental health as well as physical health. Nearby wildfires, long-term changes in air quality from longer wildfire seasons, and personal perceptions of risk can negatively impact mental health. Changes to outdoor activities can make mental health impacts worse by reducing physical activity and time in nature. Decision makers can weigh the risks of PM2.5 exposure to health against the mental health benefits of outdoor activities.
Reducing exposures throughout the day	As PM2.5 pollution increases, take action to protect health. Limit the time and intensity of outside physical activity, stay indoors when possible and keep indoor air clean. Consider a child's total exposure throughout the day and night, including time spent at school, home, and in transit. Walking, biking, or riding in a bus with windows open is time outdoors. PM2.5 exposures on a bus may be lower when windows are closed, air conditioning is on and air is recirculating. Some children may not have cleaner air at home.
Masks and respirators	A NIOSH-approved N95 or other particulate respirator can be an option when you have no other way to avoid wildfire smoke. NIOSH-approved respirators do not come in suitable sizes for very young children and have not been tested for broad use in children. Effective use requires proper selection, size and fit. See Western States PEHSU guidance on respirator use by children. More NIOSH information here.
Air quality monitoring and low-cost sensors	Public agencies that monitor outdoor air quality make that information available at AirNow.gov for non-wildfire smoke pollution and the Oregon Smoke Blog for wildfire smoke in Oregon. The Smoke Blog has the most relevant forecasts for Oregon during wildfire season. For areas without nearby air quality monitors, consider using the 5-3-1 visibility index to estimate smoke levels. Low-cost sensors can measure indoor or outdoor air quality. Do not compare uncorrected sensor data to the AQI. Compare sensor data in locations throughout the facility and indoors vs. outdoors. So. California's air quality agency has a useful guide .
Indoor air quality	During high levels of PM2.5 or extended periods of poor air quality, PM2.5 will likely enter buildings. If you're not sure whether indoor PM2.5 levels are lower than outside, assume levels are similar and try to reduce exposure. Indoor air filtration can reduce indoor levels of PM2.5 (HVAC systems with particle filtration of MERV 13 or higher, or HEPA portable air cleaners). Do not use air cleaners that produce ozone. More information on air cleaning devices is available from the California Air Resources Board.
Adult staff and volunteers	Adult staff and volunteers can be impacted by air pollution. Oregon Occupational Safety and Health (OR-OSHA) determines rules to protect employee and volunteer health during wildfire smoke events. OR-OSHA rules also apply to youth employees and volunteers. The OR-OSHA website has a wildfire topic page and information for protection from other respiratory hazards .
Resources	For more information about wildfire smoke and how to protect your health, go to OHA's wildfire and smoke website at https://healthoregon.org/wildfire . For other sources of pollution visit the US EPA Air Quality website. Your local or Tribal health authority may also have resources to answer air pollution and health questions.



Adapted with permission from the Washington State Department of Health
Children and Youth Activities Guide for Air Quality.

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200-569354_OHA 8815H (04/2026)