

How Cold Weather Affects Air Quality

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When the weather gets cold enough, exhaust from vehicles and homes becomes a very visible mist in the air. Is all that vapour simply more visible to the eye, or is the level of pollution actually greater in the winter? The answer is yes to both questions.

Some sources of emissions, like those from industrial operations in Alberta's Industrial Heartland, stay fairly constant throughout the year, no matter what the season. But roaring fireplaces, wood stoves and idling vehicles in the winter all add up to higher levels of particulate matter (the particles that make up smoke) and carbon monoxide (from vehicle emissions).

On top of this, cold temperatures and stagnant air have a way of creating a build-up of these substances near the ground, particularly during a weather phenomenon called temperature inversions. In other seasons or weather conditions, warm air sits near the ground and the air can rise easily and carry away pollutants. In a temperature inversion, cold air is trapped near the ground by a layer of warm air. The warm air acts like a lid, holding these substances down. During a temperature inversion, smoke can't rise and carbon monoxide can reach unhealthy levels. From an air quality perspective, storms are a welcome weather event. Wind, rain and snow storms are sometimes called scrubbers because they help clear out and disperse these substances of concern.

Fort Air Partnership is the organization responsible for collecting ambient (outdoor) air quality data in the Heartland region and surrounding areas. Most of the time during the winter, air quality in the [Fort Air Partnership airshed](#) stays within good or low health risk ranges, as measured by the Alberta Air Quality Health Index. If AQHI readings do increase in the winter, it's generally due to the temperature inversion phenomenon.

Indoor air quality also becomes a greater concern during the winter because of the amount of time that people stay inside with poor ventilation. Without adequate circulation, carbon dioxide levels can become an issue, leading to headaches and lethargy. Generally, outdoor air quality is better than indoor air, so the best antidote is to get outside regularly, open windows for short periods if possible and keep fireplaces and ventilation systems clean and maintained.

Learn more about air quality in the Fort Air Partnership airshed

Sign up for Fort Air Partnership's e-bulletin. Visit www.fortair.org for details.

*Brought to you by **Life in the Heartland**, a partnership aimed at improving access to information, resources, and contacts for residents in and around Alberta's Industrial Heartland. For more information, visit www.lifeintheheartland.com, email info@lifeintheheartland.com or follow us on Facebook at www.facebook.com/LifeintheHeartland.*