COLD STRESS AT MODERATE TEMPERATURES

Cold stress can happen at moderate temperatures (as high as 60°F or 16°C) when other factors increase heat loss, such as wind, wetness, low physical activity, or wearing insufficient clothing. OSHA and other safety agencies note that hypothermia and cold stress can occur “above 40°F” when a person is wet, exposed to wind, or inactive (OSHA, 2024) and as high as 60°F in damp conditions. (OCWR, 2023)

Key factors contributing to cold stress at these temperatures include the wind’s chilling effect, dampness, decreased insulation from clothing, and reduced physical activity that lowers natural heat production.

Why it Happens at Moderate Temperatures

Even when the air temperature isn't extremely cold, other factors can make it feel much colder and lead to cold stress:

Wind Wind increases the rate of heat loss from the body, a combined effect known as wind chill, making it feel colder than the actual air temperature.
(OSHA Training Institute, 2023 and https://www.noaa.gov/jetstream/synoptic/wind-chill)

Dampness Wet skin or clothing dramatically increases heat loss, as wet fabrics lose their insulating properties. (OSHA, 2024; Kaiser Permanente, 2024)

Insufficient Clothing Wearing too few layers or clothing made of cotton (which loses insulation when wet) can increase heat loss from the body.
(OSHA, 2023)

Low Physical Activity If a person is not very active or is working in a sedentary position, their body produces less heat, making them more vulnerable to cold. (NY Dept. of Labor, 2024)

Symptoms of Cold Stress

Shivering
(OSHA, 2024)

Slurred Speech
(Mayo Clinic, 2024)

Reduced Agility and Dexterity in Hands and Feet
(OCWR, 2023)

Confusion
(Mayo Clinic, 2024)

Loss of Coordination
(Mayo Clinic, 2024)

Prevention Strategies

Wear Multiple Layers of Clothing
Layering clothing traps air and provides better insulation, and choose wool over cotton for its ability to retain insulation when wet.
(OSHA, 2023)

Stay Hydrated
Drink plenty of warm, sweetened beverages, avoiding caffeine and alcohol, which can increase dehydration or hinder the body's ability to stay warm.
(OSHA, 2024)

Take Breaks in Warm Areas
Schedule work during the warmest part of the day and take breaks to warm up.
(OSHA, 2024)

Use a Buddy System
Work in pairs to monitor each other for signs of cold stress, as symptoms can be difficult for the affected person to recognize.
(OSHA, 2024)

References: OSHA (2024). Cold Stress. Occupational Safety and Health Administration. OCWR (2023). How to Work Safely in Cold Conditions. Office of Congressional Workplace Rights. OSHA Training Institute (2023). Understanding the Effects of Wind Chill. Kaiser Permanente (2024). Cold Exposure: What Increases Your Risk of Injury? NY Dept. of Labor (2024). Protecting Outdoor Workers in Extreme Cold. Mayo Clinic (2024). First Aid: Hypothermia.