Study Finds Risk of Heat & Cold Stress Even at Moderate Temperatures



It seems reasonable to assume that heat stress is only a safety hazard when the temperature and/or humidity levels are really high and cold stress a risk only when the temperature is really low. And yes, extreme weather conditions do increase the risk of heat or cold stress.

But a new study by researchers at the Institute for Work & Health (IWH) has found that workers can be at risk of heat and cold stress even when the temperature is moderate.

The researchers used the National Ambulatory Care Reporting System, which documents all emergency department visits in Canada, to focus on visits in southwestern Ontario between 2004 and 2010, looking for visits involving heat- or cold-related illnesses that were deemed by the medical staff to be work-related, such as heat stroke, frostbite and hypothermia.

For daily weather and pollution records, researchers used data from Environment Canada and the Ontario Ministry of the Environment. They then compared illness rates on days with different temperatures, while controlling for day of the week, monthly workforce size, seasonal trends and other factors.

Key findings:

- Above 22øC, every one-degree rise in the temperature

sees the risk of workers seeking treatment at the ER rise by 75%.

- Each one-degree fall in the temperature below OøC comes with a 15% increase in the risk of workers seeking help at the ER.
- Wind speed was also relevant as to the risk of cold stress. Each one-kilometre increase in wind speed brings a 6% increase in the rate of ER visits by workers experiencing cold-related illnesses.

Bottom line: A strong relationship exists between outdoor temperature and illness among workers. And, as the IWH study shows, it's not just extreme temperatures that put workers are at risk.

As a safety professional, these findings mean that if workers complain of symptoms or show signs of heat or cold stress, don't dismiss them just because the temperature outside isn't extreme.

For tools, information and other resources on protecting workers from heat-related illnesses, go to the OHS Insider's Heat Stress Compliance Centre. And learn how to protect workers from cold stress with an exposure control plan.