

# HAZARD ALERT!

## Heat stress can be a killer

### WHAT HAPPENED?

In 2001, a bakery worker in Barrie died of heat stress during a heat wave. The outdoor temperature that day was 34 C, and the temperature inside the bakery was 46 C. Lack of water and not enough rest breaks were blamed.

In 2002 in the United States, two mine rescue trainers died from heat stress in an abandoned, unventilated, underground gold mine while under oxygen. The temperature was greater than 39 C with very high humidity. Summer temperatures in Ontario are climbing, and in some underground mines, rock temperatures and humidity are high year-round.

On the second day of his summer job as a garbage collector, a college student was overcome by heat stress symptoms, according to the Workplace Safety and Insurance Board's *Heat Stress Awareness Guide*. Not trained to recognize warning signs, the young worker continued to work until he collapsed and fell into a coma. He died 17 days later. The inquest concluded his death could have been prevented if the employer had a heat stress program that included training to recognize the symptoms.

### WHY DID IT HAPPEN?

Heat stress can happen to anybody, even the young and fit, and heat exposure may occur in all kinds of workplaces.

Industrial furnaces, bakeries, smelters, foundries and worksites with heavy equipment are significant sources of heat inside workplaces. For outdoor workers, direct sunlight is the main source of heat. In mines, geothermal gradients and equipment can contribute to exposure.

### HOW COULD IT HAVE BEEN PREVENTED?

**DO NOT UNDERESTIMATE THE HAZARDS OF HEAT STRESS:** When it's hot you need to drink a lot of fluids, dress appropriately and recognize the signs of heat stress. If heat exposure is an issue in your workplace you need to develop and implement policies to prevent heat-related illnesses.

- Acclimatization – You should take a week or two to get used to the heat and allow your body to adjust. This is called “acclimatization.” Be aware that if you are away from work for a week you may need to re-adjust to the heat.



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- Engineering Controls – Air-cooling systems, fans and insulating and reflective barriers around furnaces and machinery can help to reduce heat exposure and control workplace temperatures and humidity.
- Administrative Controls – Ensure that there are appropriate monitoring and control strategies in place and be ready to take appropriate action for hot days and hot workplaces. To prevent heat stress, increase the frequency and the length of rest breaks and slow down the pace of work.

### LEGISLATION

Employers have a duty under clause 25(2)(h) of the *Occupational Health and Safety Act* to **take every precaution reasonable in the circumstances for the protection of a worker**. This includes developing policies and procedures to protect workers in environments that are hot because of hot processes and/or weather.

For compliance purposes, the Ministry of Labour recommends the Threshold Limit Values (TLVs) for Heat Stress and Heat Strain published by the American Conference of Governmental Industrial Hygienists (ACGIH). These values are based on preventing workers' core body temperatures from rising above 38 C.

### RESOURCES FOR DEALING WITH WORKPLACE HEAT STRESS

#### **Ontario Ministry of Labour Heat Stress Guidelines and Legal Requirements**

[www.labour.gov.on.ca/english/hs/pdf/gL\\_heat.pdf](http://www.labour.gov.on.ca/english/hs/pdf/gL_heat.pdf)

#### **MOL Video**

[www.labour.gov.on.ca/english/gallery/v\\_heatstress\\_hs.php](http://www.labour.gov.on.ca/english/gallery/v_heatstress_hs.php)

#### **Occupational Health Clinics for Ontario Workers Humidex-based Heat Stress Calculator**

[www.ohcow.on.ca/uploads/Newsroom/hhrplan.pdf](http://www.ohcow.on.ca/uploads/Newsroom/hhrplan.pdf)

#### **Workplace Safety and Insurance Board Heat Stress Awareness Guide**

[www.wsib.on.ca/files/Content/PreventionHSGuide/HeatStressGuide.pdf](http://www.wsib.on.ca/files/Content/PreventionHSGuide/HeatStressGuide.pdf)

#### **Protecting Workers from Heat Stress: What are an employer's legal obligations?**

[ohsinsider.com/wp-content/uploads/2010/07/Protect-Workers-From-Heat-Stress.pdf](http://ohsinsider.com/wp-content/uploads/2010/07/Protect-Workers-From-Heat-Stress.pdf)

#### **Daily Humidex ratings**

[weather.gc.ca/forecast/canada/index\\_e.html?id=ON](http://weather.gc.ca/forecast/canada/index_e.html?id=ON)


### HOW WSN CAN HELP YOU

As your health and safety specialist for Ontario's mining, forestry, and paper, printing, and converting sectors, WSN offers training, resources, risk assessment, safety auditing, and confidential consultation.

#### **WSN Beat the Heat PowerPoint Presentation and Leader's Guide**

[www.workplacesafetynorth.ca/resources/beat-heat-safety-meeting-talk](http://www.workplacesafetynorth.ca/resources/beat-heat-safety-meeting-talk)

**WSN Beat the Heat: A Pocket Guide to Heat Stress and Strain** is a helpful tool regarding the hazards related to heat and the best ways to control them. Order the booklet by calling 1-888-730-7821 ext. 288.



**About WSN:** Workplace Safety North believes illnesses and injuries can and must be prevented. An independent not-for-profit health and safety organization, WSN is a leading provider of health and safety training, consulting and information to Ontario mining, forestry, paper, printing and converting sectors. WSN was formed by the 2010 amalgamation of three key safety associations: Mines and Aggregates Safety and Health Association (MASHA), Ontario Forestry Safe Workplace Association (OFSWA), and the Pulp and Paper Health and Safety Association (PPHSA).