

NIAGARA COLLEGE OF APPLIED ARTS AND TECHNOLOGY



College Practices

Approved: October 13, 2010
Responsibility: COG

PRACTICE NUMBER: NC500-03

PRACTICE TITLE: Heat Stress Prevention

A. Background and Definitions

Acclimatization: the physiological changes that occur after prolonged exposure, allowing the body to adapt to a new temperature, climate, or environment.

Dehydration: the loss or deficiency of water in body tissues which may be caused by perspiration, vomiting, or diarrhea. Symptoms include excessive thirst, nausea and exhaustion.

FMS: Facilities Management Services.

Hot Work Environment: conditions in the workplace (air temperature, radiant temperature, humidity, air velocity, clothing and physical activity) which provide a risk for hazardous body heat storage.

Humidex: an index that describes how hot or humid weather feels to the average person.

WSIB: Workplace Safety and Insurance Board.

B. Purpose

The purpose of this practice is to develop guidelines for working in hot environments, reduce the potential for heat-related illnesses, and to ensure compliance with the *Occupational Health & Safety Act* of Ontario and its regulations. This procedure applies to all employees working in hot environments at Niagara College.

C. Practice Statements

1. Niagara College recognizes the potential problems caused by high temperatures in the workplace. A “hot” work environment at Niagara College is defined as a condition or situation in the workplace which provides a risk for hazardous body heat storage. Examples include air temperature, radiant temperature, humidity, air velocity, clothing and physical activity.
2. This procedure consists of four sections that describe the precautions to follow in “hot” work environments:
 - i. Heat Monitoring Methods
 - ii. Safe Work Practices & Control Measures

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- iii. Heat Exposure Illnesses
 - iv. Training
3. Department Managers/Supervisors shall ensure that all employees in their department who work in hot environments are instructed in this procedure prior to the commencement of work.

Responsibilities

4. **Department Managers/Supervisors** are responsible for:
- a) ensuring all employees in their department who work in hot environments are instructed in this procedure;
 - b) scheduling strenuous work during cooler times of day where possible;
 - c) making cool drinking water available to employees and encouraging them to drink it often (a cup every 20-30 minutes);
 - d) providing mechanical aids for employees to avoid strenuous lifting/physical activity;
 - e) exercising due diligence for personal safety when assigning work in hot environments, and ensuring that all employees are familiar with first aid procedures for heat stress; and
 - f) assigning a designate to keep a record of humidex readings throughout the day (morning, noon and afternoon).
5. **Workers** are responsible for:
- a) taking precautions as necessary to prevent heat-related illnesses, and
 - b) participating in training as required.
6. **Health and Safety Office** is responsible for:
- a) providing information on heat stress to departments as necessary, and
 - b) tracking heat-related illnesses and complaints to measure the effectiveness of the Heat Stress Prevention Practice.

Heat Monitoring Methods

7. *Acclimatization*: Employees who perform moderate work regularly in hot environments can develop a certain degree of tolerance for heat, which is called acclimatization. Examples of workers at the College that can become acclimatized include FMS, greenhouse staff and kitchen staff, who are consistently working in a hot environment.

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Table 1. Humidex from Temperature and Relative Humidity Readings

This table is based on the following assumptions:

- x Work is being performed under conditions with little or no radiant heat.
- x Workers are wearing regular summer clothing (light shirt and pants, socks & shoes).
- x For outdoor work in direct sunlight between the hours of 10 a.m. and 4 p.m., add 1-

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- c) *Humidex Based Heat Response Plan*: Humidex-based heat response plans will begin when the Humidex reading is at 30 or more. The following table details the recommended action to be taken when Humidex measurements are high:

HUMIDEX 1	ACTION PLAN	HUMIDEX 2
30-37	Notify employees of heat stress warning and that	

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- c) Avoid alcohol or beverages with caffeine – these make the body lose water and increase the risk of heat stress.
- d) Wear light clothing that permits the evaporation of sweat (i.e. cotton clothing).
- e) Check with your doctor if your medication may affect your heat tolerance.
- f) Make healthy lifestyle choices (i.e. body weight, fitness, diet, rest).

Heat Exposure Illnesses

13. Heat stress symptoms are a set of natural signals telling you that something needs to be done to balance your body's heating and cooling. As your body heats up, it tries to rid itself of excess heat through the evaporation of sweat. If it is unable to cool itself this way, your body temperature will increase. When body temperature gets above 38-39°C, the brain starts to overheat, leading to a shutdown of your body's cooling system (sweating stops).

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Training

16. The prevention of heat stress and heat-related illness begins with educating supervisors and employees on the hazards of working in hot environments.
17. Department Managers/