

SUGGESTED MEASURES TO PREVENT HEAT STRESS

The University of North Carolina at Chapel Hill (UNC) is committed to the health and safety of our students, faculty, staff and visitors. The guidance below compliments UNC's *Heat Stress Policy*. Together, these documents will help to minimize the detrimental effects of excessive heat on UNC employees who are required to work outdoors or within indoor environments with elevated temperatures.

There are many steps that can be taken to prevent heat stress. Some of these steps can be taken by the employee, while other preventive measures can be implemented by supervisors and departments. Work environments can be changed to reduce the risk of heat stress. Every situation is different. The best combination of ways to prevent heat stress depends on the particular work being done, the environment in which it must be done, and the employees doing the work. Consider the following suggestions below to find the best combination of ways to prevent heat stress for your situation.

PREVENTIVE MEASURES EMPLOYEES CAN TAKE

Employees should take special precautions to avoid heat-related illness in unusually hot weather when working outdoors or in unconditioned indoor environments. People suffer heat-related illness when their bodies are unable to regulate internal body temperature. In hot weather, the body normally cools itself by sweating. Under some conditions, however, sweating isn't enough. Such conditions include high humidity, where air movement is limited, working in the direct sun, heavy physical exertion and poor physical condition. Some medical conditions and medications can also reduce the body's ability to tolerate heat. Still, heat-related illness is preventable by following these guidelines when working outdoors in hot weather:

- Drink small amounts of cool water frequently to prevent dehydration. Drink throughout the day to relieve thirst and maintain an adequate urine output.
- Plain water is usually adequate without need to take additional salt or minerals beyond those in your diet. A sports beverage can replace the salt and minerals you lose in sweat.
- Wear appropriate clothing. During periods of elevated temperature, employees should wear light-colored, lightweight, loose-fitting cotton clothing that allows ventilation of air to the body.
- Protect yourself from the sun by wearing a wide-brimmed hat. (Sunglasses and sunscreen—SPF 15 or higher—are also recommended.)
- Pace yourself. Start slowly and pick up the pace gradually.
- Stand or sit up slowly. Flex leg muscles before moving.

- Take time to cool down. Rest often in shady areas. A few hours in air conditioning can help you stay cooler later in the heat.
- Take time to acclimate to heat and humidity. A heat wave is stressful to your body. You will have a greater tolerance for heat if you limit physical activity until you become accustomed to it. Acclimation to a stressful environment may take days or weeks. Gradual adaptation improves the employees' ability to tolerate heat by sweating more efficiently, thus cooling the body and making it easier to maintain a normal temperature.

Signs and symptoms of heat-related illness include headache, dizziness, lightheadedness, fainting, weakness, malaise, mood change, mental confusion or irritability, nausea or vomiting, rapid pulse and excessive sweating or lack of sweating with hot dry skin. An employee experiencing any of these signs or symptoms should be taken to the UNC Hospitals Emergency Room as soon as possible. Contact the University Employee Occupational Health Clinic at 6-9119 if you have any questions.

PREVENTIVE MEASURES SUPERVISORS CAN TAKE

As explained in the *UNC Heat Stress Policy*, departments and supervisors with employees who normally work outdoors or in unconditioned indoor environments need to address heat stress in their Hazards Management Plan by including written safe job procedures (i.e., preventive measures) appropriate to their work and the situation. Preventive measures selected for inclusion in the HMP Job Safety Analysis are at the discretion of the employee's supervisor and department.

Preventive measures that can be implanted by a supervisor are also called *administrative controls* or work strategy controls. Administrative controls are strategies using managerial involvement to limit exposure to a particular hazard. In the case of heat stress, administrative controls limit the amount of time an employee is actually exposed to elevated temperatures. Administrative controls can be changes to how the job is performed, or work schedule changes to when the job is performed.

Rest and Cool Down Breaks

Consider changes to your break practices to lower the risk of heat stress. Possible changes during heat-stressed conditions include:

- Encourage employees to take breaks and hydrate any time they feel necessary.
- Pace the job to allow more frequent breaks for fluid intake and sufficient recovery time.
- Take a break in a shaded area or an air conditioned building.

Work Schedule Changes

Consider changes to your work to lower the risk of heat stress. Possible changes include:

- When feasible, departments can schedule routine maintenance and repair work, which exposes employees to heat-stressed conditions, until cooler periods of the day or cooler seasons. Limit sun exposure during mid-day hours.
- If a job is essential for continuing university operations, consider implementing a worker rotation schedule every hour or sooner. Allow sufficient recovery time for each worker.
- Implement summer work schedules (e.g., 6:00 a.m. to 2:00 p.m.).
- Permit heavy work only from 7:00 a.m. to 9:00 a.m. or earlier.
- Complete all other moderate to light work before 12:00 Noon.
- If extensive PPE is required, then those jobs should be scheduled for the cooler part of the day (i.e., early mornings).

OTHER PREVENTIVE MEASURES IN THE WORK ENVIRONMENT

Engineering controls are physical changes made to the environment. To minimize the risk of heat-related disorders, consider these steps:

- Open windows and add fans to increase air movement in order to provide air cooling and ventilation of heat.
- Shield radiant heat sources or local exhaust at the point of heat generation.
- Provide shaded areas during remote outdoor work (e.g., constructing temporary shelters using tarps)
- Equip tractors, lawnmowers, and other outdoor equipment with cabs or canopies.

FOR HELP AND MORE INFORMATION

For assistance, please contact the UNC Department of Environment, Health and Safety (EHS) at 962-5507 or by sending an email via <http://ehs.unc.edu/feedback.shtml>. EHS can also suggest appropriate controls to reduce your risk of heat-related illness. For more information, visit <http://ehs.unc.edu/healthy/index.shtml>.