Using the Heat Index: A Guide for Employers

Acclimatizing Workers

Individual susceptibility to heat-related illness can vary widely between workers. Workers become gradually acclimatized when exposed to hot conditions for several weeks. Physical changes in blood vessels and in sweating occur to dissipate heat more effectively. When the **heat index** is high, special precautions are needed to protect un-acclimatized workers while they adjust, particularly on the first few days of the job.

- Develop a heat acclimatization program and plans that promote work at a steady moderate rate that can be sustained in the heat. For example, allow workers to get used to hot environments by gradually increasing exposure over at least a 5-day work period. Begin with 50% of the normal workload and time spent in the hot environment and then gradually build up to 100% by the fifth day. New workers and those returning from an absence of two weeks or more should have a 5-day minimum adjustment period. While a significant amount of acclimatization occurs rapidly in that first week, full acclimatization may take a little longer. Some workers require up to two or three weeks to fully acclimatize.

- Determine how you will lessen the intensity of workers' work during the adjustment period.

- Keep in mind that acclimatization can occur naturally for outdoor workers in a hot climate as the weather changes. However, implementing acclimatization activities is essential for new workers, workers who have been out sick or on vacation, and all workers during a heat wave. Be extra-careful with these workers and recognize immediately the symptoms of possible heat-related illness.

- During a sudden heat spike, determine how you will protect your workers from conditions resulting from sudden exposure to heat.

Why Workers Must Be Acclimatized[1]

Humans are, to a large extent, capable of adjusting to the heat. Much of this adjustment to heat, under normal circumstances, usually takes about 5 to 7 days, during which time the body will undergo a series of changes that will make continued exposure to heat more endurable. However, it may take up to several weeks for the body to fully acclimatize.

On the first day of work in a hot environment, the body temperature, pulse rate, and general discomfort will be higher. With each succeeding daily exposure, all of these responses will gradually decrease, while the sweat rate will increase. When the body becomes acclimatized to the heat, the worker will find it possible to perform work with less strain and distress.

Special Caution

Some health conditions can put workers at greater risk of heat-related illness. These include diabetes, kidney and heart problems, pregnancy, and being overweight.

Source: Adapted from Page 10 in OSHA's Heat-related Illness Prevention Training Guide.

Gradual exposure to heat gives the body time to become accustomed to higher environmental temperatures. Heat disorders in general are more likely to occur among workers who have not been given time to adjust to working in the heat or among workers who have been away from hot environments and who have gotten accustomed to lower temperatures. Hot weather conditions of the summer are likely to affect the worker who is not acclimatized to heat. Likewise, workers who return to work after a leisurely vacation or extended illness may be affected by the heat in the work environment. Whenever such circumstances occur, the worker should be gradually reacclimatized to the hot environment.

People who have not worked in hot weather for a week or more need time for their bodies to adjust. They need to take more breaks and not do too much strenuous work during their first weeks on the job.

[1]Information sources: NIOSH, Working in Hot Environments (NIOSH 86-112) "Preparing for the Heat" and OSHA's Heat-related Illness Prevention Training Guide (page 10).