

# Beat the Heat & Keep Your Cool: Indoors

## Submitted Questions

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### 1. We have an air conditioned lunch room but have never had cooling towels. How important is it to have these available?

Cooling towels are optional equipment. They provide a damp cool surface to place against the skin and help to reduce heat almost immediately. When in an air conditioned environment, the cooling towels are typically not needed, they can still be a good relief for employees working in hot environments.

### 2. How does an employer go about acclimatizing workers?

Acclimatization is the beneficial physiological adaptations that occur during repeated exposure to a hot environment. These physiological adaptations include:

- Increased sweating efficiency (earlier onset of sweating, greater sweat production, and reduced electrolyte loss in sweat).
- Stabilization of the circulation.
- The ability to perform work with lower core temperature and heart rate.
- Increased skin blood flow at a given core temperature.

To acclimatize workers, gradually increase their exposure time in hot environmental conditions over a 7–14 day period. New workers will need more time to acclimatize than workers who have already had some exposure.

### Acclimatization Schedule

- For new workers, the schedule should be no more than a 20% exposure on day 1 and an increase of no more than 20% on each additional day.
- For workers who have had previous experience with the job, the acclimatization regimen should be no more than a 50% exposure on day 1, 60% on day 2, 80% on day 3, and 100% on day 4.
- In addition, the level of acclimatization each worker reaches is relative to the initial level of physical fitness and the total heat stress experienced by the individual.

## **Maintaining Acclimatization**

Workers can maintain their acclimatization even if they are away from the job for a few days, such as when they go home for the weekend. However, if they are absent for a week or more then there may be a significant loss in the beneficial adaptations leading to an increased likelihood of heat-related illness and a need to gradually reacclimate to the hot environment.

Some additional information on maintaining acclimatization:

- It can often be regained in 2 to 3 days upon returning to a hot job.
- It appears to be better maintained by those who are physically fit.
- Seasonal shifts in temperatures may result in difficulties.
- Working in hot, humid environments provides adaptive benefits which also apply in hot, desert environments and vice versa.
- Air conditioning will not affect acclimatization.

### **3. Must we include our Heat Illness Procedures with our HIPP or can we have it separate?**

The Heat Illness Procedures can be in either your HIPP or as a separate document. Whichever you find is most effective at your organization is the right choice for you.

### **4. Are any of the pamphlets trainings materials in Spanish?**

Many of our heat illness prevention bulletins are in Spanish. You can find them in the same location as the resources we provided for this class.

### **5. Are Employees who are pregnant more likely to have adverse reaction to heat exposure in say a food service position?**

Yes. Pregnancy is a condition that makes individuals more susceptible to heat illness. The combination of extra weight, more exertion, and impact on hormones can affect the body's ability to cool. If workers are pregnant, the supervisor should evaluate them for the beginning signs of heat illness more often. Make their doctor aware of the workplace environment so that they can recommend leave when appropriate.

### **6. What about pre-menopausal women? Are they a concern?**

Heat sensitivity can be affected by a lot of things, and a number of people are subject to this condition. The causes of it can range from normal life changes like perimenopause and menopause to serious illnesses like thyroid disorders that produce too much thyroid hormone. Other things may result in this condition too, including ingestion of certain substances. Some people considered heat sensitive who have chronic diseases may feel significantly worse as heat climbs.

## 7. Tips for HVAC companies?

- Be aware that roof work intensifies the heat — consider portable shade over HVAC work when possible.
- Bring fans to get air movement during rest periods. Air conditions are impossible for new construction, but a small fan in the shade can make the rest area cooler. Adding a mister to create a swamp cooler can magnify this affect.
- Make sure to move work to early morning whenever possible. Outdoor work in sun first, then indoor work if possible.

## 8. How much cooler should the resting environment be before I can use the Time Weighted Average approach?

There is no set temperature other than it being cooler than the work area. The challenge is in the averaging. If the area is not significantly cooler than the work environment, the time weighted averaging will only have a minor impact of exposure and will have little impact on work/rest recommendations. The greater the temperature change, the bigger impact on the work/rest recommendations.

## 9. If folks are wearing PPE to provide cooling, does that affect the need for rest time?

PPE can affect the rest time by allowing the worker to be “cooler” than the environment. How much it impact the rest time need is dependent on the specific situation.

## 10. How do I know when acclimatization is successful?

This is a difficult question due to the number of personnel and environmental factors that affect acclimatization. There have been several studies on scclimatization. Almost all approaches are medical, however, the research says it takes 7–14 days.

One study by Lawrence Armstrong provides some insights into Heat acclimatization reducing muscle glycogen utilization and post-exercise muscle lactate concentration which can be measured to evaluate effectiveness of acclimatization.

Armstrong, L.E. (1998). Heat acclimatization. In: Encyclopedia of Sports Medicine and Science, T.D.Fahey (Editor). Internet Society for Sport Science: <http://sportsoci.org>. 10 March 1998