

When Temperatures Rise So Do Heat Related Illnesses and Injuries

Your workers who are exposed to extreme heat or who work in hot environments may be at risk of *Heat Stress*. Exposure to extreme heat can result in occupational illnesses and injuries. Heat Stress can result in heat stroke, heat exhaustion, heat cramps, or heat rashes. Heat can also increase other risks to your employees – especially your maintenance teams – as it may result in sweaty palms, fogged-up safety glasses and dizziness. Burns may also occur as a result of accidental contact with hot surfaces or steam.

People suffer heat-related illnesses when their bodies are unable to compensate and properly cool themselves. The body normally cools itself by sweating, but under some conditions sweating just isn't enough. In some cases, a person's body temperature rises rapidly. Very high body temperatures may damage the brain or other vital organs. When temperatures hover 10 degrees or more above the average high temperature for the region coupled with humid or muggy conditions this qualifies as an extreme heat condition and should be monitored.

Heat Index Chart

Temperature vs. Relative Humidity

	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
115	111	115	120	127	135	143	151								
110	105	108	112	117	123	130	137	143	151						
105	100	102	105	109	113	118	123	129	135	142	149				
100	95	97	99	101	104	107	110	115	120	126	132	136	144		
95	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136
90	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113
85	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97
80	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86
75	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78

How to read the chart: find the temperature on the left hand side, then move to the right until you find the column for the approximate relative humidity. That number will be the temperature that it will "feel" like. *Example: A temperature of 95 and relative humidity of 50% will "feel" like 107 degrees. Add up to 15 degrees if in the direct sun.*¹

Prevention of Heat Stress in your workers is important. You should provide training to your staff so they understand what Heat Stress is, how it affects their health and safety and how it can be prevented.

¹ National Weather Service – Detroit/Pontiac, Michigan Weather Forecast Office – May 2009.

What Is Heat Stroke?

Heat Stroke is the most serious heat-related disorder. It occurs when the body is unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails and the body is unable to cool down. When Heat Stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10-15 minutes. Heat Stroke can cause death or permanent disability if emergency treatment is not given.

Symptoms

- Hot, dry skin (no sweating)
- Hallucinations
- Chills
- Throbbing headache
- High body temperature
- Confusion/Dizziness
- Slurred Speech

First Aid

- Call 911 and notify your supervisor
- Move the worker to a cool area
- Cool the worker by soaking their clothes with water; spraying, sponging or showering them with water; fanning their body

What Is Heat Exhaustion?

Heat Exhaustion is the body's response to an excessive loss of water and salt, usually through excessive sweating. Workers most prone to heat exhaustion are those that are elderly, have high blood pressure and *those working in a hot environment* – in particular, your maintenance teams.

Symptoms

- Heavy sweating
- Extreme weakness/Fatigue
- Dizziness/Confusion
- Nausea
- Clammy/Moist skin
- Pale/Flushed complexion
- Muscle cramps
- Slightly elevated body temperature
- Fast & Shallow breathing

First Aid

- Have them rest in a cool, shaded or air-conditioned area
- Have them drink plenty of water or other cool non-alcoholic beverages
- Have them take a cool shower, bath or sponge bath

What Is Heat Syncope?

Heat Syncope is a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Factors that may contribute to heat syncope include dehydration and your workers not being accustomed to the conditions.

Symptoms

- Light-headedness
- Dizziness
- Fainting

First Aid

- Sit or lie down in a cool place if you begin to feel symptoms
- Slowly drink water, clear juice or a sports beverage

What Are Heat Cramps?

Heat Cramps usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture levels. Low salt levels in muscles cause painful cramps. A great example of this condition was on cable T.V. with a National League pitcher actually falling down on the mound in obvious pain with leg cramps.

Symptoms

- Muscle pain or spasm
Usually in the abdomen, Arms or legs

First Aid

- Stop all activity and sit in a cool place
- Drink clear juice/sports beverage
- Do not return to strenuous work for a few hours after the cramps subside because further exertion may lead to Heat Stroke or Heat Exhaustion
- Seek medical attention if: The worker has heart problems; the worker is on a low sodium diet; the cramps do not subside within one hour

What Is Heat Rash?

Heat Rash is a skin irritation caused by excessive sweating during hot, humid weather.

Symptoms

- Heat rash looks like a red cluster of pimples or small blisters
- It is more likely to occur on the neck, upper chest, in the groin, under the breasts and in elbow creases

First Aid

- Try to work in a cooler, less humid environment when possible
- Keep the affected area dry
- Dusting powder may be used to increase comfort

Recommendations for Your Employers/Workers

1. Schedule maintenance and repair jobs in hot areas for cooler months or during the cooler parts of the day. Wear light-colored, loose fitting, breathable clothing such as cotton.
2. Acclimatize workers by exposing them for progressively longer periods to hot work environments.
3. Reduce the physical demands of workers.
4. Use relief workers or assign extra workers for physically demanding jobs.
5. Provide cool water or liquids to workers - Avoid drinks with caffeine, alcohol or large amounts of sugar.
6. Provide rest periods with water breaks.
7. Provide cool areas for use during break periods.
8. Monitor workers who are known to be at risk for Heat Stress.
9. Provide Heat Stress Training that includes information about:
 - Worker Risk
 - Prevention
 - Symptoms
 - The importance of monitoring yourself and co-workers for symptoms
 - Treatment
 - Personal protective equipment

In summer or winter, the best warmth a worker enjoys is knowing that you, their employer, cares about them. Provide them these tips for their health and safety.

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