ACGIH Guidelines

	Work Load (WBGT °F)		
Work/rest regimen	**Light**	**Moderate**	**Heavy**
Continuous work	86°	80°	77°
75% work, 25% rest, each hour	87°	82°	78°
50% work, 50% rest, each hour	89°	85°	82°
25% work, 75% rest, each hour	90°	88°	86°

WBGT Correction Factors in °C		
Clothing Type	Clo* value	WBGT correction
Summer lightweight working clothes	0.6	0
Cotton coveralls	1.0	-2
Winter work clothing	1.4	-4
Water barrier, permeable	1.2	-6

*Clo: insulation value of clothing. One clo = 5.55kcal/m2/hr of heat exchange by radiation and convection for each degree C difference in temp between the skin and the adjusted dry bulb temp.

American Conference of Governmental Industrial Hygienists (ACGIH). 1992. 1992-1993 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. Cincinnati: American Conference of Governmental Industrial Hygienists.

Heat Illness and What to Do

Heat Cramps: Painful, involuntary muscle spasms (usually occurring in the legs) associated with exercise in the heat when athletes have been sweating profusely.

What to do: Stop activity and rest in cool area. Rehydrate.

Heat Exhaustion: Inability to sustain exercise in the heat due to cardiovascular strain. Signs and symptoms include: fatigue, weakness, nausea, light-headedness, headache, heavy sweating, dehydration, decreased muscle coordination, and chills. Improvement is seen usually within 10-15 minutes.

What to do: Stop activity and rest in cool area. Rehydrate. Remove excess clothing and cool the athlete with ice-wet towels. If exertional heat stroke is suspected, take rectal temperature for differential diagnosis.

Exertional Heat Stroke: Occurs when (1) the rectal temperature is ≥104°F and (2) there are signs/symptoms of central nervous system dysfunction. Signs and symptoms include: high body temperature (≥104°F), irrational behavior, emotional instability, confusion, nausea, diarrhea, loss of muscle coordination, collapse, dehydration, rapid pulse, low blood pressure, heavy sweating. **This is a medical emergency.**

What to do: Stop activity and aggressively cool the patient using cold water tub. Activate emergency medical service, but always cool first and transport second. Remove excess clothes. Continuously monitor the rectal temperature until it is cooled down to 102°F.

Information provided by the Korey Stringer Institute http://ksi.uconn.edu

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!! WARNING!!

These WBGT Reference Guidelines are summarized from published papers, policies, and position statements relating to preventing heat injury. These guidelines provide a reference as to danger zones but do not constitute or take the place of medical advice.

The Kestrel Heat Stress Tracker is an environmental meter, not a medical device, and must be employed correctly according to these instructions to ensure accurate readings. Always let the instrument equilibrate to the environment you are in.

These guidelines, and your Kestrel Heat Stress Tracker, must be employed with care and good judgment. Remember that certain individuals are more susceptible to exertional heat stress and may suffer injury before a Zone Threshold is reached. When in doubt, set your Zone Thresholds lower, reduce work time, and increase rest, hydration and access to shade. Have and practice a heat injury emergency action plan, ensure ready access to cooling equipment such as ice baths and chilled sheets, and always intervene when any individual appears disoriented, weak or ill.

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Heat Stress Emergency Action Plan

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