




TB Med 507


Heat Category	WBGT ^{6,7} Index (°F)	Easy Work (250 W)	Moderate Work (425 W)	Hard Work (600 W)
1	78-81.9	No Limit on Work, ½ qt water/hour	No limit on work, ¾ qt water/hour	40/20 Work/Rest ratio, ¾ qt water/hour
2 (green)	82-84.9	No limit on work, ½ qt water/hour	50/10 work/rest ratio, ¾ qt water/hour	30/30 min work/rest ratio, 1 qt water/hour
3 (yellow)	85-87.9	No limit on work, ¾ qt water/hour	40/20 Work/Rest ratio, ¾ qt water/hour	30/30 min work/rest ratio, 1 qt water/hour
4 (red)	88-89.9	No limit on work, ¾ qt water/hour	30/30 work/rest ratio, ¾ qt water/hour	20/40 work/rest ratio, 1 qt water/hour
5 (black)	>90	50/10 work/rest ratio, 1 qt water/hour	20/40 work/rest ratio, 1 qt water/hour	10/50 work/rest ratio, 1 qt water/hour


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 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 $\geq 104^{\circ}\text{F}$ and (2) there are signs/symptoms of central nervous system dysfunction. Signs and symptoms include: high body temperature ($\geq 104^{\circ}\text{F}$), 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 and ice tub. Activate emergency medical service, but always cool first and transport second. Remove excess clothes. Continuously monitor the rectal temperature until it is down to 102°F .

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



TB Med 507 Notes

- » The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified heat category. Fluid needs can vary based on individual differences ($\pm 1/4$ qt/hr) and exposure to full sun or full shade ($\pm 1/4$ qt/hr).
- » No limit: No limit equals no limit to work time per hour (up to 4 continuous hours).
- » Rest means minimal physical activity (sitting or standing), accomplished in shade if possible.
- » CAUTION: Hourly fluid intake should not exceed 1 ½ qt.
- » Daily fluid intake should not exceed 12 qts.
- » If wearing body armor, add 5° F to WBGT in humid climates.
- » If wearing NBC clothing (mission-oriented protective posture (MOPP 4)), add 10° F to WBGT index for easy work, and 20°F to WBGT for moderate and hard work.
- » Descriptions of Easy/Moderate/Hard Work can be found in the full guideline, Departments of The Army, The Navy, and The Air Force, Occupational and Environmental Health: Prevention, Treatment, and Control of Heat Injury. Technical Bulletin MED No. 507. 1980: 1-21, Table 3-1.

Departments of The Army, The Navy, and The Air Force, Occupational and Environmental Health: Prevention, Treatment, and Control of Heat Injury. Technical Bulletin MED No. 507. 1980: 1-21.

!! 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.

