

Heat Category	WBGT Index, °F	Easy Work		Moderate Work		Hard Work	
		Work/Rest Intake (qt/h)	%	Work/Rest Intake (qt/h)	%	Work/Rest Intake (qt/h)	%
1	78° - 81.9°	NL	%	NL	%	NL	%
2 (GREEN)	82° - 84.9°	NL	%	50/10 min	%	30/30 min	1
3 (YELLOW)	85° - 87.9°	NL	%	40/20 min	%	30/30 min	1
4 (RED)	88° - 89.9°	NL	%	30/30 min	%	20/40 min	1
5 (BLACK)	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

Fluid Replacement and Work/Rest Guide

Easy Work = Walking hard surface < 2.5 mph < 30# load, Weapon maintenance, Marksmanship training
Moderate Work = Patrolling, Walking sand < 2.5 mph no load, Callisthenics
Hard Work = Walking sand < 2.5 mph w/load, Field assaults

- 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 (± ¼ qt/h) and exposure to full sun or full shade (± ¼ qt/h).
- **NL** = no limit to work time per hour.
- **Rest** means minimal physical activity (sitting or standing), accomplished in shade if possible.
- If wearing NBC clothing (MOPP 4) add **10°F** to WBGT index for easy work, and **20°F** to WBGT index for moderate and hard work.
- If wearing NBC clothing (MOPP 4) add **10°F** to WBGT index for easy work, and **20°F** to WBGT index for moderate and hard work.
- If wearing body armor add **5°F** to WBGT in humid climates.
- **CAUTION: Hourly fluid intake should not exceed 1½ quarts.**
- **Daily fluid intake should not exceed 12 quarts.**

High Risk for Heat Illness:

- **Not acclimatized** to heat (need 10-14 days to get trainees adequately acclimated).
- Exposure to cumulative days (2-3 days) of any of the following:
 - Increased heat exposure
 - Increased exertional level
 - Lack of quality sleep
- Poor fitness (Run 2 miles > 16 minutes).
- Overweight.
- Minor illness (cold symptoms, sore throat, low grade fever, nausea, vomiting).
- Taking medications (either prescribed or over counter)/supplements/dietary aids.

Example:

- Allergy or cold remedies
- Ephedra supplement
- Use of Alcohol in the last 24 hours.
- Prior history of heat illness (any heat stroke, or >2 episodes of heat exhaustion).
- Skin disorders such as heat rash and sunburn which prevent effective sweating.
- Age >40 years.

HIP Pocket Guide

(Heat Injury Prevention Guide)

- **Hazards**
- **Individual Risk Factors**
- **Fluid Replacement and Work/Rest Guide**
- **Heat Injury Controls**
- **Warning Signs and Symptoms of Heat Stress and Illness**

Hazards:

- **H**igh heat category - measure WBGT over 75°F.
- **E**xertional level of training, especially on several sequential days.
- **A**cclimatization (and other individual risk factors - See reverse side).
- **T**ime (length of heat exposure, especially sequential days, and recovery time allowed).

Heat Injury Controls:



Decision to accept risk is made at the appropriate level

- Made in accordance with appropriate MACOM regulation.



Identified controls are in place

- Update WBGT hourly when ambient temperature is $\geq 75^\circ\text{F}$.
- Adhere to work/rest cycle in high heat categories. Rest in shade.
- For tasks requiring continuous effort, adhere to guideline and allow several hours of rest afterwards.
- Training event incorporates good prior planning.



Monitor and enforce hydration standard

- Encourage frequent drinking, but not to exceed 1 ½ quarts per hour or 12 quarts per day. Make water more palatable, if possible, by cooling.
- Do not allow soldier or trainee to empty canteens to lighten load (consider imposing a penalty in time events).
- Ensure soldiers are well hydrated before training. Ask about urine; urine is clear if well hydrated.
- Check Riley (water) Card, Ogden Cord or other personal water consumption monitoring systems frequently.



Monitor and enforce eating of meals

- Ensure all meals are eaten during the meal break.
- Ensure adequate time to eat and drink meals.
- Table salt may be added to food when the heat category is high. Salt tablets are not recommended.



Execute random checks

- Spot checks by Cadre, Senior NCO's, and Drill Instructors.
- Enforce battle buddy checks — need to be aware of each other's eating, drinking and frequency of urination.
- Plan placement of leaders to observe and react to heat injuries in dispersed training.



Follow clothing recommendations

- Heat category 1-2: No restrictions.
- Heat category 3: Unblouse trouser legs, unbuckle web belt.
- Heat category 4-5:
 - Unblouse trouser legs, unbuckle web belt.
 - Remove t-shirt from under BDU top or remove BDU top down to t-shirt (depends whether biting insects are present).
 - Remove helmets unless there are specific safety reasons to keep them on (e.g. range)
- MOPP 4: Add 10°F to WBGT index for easy work, and 20°F to WBGT index for moderate and hard work.
- Body Armor: Add 5°F to WBGT index.

Warning Signs and Symptoms of Heat Stress and Illness

*With **any** of the below symptoms or signs, immediately call for medical evaluation by a 91W (Medic). If 91W is not immediately available, call for Medevac or ambulance.*

Indications of Possible Heat Casualty

<p>MORE COMMON SIGNS/SYMPTOMS</p> <ul style="list-style-type: none"> Dizziness Headache Nausea Unsteady walk Weakness or fatigue Muscle cramps 	<p>IMMEDIATE ACTIONS</p> <ul style="list-style-type: none"> Remove from training Allow casualty to rest in shade Loosen clothing Take sips of water While doing the above, call for a Medic to evaluate the soldier (Medic will monitor temperature and check for mental confusion) <p style="color: red; font-weight: bold;">If no Medic is available call for ambulance or Medevac</p>
<p>SERIOUS SIGNS/SYMPTOMS</p> <ul style="list-style-type: none"> Hot body, high temperature Confusion, agitation (Mental Status Assessment) Vomiting Involuntary bowel movement Convulsions Weak or rapid pulse Unresponsiveness, coma 	<p style="color: red; font-weight: bold;">Immediately call Medevac or ambulance for emergent transport while doing the following:</p> <ul style="list-style-type: none"> Lay person down in shade with feet elevated until Medevac or ambulance arrives Undress as much as possible Aggressively apply ice packs or ice sheets Pour cold water over person and fan Give <u>sips</u> of water while awaiting ambulance (if conscious) Monitor airway and breathing until ambulance or Medevac arrive

Mental Status Assessment

An important sign that the soldier is in a **serious life-threatening** condition is the presence of mental confusion (with or without increased temperature). Anyone can do a mental status assessment asking some simple questions.

Call for emergency Medevac or ambulance if any of the following exist:

- **What is your name?** (Does not know their name.)
- **What month is it? What year is it?** (Does not know the month or year.)
- **Where are we/you?** (Is not aware of location or surroundings)
- **What were you doing before you became ill?** (Does not know the events that led to the present situation.)

Indications of Possible Water Intoxication (Over Hydration)

Signs and Symptoms: Confusion, Weakness, and Vomiting

What to do:

Ask these questions to the soldier or battle buddy:

- Has soldier been eating? Check rucksack for # of MRE's left.
- Has soldier been drinking a lot? (suspect water intoxication if soldier has been drinking constantly)
- How often has soldier urinated? (frequent urination seen with water intoxication; infrequent urination with heat illness)
- What color is urine (clear urine may indicate over hydration)

If soldier has been eating, drinking and urinating a lot, yet has these symptoms, immediately call Medevac or ambulance for emergency transport.



For additional copies contact: U.S. Army Center for Health Promotion and Preventive Medicine (800) 222-9698.
Also see <http://chppm-www.apgea.army.mil/heat> for electronic versions of this document and other heat injury prevention resources.