DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY EUROPE REGIONAL MEDICAL COMMAND
CMR 442
APO AE 09042

MCEU-S

20 JUN 2003

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Heat Injury Prevention Guidance

1. References.

a. US Army Safety Center Memorandum, 7 Apr 03, Subject: Prevention of Heat Injuries.
b. AE PAM 385-15, Leaders Operational Accident Prevention Guide, May 03.
c. TB MED 507, Prevention, Training and Control of Heat Injury, Mar 03.
d. FM 21-10, Field Hygiene and Sanitation, Jun 00.
e. FM 21-1, Foot Marches, Jun 90.
f. FM 21-10W/CHG 1, Physical Fitness Training, Oct 98.
g. FM 4-10.17, Preventive Medicine Services, Aug 02.
h. FM 4-25.12, Unit Field Sanitation Team, Jan 02.
i. "Countermeasure" US Army Safety Center Bulletin, Apr 03.

2. The heat injury season has begun and our soldiers will be exposed to environmental conditions that can cause heat cramps, exhaustion and stroke. Heat injuries are preventable in most cases when soldiers are properly trained, first line supervisors get actively involved, and there is command emphasis to promote prevention efforts. I hold commanders responsible for ensuring their soldiers receive proper heat injury prevention education and training.

3. The four most common variables causing heat injury are: (1) the climate (temperature and humidity), (2) the intensity of the activity, and (3) the individual risk factors of the soldier, especially the level of fitness; and (4) improper re-hydration. Our soldiers experience heat injury when fluids are not adequately replenished.

4. I want commanders to ensure the following actions are taken to prevent heat injuries:

a. Each unit must measure the heat index at their training site using the Wet Bulb Globe Temperature (WBGT) that is part of their Field Sanitation Team equipment package.
b. Manage water intake and modify work rest cycles according to the Work/Rest/Water Consumption Table.
c. Modify the duty uniform as appropriate for the activity.
d. Conduct pre-planning events for rigorous training events that include warning soldiers against the use of performance enhancing supplements or medications.

e. Refer soldiers with acute/chronic medical problems, those taking prescription medications, dietary supplements, and those with a history of previous heat injury for medical screening.

f. Include these topics during safety briefings prior to training events.

5. Utilize your Field Sanitation Teams and Preventive Medicine personnel to ensure training is provided. The following website provides additional information on Heat Injury Prevention topics: http://chppm-www.apgea.army.mil/heat/. Refer to the attached USAREUR Safety Alert containing the Work/Rest/Water Consumption Table.

6. As part of Force Health Protection, it is absolutely incumbent upon us as leaders to ensure our soldiers receive heat injury awareness classes. Be pro-active leaders in ensuring the health of our soldiers as they continue to serve on point for the nation.

ELDER GRANGER
Brigadier General, USA
Commanding

DISTRIBUTION:
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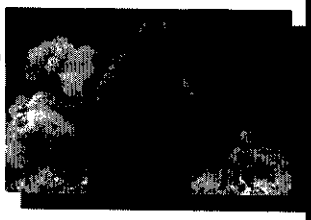
SAFETY ALERT

Heat Injury Prevention

12 May 2003



Risk Management:

1. Determine Heat Category (See Table).
2. Enforce appropriate water intake and work/rest cycles (See Table).
3. Modify intensity of activity and uniform to decrease risk.
4. Plan events involving high performance training.
5. Allow train-up conditioning and time for fluid replenishment, rest and recovery.

Work/Rest/Water Consumption Table

Applies to average sized, heat acclimated soldier wearing BDU, hot weather

Easy Work	Moderate Work	Hard Work
• Weapon Maintenance • Walking Hard Surface at 2.5 mph, < 30 lb Load • Marksmanship Training • Drill and Ceremony	• Walking Loose Sand at 2.5 mph, No Load • Walking Hard Surface at 3.5 mph, < 40 lb Load • Calisthenics • Patrolling • Individual Movement Techniques, i.e. Low Crawl, High Crawl, etc.	• Walking Hard Surface at 3.5 mph, > 40 lb Load • Walking Loose Sand at 2.5 mph with Load • Field Assaults

Heat Category	WBGT Index, F°	Easy Work		Moderate Work		Hard Work	
		Work/Rest	Water Intake (Qt/H)	Work/Rest	Water Intake (Qt/H)	Work/Rest	Water Intake (Qt/H)
1	78° - 81.9°	NL	½	NL	¾	40/20 min	¾
[redacted]							
3 (YELLOW)	85° - 87.9°	NL	¾	40/20 min	¾	30/30 min	1
[redacted]							
5 (BLACK)	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

- 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.
- ***CAUTION: Hourly fluid intake should not exceed 1½ quarts.***

  Daily fluid intake should not exceed 12 quarts.
- If wearing body armor add 8°F to WBGT in humid climates.
- If wearing NBC clothing (MOPP 4) add 10°F to WBGT.

Precautions:

- Soldiers need time to adjust. Full acclimatization can take up to 2 weeks.
- Gradually increasing work in heat allows for adaptation in hot climates.
- Soldiers recovering from injury/illness or in poor condition are at higher risk.
- Dehydration can worsen over several days of heat exposure.
- Acclimatization increases water requirements. Ensure fluid intake is increased.
- Adequate hydration is essential the night prior to strenuous activities.
- Heat stress accumulates during sequential days of strenuous activities.
- Encourage soldiers to eat regular meals to replace salt. Tablets are unnecessary.
- Certain dietary supplements (e.g. Ephedera, Ma Juang) and medications (e.g. Cold and Allergy medications) increase the risk of heat injuries. Warn soldiers prior to rigorous physical training.
- Medically screen soldiers with acute or chronic medical problems, those taking prescription or over-the-counter medications or dietary supplements and those with prior history of heat injury.

REFERENCES:

http://chppm-www.apgea.army.mil/heat/

TB MED 507M PREVENTION, TRAINING AND CONTROL OF HEAT INJURY, MAR 03

FM 21-10, FIELD HYGIENE AND SANITATION, JUN 00

FM 21-1, FOOT MARCHES, JUN 90

FM 21-20W/CHG 1, PHYSCIAL FITNESS TRAINING

FM 4-10.17, PREVENTIVE MEDICINE SERVICES, AUG 02

FM 4-25.12, UNIT FIELD SANITATION TEAM, JAN 02

AE PAM 385-15LEADERS OPERATIONAL ACCIDENT PREVENTION GUIDE

COUNTERMEASURE, APR 03