



**STATE SAFETY OFFICE**  
 HEADQUARTERS, NEW YORK ARMY NATIONAL GUARD  
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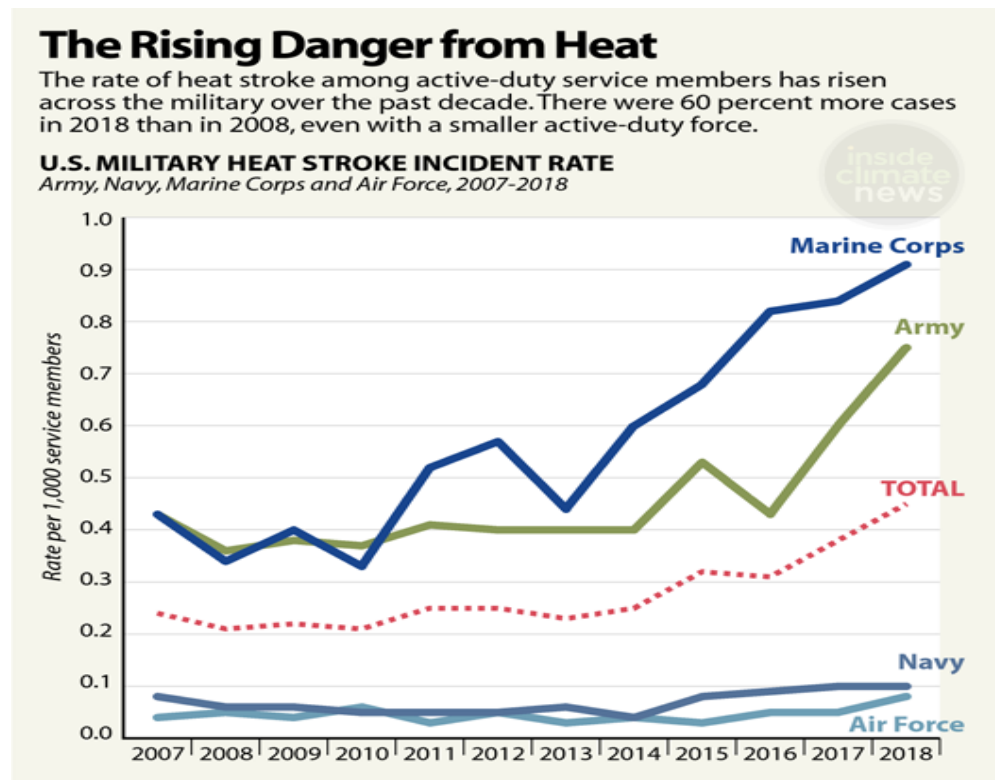


# SAFETY MESSAGE 20-07

## Heat Injury Prevention

With the summer upon us, higher temperatures and increased humidity can be an unseen hazard. Missions can suffer, vacations can be ruined, and lives can be endangered.

About 2,800 troops suffered illnesses from dehydration to heat stroke last year. That number is 50 percent higher than it was five years ago. In 2016 there were three fatalities due to heat injuries. Heat stroke is the most serious heat-related illness and can cause death or lead to permanent disability. Health impacts from heat have already cost the military as much as nearly \$1 billion from 2008-2018 in lost work, retraining and medical care.



SOURCE: Military Health System

PAUL HORN / InsideClimate News

Prevention starts with training. Educating all Soldiers on prevention, recognition, and treatment of heat illness is critical. This applies to all members, to include civilians. Observing abnormal behavior during training could lead to the prevention of a serious condition becoming worse.

Some abnormal behaviors are dizziness, vomiting, headache, weakness, muscle cramps, and unsteady movement. Factors that might increase the risk of some Soldiers are: wearing body armor, failing to hydrate adequately, use of energy/caffeinated drinks, poor physical fitness, cumulative exposure to heat, a pre-existing illness, prescription drug use, age, and inadequate diet.

Steps to take to reduce the risk of heat injury are: use of the Wet Bulb Globe Thermometer (WBGT) when ambient temperatures are above 75 degrees Fahrenheit, follow an effective work/rest cycle, utilize shade when resting, follow water consumption recommendations, prevent over-hydration (hyponatremia), alter training to reduce risk when possible, and monitor urine color. **Remember! Thirst is NOT an effective indicator of hydration level!**

## Work/Rest Times and Fluid Replacement Guide

Heat Category	WBGT Index (°F)	Easy Work Walking on hard surface, 2.5 mph, <30 lb. load; weapon maintenance, marksmanship training.		Moderate Work Patrolling, walking in sand, 2.5 mph, no load; calisthenics.		Hard Work Walking in sand, 2.5 mph, with load; field assaults.	
		Work/Rest (minutes)	Fluid Intake (quarts/hour)	Work/Rest (minutes)	Fluid Intake (quarts/hour)	Work/Rest (minutes)	Fluid Intake (quarts/hour)
1	78° - 81.9°	NL	½	NL	¾	40/20 (70)*	¾ (1)*
2 (GREEN)	82° - 84.9°	NL	½	50/10 (150)*	¾ (1)*	30/30 (65)*	1 (1¼)*
3 (YELLOW)	85° - 87.9°	NL	¾	40/20 (100)*	¾ (1)*	30/30 (55)*	1 (1¼)*
4 (RED)	88° - 89.9°	NL	¾	30/30 (80)*	¾ (1¼)*	20/40 (50)*	1 (1¼)*
5 (BLACK)	> 90°	50/10 (180)*	1	20/40 (70)*	1 (1¼)*	10/50 (45)*	1 (1½)*

NL = No limit to work time per hour.

\*Use the amounts in parentheses for continuous work when rest breaks are not possible. Leaders should ensure several hours of rest and rehydration time after continuous work.

This guidance 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/hr) and exposure to full sun or full shade (± ¼ qt/hr). Rest means minimal physical activity (sitting or standing) in the shade if possible. Body Armor - Add 5°F to WBGT index in humid climates. NBC (MOPP 4) - Add 10°F (Easy Work) or 20°F (Moderate or Hard Work) to WBGT Index.

**CAUTION:** Hourly fluid intake should not exceed 1½ qts. Daily fluid intake should not exceed 12 qts.



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**Links to additional safety materials:**

<https://safety.army.mil/MEDIA/SeasonalSafetyCampaigns/AllSeasons.aspx>

<https://phc.amedd.army.mil/topics/discond/hipss/Pages/Heat-Related-Illness-Prevention.aspx>