

# **FIELD SANITATION TEAM CERTIFICATION COURSE**



## **LESSON 11 - PREVENTING HEAT INJURY**

**FSTCC0011-1**

## ***Lesson Objectives***

- ***Define the types of heat injury.***
- ***Select the factors that influence heat injury.***
- ***Select the measures to prevent heat injuries.***
- ***Compute the WBGT index.***

# ***Types of Heat Injury***

**Heat Edema**

**Heat Rash**

**Sunburn**

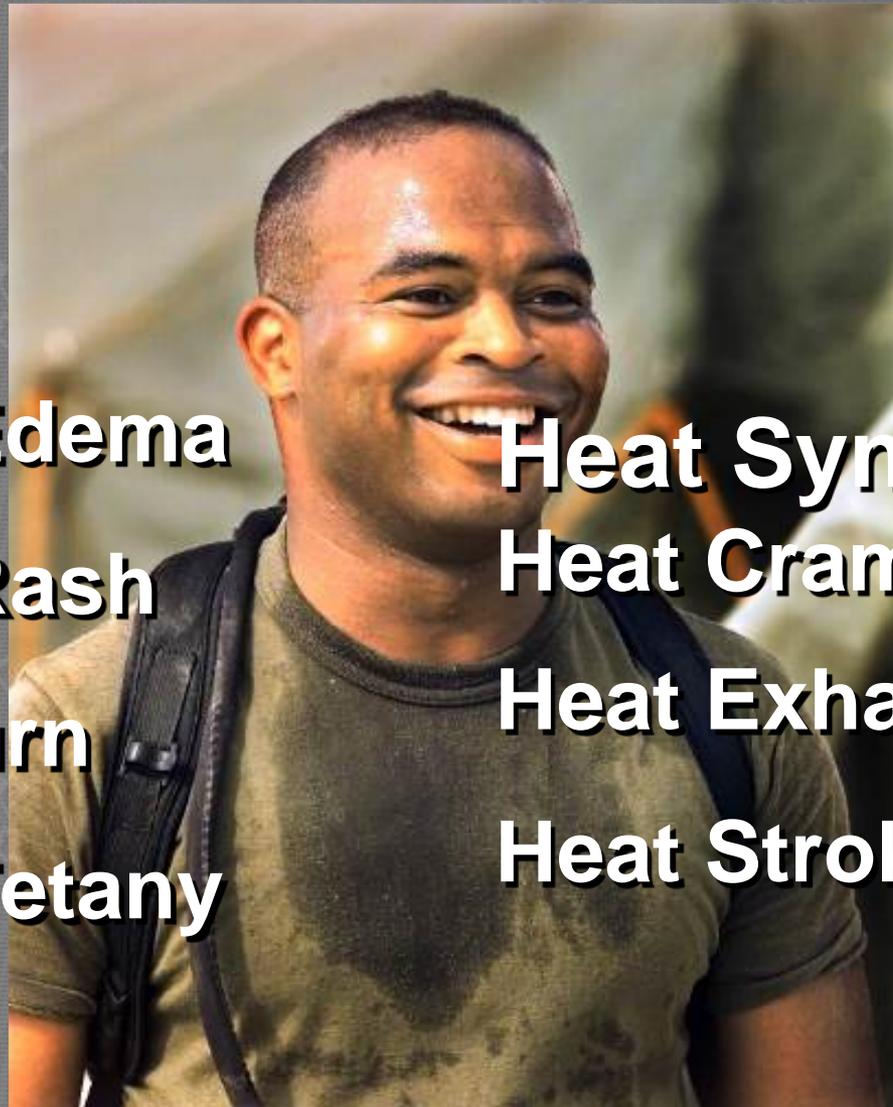
**Heat Tetany**

**Heat Syncope**

**Heat Cramps**

**Heat Exhaustion**

**Heat Stroke**



# ***Heat Edema***



***Refers to the swelling of the hands and feet associated with heat exposure.***

# Heat Rash



*It occurs usually in areas where the clothing is restrictive, and gives rise to a prickling sensation.*



# ***Sunburn and Heat Tetany***

## ***Sunburn***

***Impairs sweating over the affected skin and predisposes soldiers to heat injury.***

## ***Heat Tetany***

***Is related to the result of hyperventilation by an individual after being exposed to heat stress.***

# ***Parade Syncope***



***Temporary circulatory failure due to pooling of blood in the lower extremities when standing in a hot environment.***

# Heat Cramps



- *Usually involves the muscles of the arms, legs, and abdomen.*
- *May be accompanied by abnormal body temperature.*

# ***Heat Exhaustion***



***Heat exhaustion is the most common form of heat casualty.***

# Heat Stroke



***Heat stroke is a medical emergency!  
Treatment should start immediately.***

# ***Influencing Factors***



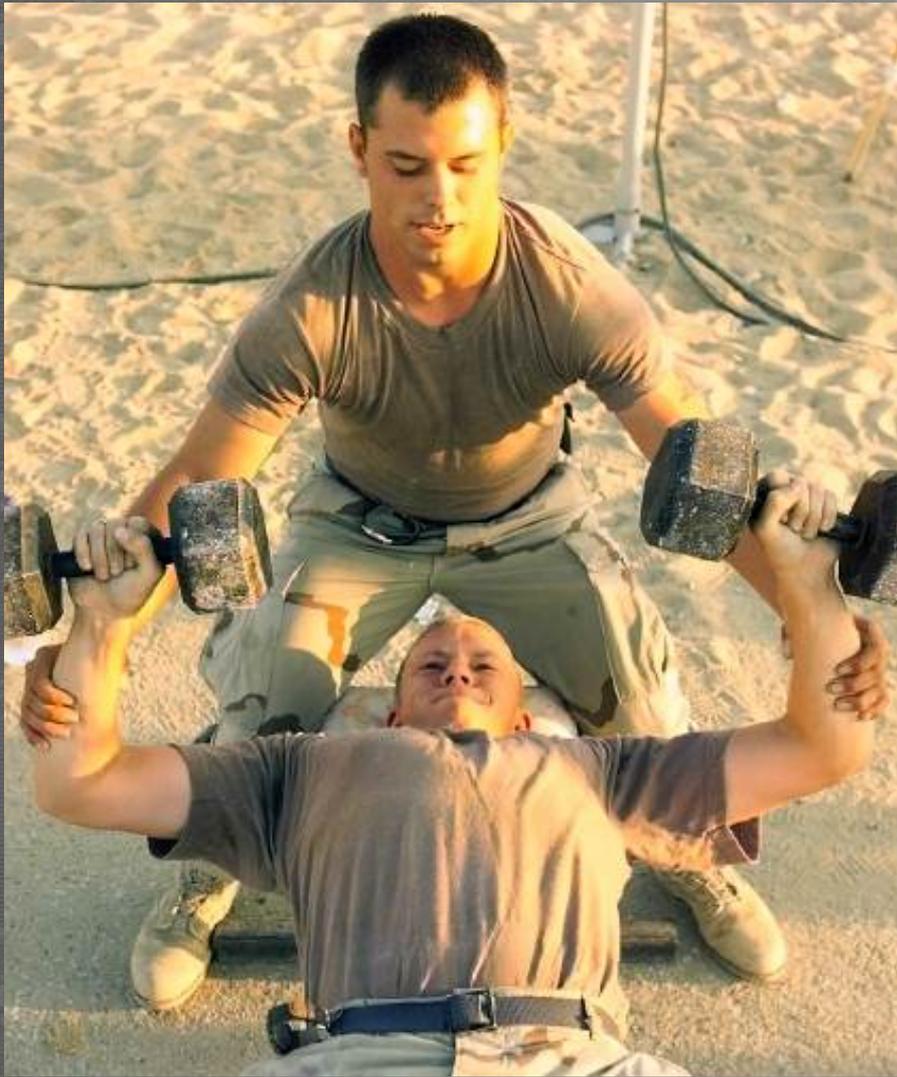
- ***Knowing the factors that influence heat injury will help you protect the soldiers in your unit.***

# Acclimatization



- *How well adapted to the heat are the soldiers in your unit?*

# ***Overweight/Out of Shape***



➤ ***Are the soldiers in your unit overweight or out of shape?***

# ***Fatigue***



- ***Have the soldiers in your unit been performing heavy work or working for long periods of time without rest?***

# Food and Alcohol



- ***Consume all components of your rations for adequate salt intake.***

# Medications



➤ ***Be aware of the dehydrating effects of some medications.***

# Clothing



- *Proper wear of the uniform is essential for adequate protection.*

# ***Water Replacement***



- ***Make sure you replace any water lost through sweating.***

## ***Water Replacement - Encourage Water Consumption***



- ***Soldiers should be given time to drink even if they don't feel thirsty.***

# Water Replacement - Know Water Needs

Table 3-1. Fluid Replacement Guidelines for Warm Weather Training (Applies to Average Acclimated Soldier wearing BDU, Hot Weather).

Heat Category	WBGT Index °F	Easy Work		Moderate Work		Hard Work	
		Work /Rest	Water Intake Qt/hr	Work /Rest	Water Intake Qt/hr	Work /Rest	Water Intake Qt/hr
1	78 - 81.9	NL	1/2	NL	3/4	40/20 min	3/4
2 (Green)	82 - 84.9	NL	1/2	50/10 min	3/4	30/30 min	1
3 (Yellow)	85 - 87.9	NL	3/4	40/20 min	3/4	30/30 min	1
4 (Red)	88 - 89.9	NL	3/4	30/30 min	3/4	20/40 min	1
5 (Black)	>90	50/10 min	1	20/40 min	1	10/50 min	1

# Sodium (Salt) Replacement



# ***Periods of Acclimatization***



- ***Allow 14 days for soldiers to get used to the heat.***

# ***Maintain Health and Vigor***



- ***Good general health will improve a soldier's ability to deal with the heat.***

# Establish Work/Rest Schedules

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# Protection from the Environment



- ***Clothing reduces exposure, but it also decreases the air circulation around the body.***

# ***Educate Leaders and Soldiers***



- ***Education should occur at all levels.***
- ***Education can be a key factor in heat injury prevention.***

# ***Purpose/Use of the WBGT***



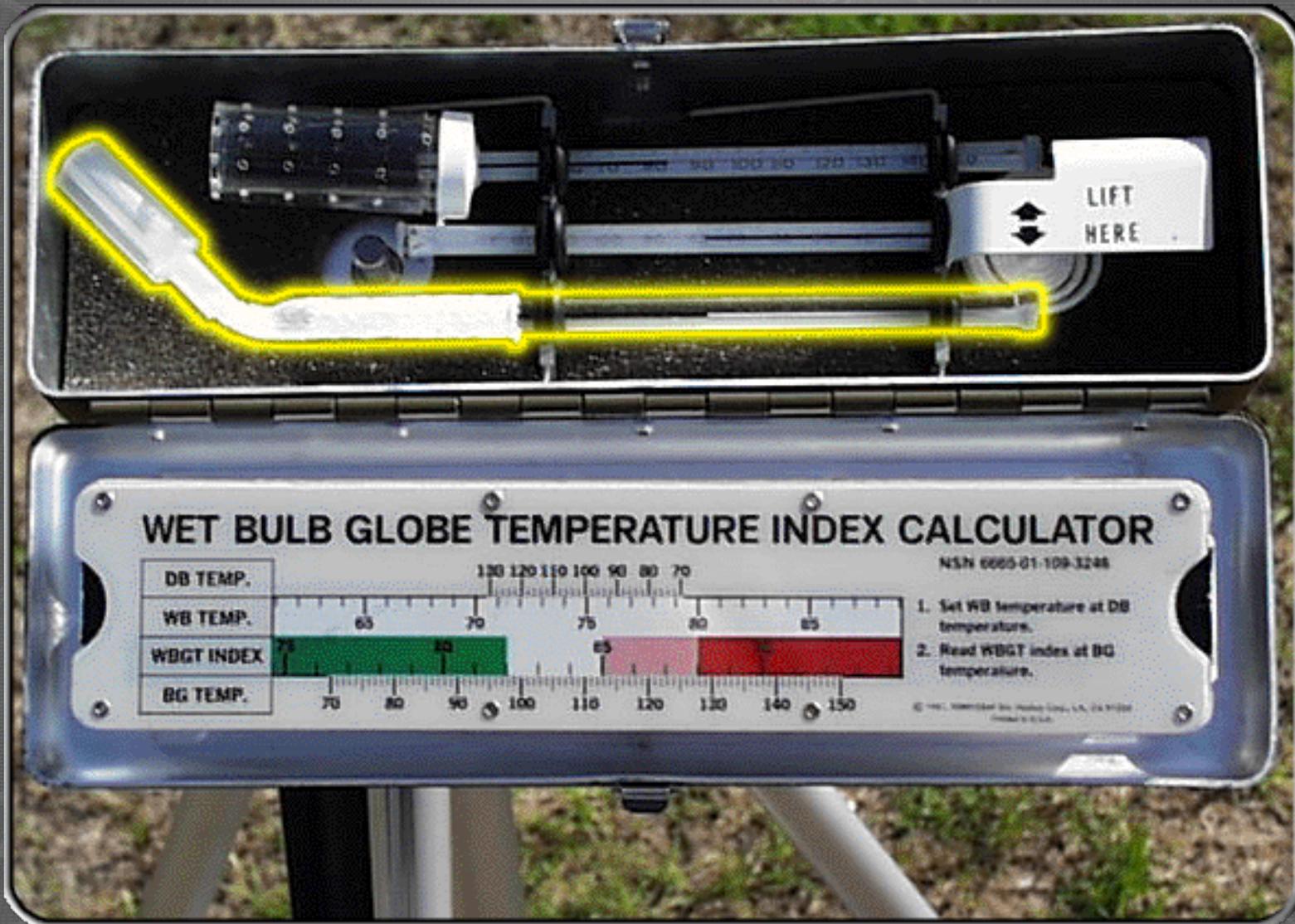
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# WBGT Kit

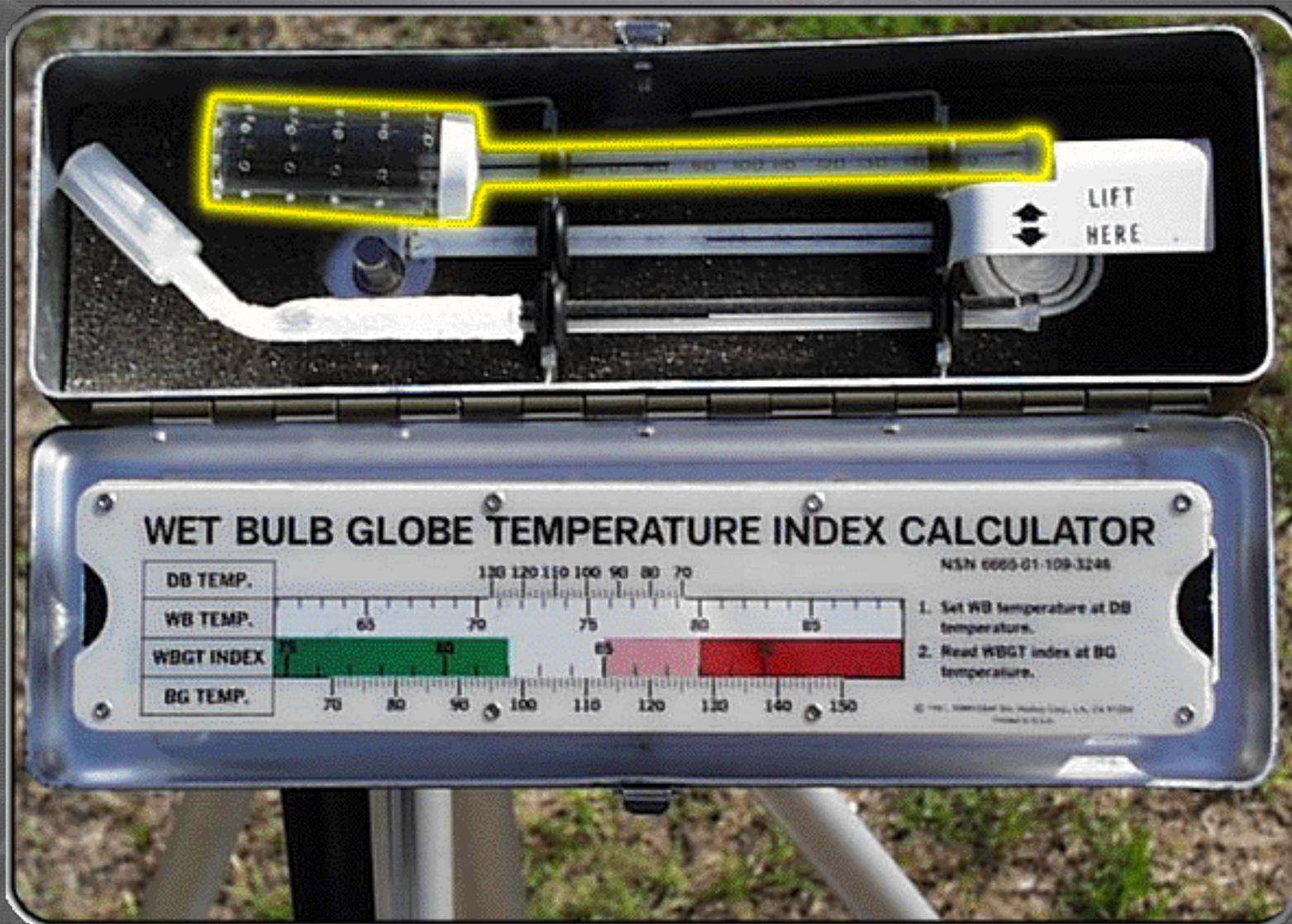


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# Wet Bulb Thermometer

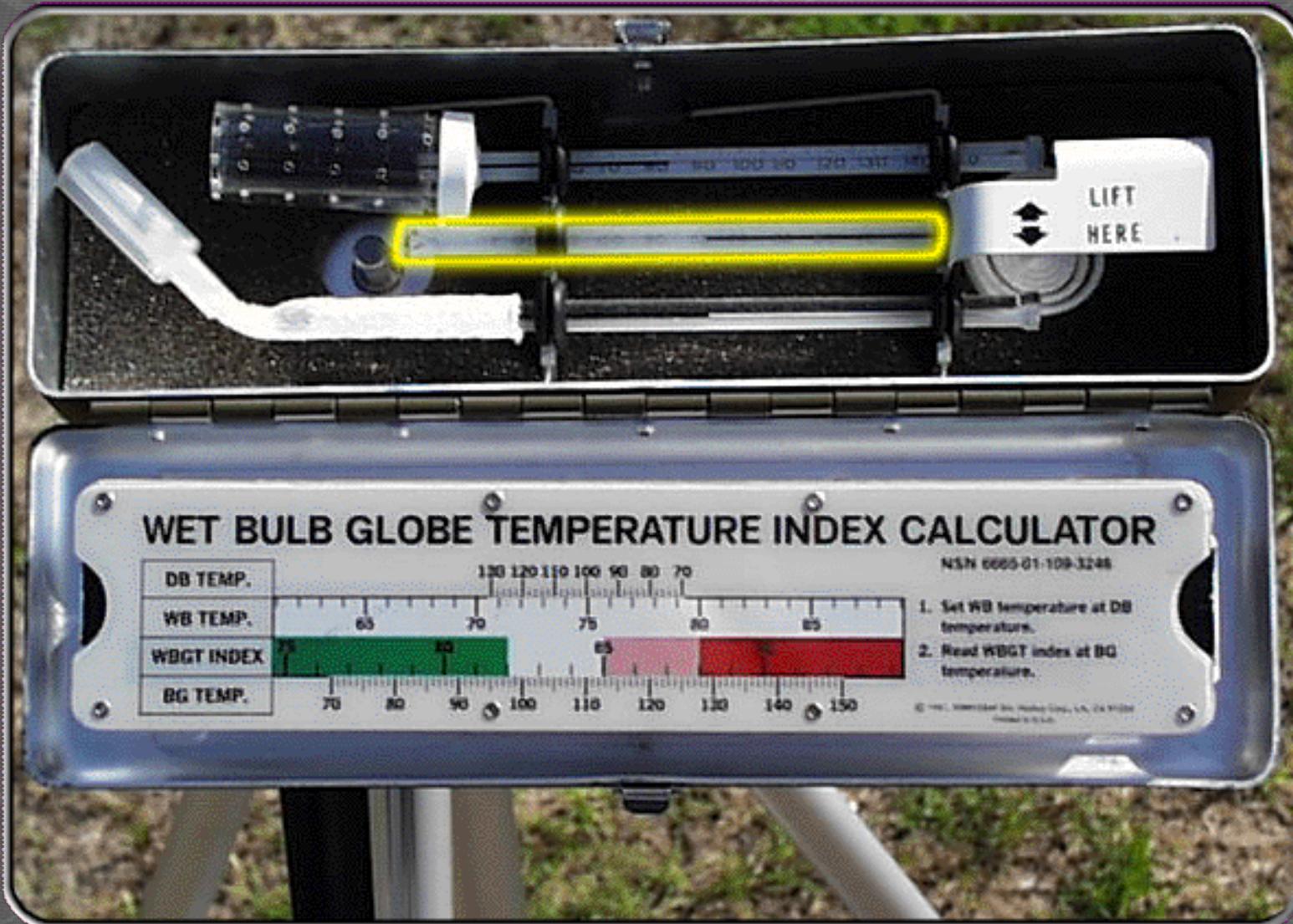


# Black Globe Thermometer



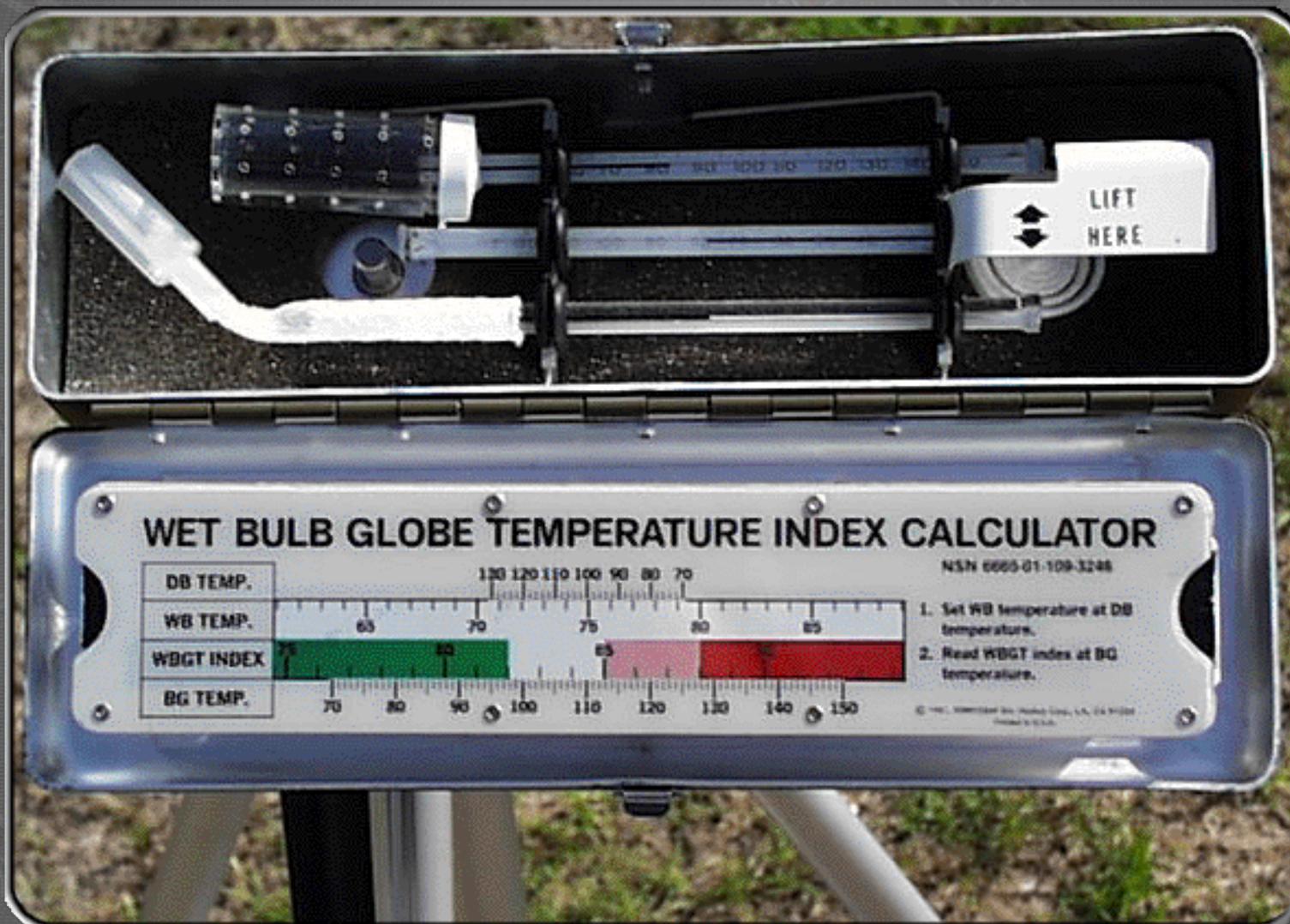
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# Dry Bulb Thermometer

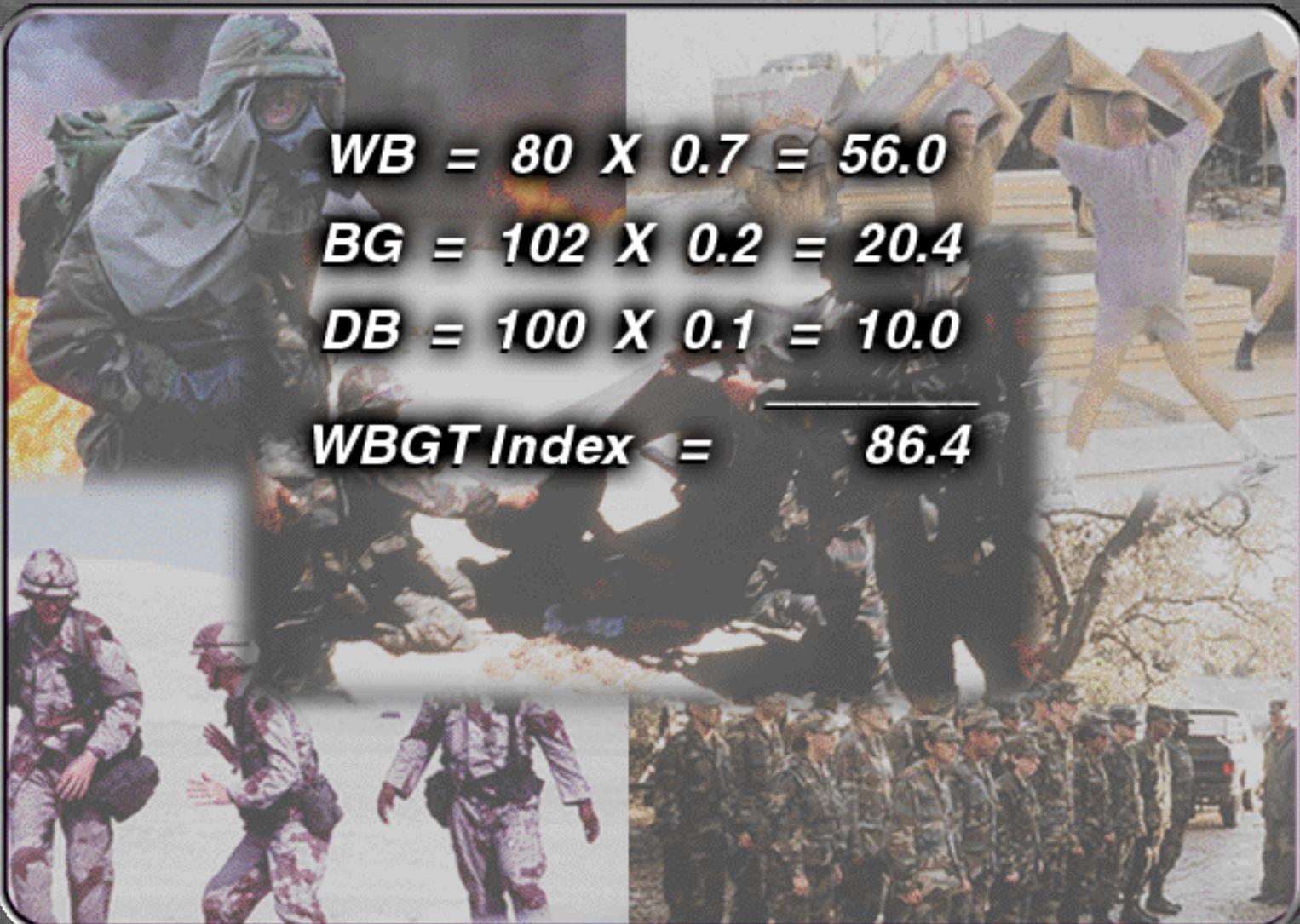


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# Demonstration - Using the WBGT Kit



# Compute the WBGT Index


$$WB = 80 \times 0.7 = 56.0$$

$$BG = 102 \times 0.2 = 20.4$$

$$DB = 100 \times 0.1 = 10.0$$

$$\text{WBGT Index} = \frac{\quad}{\quad} = 86.4$$

# ***MOPP Gear and Body Armor***



***Add 10°F for wearing MOPP gear during easy work, 20°F for moderate and hard work, and 5°F for wearing body armor to the final WBGT index.***

# ***SUMMARY***