



**RECOGNIZE TO RECOVER**

Presented By THORNE

# HEAT GUIDELINES

Heat-related illnesses, such as heat stroke and heat exhaustion can be serious and potentially life-threatening conditions. U.S. Soccer's RECOGNIZE TO RECOVER program prepared this guide for coaches, referees and players when training or playing in warmer climates, outlining recommendations for hydration breaks and participant safety during extreme temperature conditions. The information provided herein is not a substitute for medical or professional care, and you should not use the information in place of a visit, consultation or the advice of your physician or other healthcare provider. For specific questions and concerns, please consult your healthcare provider or physician

## HEAT RELATED ILLNESS

Heat-related illnesses, such as heat exhaustion and exertional heat stroke (EHS), can be serious and potentially life-threatening conditions which can be brought on or intensified by physical activity. Recognizing the signs and symptoms as early as possible allows for treatment and rapid recovery with hydration and cooling down the individual.

- Early signs and symptoms of heat illness include weakness or fatigue, headache, nausea and dizziness
- Altered mental status, such as confusion, irritability, aggressive behavior, dizziness
- Slurred speech
- Hallucinations
- Loss of balance, falling down
- Throbbing headache
- Body temperature above 104 degrees Fahrenheit
- Complaining of chills, while skin may be warm to the touch

Preventing heat related illness is the best medicine. It may become important to adjust training, match play and hydration breaks when playing in warmer climates and during extreme temperature conditions.

- Develop and implement a heat policy (heat acclimatization guidelines, activity modification guidelines based on environmental conditions and management of heat-related illness) as part of your emergency action plan (EAP)
- Frequently monitor environmental conditions using Wet Bulb Globe Temperature (WBGT) device or Heat Index and make practice modifications (e.g., increase in the number and duration of hydration breaks, shortening practice, postponing practice/competition until cooler parts of the day)
- Follow heat acclimatization guidelines (below) during preseason practices and conditioning
- Ensure appropriate hydration policies are in place with athletes having unlimited access to water during practice and competition, especially in warm climates.
- Educate staff on the signs and symptoms of heat related illness and early management
- Consider having a health care provider such as an athletic trainer onsite for all practices and competitions

### Resources to Help Ensure Safe Play in Extreme Heat

- WBGT monitor
- Hydration capabilities: water bottles, coolers, hoses, etc.
- National Weather Service website: [www.weather.gov](http://www.weather.gov)
- Phone App for WBGT - WeatherFX (iTunes or Android store)
- Ice
- Ice immersion tub or kiddie pools
- Towels and cooler
- Tent or other artificial shade if none available





# HEAT GUIDELINES

To assist coaches and athletes in this, RECOGNIZE to RECOVER created an easy reference poster. The guidelines are intended to help evaluate situations to prevent heat-related illness before it begins. The three-step Heat Guidelines include methods for evaluating danger levels and appropriate responses to those various levels

## TO USE THE GUIDELINES, FOLLOW THESE THREE STEPS:

**STEP 1** **FIND THE WET BULB GLOBE TEMPERATURE (WBGT)**  
Measure the temperature and humidity at your site. Find the estimated WBGT corresponding below.

		TEMPERATURE IN DEGREES FAHRENHEIT																																	
		68.0	69.8	71.6	73.4	75.2	77.0	78.8	80.6	82.4	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4	102.2	104.0	105.8	107.6	109.4	111.2	113.0	114.8	116.6	118.4	120.2	122.0			
RELATIVE HUMIDITY (%)	0	59.0	60.8	60.8	62.6	64.4	64.4	66.2	66.2	68.0	68.0	69.8	71.6	71.6	73.4	73.4	75.2	75.2	77.0	77.0	78.8	80.6	80.6	82.4	82.4	84.2	84.2	86.0	87.8	87.8	89.6	91.4	91.4	93.2	95.0
	5	60.8	62.6	62.6	64.4	66.2	66.2	68.0	69.8	69.8	71.6	73.4	73.4	75.2	77.0	77.0	78.8	80.6	80.6	82.4	84.2	84.2	86.0	86.0	87.8	89.6	89.6	91.4	93.2	95.0	96.8	96.8	98.6	98.6	
	10	62.6	64.4	64.4	66.2	68.0	68.0	69.8	69.8	71.6	73.4	75.2	75.2	77.0	78.8	78.8	80.6	82.4	82.4	84.2	84.2	86.0	87.8	87.8	89.6	89.6	91.4	93.2	95.0	96.8	98.6	98.6	100.4	102.2	
	15	64.4	64.4	66.2	68.0	68.0	69.8	69.8	71.6	73.4	75.2	77.0	77.0	78.8	80.6	80.6	82.4	84.2	84.2	86.0	87.8	87.8	89.6	89.6	91.4	93.2	95.0	96.8	98.6	98.6	100.4	102.2			
	20	66.2	66.2	68.0	68.0	69.8	69.8	71.6	73.4	75.2	77.0	77.0	78.8	80.6	82.4	82.4	84.2	84.2	86.0	87.8	89.6	89.6	91.4	93.2	95.0	96.8	98.6	98.6	100.4	102.2					
	25	68.0	68.0	69.8	69.8	71.6	73.4	75.2	77.0	77.0	78.8	80.6	82.4	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	98.6	100.4	102.2								
	30	69.8	69.8	71.6	73.4	75.2	77.0	77.0	78.8	80.6	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	98.6	100.4	102.2											
	35	71.6	71.6	73.4	75.2	77.0	78.8	80.6	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	98.6	100.4	102.2													
	40	73.4	73.4	75.2	77.0	78.8	80.6	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4	102.2															
	45	75.2	75.2	77.0	78.8	80.6	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																	
	50	77.0	77.0	78.8	80.6	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																		
	55	78.8	78.8	80.6	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																			
	60	80.6	80.6	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																				
	65	82.4	82.4	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																					
	70	84.2	84.2	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																							
	75	86.0	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																								
80	87.8	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4																										
85	89.6	89.6	91.4	93.2	95.0	96.8	98.6	100.4																											
90	91.4	91.4	93.2	95.0	96.8	98.6	100.4																												
95	93.2	93.2	95.0	96.8	98.6	100.4																													
100	95.0	95.0	96.8	98.6	100.4																														

NOTE: This table is compiled from an approximate formula which only depends on temperature and humidity. The formula is valid for full sunshine and a light wind. Table adapted from Bureau of Meteorology

**STEP 2** **FIND YOUR REGIONAL CATEGORY**  
Determine which region category you are in based on the map.



**CATEGORY 1**  
 **CATEGORY 2**  
 **CATEGORY 3**

### TRAINING & MATCH PLAY LIMITS

#### CANCELLATION OF TRAINING

Depending on your region category, recommend cancellation of training or delay until cooler when WBGT for

**Cat 1 >86.2°F**

**Cat 2 >89.9°F**

**Cat 3 >92.0°F**

#### MATCH PLAY HYDRATION BREAKS: WBGT OF 89.6°F

Provide hydration breaks of 4 minutes for each 30 minutes of continuous play (i.e., minute 30 and 75 of 90 minute match)



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# HEAT GUIDELINES

## RECOVERY

- Remove from training and away from the source of heat
- Cool in a shaded area using ice towels
- Fan or spray with water to bring down body temperature
- Provide access to fluids/electrolytes and encourage rehydration

## SPECIFIC HEAT-RELATED ILLNESSES

The first steps to recovery in all these cases are replacing fluids and cooling the body by resting in a cool, shaded place. Fanning or spraying with water will also help bring down the body temperature.

### Heat Cramps

Heat cramps usually affect those who sweat a lot during strenuous activity. This sweating depletes the body's salt level, as well as hydration. Low salt levels lead to painful muscle cramps. Heat cramps may also be a symptom of heat exhaustion.

### Heat Stroke

Heat stroke is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature. When this happens, the body's temperature rises rapidly, the sweating mechanism fails and the body is unable to cool down. The surge in body temperature can happen very quickly, within 10 to 15 minutes, rising to 106° Fahrenheit or higher. Heat stroke can cause death or permanent disability if emergency treatment is not given.

Someone suffering heat stroke will be dizzy and confused. They may slur their speech, have hallucinations or complain of a throbbing headache. While their skin may be warm to the touch, they may actually complain of chills. If you suspect heat stroke, get the on-site medical provider or call 9-1-1.

## MANAGEMENT

### Heat Illness (Heat Exhaustion, Heat Cramps)

- Remove from training and source of heat
- Cool in a shaded area using ice towels
- Provide access to fluids/electrolytes and encourage rehydration

### Exertional Heat Stroke

- Is a medical emergency
- Immediately call EMS (911) and prepare hospital for heat related emergency
- Athlete may have confusion or altered mental status and a rectal temperature >104°F
- Remove excess clothing/equipment and immediately begin cooling the athlete by placing them in an ice-water-tub
- If no tub is present, rotate cold wet ice towels (every 2-3 minutes over the entire surface of the body or as much as possible)

In severe cases of exertional heat stroke:

- Remove excess clothing/equipment and immediately begin cooling the athlete by placing them in an ice-water tub
- If no tub is present, rotate cold, wet ice towels every 2-3 minutes over the entire surface of the body or as much as possible
- Call 9-1-1 – Exertional heat stroke is a medical emergency

### Heat Exhaustion

Heat exhaustion is the body's response to an excessive loss of water and salt, usually through excessive sweating. Someone suffering from heat exhaustion may appear confused or disoriented. It can lead to extreme weakness or fatigue, dizziness and nausea.

