



# Urban Area Security Initiative (UASI-PHX) Phoenix Police Department / Homeland Defense Bureau Public Health Situational Awareness Bulletin



## Preparing for Hazardous Heat



As the summer temperatures increase, heat related illnesses increase. Excessive exposure to the heat can be **life threatening**. Nationwide, heat is the #1 weather-related killer and Arizona is known to be one of the hottest places on the earth from June to September. [1]

It is important to be mindful of heat stress symptoms that could lead to a heat related injury such as heat exhaustion or heat stroke. Early symptoms to watch for include **fatigue, heavy sweating, headache, cramps, dizziness, high pulse rate, and nausea/vomiting**. [2]

Unlike some occupations, it is not always feasible for police/fire/EMS personnel to avoid the heat nor do they have the ability to take precautions prescribed to the public such as scheduling work for cooler hours or wearing lighter colored clothing. Therefore, those having to spend a considerable amount of time in the heat are strongly advised to use protective measures to avoid heat related illnesses. **Hydration and sun protection** are among the best ways to avoid the effects of the sun and wearing light colored clothing when feasible to do so. [3]

The National Weather Service statistical data shows that **heat causes more fatalities per year than floods, lightning, tornadoes and hurricanes combined**. The elderly, the very young, and people with chronic health problems are most at risk. However, even young and healthy individuals can succumb to heat if they participate in strenuous physical activities during hot weather. Additionally, some behaviors also put people at greater risk: drinking alcohol; taking part in strenuous outdoor physical activities in hot weather; and taking medications that impair the body's ability to regulate its temperature or that inhibit perspiration. [5]

### Monsoon Weather—Heat Index

In addition to hot temperatures that often exceed 110 degrees, monsoon weather raises humidity levels increasing the **heat index**. The heat index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature (see chart). [3] The Arizona "monsoon season" officially extends from June 15th through September 30th, the time during which associated hazards are most likely to occur." [5]

NOAA's National Weather Service  
Heat Index  
Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	138
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

■ Caution   
 ■ Extreme Caution   
 ■ Danger   
 ■ Extreme Danger

### Be Aware of Excessive Heat Watches/Warnings

During Arizona's hottest months, the National Weather Service (NWS) Warning and Forecast Office (WFO) in Phoenix issues special products to alert the public when unusually hot weather (by Arizona standards) is expected. These products are intended to raise the public's awareness to prevent heat illnesses from occurring. When the NWS WFO Phoenix issues one of its heat products, it should serve as a signal that on that day outdoor activities are not "business as usual." [6]



**Excessive Heat Outlook**—Head's up! Extreme heat is possible 3 to 5 days from now

**Excessive Heat Watch**—Watch out! Extreme heat is expected within the next 2 to 3 days

**Excessive Heat Warning**—Warning! Extreme heat will occur today or tomorrow.

## Heat Related Illnesses—Know the Signs

**Heat Cramps** effect workers who sweat a lot during strenuous activity. Sweating depletes the body's salt and moisture levels. [4]

### Symptoms

⇒ Muscle cramps, pain, or spasms in the abdomen, arms or legs

### First Aid

- ⇒ Stop all activity, and sit in a cool place.
- ⇒ Drink clear juice or a sports beverage, or drink water with food.
  - Avoid salt tablets.
- ⇒ Do not return to strenuous work for a few hours after the cramps subside.
- ⇒ Seek medical attention if you have the following: heart problems, are on a low-sodium diet, or if the cramps do not subside within one hour.

**Heat Exhaustion** is the body's response to an excessive loss of water and salt, usually through sweating. [4]

### Symptoms

- ⇒ Rapid heart beat
- ⇒ Heavy sweating
- ⇒ Extreme weakness or fatigue
- ⇒ Dizziness
- ⇒ Nausea, vomiting
- ⇒ Irritability

- ⇒ Fast, shallow breathing
- ⇒ Slightly elevated body temperature

### First Aid

- ⇒ Rest in a cool area
- ⇒ Drink plenty of water or other cool beverages.
- ⇒ Take a cool shower, bath, or sponge bath

**Heat Stroke** is a condition that occurs when the body becomes unable to control its temperature, and can cause death or permanent disability. [4]

### Symptoms

- ⇒ High body temperature
- ⇒ Confusion
- ⇒ Loss of coordination
- ⇒ Hot, dry skin or profuse sweating
- ⇒ Throbbing headache
- ⇒ Seizures, coma

### First Aid

- ⇒ Request immediate medical assistance
- \***Heat stroke is a severe medical emergency. Summon emergency medical assistance or get the victim to a hospital immediately. Delay can be fatal** [5]
- ⇒ Move person to a cool, shaded area.
- ⇒ Remove excess clothing and apply cool water to their Body \*Do NOT give fluids [5]

### References:

1. Monsoon Awareness Week <http://www.wrh.noaa.gov/psr/pns/2013/June/MonsoonAwarenessWeek.php?day=fri>
2. DPS/HS—Heat Preparedness Bulletin City of Indianapolis 061213
3. DHHS-(NIOSH) [www.cdc.gov/niosh/topics/outdoor/](http://www.cdc.gov/niosh/topics/outdoor/)
4. ADHS—Heat Emergency Response Plan [http://www.azdhs.gov/phs/oeht/pdf/ADHS\\_HeatEmergencyResponsePlan.pdf](http://www.azdhs.gov/phs/oeht/pdf/ADHS_HeatEmergencyResponsePlan.pdf)
5. NOAA—Heat: A Major Killer <http://www.nws.noaa.gov/os/heat/index.shtml>
6. Heat in the Southwest <http://www.wrh.noaa.gov/psr/general/safety/heat/>

### Additional Resources:

Tucson—[http://www.wrh.noaa.gov/total\\_forecast/getprod.php?wfo=twc&sid=TWC&pil=PNS](http://www.wrh.noaa.gov/total_forecast/getprod.php?wfo=twc&sid=TWC&pil=PNS)  
Surviving Arizona Summer Heat—[http://www.azdhs.gov/phs/oeht/pdf/heat\\_brochure.pdf](http://www.azdhs.gov/phs/oeht/pdf/heat_brochure.pdf)

For this or other health-related questions, please contact David Leinenveber at [David.leinenveber@phoenix.gov](mailto:David.leinenveber@phoenix.gov)  
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