Heat is the number one weather-related killer in the United States, resulting in hundreds of fatalities each year. In fact, on average, excessive heat claims more lives each year than floods, lightning, tornadoes and hurricanes combined. In the disastrous heat wave of 1980, more than 1,250 people died. In the heat wave of 1995 more than 700 deaths in the Chicago area were attributed to heat. In August 2003, a record heat wave in Europe claimed an estimated 50,000 lives.

The frequency of accidents in general appears to be higher in hot environments than in more moderate environmental conditions. One reason is that working in a hot environment lowers the mental alertness and physical performance of an individual. Increased body temperature and physical discomfort promote irritability, anger, and other emotional states which sometimes causes us to overlook safety procedures or to divert attention from hazardous tasks.

Arizona is one of the hottest areas of the United States. Temperatures in the triple-digits are common for several months of the year. In addition, the rapid expansion of major urban areas in Phoenix has caused a significant urban heat island (UHI) to develop - causing low temperatures to be abnormally high. The table below compares the frequency of extreme temperatures at select Arizona locations.

<table>
<thead>
<tr>
<th></th>
<th>Phoenix</th>
<th>Casa Grande</th>
<th>Parker</th>
<th>El Centro</th>
<th>Yuma</th>
<th>Globe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Number of Days w/High of 100+ °F per Year #</td>
<td>110</td>
<td>121</td>
<td>110</td>
<td>115</td>
<td>118</td>
<td>19</td>
</tr>
<tr>
<td>Average Number of Days w/High of 110+ °F per Year #</td>
<td>18</td>
<td>30</td>
<td>29</td>
<td>20</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>Average Number of Days w/Low of 80+ °F per Year #</td>
<td>67</td>
<td>10</td>
<td>37</td>
<td>29</td>
<td>59</td>
<td>0</td>
</tr>
<tr>
<td>All-Time Record High Temperature</td>
<td>122 °F</td>
<td>123 °F</td>
<td>127 °F</td>
<td>122 °F</td>
<td>124 °F</td>
<td>113 °F</td>
</tr>
<tr>
<td>All-Time Record High Low Temperature</td>
<td>96 °F</td>
<td>96 °F</td>
<td>100 °F</td>
<td>98 °F</td>
<td>94 °F</td>
<td>86 °F</td>
</tr>
</tbody>
</table>

# Based on 1978-2007 data.

Adjusting to these factors and/or controlling them reduce the chances of heat stress. Your body can adjust to working in a warm environment through a process known as "acclimatization." Acclimatization processes involve gradually increasing the amount of time you spend working in a hot environment. This gradual increase allows your body to properly adjust to the heat.

Preventing heat stress is a matter of controlling the factors that cause it. Use the precautions mentioned here, and don't hesitate to seek assistance if you suspect heat stress in yourself or others.
Heat Wave Safety Tips

- **Slow down.** Reduce, eliminate or reschedule strenuous activities until the coolest time of the day. Children, seniors and anyone with health problems should stay in the coolest available place, not necessarily indoors.
- **Dress for summer.** Wear lightweight, light-colored clothing to reflect heat and sunlight.
- **Put less fuel on your inner fires.** Foods, like meat and other proteins that increase metabolic heat production also increase water loss.
- **Drink plenty of water, non-alcoholic and decaffeinated fluids.** Your body needs water to keep cool. Drink plenty of fluids even if you don't feel thirsty. Persons who have epilepsy or heart, kidney or liver disease, are on fluid restrictive diets or have a problem with fluid retention should consult a physician before increasing their consumption of fluids. **Do not drink alcoholic beverages and limit caffeinated beverages.**
- **During excessive heat periods, spend more time in air-conditioned places.** Air conditioning in homes and other buildings markedly reduces danger from the heat. If you cannot afford an air conditioner, go to a library, store or other location with air conditioning for part of the day.
- **Don't get too much sun.** Sunburn reduces your body's ability to dissipate heat.
- **Do not take salt tablets unless specified by a physician.**

EH&S has developed heat stress prevention training that is web based and is available at [http://www.asu.edu/go/blackboard/selfenroll/?cid=207384](http://www.asu.edu/go/blackboard/selfenroll/?cid=207384).

The Center for Disease Control has prepared a very good guide for prevention of heat stress both on and off the job that is available at [http://www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp](http://www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp). We recommend you review and discuss with friends and family.

Also, please remember that Arizona has the highest rate of skin cancer among the 50 states. To Prevent Skin Cancer:

- Minimize sun exposure, especially during the hours of 10 a.m. and 2 p.m., when the sun's rays are the most intense;
- Use a sunscreen with a sun protection factor (SPF) 15 or higher and apply often;
- Cover up. Wear a hat, long-sleeved shirts and pants when out in the sun;
- Be aware of reflecting surfaces (Sand, water, and pool decks can reflect up to 85% of damaging rays);
- Damaging ultraviolet rays can penetrate clouds and are stronger in the thinner air of higher altitudes, so don't forget the sunscreen in these conditions; and
- Avoid tanning salons and sunlamps as ultraviolet rays from these sources are the same as in sunlight.