Wet bulb globe temperature is a more comprehensive human heat stress index that includes air temperature, relative humidity, wind speed, and sunlight weather variables. The traditional human heat stress index is based on just air temperature and relative humidity. Wet bulb globe temperature is a better human heat stress index, because it includes sunlight, which increases heat stress, and wind speed, that decreases heat stress. Although it is not a well-known heat index, wet bulb globe temperature is not new. It was developed by the U.S. Marine Corps in the late 1950s to give drill instructors and officers a tool to avoid recruit activity that could lead to heat exhaustion or heatstroke.

Heat acclimation typically takes 5 days of heat exposure. Start at 20% of full exposure on day one and increase by 20% each day. Rest period times assume that a person is in the same outdoor conditions. Persons should shade themselves during rest breaks, if possible. Fluid differences can vary for individuals (+/− ¼ quart/hr) and exposure to full sun or full shade (+/− ¼ quart/hr).

Recommendations above are for healthy, hydrated humans fully clothed with lightweight summer working clothes. Increase Wet Bulb Globe Temperature (WBGT) by 2 units, when wearing cotton coveralls. Increase WBGT by 4 units, when wearing heavy winter-type clothing. Increase WBGT by 6 units, when wearing permeable, water barrier clothing. When wearing full-body, impermeable, protective clothing (e.g. Tyvek coveralls and hood), increase WBGT by 10 units while conducting “Light Work” and increase WBGT by 20 units for “Moderate to Hard Work” tasks. Heat tolerance can be impacted by hydration, overall health, medications, and level of acclimation.

<table>
<thead>
<tr>
<th>Work Level</th>
<th>Activity examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>Sitting or standing</td>
</tr>
</tbody>
</table>
| Light      | Sitting with light manual work  
Driving on paved surface  
Walking 2 mph on hard surface |
| Moderate   | Painting with brush  
Lawn mowing with walk behind power mower on flat area  
Pushing light wheelbarrow  
Weeding or hoeing  
Walking 3.5 mph on hard surface |
| Heavy      | Digging or shoveling  
Hand sawing wood  
Chopping wood  
Walking 4 mph on hard surface or 2.5 mph in sand |


Oklahoma Mesonet weather variables used to calculate wet bulb globe temperature include:
air temperature 1.5 meters; wind speed 2 meters; relative humidity 1.5 meters; and solar radiation.

mesonet.org