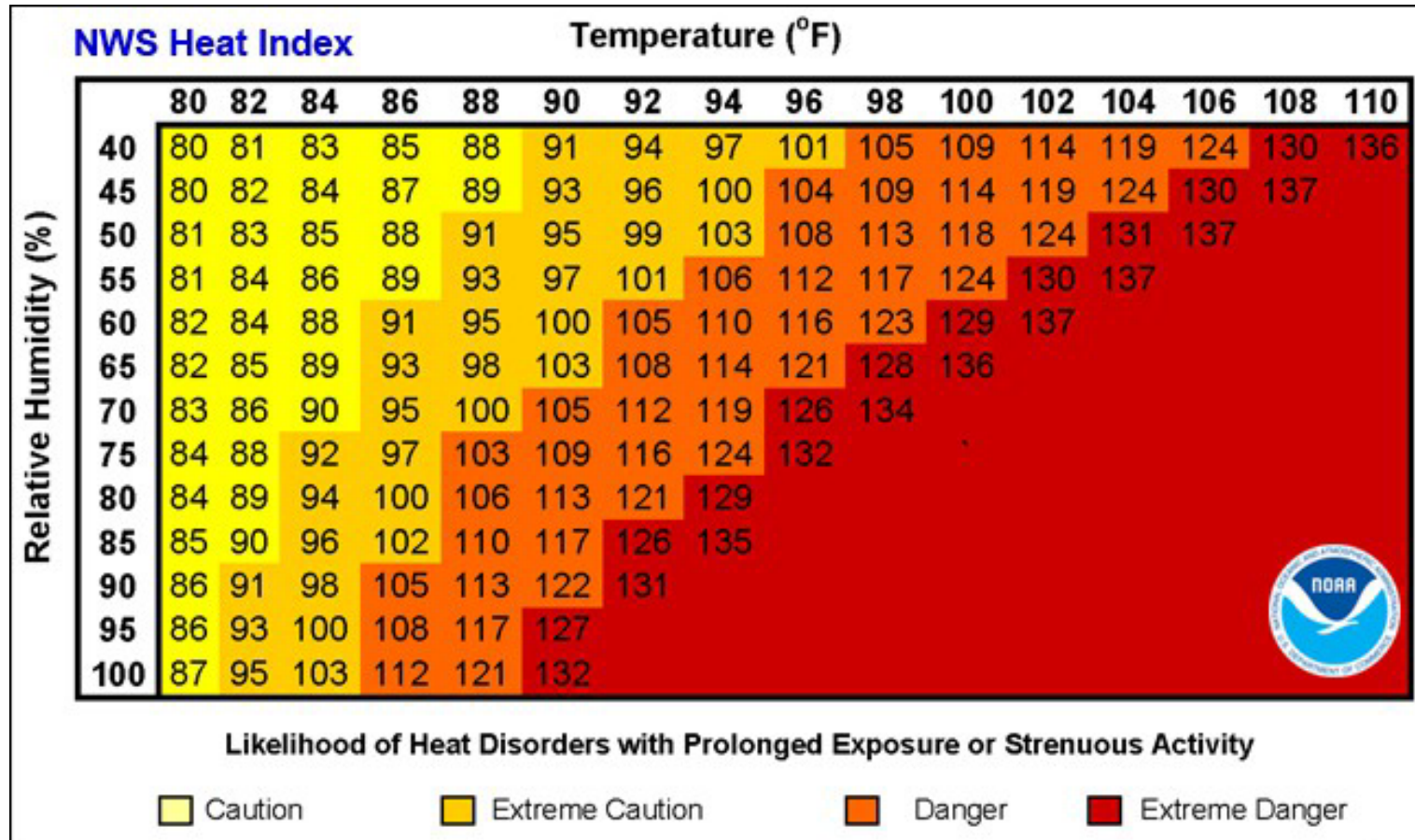


Evaluating HRI Risk: Heat Index

NOAA Heat Index



Evaluating HRI Risk: WBGT



Wet Bulb Globe Temperature (WBGT) incorporates the environmental factors of:

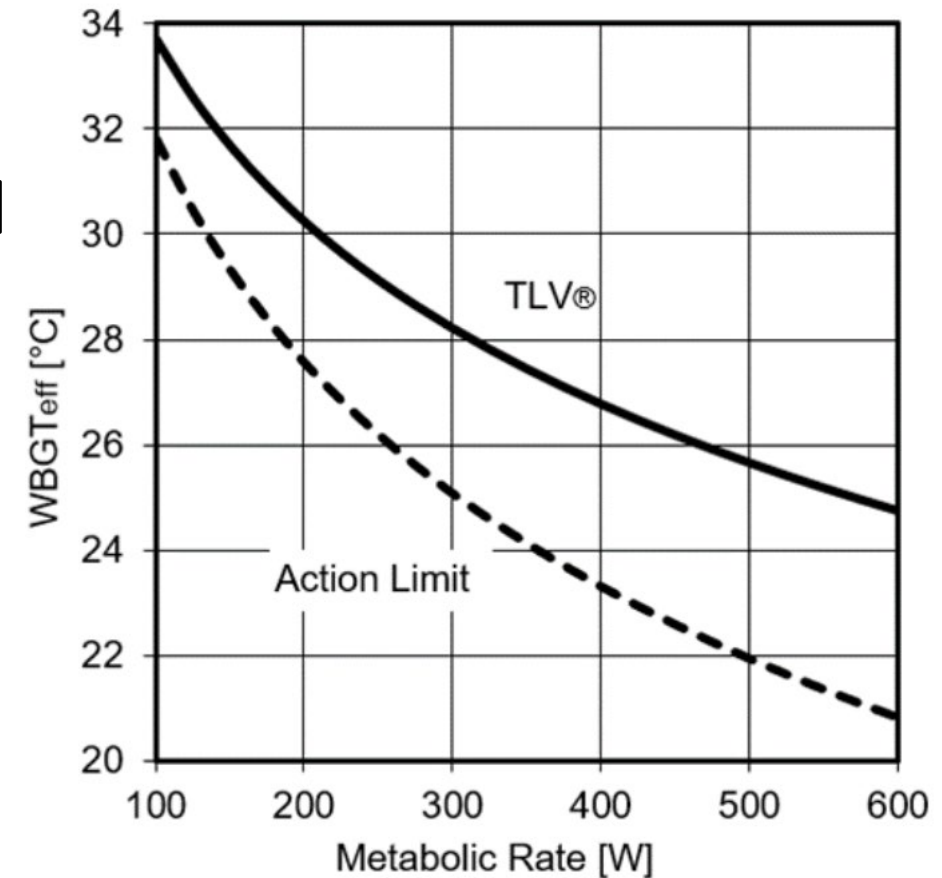
- Air temperature
- Humidity
- Air movement (wind)
- Radiant heat

Evaluating HRI Risk: WBGT

Threshold Limit Value (TLV): $[\text{°C}] = 56.7 - 11.5 \log_{10} M[\text{W}]$

Action Limit (AL): $[\text{°C}] = 60.0 - 14.1 \log_{10} M[\text{W}]$

The TLV assumes complete recovery from previous heat stress exposures before subsequent exposure.



Evaluating HRI Risk: WBGT

$$\text{WBGT}_{\text{in}} = 0.7T_{\text{nwb}} + 0.3T_{\text{g}}$$

(indoors or outdoors with shade or cloudy day-negligible solar radiation)

$$\text{WBGT}_{\text{out}} = 0.7T_{\text{nwb}} + 0.2T_{\text{g}} + 0.1T_{\text{db}}$$

(no cloud cover-direct exposure to sunlight)

- T_{nwb} = Natural wet-bulb temperature
- T_{g} = Globe thermometer temperature (a.k.a. black globe thermometer)
- T_{db} = Dry-bulb temperature

