

Wet Bulb Temperature Charts

Constancy of Internal Body Temperature

- Effect of high and low atmospheric temperatures of several hours' duration on the internal body "core" temperature.
- In general, a nude person in dry air between 55° and 130°F is capable of maintaining a normal body core temperature somewhere between 97° and 100°F.

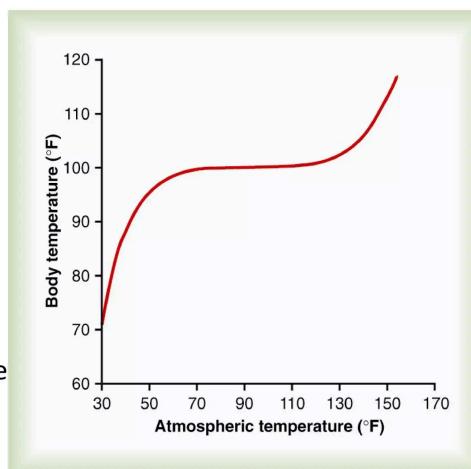
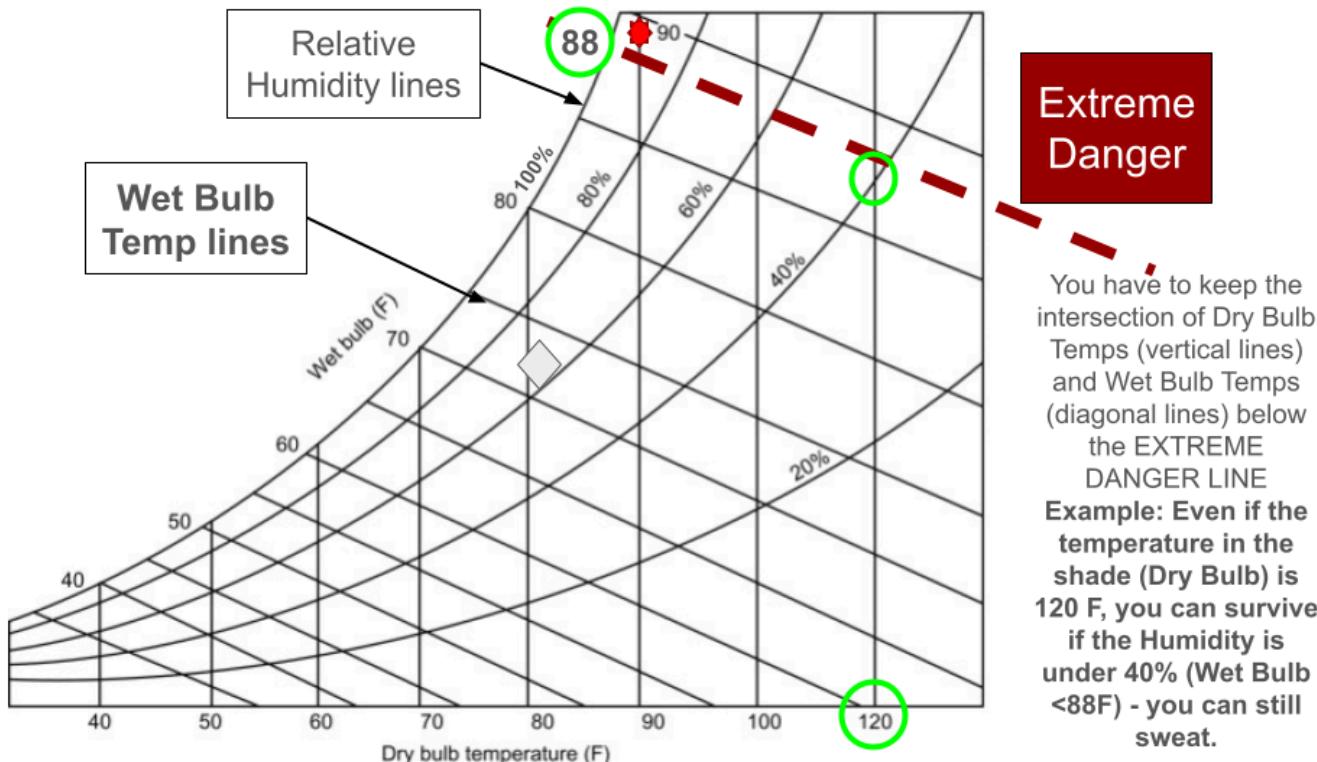


Figure 73-6; Guyton & Hall





<https://arielschecklist.com/wbgt-chart/>

How to avoid exertional heat stroke when hiking in the desert.

WBGT Chart

CHART A: FAHRENHEIT

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Materials Library at: <https://drive.google.com/drive/folders/100OYwNz92CbY-pC-aYEDrwJTxLj8JUZf?usp=sharing> maclankford@gmail.com

Wet Bulb Globe Temperature (WBGT) from Temperature and Relative Humidity																
Temperature in Degrees Fahrenheit																
	68.0	71.6	75.2	78.8	82.4	86.0	89.6	93.2	96.8	100.4	104.0	107.6	111.2	114.8	118.4	122.0
0	58.6	60.9	64.3	65.5	67.7	69.9	72.1	74.3	76.4	78.5	80.6	82.6	84.7	86.6	88.6	90.5
5	59.6	62.1	65.6	67.0	69.3	71.7	74.0	76.4	78.6	80.9	83.1	85.3	87.5	89.9	92.1	94.2
10	60.7	63.3	66.9	68.4	70.8	73.3	75.8	78.2	80.7	83.0	85.5	88.0	90.3	92.8	95.1	97.6
15	61.7	64.5	68.1	69.6	72.2	74.8	77.4	80.0	82.6	85.2	87.8	90.2	92.8	95.4	98.0	
20	62.7	65.6	69.4	70.9	73.6	76.3	79.2	81.8	84.5	87.1	89.8	92.5	95.2	97.8		
25	63.8	66.7	70.5	72.2	75.1	77.8	80.6	83.4	86.2	89.0	91.8	94.6	97.4			
30	64.8	67.6	71.7	73.4	76.3	79.2	82.1	84.9	87.8	90.8	93.6	96.6	99.4			
35	65.6	68.6	72.7	74.6	77.5	80.5	83.5	86.4	89.4	92.4	95.3	98.3				
40	66.7	69.6	73.8	75.7	78.8	81.8	84.8	87.8	90.9	94.0	97.0					
45	67.5	70.6	74.8	76.8	79.9	83.0	86.1	89.2	92.3	95.4	98.6					
50	68.4	71.5	75.8	77.8	81.1	84.1	87.4	90.5	93.7	96.9						
55	69.3	72.4	76.7	78.8	82.1	85.3	88.5	91.9	95.1	98.3						
60	70.1	73.3	77.7	79.8	83.2	86.4	89.8	93.1	96.3	99.6						
65	70.9	73.8	78.6	80.9	84.2	87.5	90.8	94.1	97.5							
70	71.7	75.0	79.5	81.7	84.9	88.6	91.9	95.3	98.6							
75	72.4	75.9	80.3	82.7	86.1	89.6	92.9	96.4								
80	73.2	76.7	81.2	83.6	87.1	90.4	93.9	97.4								
85	74.0	77.4	82.0	84.5	88.0	91.5	94.9	98.5								
90	74.7	78.2	82.9	85.3	88.9	92.3	95.9	99.4								
95	75.5	78.9	83.6	86.1	89.6	93.2	96.8									
100	76.1	79.7	84.4	86.9	90.5	94.1	97.7									

NOTE: This chart is calculated using temperature and humidity, assuming a very clear sky (maximal solar load), and atmospheric pressure of 1ATA (760 mmHg). Chart A was developed by Professor Yoram Epstein to be used in Ariel's Checklist for hikers in Israel.

CHART A: CELSIUS

Wet Bulb Globe Temperature (WBGT) from Temperature and Relative Humidity																	
Relative Humidity (%)	Temperature in Degrees Celsius																
	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
	0	14.8	16.1	18.0	18.6	19.8	21.1	22.3	23.5	24.7	25.8	27.0	28.1	29.3	30.3	31.4	32.5
	5	15.3	16.7	18.7	19.4	20.7	22.0	23.3	24.6	25.9	27.2	28.4	29.6	30.9	32.2	33.4	34.6
	10	16.0	17.4	19.4	20.2	21.6	23.0	24.3	25.7	27.1	28.4	29.7	31.1	32.4	33.8	35.1	36.4
	15	16.5	18.0	20.1	20.9	22.4	23.8	25.2	26.7	28.1	29.6	31.0	32.4	33.8	35.2	36.7	38.1
	20	17.1	18.7	20.8	21.6	23.1	24.6	26.2	27.7	29.2	30.6	32.1	33.6	35.1	36.6	38.2	39.7
	25	17.6	19.3	21.4	22.3	24.0	25.5	27.0	28.6	30.1	31.7	33.2	34.8	36.3	37.9	39.5	
	30	18.2	19.8	22.0	23.0	24.6	26.2	27.8	29.4	31.0	32.7	34.2	35.9	37.4	39.1		
	35	18.7	20.3	22.6	23.6	25.3	26.9	28.6	30.2	31.9	33.5	35.2	36.8	38.5			
	40	19.3	20.9	23.2	24.3	26.0	27.6	29.4	31.0	32.7	34.4	36.1	37.8	39.5			
	45	19.7	21.5	23.8	24.9	26.6	28.3	30.1	31.8	33.5	35.2	37.0	38.7				
	50	20.2	22.0	24.3	25.5	27.3	29.0	30.8	32.5	34.3	36.1	37.9	39.6				
	55	20.7	22.4	24.8	26.0	27.8	29.6	31.4	33.3	35.0	36.8	38.6					
	60	21.1	22.9	25.4	26.6	28.4	30.2	32.1	34.0	35.7	37.5	39.4					
	65	21.6	23.2	25.9	27.1	29.0	30.9	32.7	34.5	36.4	38.2						
	70	22.1	23.9	26.4	27.6	29.4	31.4	33.3	35.1	37.0	38.9						
	75	22.5	24.4	26.9	28.2	30.1	32.0	33.8	35.8	37.7	39.5						
	80	22.9	24.8	27.4	28.7	30.6	32.5	34.4	36.3	38.2							
	85	23.3	25.2	27.8	29.2	31.1	33.0	35.0	36.9	38.9							
	90	23.7	25.7	28.3	29.6	31.6	33.5	35.5	37.5	39.5							
	95	24.2	26.1	28.7	30.1	32.0	34.0	36.0	38.0	40.0							
	100	24.5	26.5	29.1	30.5	32.5	34.5	36.5	38.5								

NOTE: This chart is calculated using temperature and humidity, assuming a very clear sky (maximal solar load), and atmospheric pressure of 1ATA (760 mmHg). Chart A was developed by Professor Yoram Epstein to be used in Ariel's Checklist for hikers in Israel.

CHART B

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Materials Library at: <https://drive.google.com/drive/folders/100OYwNz92CbY-pC-aYEDrwJTxLj8JUZf?usp=sharing> maclankford@gmail.com

Heat Stress Category (WBGT)	Moderate Work		Hard Work	
	Work/Rest Cycle	Water Intake Per Hour	Work/Rest Cycle	Water Intake Per Hour
White ≤76.9°F (≤24.9°C)	60/15 MINUTES	300 ml (1/3 qt)	40/20 MINUTES	500 ml (1/2 qt)
Green 77-81.9°F (25-27.7°C)	60/15 MINUTES	750 ml (3/4 qt)	40/20 MINUTES	1000 ml (1 qt)
Yellow 82-84.9°F (27.8-29.4°C)	40/20 MINUTES	1000 ml (1 qt)	30/30 MINUTES	1000 ml (1 qt)
Red 85-88.9°F (29.5-31.6°C)	30/30 MINUTES	1000 ml (1 qt)	Exercise is forbidden. Very high risk for heat casualties.	
Black ≥89°F (≥31.7°C)	Exercise is forbidden. Very high risk for heat casualties.			

- Chart B was developed by Professor Yoram Epstein to be used in Ariel's Checklist for hikers in Israel.
- Environmental heat stress categories are given in Wet Bulb Globe Temperature values.
- These are minimum rest periods. You may plan for more rest but not less.
- Fluid recommendations are just general guidelines and may vary based on many factors. People should monitor individual fluid needs.
- **Warning!!** Do not read Chart B in isolation. These guidelines are for healthy, relatively fit hikers. For

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novice, less fit, un-acclimated, sleep-deprived, or overweight individuals, the tour leader should refer to Moderate Work as Hard Work.

Materials Library at: <https://drive.google.com/drive/folders/100OYwNz92CbY-pC-aYEDrwJTxLj8JUZf?usp=sharing> maclankford@gmail.com