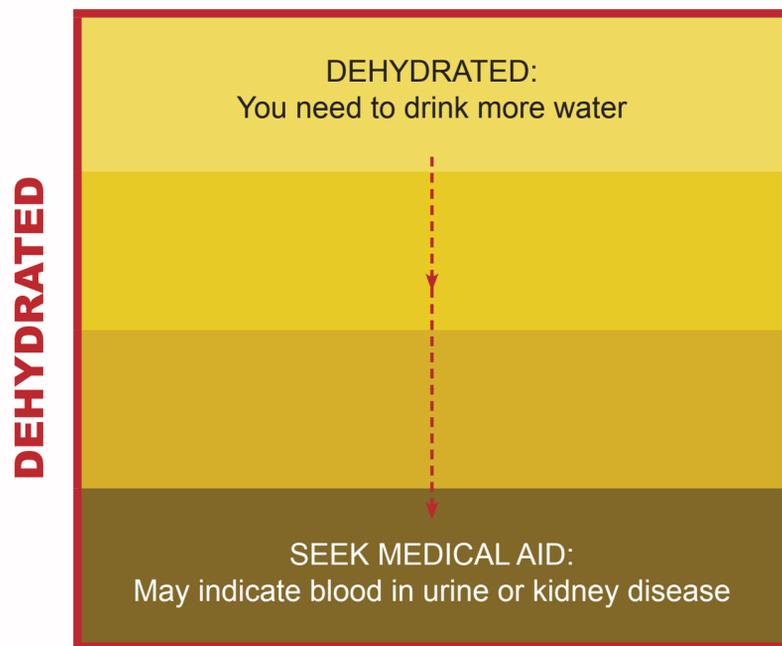
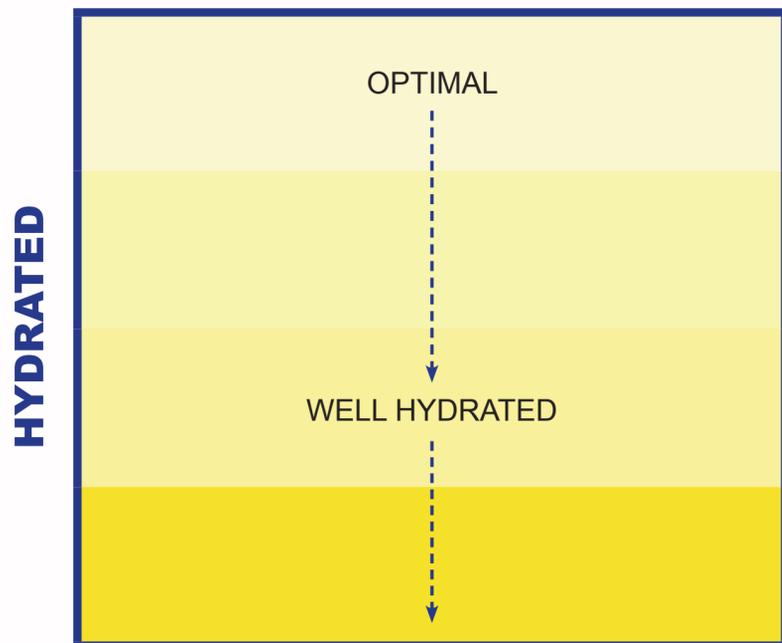


Are You Hydrated?

Take the Urine Color Test

Urine Color Chart*



*This color chart is not for clinical use.

Water Consumption Table

Heat Category	WBGT Index, °F	Easy Work	Moderate Work	Hard Work
		Water Intake (Quart/Hour)	Water Intake (Quart/Hour)	Water Intake (Quart/Hour)
1	78° - 81.9°	½	¾	¾
2	82° - 84.9°	½	¾	1
3	85° - 87.9°	¾	¾	1
4	88° - 89.9°	¾	¾	1
5	> 90°	1	1	1
Body Armor = +5°		Easy Work – walking on a hard surface at less than 2 mph with less than a 30 pound load, weapon maintenance, marksmanship training; drill and ceremony	Moderate Work – patrolling, walking in the sand at 2.5 mph with no load, calisthenics; patrolling; individual movement techniques (i.e., high/low crawl)	Hard Work – walking in the sand at 2.5 MPH with a load, field assaults
MOPP 4 = +10°				
Rest - sitting or standing in the shade if possible				
<small>The fluid replacement volumes will sustain performance and hydration for at least 4 HOURS of work in the specified heat category. Fluid needs can vary based on individual differences and exposure to full sun or full shade.</small>				
<small>CAUTION: Hourly fluid intake should not exceed 1.5 quarts. Daily fluid intake should not exceed 12 quarts.</small>				

Purpose

- With normal kidney function, your level of hydration is indicated by the color of your urine. Some vitamins and supplements may cause a darkening of the urine unrelated to dehydration.
- Since heat-related illness often follows dehydration, this simple test will help protect your health.
- Dehydration also increases your risk for kidney stones.

How does it work?

- Match your urine color to closest color in the chart and read the hydration level on the chart.
- Watch the urine stream not the toilet water, as the water in the toilet will dilute your urine color.
- In response to dehydration, the kidneys conserve water and excrete more concentrated urine; the more concentrated the urine the darker the color.

Prevent Dehydration

- No amount of training or acclimatization can reduce the body's requirement for water.
- Follow the water consumption guidelines in the water consumption table.

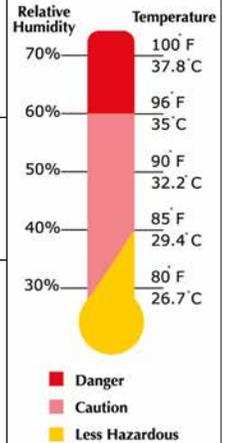
Heat Illness - Know the Signs and Dangers

What are the Dangers of Heat Stress?

	Heat Cramps	Heat Syncope (Fainting)	Heat Exhaustion	Heat Stroke
Description	A temporary fluid and electrolyte imbalance- salt depletion in conditions of heavy physical exertion	Pooling of the blood in the lower extremities in unacclimatized workers who are required to stand in the heat for long periods of time.	A reduction of body water content or blood volume. It occurs when the amount of water lost (as sweat) exceeds the volume of water taken in during the heat exposure.	Body fails to regulate core temperature. Sweating slows or stops completely preventing the body from releasing the excess heat.
Symptoms	Painful muscle spasms in the arms, legs, and abdomen	A brief loss of consciousness. <i>In a worker who is performing any substantial labor, consider it HEAT STROKE, call 911, and cool down immediately by any method.</i>	Profuse excessive sweating, cool clammy pale skin, weakness and fatigue, dizziness, nausea and vomiting, weak rapid pulse and early neurological symptoms (e.g. headache, anxiety, or impaired judgment)	Same as heat exhaustion + core body temperature >104°, altered mental status (irrational behavior, psychosis, aggressive behavior, incoherent speech), the skin can be hot, flushed, pulse may be bounding and rapid.
Consequences if Untreated	May be accompanied by heavy sweating and thirst, heralding impending heat exhaustion.	Loss of consciousness regained once the person falls to the ground. Watch for injuries secondary to falling.	If left untreated may rapidly progress to HEAT STROKE and subsequent death.	Loss of consciousness, coma, organ failure and death.
Treatment	Rest in a cool environment. Give fluids and salty foods or an electrolyte solution such as sports drinks. Salt tablets are not recommended due to the risks of overdosing.	Keep the individual lying down with feet raised, cool with wet cloths and ventilation, provide fluids and then move to a cooler location. Do not return to work and refer for medical evaluation.	Transfer to a cool shaded place. Cool body with wet clothes and ventilation. Replace water and salts; a good source for both are sports drinks. Transfer to a medical facility for evaluation.	Call 911! Cool down the body immediately with every available means- most effective is a ice water bath or wet down entire body with copious amounts of water and vigorously fan.



High Temperature
+ High Humidity
+ Physical Work
= Heat Stress



Combat these dangers with three steps:

1.

Hydrate

Adequate hydration is the most important step to combating heat stress. When the heat index is high, workers should drink copious amounts (1 quart every hour) frequently throughout the work shift: they should consume at least one cup every 15 minutes or a pint every half hour - in order to stay properly hydrated. Workers should be trained not to wait until they feel thirsty to drink; if they are thirsty they may already have lost 2% of their body's water. The onset of heat exhaustion can begin after losing 3% of the body's water and heat stroke occurs once 8% is lost. The bottom line is, if a worker is not regularly urinating or has dark urine, they are dehydrated and at risk for heat illnesses!

2.

Assess

Assess the relative danger of the worksite. Be aware that high heat, high humidity, low air circulation all create a more dangerous working environment. Any time more than one of these variables is present, the danger is compounded. Wearing occlusive non-breathable clothing in combination with heavy exertion compounds these worksite risks and can alone lead to heat illness.

3.

Acclimate

If an employee is new to a job or is returning after time away: ease them back into full-time work over the course of 5 days. Starting at half time (50% effort) and increasing to full time (increase by 10% each day) can greatly reduce the employee's susceptibility to heat stress.

Heat Stress Resources

- WA Labor and Industries:
<http://www.lni.wa.gov/safety/topics/AtoZ/heatstress/>
- OR OSHA:
http://www.cbs.state.or.us/external/osh/subjects/heat_stress.htm
- OSHA:
<http://www.osha.gov/SLTC/heatstress/>
- CDC:
<http://www.bt.cdc.gov/disasters/extremeheat/>
- WA SHARP Program:
<http://www.lni.wa.gov/Safety/Research/Focus/default.asp>