



HEAT INJURY PREVENTION

B. WILKERSON, M.D.



- ❖ Before mandated 8-12 hour shifts, workers would avoid the most strenuous activities during the peak heat times of the day
- ❖ Personnel does not have the option of idling expensive equipment or delaying production
- ❖ You are a “two-fer” – accomplishing twice as much in half of the work days



- ❖ Working in the offshore or remote setting places workers in a “high-risk” environment
 - ❖ Delayed access to definitive medical care
- ❖ Workers must participate in their own, and their co-worker’s safety



- ❖ DETERMINE RISK
- ❖ WHAT TO AVOID
- ❖ PRE-HYDRATE
- ❖ BREAK
- ❖ HYDRATE
- ❖ SYMPTOM RECOGNITION
- ❖ “BUDDY UP”
- ❖ RE-HYDRATE



❖ Co-morbid illnesses

- ❖ Kidney
- ❖ Diabetes
- ❖ Blood pressure
- ❖ Tobacco use / abuse
- ❖ Deconditioned / “not in good shape”

❖ Medications that put personnel at risk

- ❖ Cardiac meds
- ❖ Blood pressure meds
- ❖ Antidepressants / mood disorder
- ❖ Pain medications
- ❖ Sleep medications
- ❖ ADHD medications



❖ High-Risk Personnel

- ❖ Increased muscle mass
- ❖ Previous heat-related events
- ❖ Persons consuming high amounts of:
 - ❖ Caffeine
 - ❖ Theobromine
 - ❖ Carbonated and high sugar content drinks
 - ❖ Energy boost products
- ❖ Older workers
- ❖ Smokers
- ❖ Persons returning from extended breaks or vacations

❖ High-Risk Times for Heat Injury

- ❖ 10 a.m. to 3 p.m.
- ❖ Sunrise and sunset (dew points)
- ❖ Absence of breeze or wind
- ❖ High humidity (> 85%)



❖ Consider avoiding these types of beverages, especially for rehydration purposes:

- ❖ Caffeinated
- ❖ Carbonated
- ❖ Sugary



- ❖ Prior to beginning strenuous work in a hot, and/or humid environment:
 - ❖ Drink 16 – 32 ounces; or
 - ❖ Drink 500 – 1000 mL prior to starting any strenuous work activity



❖ BREAKS

- ❖ For temperatures over 90 degrees, break every 20 minutes
- ❖ Shady or cool areas
- ❖ Use break as opportunity to get cool / stay hydrated



❖ HYDRATE – at each break

- ❖ Drink 16 – 32 ounces; or
- ❖ Drink 500 – 1000 mL of fluid
- ❖ Fluid should be $\frac{1}{2}$ water, $\frac{1}{2}$ electrolyte solutions (Gatorade™)
 - ❖ Fluid should be no less than $\frac{1}{3}$ electrolyte solution
- ❖ Be prepared to replace fluid in extreme environments under heavy work loads at a 2 L per hour rate



❖ You're in trouble (or at risk) if you(r):

- ❖ Don't urinate between each meal
- ❖ Weight varies more than 1 pound per day
- ❖ Get lightheaded going from a stooped or seated position to an upright one
- ❖ Urine is dark or significantly decreased in volume
- ❖ Have difficulty form spit; have a dry mouth, or tongue is dry/wrinkled
- ❖ Have cramping / nausea / vomiting
- ❖ Feel as though your muscles won't relax
- ❖ Experience irritability or discomfort
- ❖ Have unexpected weakness, dizziness, cramps, chills, nausea, and / or vomiting



❖ **IF YOU EXPERIENCE ANY OF THESE SYMPTOMS:**

- ❖ **TELL YOUR SUPERVISOR IMMEDIATELY**
- ❖ **SEE THE MEDIC (IF THERE'S ONE ON SITE)**

❖ **HEAT INJURIES MAY REQUIRE DAYS TO RECOVER, THE EARLIER THE RECOGNITION, THE SHORTER THE RECOVERY TIME**



❖ DON'T WORK ALONE IN HIGH-RISK ENVIRONMENTS

❖ Use co-workers as a “reference point;” You should (be)

- ❖ Sweating if others are
- ❖ Drink and feel thirst when others do
- ❖ Break when others do
- ❖ Need to urinate when others do
- ❖ Notice irritability in yourself or co-workers
- ❖ Notice if you or a co-worker can not keep up with others/peers



❖ REHYDRATE – following the end of shift / tour

- ❖ Replace each pound lost with 24 fluid ounces (750 mL) of electrolyte and water solution in no greater than 1:1 and no less than 3:1 (water:electrolyte) concentration
- ❖ Be prepared to replace fluid in extreme environments under heavy work loads at a 2 L per hour rate

