

Delgado Safety Topic

RECOGNITION AND PREVENTION OF HEAT RELATED ILLNESSES



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Purpose

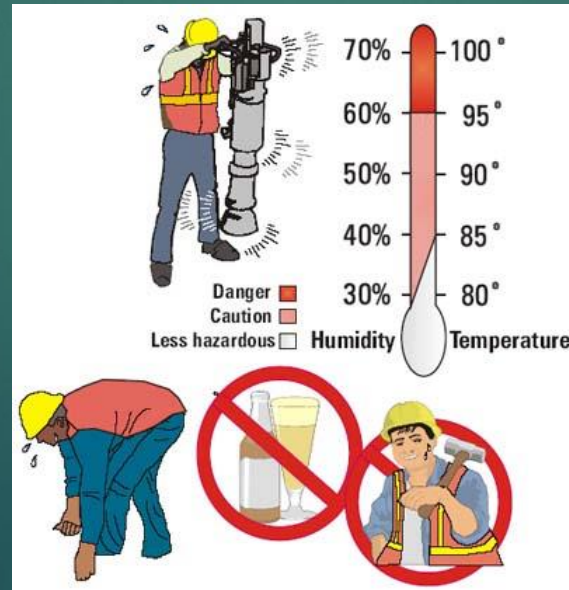
To understand the causes and preventive measures to eliminate heat stress during the Spring/Summer

- ▶ During both the Spring/ Summer months in Louisiana most work areas are at a high risk for environmental related Heat Stress.
- ▶ We need to be prepared to handle stress both at work and in our recreational activities away from work
- ▶ Heat Stress can have deadly consequences
- ▶ Heat Stress is not an accident, it is preventable

“Be aware and be prepared”

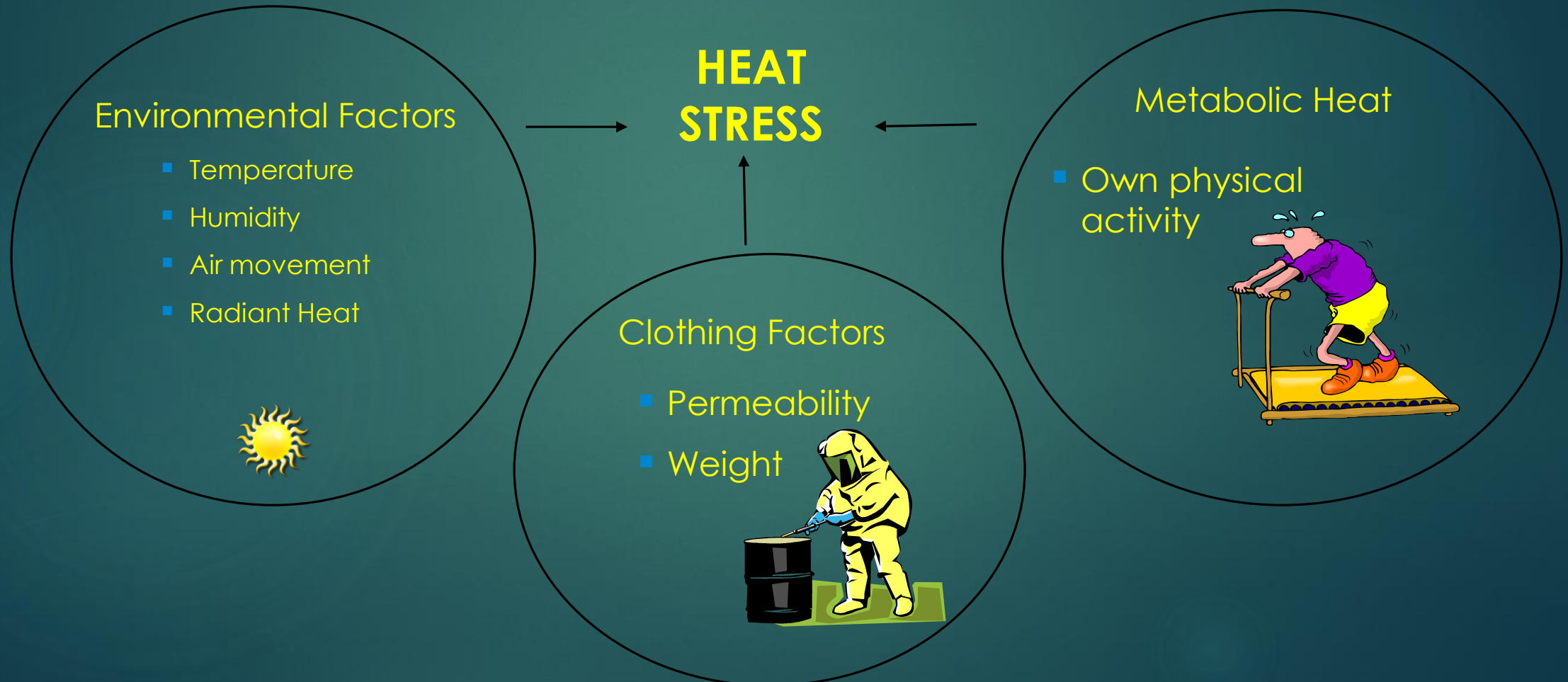
What do we Need to Know ?

- ▶ What is Heat Stress?
- ▶ How do we prevent it from occurring?
- ▶ What do we do if/when it happens to us ?



What is Heat Stress?

Heat Stress is the effect from the heat load that a worker is exposed to from the combination of:



Heat Disorders & Health Effects



Heat Stroke



Heat Exhaustion



Heat Cramps



Heat Collapse "Fainting"



Heat Rashes



Heat Fatigue



Maintaining Body Temperature

HEAT LOSS



HEAT GAIN

**In very hot environmental conditions,
evaporation of sweat is the body's primary
means of cooling.**

**Problems begin if the body cannot lose heat quickly enough,
resulting in a rise in body temperature.**

Impact of Fluid Loss Due to Excessive Heat Loading

During heavy work, body can lose 1-2 quarts of water per hour.

Impacts to the body due to fluid loss

- After 2-3 hours of fluid loss:
 - Lose endurance • Become thirsty
 - Become uncomfortable • Feel hot
- After 3 hours, you may experience:
 - Headaches • Muscle fatigue • Nausea
 - Loss of strength • Heat cramps
 - Loss of accuracy and dexterity
 - Reduced alertness

How do we Prevent it?

The best defence against heat stress is:

Have frequent, small drinks

Evaluate and manage your environment

Acclimate to the region

Take regular breaks from the heat when working or performing recreational activities outside



- Water should be consumed on regular intervals.
- This includes the night before or on days off!

Prevention - Fitness for Work

- ▶ Before you perform outside activities you have a responsibility to ensure that you are fit for the work/outside activities
- ▶ Delgado Employees who perform outside duties, must be mindful that if you are ill (flu, gastro, vomiting, viral illnesses) you must inform your Supervisor and seek medical advice
- ▶ If you have been ill recently - you must also inform your Supervisor prior to starting work
- ▶ Please be sensible about alcohol consumption and always re-hydrate with water before going to bed and before commencing work
- ▶ Come to work prepared to work in the heat

Prevention – Be an Industrial Athlete

- ▶ Maintain a diet conducive to working in extreme heat.
- ▶ Do eat and drink:
 - Water
 - Gatorade or other drinks rich in electrolytes.
 - The rule of thumb is to consume 1 bottle of water for every sports drink consumed. The sugars and potassium in those drinks are good, but only if you have enough clean fluid (water) to transfer all the goodness to your body without taxing the liver and kidneys. If you're just consuming sports drinks, it creates a syrupy fluid level in your body which can take a toll on your organs.
 - Fruits such as:
 - Kiwi
 - Watermelon
 - Blueberries
 - Cranberries
 - Frozen fruits are a great source
 - Salty Foods:
 - Pickles, Olives, and Almonds.



Prevention – Be an Industrial Athlete

- ▶ Maintain a diet conducive to working in extreme heat.
- ▶ Do not eat or drink:
 - Alcohol (this
 - “High Energy” Drinks
 - Soda, Coffee, Tea, Energy drinks, and other beverages that contain caffeine.
 - Spicy Foods
 - High Protein Foods
 - In extreme temperatures, it's best to reduce your protein consumption. Not eliminate it all together, but cut back, and here's why: Protein is really hard to digest. It takes a lot of different molecules and enzymes to transform a piece of meat into something the body can use. When your body performs this process, it creates heat — a process known as *thermogenesis*.



Personal Factors

Personal factors that affect your ability to cope with heat

- ▶ Age, weight and physical condition
- ▶ Medical conditions such as diabetes, hypertension and heart disease
 - ▶ See your doctor
- ▶ Medications and drugs
- ▶ Overweight, poor general health and poor physical fitness



Acclimatization

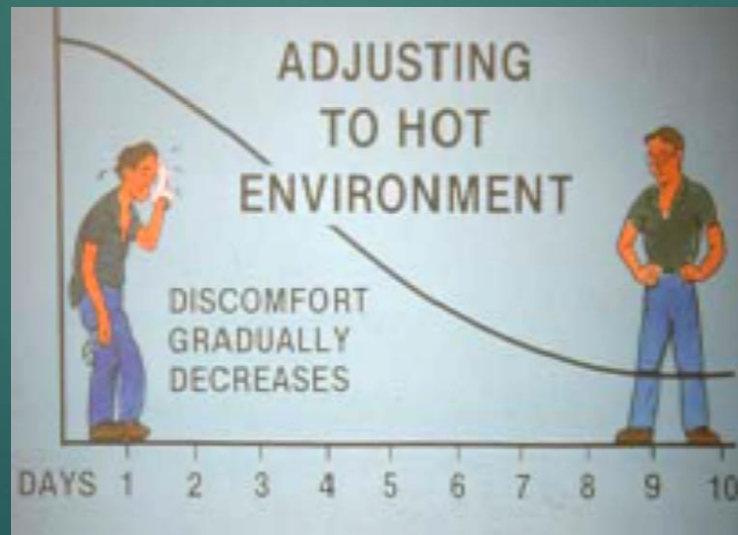
- ▶ The body's improved ability to withstand heat stress after repeated exposures to hot environments
- ▶ If you are not used to working in the heat then you must take time to acclimatise. The general consensus is it takes about 14 days to acclimate properly.

Un-acclimatized

Increased
hunger

Increased
fatigue

Decreased
concentration



Acclimatized

Increased sweat
for cooling

More dilute sweat
(lower salt loss)

Better recovery
through sleep and
rest

**You may need to reduce workload
during acclimatization**

Electrolyte and Sports Drinks

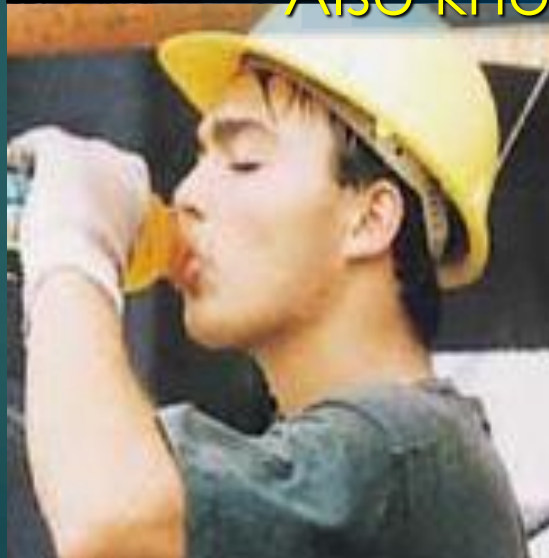
- ▶ There is usually enough salt in a normal diet to replace electrolytes lost by sweating
- ▶ But if you work in high temperatures or have a high workload job, the consumption of reasonable quantities of electrolyte drinks may be of benefit



Keep Plenty of Cool Water on Hand



Also know where your supply of ice is



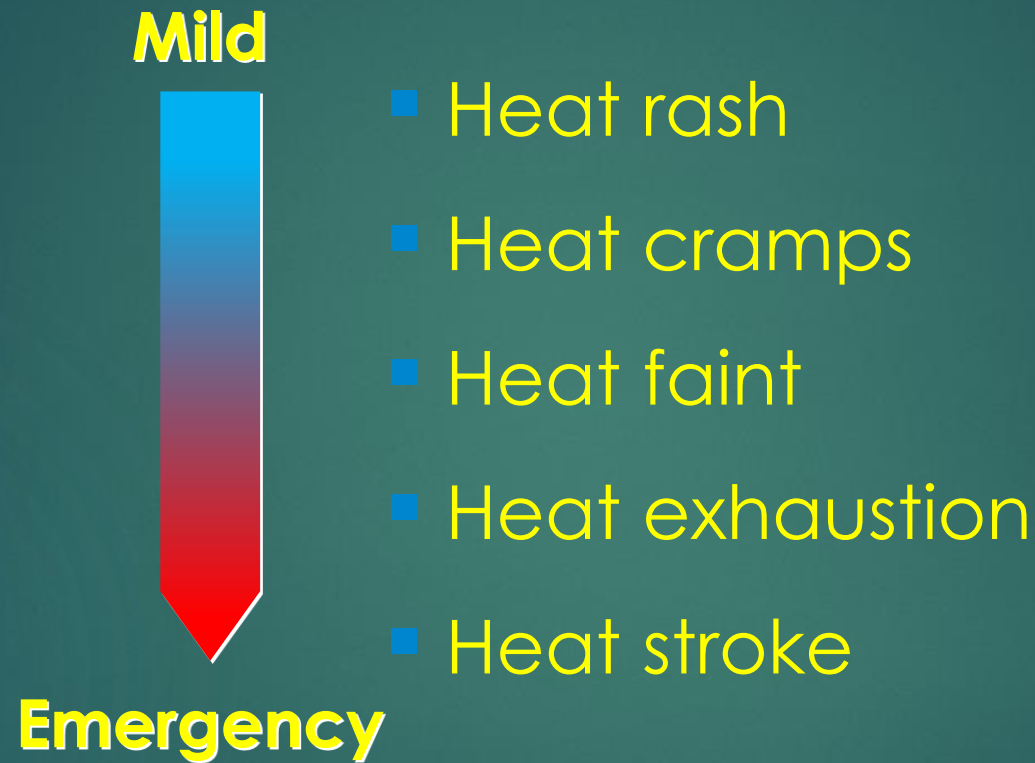
Controls- Prevention of Heat Stress

- ▶ Heat Stress awareness information
- ▶ Increase rest breaks
- ▶ Avoid strenuous activities in the hottest part of the day
- ▶ Air-conditioning service/repair early (including vehicles)
- ▶ Job rotation
- ▶ Shade, fans, ventilation and insulation

Controls- Prevention of Heat Stress (cont.)

- ▶ Multiple water stations with electrolyte replacement
- ▶ Supply and maintain ice machines
- ▶ Air-conditioned break rooms
- ▶ Drinks and break logs
- ▶ Personal protective equipment – hats, sunglasses, water bottles, sunscreen, correct clothing

What do we do if it Happens?



Heat Rash

- ▶ Heat rash (Prickly Heat) is caused by the skin being continuously wet from unevaporated sweat causing itchiness, irritation and red skin
- ▶ Keeping the skin cool and dry and some creams or powders can help

Heat Cramps

- ▶ Heat cramps are painful spasms of the muscles that are thought to be caused by a depletion of salts due to excessive sweating
- ▶ Rest the affected person in a cool place and give them frequent small drinks of an electrolyte fluid

Heat Faint

- ▶ Heat faint occurs when body fluids shift to the skin to cool the body down resulting in a drop in blood pressure
- ▶ Rest the affected person in a cool place and give them frequent small sips of fluids

Heat Exhaustion and Heat Stroke

- ▶ Serious conditions that require immediate treatment
- ▶ Due to a combination of increasing body temperature and severe dehydration

**Heat Stroke must be treated
as a medical emergency**

Early Warning Signs of Heat Illness

- ▶ Muscle cramps in the limbs or stomach
- ▶ Urine getting dark
- ▶ Not passing much urine
- ▶ Nausea and vomiting
- ▶ Headaches
- ▶ Dizziness, confusion and fainting

If Heat Exhaustion or Heat Stroke are Suspected

- ▶ Immediately seek medical assistance
- ▶ Follow the First Aid principles: **D**anger **R**esponse **A**irway **B**reathing **C**ompression
- ▶ Get the affected person out of the heat and begin **COOLING** them down by spraying with water and fanning down or using ice packs.

Have a “cool” Summer