R P S: Heat Stress Training Module
When body core temperature rises

- Blood flow to skin increases
- Sweating increases
- Heart rate increases to move blood - and heat - to the skin

When this works well

- Core temperature drops or stabilizes at a safe level
What Is The Body Core:

- The deep organs, especially heart, lungs, and other vital organs
- The arms, legs, and the tissues close to the skin are referred to as the periphery
- The core and the periphery compete with each other for blood supply
So much sweat is lost that

- dehydration results
- the body cannot cool itself by sweating, and the core temperature rises
- Salt loss causes heat cramps
- So much of the blood flow goes to the skin that other organs cannot function properly
Heat Stress (continued)

- The buildup in the body of heat
  - generated by the muscles during work
  - coming from warm and hot environments

- Heat exhaustion and heat stroke occur when the body is subjected to more heat than it can cope with
Heat – Related Illnesses

- Painful muscle cramps, usually in legs or abdomen, which warn that heat stress is developing
- Stop activity, rest in cool place, drink juice or sports beverage
- Get medical attention if no improvement in one hour
The body’s response to the excessive loss of water and salt in Sweat

**Symptoms:**

- Heavy sweating
- Worker is pale and tired
- Nausea and vomiting
- Headache, blurred vision
- Dizziness and fainting
Heat Stroke

- The body becomes unable to control its temperature
- Temperature by mouth can rise above 105°F in 10 to 15 minutes
- Death or permanent damage may occur if treatment is not given promptly
- Heat stroke kills 4,000 Americans yearly
Heat Stroke

- Symptoms
  - Oral temperature over 103°F
  - No sweating
  - Red, hot, dry skin
  - Throbbing headache
  - Dizziness
  - Nausea
  - Unconsciousness
Heat Exhaustion First Aid

- Call 911
- Help the victim cool off
  - Rest in cool place
  - Drink cool water
  - Remove unnecessary clothing or loosen clothing
  - Shower or sponge with cool water
Remember

- It takes at least 30 minutes to cool the body once a person has become overheated.
Heat Stroke First Aid

- Call 911
- Immediate, aggressive, effective cooling
  - immerse victim in tub of cool water
  - place in cool shower
  - spray with cool water from a hose
  - wrap in cool, wet sheets and fan rapidly
- Do not give anything by mouth - it won’t stay down
- Transport to hospital
## Risk Factors for Individuals

- Overweight
- Very small body size
- Poor nutrition
- Poor physical condition
- Previous heat illnesses
- Lack of heat acclimatization
- Increasing age over 40
- Heart disease, high blood pressure
- Diabetes
### Risk Factors for Individuals

- Skin disease
- Liver, kidney, and lung problems
- Pregnancy
- General fatigue, lack of sleep
- Diarrhea, vomiting
- Dehydration
- Infections
- Fever
- Sunburn, skin rash
- Recent illness or injury
Risk Factors for Individuals

- Recent inoculation or immunization
- Alcohol consumption during previous 24 hours
- Malnutrition
- Sleeping pills, medications which limit sweating
- Excessive consumption of caffeine
- Use of illegal drugs
- Low-salt diet
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Weather

- Temperatures above 70°F during the day, 80°F at night
- Direct sunlight can equal an increase up to 13° in air temperature
- High humidity
- Little air movement
Risk Factors Of The Job:

- Heavy Work
- Prolonged Shifts
- Heavy Clothing
- Protective Gear
- Overexposure to Sun & Heat
A Program To Prevent Heat Illness Will:

- **Protect health**
  - illness can be prevented or treated while symptoms are mild

- **Improve safety**
  - workers with heat stress symptoms are more accident-prone

- **Increase productivity**
  - people work less efficiently when they are over-heated
Workload

- Body generates more heat during heavy work
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**Clothing and PPE**

- The more clothing worn, the longer it takes evaporation to cool the skin.
- Coated and non-woven personal protective garments block evaporation of sweat.
Selecting PPE

- Use lightest weight garments and respirators available
- Light-colored garments absorb less heat from the sun
- If cooling vests are used, they must be selected carefully and washed daily
Managers’ Responsibilities

- Monitoring environmental conditions
- Making work assignments
- Adjusting work practices as necessary
Managers’ Responsibilities

- Observing worker
  - drinking enough water?
  - rested?
  - taking medication?
  - seems to have consumed alcohol?

- Treating heat stress problems
Managers’ Responsibilities

- Overseeing acclimatization and heat stress training of new workers
- Conducting periodic safety meetings during hot weather
**Workers’ Responsibilities**

- Carrying out instructions and training for controlling heat stress
- Being alert for symptoms in themselves and others
- Drinking enough water
- Getting adequate rest and sleep
- Avoiding alcohol, illegal drug use, and excessive caffeine
Questions
And
Answers
?? ?? ?? ??

Ask Your Supervisor For Help!

( Be Sure To Sign Training Roster Before Departing This Session )