MAJOR PROGRAM POINTS

"WORKING IN 'HIGH HEAT' ENVIRONMENTS"

Part of the "GENERAL SAFETY SERIES"

Quality Safety and Health Products, for Today... and Tomorrow

Outline of Major Points Covered in the "Heat Stress" Course

The following outline summarizes the major points of information presented in the course on "Heat Stress". The outline can be used to survey the course before taking it on a computer, as well as to review the course when a computer is not available.

- **The body is a powerful machine, capable of performing massive amounts of work.**
  - And like any machine, when it's pushed hard, your body can produce a lot of heat.

- **You need to be careful whenever your body heats up, whether you're outside under a hot sun, inside a busy factory or bundled up against the cold.**

- **As it gets hot, your body has to work hard to prevent itself from overheating.**
  - Of course, the hotter the area where you're working, the harder it is to cool off.
  - If your body gets too hot it can suffer "heat stress" and other heat-related illnesses such as heat cramps, heat exhaustion or even heat stroke.

- **These conditions occur when high body temperatures break down your body's ability to function normally.**

- **To fight off heat stress your body tries to keep your temperature at a "cool" 98.6 degrees Fahrenheit.**
  - When it heats up, the first thing your body does is to send more blood toward the skin's surface.
  - This helps the blood to release heat and cool you off.

- **Think of it this way. For cooling purposes your blood works just like the radiator fluid in your car.**
  - It comes out of the engine hot, gets cooled, and then recirculates to cool the engine down some more.

- **If the increased blood flow doesn't cool you down, then your sweat glands go to work, releasing heat in the form of warm water.**
  - As the sweat evaporates from your skin that removes heat as well, lowering your body temperature and making you more comfortable.

- **The problem is that maintaining your temperature by sweating depletes the body's valuable supply of fluids and minerals. This can be dangerous.**
  - Your body will begin to "malfunction" if it can't replace these materials.
  - So it's important to maintain proper fluid levels throughout the day, because when you sweat a lot your body can lose up to one quart of water an hour.

- **In high heat areas your natural thirst alone won't be enough to protect you from dehydration.**
  - So maintaining the proper fluid levels requires a conscious effort.
  - In fact, when you are sweating you should replace the fluid you lose with five to seven ounces of liquid every fifteen or twenty minutes.

- **But just replacing fluids isn't enough. It's also important to replace the minerals you lose when you sweat.**
  - This is where "electrolyte drinks" come in.
  - They're scientifically designed to replace both the fluids and vital minerals that your body needs to keep going.
  - They also give your muscles an energy boost, since they contain easily digestible sugars.

- **You should avoid alcoholic beverages during the work day and after heavy exertion.**
  - While it is a fluid, alcohol accelerates water loss, which just compounds the problem.

- **Some medicines can also accelerate fluid loss, or can have other adverse effects when you're heated up.**
  - If you're taking any medication it's a good idea to ask your doctor whether working in high heat areas could be detrimental.

- **It's also important to eat intelligently when you're in a high heat environment.**
  - Hot, heavy meals add heat to your body, and divert blood to your digestive system that would otherwise be helping to cool you off.
  - So you should make sure to eat light, cool meals when you're working up a sweat.

- **Heat stress itself can cause significant problems, but there are other heat-related illnesses that are even more serious.**
  - "Heat cramps" can be extremely painful and can prevent you from making even basic movements.
  - They can develop when you sweat a lot and don't replace the minerals you lose through your sweating.

- **While heat cramps affect the muscles you use while you work, they usually don't occur unless you're on a break or until after you've stopped working.**
  - If you get heat cramps, you should rest your body and drink plenty of electrolyte beverages.

- **Another heat-related illness you need to watch out for is "heat exhaustion."**
  - It occurs when you suffer from the symptoms of heat stress for three days or more and are unable to re-establish your body's normal fluid and mineral levels.
  - At this point your body can no longer compensate for the depletion of these materials that heat stress causes.

- **Symptoms of heat exhaustion include:**
  - Intense thirst and dehydration.
  - Fatigue.
  - Weakness.
  - Hyperventilation.
  - A loss of muscle coordination.
  - Feelings of anger and anxiety.
  - Impaired judgment.

- **If you find yourself suffering from heat exhaustion you need to get plenty of rest, and work to replace the fluids and minerals that you've lost through sweating.**
  - If you don't begin to feel better within a day or so, see your doctor.

- **Workers unaccustomed to activity in hot or humid environments also face an increased risk of fainting, which can lead to a fall or the loss of control of a tool or equipment, and result in a serious accident.**
  - If you begin to feel dizzy or lightheaded, take a break.
  - A rapid heart rate and moist skin can also be warning signs.

- **If steps aren't taken to relieve the symptoms of heat stress, heat cramps or heat exhaustion, there's a danger of going into "heat stroke", the most serious heat-related illness.**
  - Heat stroke occurs when the body can no longer cool itself at all.
  - This is extremely dangerous.

- **During heat stroke the body's temperature can get so high that you can sustain brain damage or even die if you don't get cooled down quickly. Symptoms of heat stroke include:**
  - Hot, flushed skin.
  - Dilated pupils.
  - An extremely high body temperature.

- **If someone appears to be suffering from heat stroke, their body temperature needs to be brought down immediately!**

- **While you often can't control how hot your work environment is, there are things that you can do to prepare for it.**

- **First, it's important to keep yourself in good shape.**
  - As with any activity, when you're working in the heat your body and its muscles perform better when they're in good condition.
  - Also, if you're overweight it forces your body's cooling system to work harder just to cool you off.
  - People in good shape can acclimatize to high heat areas more quickly as well, because their cardiovascular systems respond better to exertion.

- **Choosing the right clothes can also help you keep cool, and allow you to work more comfortably and more productively in hot environments.**
  - Loose, lightweight clothing made of cotton or cotton blends lets the air circulate around you, and can "wick off" much of your sweat.
  - This makes it easier to get rid of excess heat.

- **Color is important too.**
  - You should avoid wearing black or other dark colors that absorb the heat.
  - Instead wear white and other light colors (they'll reflect the heat and help to keep you cool).

- **When you're working outside under the sun, there are some other precautions you should take.**
  - A light-colored hat will keep the hot sun off your head.
  - Applying sunscreen will keep your skin from heating up as well as burning.
  - And don't forget your sunglasses.

- **If your work takes you into areas with intense levels of radiant heat, your employer may provide you with special protective clothing, such as reflective garments made of aluminized fabric.**
  - Ice vests are another type of protective equipment that is used by fire-fighters and other workers who are exposed to high heat.
  - For most jobs, your supervisor can tell you what type of clothing is best for you.

- **While it's true that because of their physical make-up some people will never get used to working in the heat, you'll have the best chance of working comfortably in a high-heat area if you can get into it gradually, letting your body "acclimatize" itself.**
  - In work areas that are extremely hot, it often takes five to ten work days to get used to the heat.

- **Gradual exposure gives the body time to become accustomed to higher temperatures, and eventually lets you work longer and more efficiently when you're in the heat.**
  - Without going through a period of acclimatization, heat-related illnesses can develop more easily, because the body isn't prepared to spend so much of its energy trying to cool down.

- **There are times when you have the opportunity to use equipment or machinery to help cool you or your work environment down.**

  These "engineering controls" can go a long way toward reducing the effect of the heat on your body.

- **Fans are one of the most basic engineering controls.**
  - The increased air movement they provide will help evaporate your perspiration and keep you cool.

- **Remember, the direction the air is moving plays an important role in keeping the temperature down.**
  - If you're working near a piece of equipment that produces heat, you'll probably want to blow the hot air away from your body.
  - If there's a source of cooler air nearby, you can blow it toward you.
  - And depending on time of year, you may want to bring cool air from outside into where you are working, or blow hot air out.

- **Other engineering controls that are sometimes used indoors include:**
  - Cooling systems that are designed to be attached to the machinery you're using.
  - Reflective barriers to cut down on exposure to high levels of radiant heat.

- **In some cases your work environment may be able to be air conditioned.**
  - Talk to your supervisor if you have questions about the engineering controls that are available in your workplace.

- **If you or a coworker does get overheated, you need to know what you can do to deal with the situation.**

- **For the most part, it's fairly easy to treat problems like heat stress, heat cramps and heat exhaustion.**
  - You can recover from these conditions with some rest, and by replacing the fluid and minerals that you've lost through sweating.
  - But if you don't take steps to relieve conditions like heat cramps and exhaustion, you run the risk of going into heat stroke.

- **Symptoms of heat stroke include:**
  - Hot, flushed skin.
  - Dilated pupils.
  - And an extremely high body temperature.

- **You need to act immediately if you think someone is going into heat stroke.**
  - First, call for emergency medical services.
  - Then take the victim to a cooler area, away from sources of heat and direct sunlight.
  - Work to bring the victim's temperature down as quickly as you can.
  - If possible, immerse them in a cool bath, or wrap them in wet sheets or towels.
  - Get a fan going.
  - Keep cooling the victim, refreshing the water or changing the sheets and towels, until medical help arrives.

***** SUMMARY *****

- **It can be easy to get overheated. But if you know what to do, and pay attention to what your body's telling you, you can avoid heat-related illnesses.**

- **Listen to your body, and pay attention to its "signals."**

- **Know when you need to replenish your fluids and electrolytes, and eat only light, cool meals during the work day.**

- **Take the time to get used to working in higher temperatures, do it gradually.**

- **Dress appropriately for the heat.**

- **Use fans and other engineering controls when you can.**

- **And be prepared to handle heat-related emergencies.**

- **No matter what type of job you have, if you're working in a high heat environment, remember what you've learned today. It really will help you to "keep your cool"!**