HEAT ILLNESS PREVENTION FOR CALIFORNIA WORKPLACES

COURSE OUTLINE

- **Sometimes it's because of the weather.**
  - Sometimes it's the physical tasks you perform, or even the nature of the facility you work in.
  - But it's not unusual to get hot and sweaty on the job.

- **Being overheated is not only uncomfortable, it can also make any job more difficult.**
  - But most importantly, it can affect your health as well.

- **Fortunately, your body has physical processes that kick in automatically to help you keep cool.**
  - For example, your blood can actually help to lower your body temperature.

- **As our temperature rises, the circulatory system directs more blood to the surface of your skin.**
  - There, the blood gives up the excess heat it has absorbed into the air.
  - It then circulates back inside the body to pick up more heat.
  - As this process continues, heat is "pumped" out of your body.

- **When more cooling power is needed, your sweat glands go to work.**
  - They move heat out of the body in the form of warm water.
  - The evaporation of the sweat cools your skin off as well.

- **It's an effective system, but it does have a downside.**
  - Sweating depletes your body's supply of water, and with it the vital minerals known as electrolytes.
  - Running low on these substances can cause your body to malfunction.

- **In extreme conditions, you can sweat out up to one quart of water and electrolytes an hour.**
  - While this makes you thirsty, you can't rely on your natural thirst alone to get you to drink enough to adequately rehydrate yourself.

- **In these cases, you need to make a conscious effort to take in even more liquids.**
  - So you should try to drink five to seven ounces of liquid every fifteen or twenty minutes when you're sweating.

- **Cal OSHA's Heat Illness Prevention Standards help with this.**
  - They require employers of both indoor and outdoor workplaces to provide access to fresh, suitably cool water free of charge.
  - The standard further specifies that the water should be located as close as possible to work and cool-down areas.

- **In addition to the water your employer supplies, bringing "sports" or "electrolyte" drinks with you to work can also help you to prevent heat-related illnesses.**
  - They are specifically formulated to replace the minerals that you're sweating out.
  - But you should avoid drinks that contain alcohol or caffeine.
  - They will only accelerate your loss of water.

- **Some medicines can do the same thing or have other adverse effects when you're overheated.**
  - So you need to ask your doctor if any medication that you take could cause problems when you're working in hot conditions.

- **You need to watch what you eat in the heat as well. Hot meals raise your internal temperature.**
  - "Heavy" foods require more blood to be used for digestion, when that blood could be helping to cool you off instead.
  - So stick to light, cool meals when you're working in the heat.

- **Whenever you work in the heat, your body's natural cooling process works hard to keep you from becoming overheated.**
  - The greater the heat, the harder that process has to work to cool you off.
  - And the more likely it is to get "out of whack".

- **When these natural cooling defenses break down, you can develop "heat-related illnesses" including…**
  - Heat syncope.
  - Heat cramps.
  - Heat exhaustion.
  - Heat stroke.

- **For example, sometimes when your system tries to cool itself off by directing more blood to the skin, the other parts of your body can get too little blood.**
  - This can cause a loss of consciousness or “fainting”, a condition that is called “heat syncope.”

- **“Heat syncope” often happens to people who are new to working in high-heat conditions.**
  - It can lead to serious injuries if the victim falls or loses control of a tool or vehicle when they faint.
  - “Warning signs” include dizziness and a rapid heartbeat.

- **When you sweat a lot and fail to replace the vital minerals or "electrolytes" that you're losing you can develop another heat-related illness, known as “heat cramps”.**

- **Symptoms of “heat cramps” include…**
  - Painful cramping.
  - Involuntary jerking or spasming of the muscles.

- **Heat cramps typically affect your…**
  - Calves.
  - Thighs.
  - Shoulders.

- **When your body runs low on both electrolytes and fluids, the result can be an illness called “heat exhaustion”.**
  - In addition to intense thirst, someone suffering from heat exhaustion can feel confused, dizzy, weak and uncoordinated.
  - They will also sweat profusely.

- **The most severe heat-related illness is “heat stroke”.**
  - It occurs when the body's natural cooling mechanisms break down completely.
  - As a result, the victim is unable to sweat.
  - Their skin will be flushed, very hot and dry.

- **Other symptoms of “heat stroke” include…**
  - A throbbing headache.
  - Rapid heartbeat.
  - Nausea.
  - Vomiting.

- **“Heat stroke” causes a person's body temperature to rise uncontrollably, which is extremely dangerous.**
  - This can cause damage to internal organs, including the brain, and can even be fatal.

- **When you're experiencing any type of heat-related illness, it's important to pay attention to what your body tells you.**
  - You might ignore the symptoms of one illness, such as heat cramps.
  - But that can quickly develop into another one such as heat exhaustion or heat stroke, which can be a lot more serious.

- **Even when you do your best to protect yourself from heat-related illnesses, it’s still possible that working in hot conditions can “knock you for a loop”.**
  - Let's start by looking at how heat can affect the body.
  - When you get overheated, your system uses the sweating process in order to carry heat out of your body in the form of warm water.

- **However at the same time, sweating constantly depletes our reserves of water and vital minerals (electrolytes).**

- **If you do not make a point of replacing these substances, you can develop heat-related illnesses such as…**
  - Heat cramps.
  - Heat exhaustion.
  - Heat stroke.

- **Which is why Cal OSHA’s “Heat Illness Prevention Standards” require employers to have a written “Heat Illness Prevention Plan” that addresses emergency response procedures.**
  - This must include any first aid that should be given to heat-affected workers and how to contact emergency medical services.

- **When someone develops a heat-related illness on the job, you need to address the causes directly.**
  - Get the victim out of the heat and into a cool environment.
  - Have them sit or lie down and rest.
  - Cool them off by bathing their head, face and neck with cool water, or applying wet towels or sheets.
  - Give them cool water or an electrolyte beverage to drink.

- **If possible, move the victim into a shady, air-conditioned area.**
  - Remove any outerwear they have on and loosen any tight garments.
  - If you think they may be experiencing heat stroke, call for emergency medical assistance immediately!

- **With heat stroke, it's also critical to lower their body temperature as soon as possible. There are several ways that you can speed up the cooling process, including…**
  - Applying cold compresses to their armpits and groin.
  - Wetting down their clothing.
  - Directing a fan on them.
  - Placing them in a cool bath.
  - Using ice or cold packs.

- **You should stay with the victim and continue to cool them down until the EMTs arrive.**

- **There are times when you can't control how hot your work environment is.**
  - But there are things that you can do to help handle the heat… by preparing for it ahead of time.

- **For starters, you should be familiar with your company's "Heat Illness Prevention Plan".**

- **Cal OSHA requires outdoor workplaces to have a written plan that includes…**
  - Procedures for providing water, shade and preventative rest periods.
  - Plans for observing new employees as they acclimate to working in a hot environment, to watch for signs of heat-related illnesses.
  - Procedures for mitigating the effects of high-heat environments, such as implementing shorter shifts or more frequent "cool-down" breaks.
  - Plans for meeting employee heat-stress training requirements.
  - What you should do in the case of a heat-related emergency.

- **Similarly, indoor workplaces that can reach 82°F or higher must have a written plan that includes all of the "outdoor" requirements as well as…**
  - Procedures for assessment and measurement of heat.
  - Feasible heat-control measures.

- **Being familiar with your company's Plan and ways to prepare for high-heat environments can enable you to work more comfortably.**
  - It can also help you avoid the hazards associated with heat-related illnesses.

- **For example, whenever it is possible you should take a gradual approach to working in a high-heat environment.**
  - This gives your body time to get used to the temperature.
  - The average worker can need from 5 to 10 days to get fully acclimated, particularly in environments that are extremely hot.

- **For new workers, it can take even longer.**
  - That's why Cal OSHA requires employers to observe new hires and workers who have been newly assigned to high-heat areas for a 14-day "acclimatization period".

- **Employers have to observe all workers during a "heat wave".**
  - OSHA defines a heat wave as "a day when the high temperature is predicted to be at least 80°F and at least 10°F higher than the average high temperature of the previous five days".
  - So it is also your supervisor's responsibility to check weather forecasts and make a plan for keeping you and your coworkers safe.

- **People who are in good physical condition can generally get used to high heat conditions more quickly.**
  - They can also perform better in the heat, because their body and its muscles are lean and toned.
  - When a person is overweight or has a lot of fatty tissue, their body's cooling system has to work harder to keep their temperature down.

- **Choosing the right work clothes is another thing that can be important to staying cool.**
  - Loose, lightweight clothing made of cotton, or a cotton blend helps you to get rid of excess heat by allowing the air to circulate freely around you and wick away much of your sweat.

- **The color of the clothing you wear makes a difference, too, especially if you're working in the sun.**
  - Black or other dark colors actually absorb heat, so you should avoid wearing them.
  - Wear white and other light colors instead.
  - They will help to keep you cooler by reflecting the heat.

- **The same principle applies when you wear a hat to keep the hot sun off your head.**
  - You really want it to be light-colored as well.

- **Don’t neglect the sunscreen.**
  - It not only prevents sunburn, it helps to keep the sunshine from heating up your skin as well.

- **Remember to wear sunglasses too!**
  - Keeping the sun off your face and out of your eyes both protects you and helps you to feel cooler.

- **Your work may take you into areas with intense levels of radiant heat.**
  - In this case, your employer may provide you with special protective clothing, such as reflective garments made of aluminized fabric.

- **Another option is ice vests.**
  - These are often used by firefighters and other workers who are exposed to very high heat.

- **Your supervisor can tell you what type of protective clothing is best for keeping you cool and safe in your job.**

- **Sometimes, working in a hot environment is inevitable, so you should know how to work safely in the heat throughout the workday.**
  - If you're working indoors, temperatures can sometimes be reduced to safe levels through the use of cooling equipment.

- **These solutions are called engineering controls.**
  - Some of them, such as air conditioning and ventilation systems, can be built directly into a facility.
  - Air conditioning can also be installed “locally” in windows, or as freestanding units.

- **Sometimes air conditioning in your work area isn't enough to keep you cool.**
  - So Cal OSHA's "Indoor Heat Illness Prevention Standard" requires employers to have a "cool-down" area where the temperature is kept below 82°F.

- **So you should take a break when you need it.**
  - You are entitled to a minimum of a 5-minute "cool-down rest period" whenever your facility's temperature is over 82° as frequently as you need.
  - If you're experiencing symptoms of a heat-related illness, you should stay in the "cool-down area" until the symptoms subside.

- **If you're working outdoors, you should have access to a shaded area when temperatures are above 80°F.**
  - Even when the temperature is below 80°F your employer must provide shade if you ask for it.

- **Cal OSHA requires employers to keep an eye on the temperature to make sure they provide their employees with protection from the heat when it's needed.**
  - To do this, they must measure the actual air-temperature and the heat index (how the temperature feels to the human body) regularly, and record whichever is greater.

- **In an indoor facility, if either measurement reaches 87°F, employers must implement control measures such as...**
  - Placing portable cooling units in the area.
  - Implementing more frequent "cool-down" rest breaks.

- **These measures must be taken when the temperature reaches 82°F for workers who...**
  - Wear clothing that restricts heat from dissipating.
  - Work in high-radiant heat areas.

- **Other engineering controls that can be built into an indoor work environment include...**
  - Cooling systems that are attached directly to the machinery that gets hot.
  - Reflective barriers that contain radiant heat given off by equipment or work processes.

- **Portable fans, such as oscillating and box-type fans, are also a popular and convenient way to keep cool.**
  - Of course, making sure the fan moves the air in the right direction is important in controlling the heat.

- **If you are working near a piece of equipment that produces heat, you should position the fan to blow the hot air away from your body.**
  - If there's a source of cooler air nearby, use the fan to blow it toward you.
  - Depending on the time of year, you may be able to use a fan to blow cool air into your work area from outside or blow the hot air out.

- **But if you're using a portable fan, it's important to remember that HVAC systems and other built-in engineering controls are carefully adjusted to cool a workplace effectively and efficiently.**
  - So using a fan in your own work area may interfere with the way the HVAC system is supposed to work.
  - Turning on a fan may help to cool you off, but it can actually make things hotter for others in the facility.
  - So be sure to talk to your supervisor about what you can and can't do to cool off your work area.

- **As for "outdoor employers", Cal OSHA's Standard states that they must implement procedures to deal with heat-related illnesses when the outside temperature reaches 95°F.**

- **These procedures can include...**
  - Making sure workers know the symptoms of heat-related illnesses.
  - Observing workers for signs of a heat-related illness.
  - Reminding workers to regularly drink water.
  - Encouraging workers to take "cool-down rest breaks".

*** * * SUMMARY * * ***

- **Cal OSHA's Heat Illness Prevention Standards require that employers in high-heat workplaces have a written Heat Illness Prevention Plan... for both indoor and outdoor employees.**

- **You should always take a gradual approach to working in a hot environment. It can take as many as fourteen days to acclimate to a high-heat work area.**

- **When your body overheats, you can develop heat-related illnesses like heat syncope, heat exhaustion, and heat stroke.**

- **When you're sweating, you need to drink five to seven ounces of liquid every fifteen minutes to keep your body's cooling system operating properly.**

- **If a coworker develops a heat-related illness, you should move them to a cooler environment, have them sit or lay down, and cool them off as much as possible until medical help arrives.**

- **Use engineering controls like air conditioning, ventilation systems, and portable fans to help cool down your environment whenever possible.**

- **Now that you understand the dangers of heat-related illnesses, how you can avoid them, and how to treat them, you can help keep yourself, your coworkers, and your work environment safe from the heat... every day!**