*Summer 2008 • Number 49*

KWORDS from KWORCC

# June is National Safety Month

What are the three leading causes of accidental death in the United States? You might be surprised!

## Distracted Driving

• Cell phone use is the most common distraction for drivers.
• An estimated 10 percent of drivers in typical daylight are using some type of phone, hand-held or hands-free.
• Talking, listening and dialing are equally dangerous. Hands-free cell phone conversations are as distracting as those on a handheld device.
• The slower reaction time caused by cell phone use is comparable to that of people who are legally drunk (.08 blood alcohol content).
• Texting, GPS and in-car computers have added to the boom in distracting technologies.

## The Overdose Epidemic

Accidental poisoning deaths have more than tripled in the United States over the past 20 years, making poisoning the nation's second-leading cause of unintentional deaths, after motor-vehicle crashes. This trend is driven primarily by adults (ages 20-64) of both sexes and seems to be mainly attributable to the abuse of drugs, particularly prescription painkillers.

Most affected by the dramatic rise in poisoning deaths are people born in the 1950s – that is, in the middle of the baby boom years. And while the largest numerical increase in poisoning deaths is among non-Hispanic white men between the ages of 20 and 64, the rate of poisoning from unintentional overdoses is increasing fastest among non-Hispanic white women in the same age range.

The need for public education concerning accidental poisoning deaths is clear. When asked to rank potential causes of poisoning in a survey conducted by the Council, 53 percent of people said household chemicals were most commonly associated with fatal poisoning, while just 34 percent named drugs and medicine.

What's more, most Americans – 81 percent – believe that children are at greatest risk for fatal poisoning, though data shows that less than one percent of poisoning deaths involve children under 6 years of age (about 30 deaths), and more than 96 percent involve adults 20 years and older (more than 20,200 deaths).

## Falls Prevention

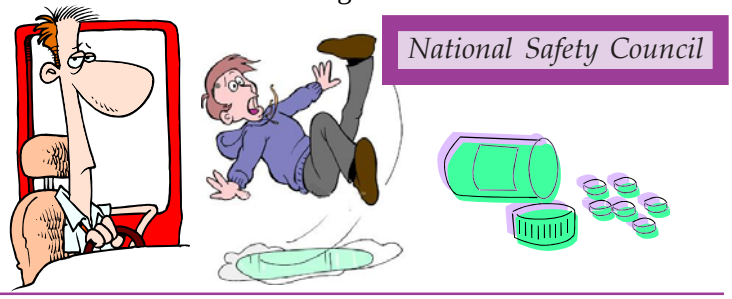
Falls are more common than you think. Ranked third among the leading causes of accidental death in the United States, deaths from falls are a growing safety concern as the nation's population ages.

### *Falls Prevention in the Workplace*

• Aisles, stairs and walkways should be clutter-free; spills should be wiped, dropped objects picked up and cabinet drawers closed when not in use.
• Use handrails in stairways; take one step at a time and report broken stairs or loose stair coverings.
• Apply non-skid floor coatings and slip-resistant mats where falls are likely.
• Slow down and take small steps when walking on a wet or slippery surface.
• Wear slip-resistant footwear and keep shoe soles clean for better traction if your work area tends to be wet, dirty or oily.
• Inspect ladders before and after every use.
• Report every incident – even minor falls. Your efforts can save someone else from a more serious injury.

### *Falls Prevention for Aging Adults*

• Wear proper footwear. Athletic shoes greatly reduce the risk of falls among the elderly. The risk of falling increases if in stocking feet or barefoot.
• Install handrails in stairways and grab bars in the bathroom near the toilet, in the shower and along the tub.
• Keep living areas well lit and place a night light in the bathroom.
• Use non-skid throw rugs to reduce chances of slipping on linoleum.
• Store frequently used items in easy-to-reach areas.
• Exercise regularly. The stronger the body, the more likely a person is to sustain a fall.
• Monitor medications. Studies show older adults taking more than four medications are at high risk for falls.



KWORCC
KANSAS WORKERS RISK COOPERATIVE for COUNTIES

700 SW Jackson • Suite 200
Topeka, Kansas 66603
Toll Free 1-877-357-1069
www.kworcc.com

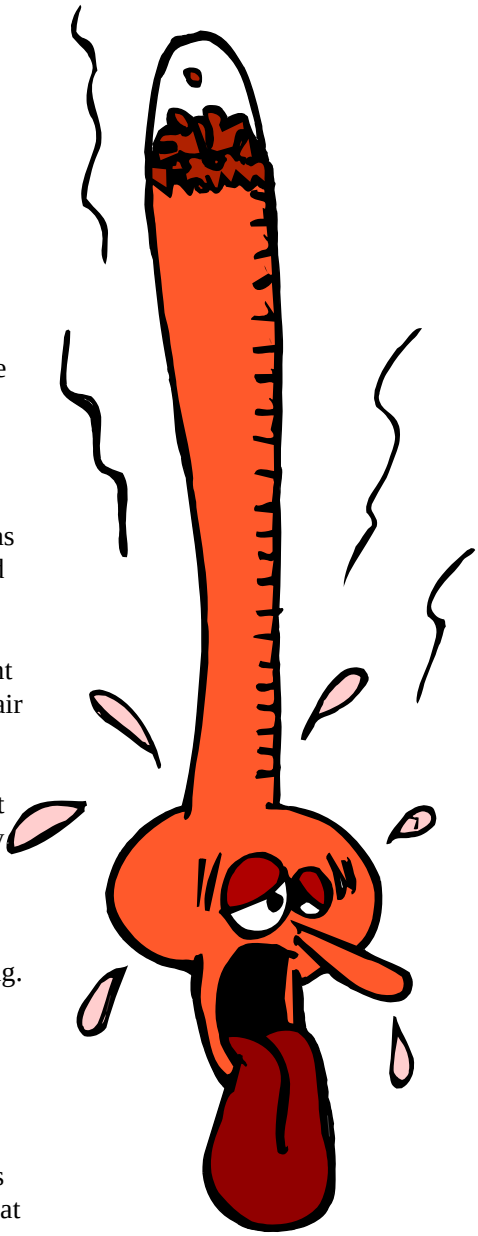
## CLAIMS REPORTING

For assistance with on-the-job injuries, contact IMA at 1-800-333-8913. Questions on claims should be directed to Annette Duncan. All correspondence, bills or other documentation for your claims can be mailed to Annette's attention at: 250 North Water, PO Box 2992, Wichita, Kansas 67201.

## TRUSTEES



# Thermal regulation: The body's delicate balance



### Thermal regulation

Thermal regulation is the process of managing one's "body vitals." That is the delicate balance of maintaining normal body temperature within a very narrow range, compelling the heat produced through normal metabolic activity and the heat lost by way of other bodily mechanisms to be continuously counterbalanced against prevailing environmental conditions.

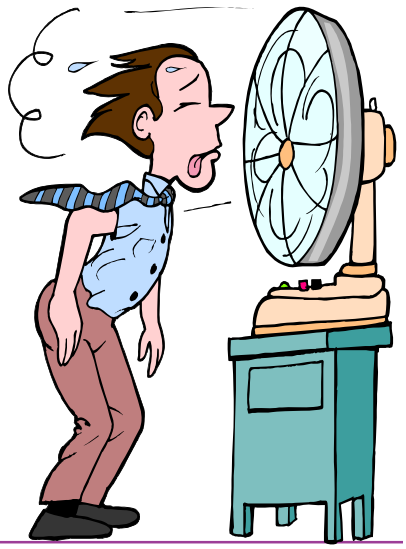
The variables that define the level of heat stress one faces are personal characteristics such as age, weight, physical fitness, medical condition and acclimatization to the heat or cold. Four environmental factors directly affect our ability to withstand heat stress: temperature, humidity, radiant heat (from the sun or a furnace, for example) and air velocity. At temperatures above 92° F (skin temperature), the body gains heat through convection; that is, outside air molecules carry heat to the skin. When temperatures exceed 92° F, body heat is lost almost solely through evaporation, through insensible perspiration (drying of the skin tissues) and through sweating. Sweating does not commence until the body triggers a need for cooling. When moderate climates prevail (temperatures less than 90° F), more means are available to dissipate body heat than under hot climatic conditions.

### Diagnosis and prevention

The National Safety Council, NIOSH and OSHA and other authorities offer detailed diagnoses of heat stress, heat exhaustion, heat cramps and heat syncope. They advise seeking immediate emergency care for heat stroke victims. OSHA Fact Sheet 92-16, "Protecting Workers in Hot Environments," outlines ways to avoid all types of heat stress. The fact sheet lists these basic precautions:

- acclimatization to the heat
- engineering controls
- work practices
- training and education
- providing cooling devices
- appropriate protective clothing
- longer rest periods in cooler areas

Managing heat stress in the workplace is very much a concern for employers as well as employees. For employers, heat stress poses the threat of injuries, workers' compensation losses, costly downtime, lost workdays, and poor performance. For the employee, it can be the prelude to accidents, cardiac stress, even death.



Heat stress can get the best of a healthy, physically fit individual no matter the time of year. It is no longer just a summer problem. Christopher Kearns, senior project officer for the U.S. Army's Dismounted Battlespace Battle Lab at Ft. Benning, GA, said the Army reports more incidents of heat stress during winter-like conditions, a problem attributed to the thermal burden of protective clothing and equipment while marching or exercising.

The body's trigger to react to the need for cooling or warming is the temperature of the blood as it reaches the hypothalamus in the brain. Reaction time to obtain thermal equilibrium is extremely quick. A similar process is our sympathetic nervous system's continuous fight with our parasympathetic nervous systems, keeping our pupils evenly dilated. But, thermal regulation is difficult to achieve and maintain when working in hot conditions, particularly when the person is burdened by wearing protective clothing.

The average individual doing light work burns approximately 3,000 calories daily. Sixty-five percent is lost through radiation, convection and conduction of the skin to the atmosphere, while 25% is lost through evaporation of water from the skin and lung surfaces. An individual performing heavy work, however, may burn as much as 425 calories per hour. Humidity is one of the most
important variables in the delicate balance of attaining thermal regulation.

If the humidity is not excessive, the air velocity is sufficient and the body is adequately hydrated, then thermal equilibrium can be maintained. But, when humidity is excessive, air molecules are unable to absorb additional moisture, making it extremely difficult for the body to dissipate heat. Exertion in hot sun and high humidity, coupled with the conductive moisture created between your skin and protective clothing, makes it difficult for a workers body to dissipate heat easily by evaporation through the skin.

## The effects of medication and drugs

The picture becomes more complicated if the employee is using over the counter headache, cold and flu remedies, tranquilizers or pain medication. Antihistamines, decongestants and remedies containing alcohol act to dry up the mucous membranes and decrease sweat gland secretion, causing further dehydration.

"You're just asking for trouble," said Dr. John C. LoZito, a neurologist in Melbourne, FL. "You won't sense the onset of heat stress as quickly. Your senses, your reaction time and your motor skills are affected," according to Dr. LoZito. Drugs and alcohol make people extremely susceptible to heat stress, while lack of sleep and improper nutrition, coupled with several cups of coffee and maybe a donut are terrific for triggering the quick onset of heat stress. The effects of a sleeping pill can linger for up to 24 hours within a person's system according to Dr. LoZito.

People who are diabetic, hypoglycemic or anemic are considered more susceptible. So are those with circulatory problems, atherosclerosis, previous head injuries, underactive thyroid or hypertension. Also vulnerable are individuals who are dieting, taking diuretics or smoke at least one pack of cigarettes daily.

Sequelae—the name for recurrent complications—is frequent in individuals who recover from a severe heat illness. Such individuals are usually intolerant of heat and become extremely uncomfortable when exposed to heat stress conditions. Subtler physiologic changes may occur, such as emotional instability, clumsy articulation and lowered tolerance to alcohol. Permanent anhidrosis (cessation of sweating) has been occasionally noted in some individuals who recovered from prolonged exposure to high heat and high humidity. For some individuals, irreparable damage to the body's heat-dissipating bodily mechanisms is noted. Muscle coordination is weak and affected in all quadrants of the body, and equilibrium and hand-eye coordination is off. Also, noted in some cases is the lack of nerve conductivity in the lower limbs.

## The morning after

So you thought last night's birthday party was a blast? You took a sleeping pill and finally got to sleep at 2:30 a.m.. You drank too much alcohol and now, upon waking, you feel so miserable that it's all you can do to gulp down some coffee and pop a few aspirin tablets before heading off to work. Physiologically, the alcohol already has you extremely dehydrated, your senses are dulled by the headache medication and the carry over effects of your sleeping aid have further dulled your senses.

Sitting in the air-conditioned office, your motor skills, muscle coordination and equilibrium are affected, but you're feeling that caffeine boost. At least you didn't have to operate a hazardous piece of machinery in the hot sun or a hot warehouse today.

Time performs its healing magic, but it will take several hours for your body to expel the toxins and medication, rehydrate itself and attain some metabolic balance.

But what if you must work in a hot room or wear protective clothing and you haven't had time to eat and properly hydrate with fruit juice or an electrolyte balanced beverage? The scenario means that you are an excellent candidate for experiencing some form of heat stress. In reality, you could be classified as a safety hazard.

The keys to avoiding heat stress situations are awareness and prevention. People working in hot weather, especially those wearing burdensome protective clothing, should drink before they feel thirsty. If moderate to heavy work is performed, an electrolyte balanced drink is best for keeping the potassium levels up for proper muscle function, but a regular regimen of hydrating at least with water, continuously throughout the work day, assists the body in continuing its natural process of thermal equilibrium—sweating. If hydration becomes insufficient, where sweating becomes difficult, you have broached the mechanism that keeps the balance of equilibrium intact. Once that occurs, the body reacts to the onset of a heat stress illness.

*This article contains edited from an article by Kathryn Maxner published in Volume 19, No. 7 edition of the November 1996 issue of* ***Industrial Hygiene News.***

KANSAS
WORKERS RISK COOPERATIVE
for COUNTIES
700 SW Jackson, Suite 200
Topeka, KS 66603-3731



HELP!
We are still trying to locate the Safety Coordinator Video by Zoman Productions!

SAVE THE DATE!

## Risk Management Strategies for Public Entities

**Sponsored by the Kansas Chapter of PRIMA (Public Risk Management Association)**

October 17, 2008 at the Cargill Learning Center in the Sedgwick County zoo

**There is NO CHARGE if you are a current member of Kansas PRIMA or you are a municipal entity employee responsible for risk/safety, insurance or human resources.**

**Others may attend by paying $50 which includes breakfast and lunch**

Phone: 316-660-9682
E-mail address mmcbride@sedgwick.gov
Web site address: http://kansasprima.org/

## 2008 Board Meeting Dates

- ✓ January 17th
- ✓ February 12th
- ✓ March 13th
- ✓ April 17th
- ✓ May 22nd
- ✓ June 19th
- July 17th
- August 21st
- September 18th
- October 16th
- November 17th – Annual Meeting
- December 11th