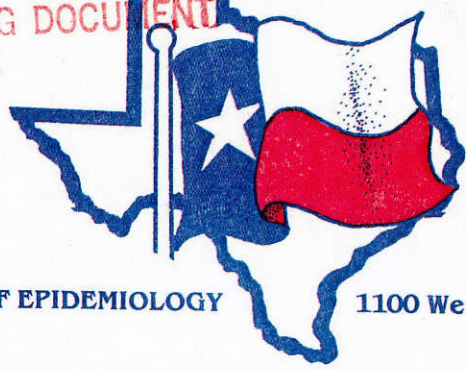


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Texas Preventable Disease NEWS

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contents:

Heat-related Illness
Parasitic Diseases in the Caribbean

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BUREAU OF EPIDEMIOLOGY

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HEAT-RELATED ILLNESS

Heat-related illness is the effect of excessive heat on the body. These illnesses are sometimes identified as "hyperthermia" or "hyperpyrexia." Both of these words mean "exceptionally high fever." ("Hyperthermia" should not be confused with "hypothermia," which means lower than normal body temperature.) Heat-related illness may show itself as one of, or a combination of, several conditions, such as heat stroke, heat cramps, or heat exhaustion. Other health problems, particularly deaths due to ischemic heart disease and cerebrovascular disease, also have been noted to increase during very hot weather, but these are not referred to as heat-related illnesses.

How Heat-related Illness Develops

Normal body temperature is controlled by heat-regulating centers in the brain that balance heat production and heat loss. Heat is produced by the body as cells break down the nutrients in food. Heat is removed from the body by evaporation of perspiration, convection of air around the body, conduction through clothing, and radiation into surrounding air. When heat gain exceeds the level the body can remove, or when the body cannot compensate for fluids and salt lost through perspiration, the temperature of the body's inner core begins to rise and heat-related illness may develop.

Contributing Factors

The degree of heat-related illness depends on biological and environmental factors. Biological factors which predispose a person to heat-related illness include:

- Age. Infants (especially those already in poor health) and elderly persons are at particularly high risk;
- Chronic illness. Persons who are chronically bedfast or unable to care for themselves are at increased risk;
- Medicine or drug usage. The use of major tranquilizers (from the phenothiazine, butyrophenone, or thioxanthene groups), large doses of anticholinergic drugs; or
- Mental illness or depression.

Some of the most notable environmental factors that contribute to heat-related illness include:

- Lack of adequate insulation, air-handling equipment, and construction criteria that would maximize the movement of air;
- Lack of trees and shrubbery surrounding residences;
- Living on the higher floors of a multistory building;
- Occupational exposure to heat;
- Living in an urban area.

Signs and Symptoms of heat-related illnesses may occur concurrently or progressively. Any of these symptoms should be heeded as serious and immediate measures should be taken to reduce body temperature.

Heat cramps: muscle cramps, often beginning in the abdomen and legs.

Heat exhaustion: normal or slightly elevated body temperature; pale, clammy skin; profuse perspiration; tiredness and weakness, headache; dizziness and nausea (possible vomiting) and sometimes abdominal cramps; and possible fainting.

Heat stroke: high body temperature (106°F or higher); hot, red, dry skin from a blocked sweating mechanism; rapid and strong pulse; and possible delirium or unconsciousness.

Preventing Heat-related Illness

A person's ability to adapt to hot weather or hot working conditions and to tolerate exposure to alternately high and low temperature and humidity is variable. Given the right circumstances, anyone can be susceptible to heat-related illness. Persons under a physician's supervision should contact their physician to determine whether or not a prescribed medication(s) (especially tranquilizers or anticholinergics) or dietary regimen places them at increased risk. Individuals known to be at risk should observe the following preventive measures:

- Drink plenty of water. Fluid consumption should be as much as 50% greater than the amount dictated by thirst. Persons who 1) have epilepsy or heart, kidney, or liver disease, 2) are on fluid restriction, or 3) have a problem with fluid retention should consult a physician before increasing their consumption of fluids.
- Be aware of the body's need to become acclimatized to heat by adjusting its balance of water and salt. Perspiration always causes a loss of physiologic salts as well as water. While replacing the water lost in sweat is the most urgent protective measure, unacclimatized persons should consider moderately salting table food as a means to replace sodium lost in sweat. Persons on salt-restrictive diets must consult their physicians before increasing their salt intake.

On the other hand, persons who eat canned foods or "junk" foods usually get plenty, if not too much salt. Excessive salt is dangerous as it further increases the body's need for water.

Salt tablets should absolutely be avoided. Among other problems, gastric irritation and hemorrhage have resulted from naive, indiscriminate use of salt tablets.

In work camps or sports practice areas where violent physical activity seems necessary despite atmospheric hazards, workers and athletes should be provided with lightly salinized drinking water. This can be prepared by adding 2/3 teaspoon of common table salt to 1 quart of water -- with or without fruit flavor* and artificial sweetening*. (Sugar, which can interfere with maximal athletic performance, is to be avoided.) Commercially available "thirst quenchers" are not (repeat NOT) recommended because of their hyperosmolarity.

- Reduce activity during the heat. Strenuous activities should be reduced, eliminated, or rescheduled to the coolest time of the day.
- Avoid the heat as much as possible. Individuals at risk should stay in the coolest available place, not necessarily indoors.
- Spend more time in air-conditioned places. Air-conditioning in homes and buildings markedly reduces danger from hot weather. If acquiring an air-conditioner for the home is not economically feasible, spending more time each day (during hot weather) in some air-conditioned environment outside the home affords some protection.
- Wear loose-fitting and light-colored clothing made of porous, loosely woven, lightweight material in hot, sunny weather. Other more obvious methods of keeping cool, such as taking cool showers or swimming, should be remembered.
- Do not drink alcoholic beverages, if exposure to heat may be a problem.
- Prevent deaths from heat stroke! First aid measures in the presence of any symptoms of heat-related illnesses must serve to reduce body heat. In a conscious victim, oral fluids must be administered immediately (especially if one complains of feeling faint), while attempts are made to move the person to the coolest possible location. Sponge body surfaces with cool water to assist in preventing heat stroke. If heat stroke symptoms occur, immediate medical attention should be obtained. Heat stroke is a life-threatening medical emergency. The most important lifesaving measure is cooling the stricken person's body by the most rapid and effective measure possible. In the presence of delirium or unconsciousness which preclude oral fluids, sponging the body with cool water (if circumstances permit) is absolutely necessary until medical assistance can be obtained.

*Kool-aid® powder and Sweet-n-low® are examples of satisfactory products for flavoring and sweetening liquids to improve palatability.

PARASITIC DISEASES IN THE CARIBBEAN

A recent report in the "Weekly Epidemiologic Record" (World Health Organization, 1984; 59: 133-6) presented the results of surveys conducted in 1982 for enteric parasites in Caribbean schoolchildren. Between 1977 and 1981, the Caribbean Epidemiology Center (CAREC) conducted similar surveys in nine Caribbean nations. The 1982 surveys added Grenada and Saint Christopher and Nevis. Infection among those surveyed was widespread in these countries; 94% of 344 children in seven schools in Grenada, and 80% of 288 children in Saint Christopher and Nevis, were positive for one or more parasites, with Trichiuris trichiura (whipworm) and Ascaris lumbricoides (roundworm) being most common (85% and 33% respectively in Grenada).

Large numbers of US citizens visit the Caribbean as tourists, and many others spend time in the region working with social service agencies. A common feature among travelers' itineraries is to visit several different islands/nations during a short time period. While high levels of parasitism cannot be uniformly applied to all Caribbean nations, travelers to the region and their health care providers need to be aware of the potential for infection with enteric parasites, many of which may not become symptomatic until after returning home.

In the Caribbean, risk of malarial infection currently exists only in Haiti and bordering areas of the Dominican Republic, thus, the vast majority of US travelers do not need malarial prophylaxis. However, dengue fever has been widespread throughout the area for many years, and precautions should be taken to avoid exposure to mosquitos; no vaccine or other chemoprophylaxis is available for dengue fever.

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