HEAT STROKE

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DEFINITION

- Heatstroke is a condition caused by your body overheating, usually as a result of prolonged exposure to or physical exertion in high temperatures.
- This most serious form of heat injury, heatstroke, can occur if your body temperature rises to 104 F (40 C) or higher.

HEAT ILLNESS

Heat cramps,

Heat rashes,

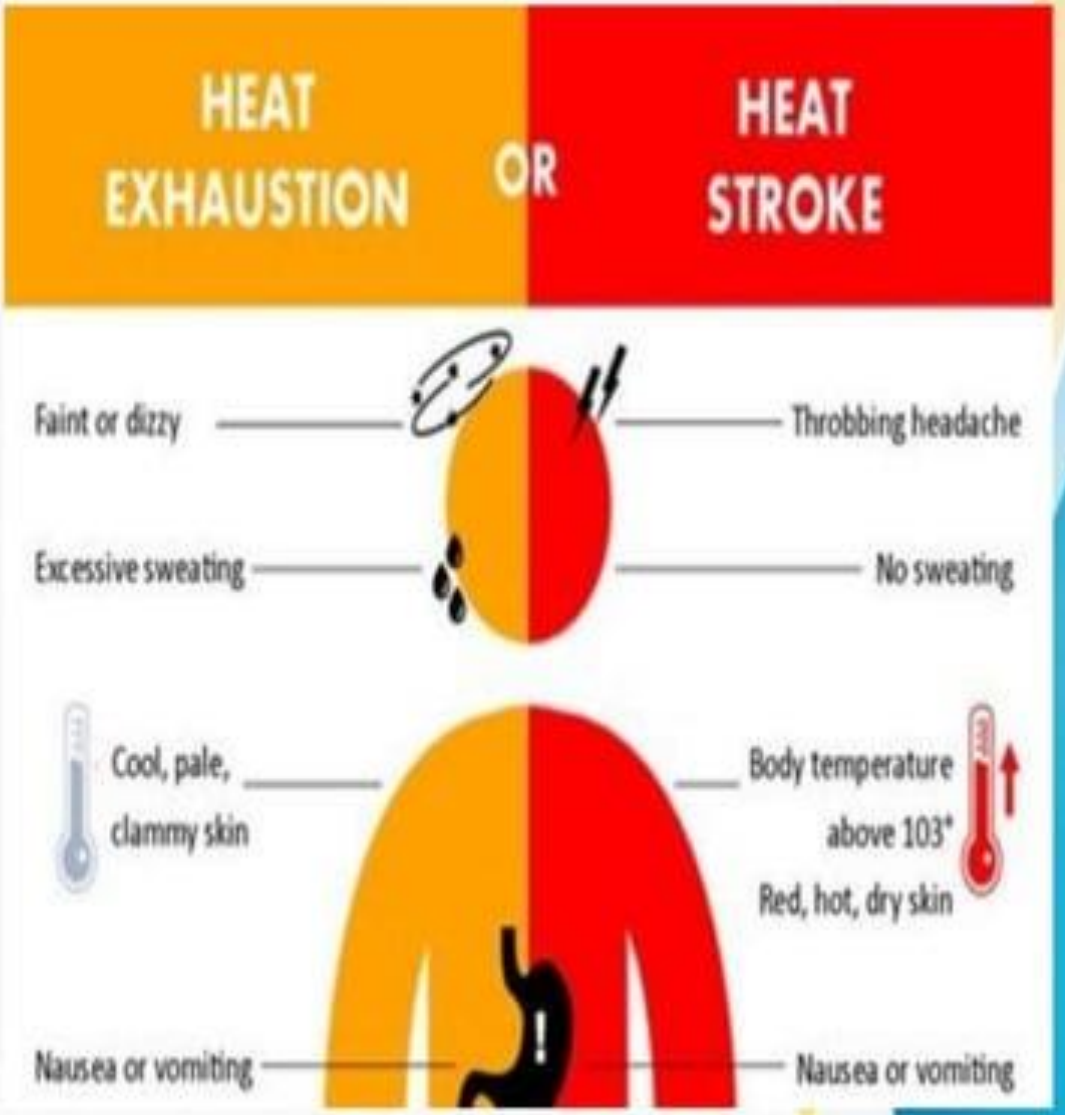
Heat edema,

Heat syncope,

cont..

- Heat exhaustion,

- Heat stroke



CLASSIFICATION

❖ Classical (nonexertional) heat stroke:

More commen in younger children who are unable to excape from hot environments and those with underlying chronic medical conditions that impaired thermoregulation.

❖ Exertional heat stroke:

Generally occures in healthy individulals who engage in heavy excercise during periods of high temperature and humidity. Example Athletes and miltary requirement basic training.

Heat exhaustion and heatstroke

- Heat exhaustion and heatstroke are part of a continuum of heat-related illness.
- Both are common and preventable conditions affecting diverse patients.
- Recent research has identified a cascade of inflammatory pathologic events that begins with mild heat exhaustion and, if uninterrupted, can lead eventually to multiorgan failure and death.
- Heat exhaustion is characterized by nonspecific symptoms such as malaise, headache, and nausea.
- Untreated heat exhaustion can progress to heatstroke, a much more serious illness involving central nervous system dysfunction such as delirium and coma.

WHO'S AT RISK

Elderly people

Children

Athletes

Military

Outdoor workers(buldinconstruction,roofers)

RISK FACTORS

- Heat stroke is most likely to affect older people who live in apartments or homes that don't have air conditioning or good airflow. Other high-risk groups include people of any age who don't drink enough water, have chronic diseases, or who drink excessive amounts of alcohol.
- Heat stroke is strongly related to the heat index, which is a measurement of how hot you feel when the effects of relative humidity and air temperature are combined. A relative humidity of 60% or more hampers sweat evaporation, which hinders your body's ability to cool itself.

RISK FACTORS

- The risk of heat-related illness dramatically increases when the heat index climbs to 90 degrees or more. So it's important especially during heat waves to pay attention to the reported heat index, and also to remember that exposure to full sunshine can increase the reported heat index by 15 degrees.

Heatstroke signs and symptoms include:

- High body temperature. A core body temperature of 104 F (40 C) or higher, obtained with a rectal thermometer, is the main sign of heatstroke,
- Altered mental state or behavior,
- Alteration in sweating,
- Nausea and vomiting,
- Flushed skin,Dry skin,
- Rapid breathing,
- Racing heart rate,
- Headache.
- Seizures
- Unconsciousness

Diagnostic evaluation

- Rectal temperature to check your core body temperature. A rectal temperature is the most accurate way of determining your core body temperature and is more accurate than mouth or forehead temperatures.
- A blood test to check blood sodium or potassium and the content of gases in your blood to see if there's been damage to your central nervous system.
- A urine test to check the color of your urine, because it's usually darker if you have a heat-related condition, and to check your kidney function, which can be affected by heatstroke.
- Muscle function tests to check for serious damage to your muscle tissue (rhabdomyolysis).
- X-rays and other imaging tests to check for damage to your internal organs.

First aid

- First aid tratment for victims of heat stroke includes moving the client to a cooler environment,
- Reducing clothing covering the body,
- Placing wet towels over the skin,using oscillating fans to increase convective heat loss.

What First Aid Can Help Heat Stroke?

- If you suspect that someone has a heat stroke, immediately call 911 or take the person to a hospital. Any delay seeking medical help can be fatal.
- While waiting for the paramedics to arrive, initiate first aid. Move the person to an air-conditioned environment -- or at least a cool, shady area -- and remove any unnecessary clothing.
- If possible, take the person's core body temperature and initiate first aid to cool it to 101 to 102 F. (If no thermometers are available, don't hesitate to initiate first aid.)

MANAGEMENT

- Heat stroke is a medical emergency and continues to be one of the leading causes of preventable death in sports.
- Rapid reduction of the core body temperature is the cornerstone of treatment because the duration of hyperthermia is the primary determinant of outcome. Patients diagnosed with exertional heat stroke (EHS) or nonexertional heat stroke (NEHS) should be admitted to the hospital for at least 48 hours to monitor for complications.
- Once heat stroke is suspected, cooling must begin immediately and must be continued during the patient's resuscitation.

Medical management

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Medical management

- Once heat stroke is suspected, cooling must begin immediately and must be continued during the patient's resuscitation.
- The American College of Sports Medicine recommends that cooling be initiated at the scene, before transporting the patient to an emergency department for further evaluation and treatment
- Emergency medical treatment may include hypothermia blankets,intravenous fluids,

Medical management

- Irrigating the stomach and lower bowel with cool solution
- Treatment involves monitoring the patient in a cool, shady environment and ensuring adequate hydration.
- Immediate cooling through evaporation or full-body ice-water immersion are crucial.
- Physicians also must monitor electrolyte abnormalities, be alert to signs of renal or hepatic failure, and replace fluids in patients with heatstroke.

Medical management

- Medications have shown little efficacy in treating heatstroke. Muscle relaxants such as benzodiazepines and neuroleptic agents such as chlorpromazine (Thorazine) have been used to inhibit shivering and as prophylaxis against seizures, but clinical trials are lacking.
- Dantrolene (Dantrium) has proved ineffective in decreasing core temperature.
- Antipyretic agents, while theoretically useful in combating the acute phase reactant response, have not been evaluated for this use. Cooling usually is discontinued once the core temperature has reached 38° C (100.4° F), though close monitoring should continue.

Lifestyle and home remedies

- If you notice signs of heat-related illness, lower your body temperature and prevent your condition from progressing to heatstroke. In a lesser heat emergency, such as heat cramps or heat exhaustion, the following steps may lower your body temperature:
- Get to a shady or air-conditioned place. If you don't have air conditioning at home, go someplace with air conditioning, such as the mall, movie theater or public library.
- Cool off with damp sheets and a fan. If you're with someone who's experiencing heat-related symptoms, cool the person by covering him or her with damp sheets or by spraying with cool water. Direct air onto the person with a fan.

Lifestyle and home remedies

- Take a cool shower or bath. If you're outdoors and not near shelter, soaking in a cool pond or stream can help bring your temperature down.
- Rehydrate. Drink plenty of fluids. Also, because you lose salt through sweating, you can replenish salt and water with some sports drinks. If your doctor has restricted your fluid or salt intake, check with him or her to see how much you should drink and whether you should replace salt.
- Don't drink sugary or alcoholic beverages to rehydrate. These drinks may interfere with your body's ability to control your temperature. Also, very cold drinks can cause stomach cramps.

Nursing care for heat stroke patient

- Monitor the vital signs
- Immerse you in cold water. A bath of cold or ice water has been proved to be the most effective way of quickly lowering your core body temperature.
- Use evaporation cooling techniques.
- Pack you with ice and cooling blankets.
- Give you medications to stop your shivering.

Nursing care for heat stroke patient

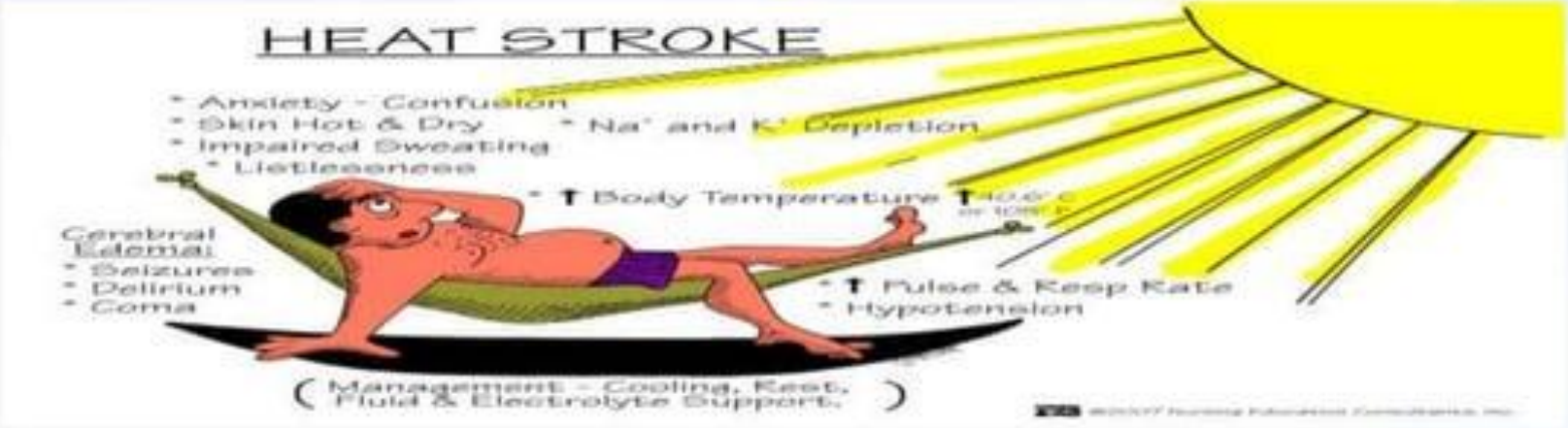
In heat stroke, a person's body temperature rises to 104° F (40° C) or higher. Unlike heat cramps and heat exhaustion, however, heat stroke is a life-threatening condition.

- Identify the triggering factors.
- Monitor the patient's HR, BP, and especially the tympanic or rectal temperature.
- Determine the patient's age and weight.
- Monitor fluid intake and urine output. If the patient is unconscious, central venous pressure or pulmonary artery pressure should be measured to monitor fluid status.Review serum electrolytes, especially serum sodium.

Nursing care

- Fan air over the patient while wetting their skin with water from a sponge or garden hose.
- Apply ice packs to the patient's armpits, groin, neck, and back. Because these areas are rich with blood vessels close to the skin, cooling them may reduce body temperature.
- Immerse the patient in a shower or tub of cool water.
- If the person is young and healthy and suffered heat stroke while exercising vigorously -- what's known as exertional heat stroke -- you can use an ice bath to help cool the body.

Nursing care



- Raise the side rails at all times
- Start intravenous normal saline solutions or as indicated.
- Provide high caloric diet or as indicated by the physician.
- Educate patient and family members about the signs and symptoms of hyperthermia and help in identifying factors related to occurrence of fever; discuss importance of increased fluid intake to avoid dehydration.

Nursing diagnosis

❖ NANDA Nursing diagnosis:(North American Nursing Diagnosis Association)

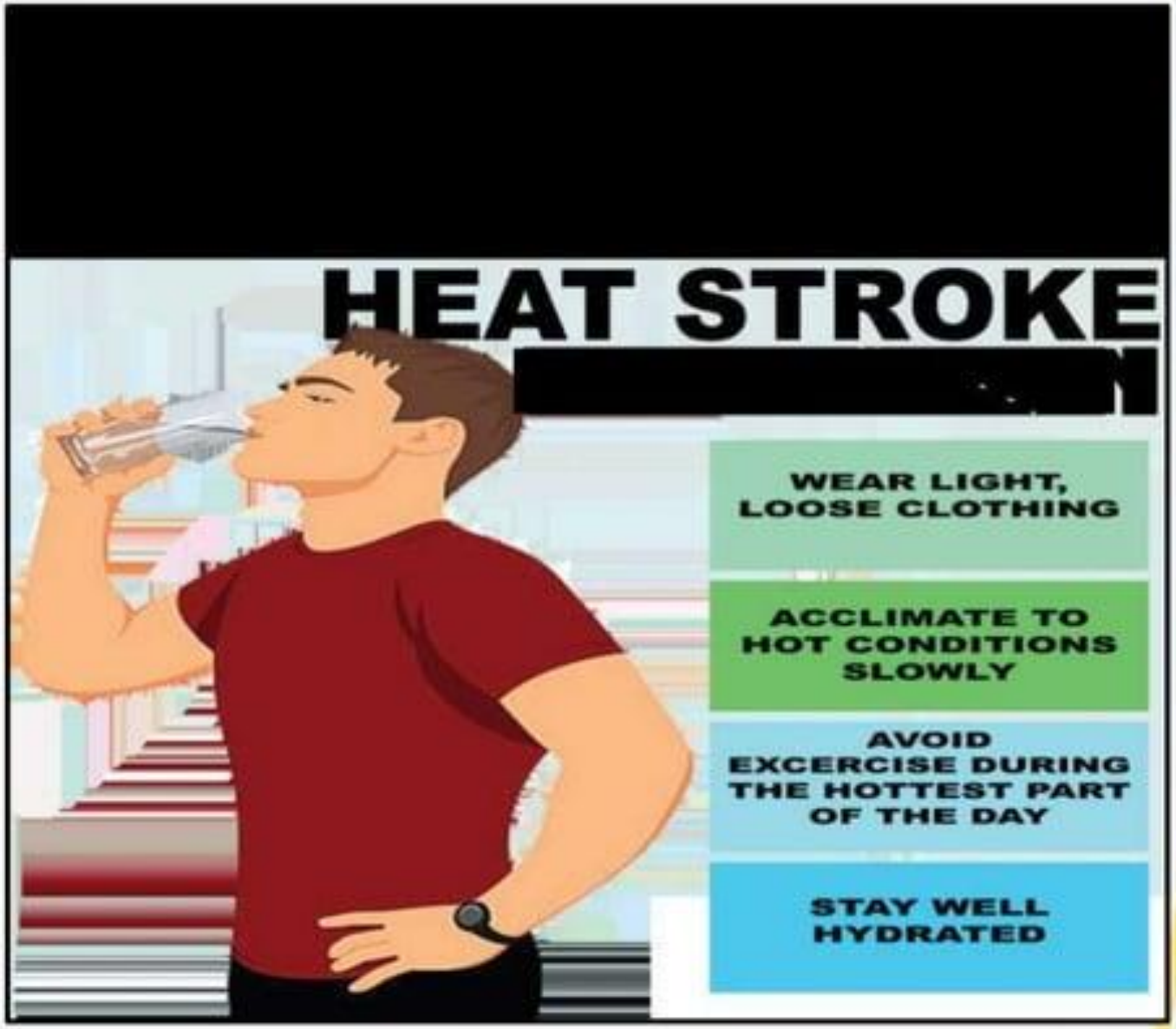
- Hyperthermia
- Fluid volume,deficient
- Nausea
- Anxiety
- Knowledge,Deficient
- Confusion,Acute

PREVENTION OF HEAT STROKE

- When the heat index is high, it's best to stay in an air-conditioned environment. If you must go outdoors, you can prevent heat stroke by taking these steps:
- Wear lightweight, light-colored, loose-fitting clothing, and a wide-brimmed hat.
- Use sunscreen with a sun protection factor (SPF) of 30 or more.
- Drink extra fluids. To prevent dehydration, it's generally recommended to drink at least eight glasses of water, fruit juice, or vegetable juice per day. Because heat-related illness also can result from salt depletion, it may be advisable to substitute an electrolyte-rich sports drink for water during periods of extreme heat and humidity.

PREVENTION OF HEAT STROKE

- Take additional precautions when exercising or working outdoors. The general recommendation is to drink 24 ounces of fluid two hours before exercise, and consider adding another 8 ounces of water or sports drink right before exercise. During exercise, should consume another 8 ounces of water every 20 minutes, even if you don't feel thirsty.
- Reschedule or cancel outdoor activity.
- If possible, shift your time outdoors to the coolest times of the day, either early morning or after sunset.


HEAT STROKE
WEAR LIGHT, LOOSE CLOTHING
ACCLIMATE TO HOT CONDITIONS SLOWLY
AVOID EXCERCISE DURING THE HOTTEST PART OF THE DAY
STAY WELL HYDRATED

Complications

- Heatstroke can result in a number of complications, depending on how long the body temperature is high. Severe complications
- Vital organ damage. Without a quick response to lower body temperature, heatstroke can cause your brain or other vital organs to swell, possibly resulting in permanent damage.
- Death. Without prompt and adequate treatment, heatstroke can be fatal.