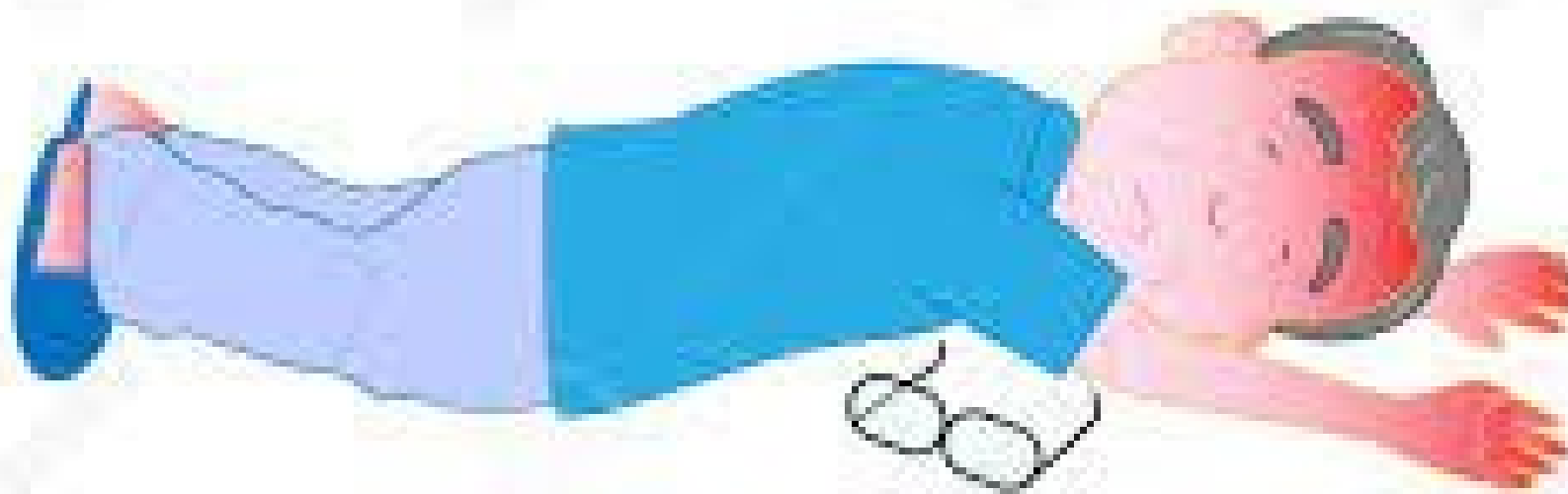
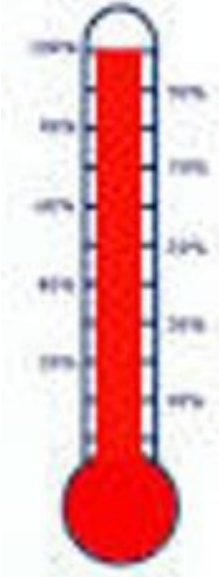


Heat Related Emergencies



Lee R. Silverman, NR Paramedic, MD EMT

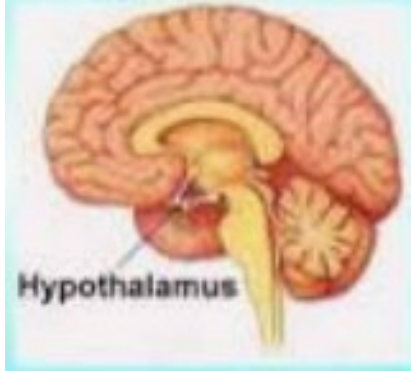


TEMPERATURE AND THE BODY

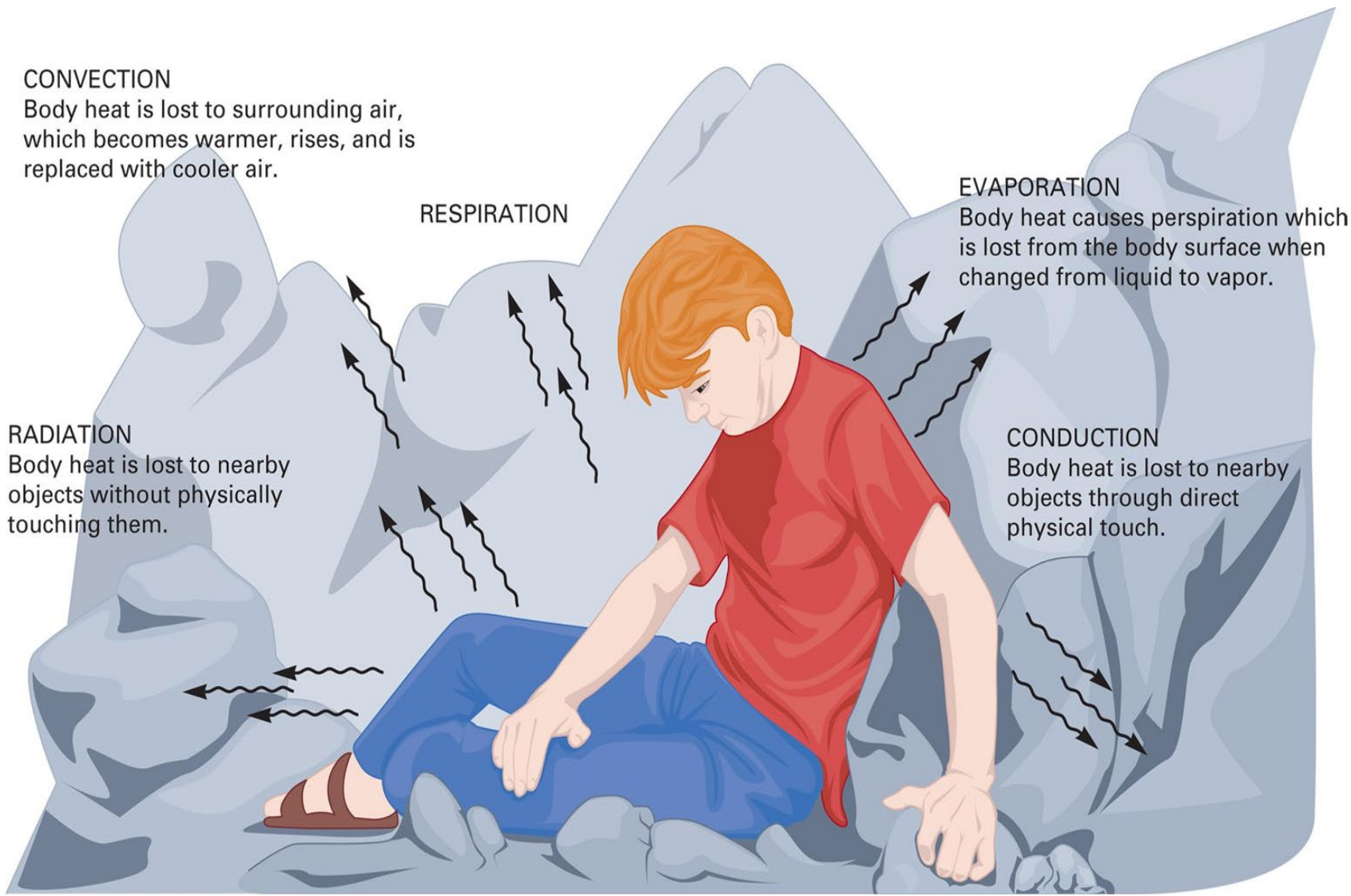
Temperature and the Body (1 of 3)



- Definitions



- Temperature regulation
 - Process of maintaining proper body temperature
 - The hypothalamus regulates for the body
- Hyperthermia
 - When heat gain occurs faster than body can shed heat.
- Hypothermia
 - When body loses heat faster than it can produce heat





HEAT EMERGENCIES

Heat Emergencies (1 of 13)

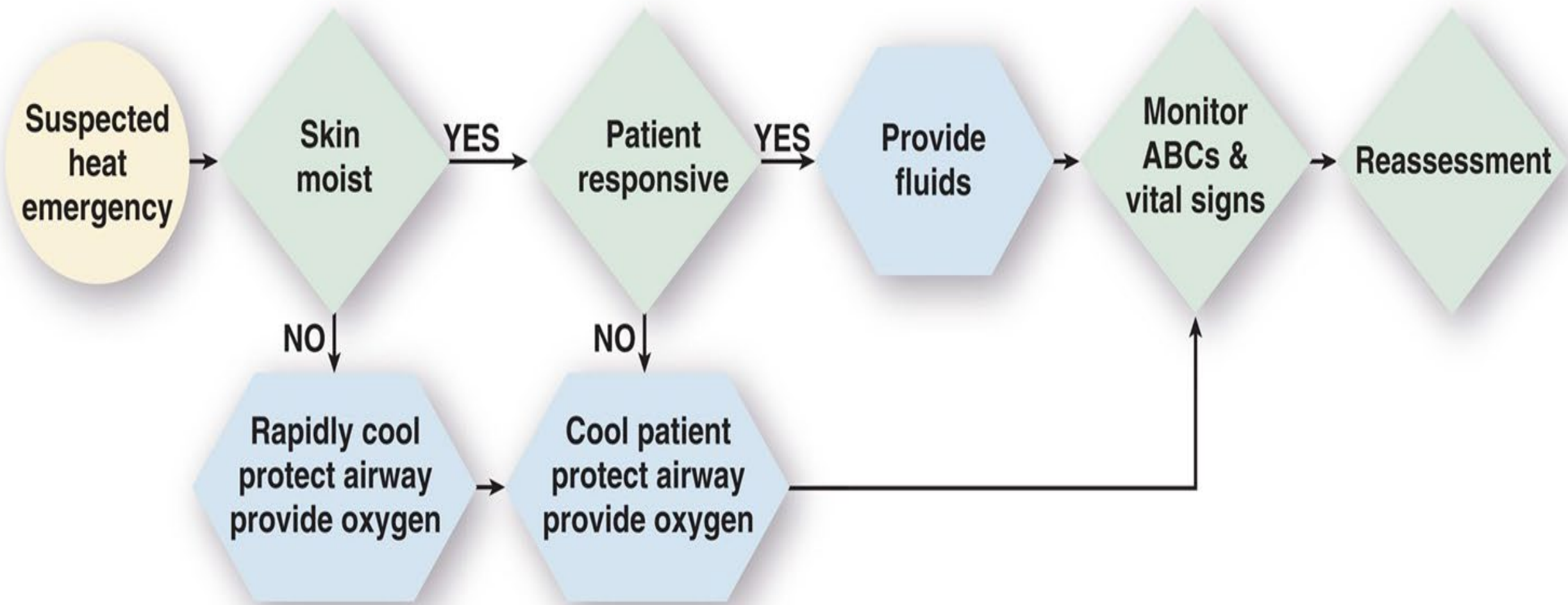


- Core temperature
 - Temperature in core of body 98.6°F (37°C)
- Heat is generated through digestion, metabolism, movement.
- Heat is lost through breathing and sweating.
- Hypothalamus
 - Body's thermostat

Heat Emergencies (2 of 13)



- Effects of heat loss through evaporation are greatly reduced when humidity is high.
- Very young, very old, and those with chronic illnesses are susceptible to effects of heat and cold.
- Perform history and physical exam.



Heat Emergencies (3 of 13)



- Heat Cramps
 - Signs and Symptoms
 - Painful muscle spasms following strenuous activity in hot environment
 - Usually caused by electrolyte imbalance
 - Patient fully alert and sweaty with normal to warm skin temperature
 - Emergency Care
 - Move to a cool environment.
 - Replenish fluids.

Heat Emergencies (4 of 13)



- Heat Exhaustion

- Exposure to excessive heat for prolonged period of time
- Cooling mechanisms begin to fail.
- Body barely able to shed as much heat as it is generating

Heat Emergencies (5 of 13)



- Heat Exhaustion

- Signs and Symptoms

- Mild to moderate perspiration
 - Warm or cool skin temperature
 - Skin color may be normal to pale.
 - Weakness, exhaustion, dizziness
 - Nausea and vomiting

Heat Emergencies (6 of 13)



- Heat Exhaustion
 - Signs and Symptoms
 - Muscle cramps
 - Usually in legs
 - Rapid, weak pulse
 - Rapid, shallow breathing

Heat Emergencies (7 of 13)



- Emergency Care for Heat Exhaustion
 - Take appropriate BSI precautions.
 - Complete primary assessment.
 - Ensure breathing is adequate.
 - Move patient to cool area.
 - Loosen or remove excess clothing.

Heat Emergencies (8 of 13)



- Emergency Care for Heat Exhaustion
 - Cool patient by fanning.
 - Be careful not to overcool patient.
 - Place patient in recovery position.
 - Provide oxygen per local protocol.

Heat Emergencies (9 of 13)



- Heat Stroke
 - Temperature-regulating mechanisms fail.
 - Unable to rid excess heat.
 - Core temperature allowed to rise uncontrolled, causing body to overheat
 - It is a life-threatening emergency.
 - Temperature may increase to 105°F (40.5°C) or higher.

Heat Emergencies (10 of 13)



- Heat Stroke
 - Signs and Symptoms
 - Altered mental status
 - Lack of sweating
 - Skin red, hot and dry
 - Rapid, shallow breathing
 - Rapid pulse

Heat Emergencies (11 of 13)



- Heat Stroke
 - Signs and Symptoms
 - Weakness, exhaustion, dizziness
 - Nausea and vomiting
 - Convulsions

Heat Emergencies (12 of 13)



- Emergency Care for Heat Stroke
 - Take appropriate Standard Precautions.
 - Complete primary assessment.
 - Ensure breathing is adequate.
 - Provide oxygen per local protocol.
 - Move patient to cool area.
 - Remove excess clothing.

Heat Emergencies (13 of 13)

- Emergency Care for Heat Stroke
 - Wet the skin or immerse the patient in cool water.
 - Do not induce shivering.
 - Place cold packs or ice bags in pulse points.
 - Under armpits
 - On groin
 - Each side of neck
 - Place patient in recovery position.
 - Monitor vital signs.



Heat Emergencies: Think About It



- It is a hot summer day and you are dispatched for "one down." You arrive to find a 36-year-old jogger who is seated on the ground. Their shirt and shorts are wet from perspiration. They seem confused and has just vomited. What do you suspect? What else should you assess? How will you proceed?



Review



Signs of

HEAT EXHAUSTION

DIZZINESS & FAINTING

EXCESSIVE SWEATING

RAPID, WEAK PULSE

NAUSEA OR VOMITING

COOL, PALE CLAMMY SKIN

MUSCLE CRAMPS



HEAT STROKE

THROBBING HEADACHE

NO SWEATING

RAPID, STRONG PULSE

NAUSEA OR VOMITING

RED, HOT DRY SKIN

MAY LOSE CONSCIOUSNESS