



# Disclaimer

- The information presented to you today is intended to increase your awareness.
- The information is not intended to replace medical advice.
- If you are in need of medical advice, please contact your physician.

# Objectives

The participant will learn to identify:

- Dehydration
- Heat Exhaustion vs. Heat Stroke
- Risk Factors for Heat Related Illness
- Medications Affecting Heat Regulation
- Prevention
- Drug-Induced Photosensitivity
- Allergic Reactions to Stinging Insects
- Anaphylaxis
- Precautionary Tips

# Dehydration

- Dehydration means your body does not have as much water and fluids as it should.
- Dehydration results when your body has lost too much fluid by not drinking enough water or fluids or both.

# Causes

- Vomiting or diarrhea
- Excessive urine output (e.g., as with uncontrolled diabetes or diuretic use)
- Excessive sweating (i.e., from exercise)
- Fever

# Poor Skin Turgor Indicates Dehydration

Skin with decreased turgor remains elevated after being pulled up and released



ADAM.

# Elderly and Dehydration

- Older adults may have an increased risk of dehydration due to:
  - A decreased thirst sensation and often don't feel the urge to drink.
  - Kidneys that do not work efficiently.
  - Physical problems, such as arthritis which may interfere with their ability to hold a glass, or get up from a chair.

# Elderly and Dehydration

- Older adults may have an increased risk for dehydration due to:
  - Conditions (e.g. Alzheimer's Disease or stroke that may make it difficult to communicate needs).
  - Medications that increase the risk of dehydration.
  - Reduced income to adequately feed oneself.
  - Intentionally limiting fluid intake to avoid a problem with incontinence.



# Signs and Symptoms

- Thirst
- Dizziness
- Less-frequent urination
- Confusion
- Dry skin
- Dry mouth and mucous membranes
- Fatigue
- Increased heart rate
- Light-headedness
- Increased breathing

# Heat Related Illnesses

- Heat Exhaustion
- Heat Stroke

# Heat Exhaustion

- Depletion of body fluids and electrolytes due to exposure to intense heat or the inability to acclimatize to heat, resulting in prolonged, severe diaphoresis
- Onset may develop slowly after exposure to heat for several days and inadequate or unbalanced replacement of fluids and electrolytes.

# Heat Stroke

- Failure of temperature regulating mechanism of the body due to prolonged exposure to high temperature.
- Onset may develop quickly within minutes.

# Heat Exhaustion and Heat Stroke

## ■ Similarities

- Headache
- Vomiting
- Dizziness
- Muscle cramps (arms, legs, abdomen)
- Fatigue
- Rapid pulse (tachycardia)
- Nausea

# Differences

## ■ Heat Exhaustion

- Profuse perspiration.
- Cool, moist skin.
- Rapid respiration.
- Body temperature may be normal, slightly below normal or as high as 102.2° F.
- Possible giddiness.
- Signs of shock.
- Coma.

## ■ Heat Stroke

- Absence of perspiration.
- Hot, dry, red or mottled skin.
- Slow, deep respiration.
- Extremely high temperatures (e.g., 104°F/40°C or above, rectally).
- Mental confusion, early or late, disorientation, delirium, irrational behavior, feeling of euphoria or impending doom, diminished level of consciousness or abrupt loss of consciousness.

# Interventions

## ■ Heat Exhaustion

- ❑ Cool fluids
- ❑ Loosen tight clothing
- ❑ Recumbent position
- ❑ Cool shaded environment
- ❑ Elevate legs
- ❑ Transport to medical facility for medical follow up

## ■ Heat Stroke

- ❑ Call for transport to medical facility immediately.
- ❑ Cool with water by sponging.
- ❑ Give fluids by mouth if still alert.
- ❑ Try to reduce body temperature to 102°F as rapidly as possible.

# Risk Factors For Heat Related

## Illness

- Very young (e.g., under 4 years) and elderly (e.g., over 65 years) are more vulnerable.
- Medical conditions (e.g., cardiovascular disease, respiratory disease or renal diseases) may increase a person's susceptibility to heat-related illness.
- Medications for various conditions may cause dehydration.

# Risk Factors For Heat Related

## Illness Obesity

- People who are overweight have greater difficulty regulating body temperature
- Psychotropic or special medications
  - Use of psychotropic medications and other medications that affect the body's ability to perspire and/or regulate the heat response can greatly decrease the person's ability to cope in hot weather.



# Medications Affecting Heat Regulation

- Antipsychotic agents [e.g., phenothiazines, thioridazine (Mellaril), chlorpromazine (Thorazine) and clozapine (Clozaril)].
- Tranquilizers and antiemetics.
- Anticholinergics [e.g., benztropine (Cogentin), Trihexyphenidyl (Artane), Diphenhydramine (Benadryl) and others].
- Lithium, especially in combination with excessive alcohol consumption, can cause dehydration and may produce serum drug levels that are toxic.

# Prevention

- Drink plenty of fluids, at least eight 8oz. glasses of fluid a day.
- Drink appropriate sports drinks to help maintain electrolyte balance.
- Try to schedule physical outdoor activities for the cooler part of the day.
- Avoid caffeinated drinks, such as colas and coffee.

# Prevention

- Wear light colored, absorbable and loose fitting clothes.
- Stay in cool, shaded areas and protect your skin with sunblock whenever possible.
- Protect yourself from the sun by wearing a hat, sunglasses and using an umbrella.

# Drug-Induced Photosensitivity

- Condition in which normally harmless doses of sunlight induce a skin reaction, categories:
  - Phototoxic – exaggerated sunburn response appearing in minutes to hours after exposure.
  - Photoallergic – resemble contact dermatitis appearing within 24-72 hours after exposure.

# Phototoxic Reaction



# Photoallergic Reaction



# Drug-Induced Photosensitivity Hyperpigmentation with Blistering



# Drug-Induced Photosensitivity





# Allergic Reactions To Stinging

## Insects

- At least 40 deaths occur each year in the United States due to reactions to insect stings.
- When an allergic person is stung for the first time, a persons body produces an antibody called Immunoglobulin E (IgE).
- The person does not usually experience a severe allergic reaction from the first sting.
- If a person is stung again, the venom reacts with the IgE antibodies.
- IgE antibodies trigger the release of histamine and other chemicals that cause allergic reactions.

# Allergic Reactions To Stinging Insects

- Insect allergies can affect anyone whether they have other known allergies or not.
- A person who has suffered previously from an allergic reaction to an insect sting has a 60% chance of experiencing the same or even worse reaction if stung again.

# Most Sting Reactions Are Caused By Five Types Of Insects

- **Yellow Jackets** are black with yellow markings and are found in various climates.
- **Honeybees** have a rounded, "fuzzy" body with dark brown coloring and yellow markings. Upon stinging, the honeybee usually leaves its barbed stinger in its victim; the bee dies as a result.
- **Paper Wasps** have slender, elongated bodies that are black, brown or red with yellow markings. Their nests are often located under eaves, behind shutters, in shrubs or woodpiles.

# Most Sting Reactions Are Caused By Five Types Of Insects

- **Hornets** are black or brown with white, orange or yellow markings and are usually larger than yellow jackets. Hornets' nests are usually found high above ground on branches of trees, in shrubbery, on gables or in tree hollows
- **Fire Ants** are reddish brown stinging insects related to bees and wasps. Fire ants may attack with little warning; after firmly grasping the victim's skin with its jaws, the fire ant arches its back as it inserts its rear stinger into the skin; it then pivots at the head and typically inflicts about eight stings in a circular pattern

# Yellow Jacket



# Honeybee



# Paper Wasp



# Hornet





# Fire Ants



# Fire Ant Sting



# Normal Versus Local Reaction

- Normal sting reaction lasts a few hours
  - Sting site is painful, reddened, may swell and itch, but will quickly dissipate.
- Large local reaction lasts for days
  - Sting site is more painful, swelling and itching may be present both at the sting site and in surrounding areas.

# Normal Reaction – Sting

## Treatment face sting area(s).

- Apply baking soda to sting area(s).
- Apply meat tenderizer to sting area(s)
  - Use any brand with papain, make a paste with a few drops of water to a teaspoon of meat tenderizer and quickly apply to the sting to reduce pain and inflammation. It breaks down components of sting fluid.
- Ammonia Solution
  - Apply a 1% to 2.5% solution no more than three to four times daily.

# Normal Reaction – Stings

## Treatments

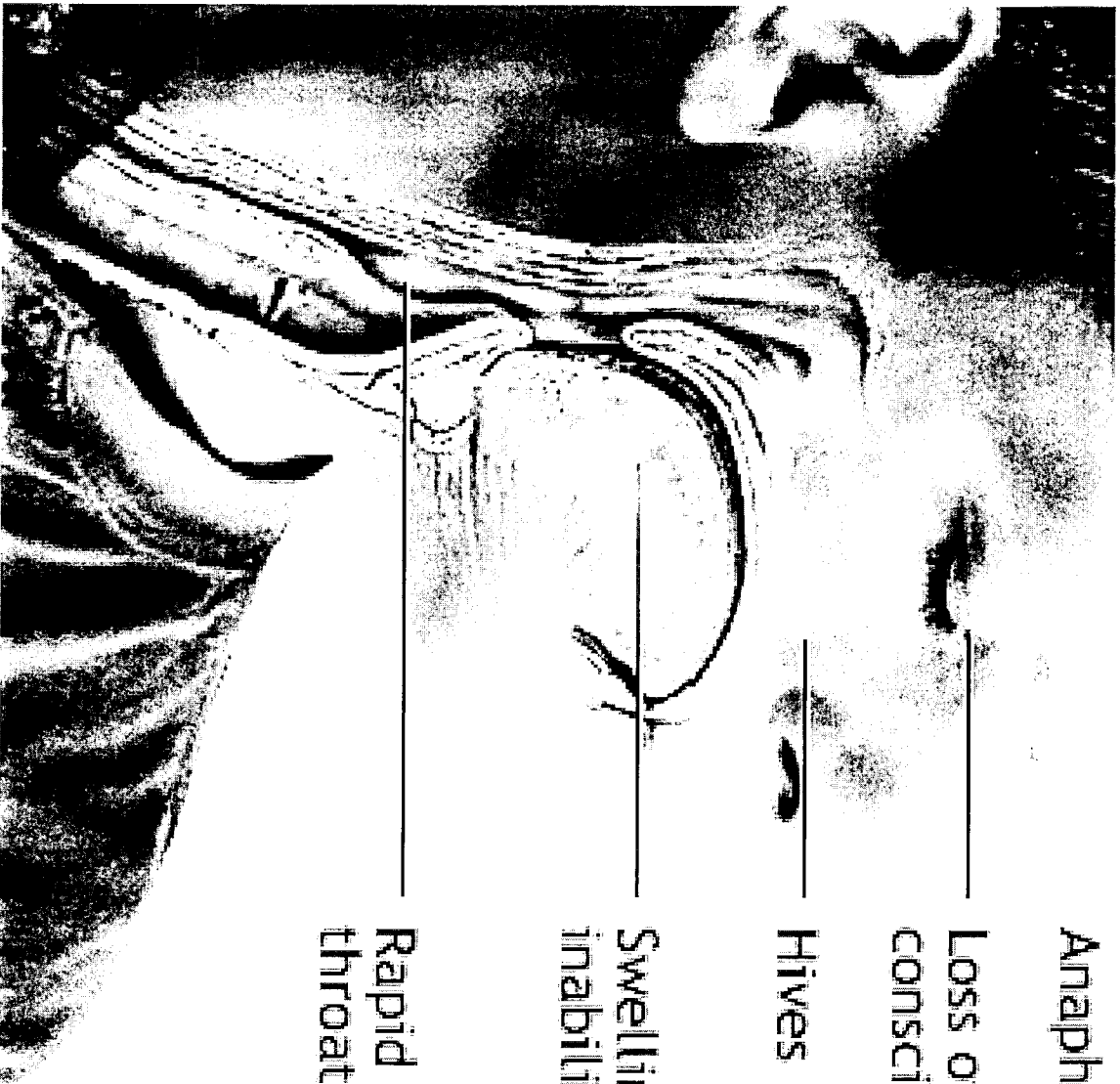
- Tablets may be chewed for faster relief, but liquids are more readily absorbed after oral ingestion (e.g. Chlortrimeton, Dimetane, Teldrin).
- Epinephrine Inhaler (e.g., Bronkaid mist, Primatene, Medihaler-Epi)
- Topical Steroids (e.g., Cortaid, Dermolate, Lanacort )
- Local Anesthetics (e.g., Benzocaine, Americaine, Dermoplast, Bactine, Foille, Lanacaine, Solarcaine).
- Oral Steroids by prescription only.

# Anaphylaxis

- Anaphylaxis is a sudden, severe, potentially fatal, systemic allergic reaction that can involve various areas of the body (e.g., skin, respiratory tract, gastrointestinal tract, cardiovascular system).
- Symptoms occur within minutes to two hours after contact with the allergy-causing substance, but in rare instances symptoms may occur up to four hours.

# Common Causes of Anaphylaxis

- Food
- Medication
- Insect stings
- Latex



Anaphylaxis

Loss of  
consciousness

Hives

Swelling of tongue,  
inability to swallow

Rapid swelling of  
throat tissues

 ADAM



# Precautionary Tips

- Speak to your doctor or allergist if you've had a severe reaction to a food, insect sting, medication or latex.
- Speak to your doctor if you've experienced an allergic reaction after exercising.
- If prescribed, carry a supply of allergic reaction medication epinephrine (EpiPen®) at all times.
- Teach yourself and others how to use epinephrine as prescribed.

# Precautionary Tips

- Stinging insects are attracted to dark colors and floral prints – wear white or light colored clothing.
- Scents often used in everyday products also attract stinging insects – Avoid wearing sweet-smelling perfumes, hairsprays, colognes and deodorants when planning outside activities.
- Honeybees and bumblebees forage on white clover – avoid walking barefoot in the grass.

# Precautionary Tips

- Since stinging insects are attracted to food and sweet beverages, when eating outside, keep food and soft drinks covered at all times.
- Garbage can lids should be secured tightly.
- Keep in mind, insect repellents **DO NOT** work against stinging insects.
- It is never wise to swat or swing at a stinging insect.
- Never move rapidly in the presence of stinging insects – it often provokes an attack.
- It is best to wait patiently for the stinging insect to leave, softly blow it away or gently brush it aside.

# Precautionary Tips

- Do not crush a wasp that has stung you. It will release a chemical that becomes airborne which signals guard wasps to come and sting whatever gets in their way.
- Hypersensitive people should never be alone when involved in outside activities.
- A Medic Alert tag or bracelet should be worn to alert others of the problem.
- A doctor may also prescribe an epinephrine kit to be carried at all times.

# Summary Review

- Classic heat stroke patients are often elderly or debilitated people who are in warm environments for too long.
- Stay in cool, shaded areas and protect your skin with sunblock whenever possible.
- A person who has suffered previously from an allergic reaction to an insect sting has a 60% chance of experiencing the same or an even worse reaction if stung again.

# Congratulations!

You are now ready to take the post test.

Once you have submitted the post test, you will receive a certificate for completing the course via e-mail or mail. Just make sure all information is entered correctly so you can receive your certificate.