



OLD DOMINION EMERGENCY MEDICAL SERVICES ALLIANCE

Environmental Emergencies – ALS

SERVING THE CITIZENS, EMS AGENCIES, ACUTE CARE HOSPITALS AND LOCAL GOVERNMENTS IN VIRGINIA PLANNING DISTRICTS 13,14,15 AND 19

7818 E. Parham Road, Suite 911 • Richmond, VA 23294
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Environmental – Hypothermia – ALS

OVERVIEW:

Hypothermia: is typically defined as a core temperature less than 35° Celsius / 95° Fahrenheit. While most commonly seen in cold climates, it may develop without exposure to extreme environmental conditions.

Hypothermia is not uncommon in temperate regions and may develop indoors even during summer.

Hypothermia should be considered in any patient with an altered level of consciousness in a cool and /or wet environment.

Individuals at the extremes of age and those of altered mental status are more susceptible to developing hypothermia.

Vasoconstriction and bradycardia may cause extreme difficulty while attempting to palpate a pulse.

Radiation accounts for the greatest form of heat loss.

Conduction normally accounts for a much smaller amount of heat loss, but increases significantly in wet clothes and astronomically in cold water.

In patients that are hypothermic, pulse and respiratory rates may be slow or difficult to detect.

If the hypothermic victim has no signs of life, begin CPR without delay.

Goal – Stop heat loss and start rewarming as soon as possible.

Treat patients like eggs – rough treatment can cause the patient to develop, Ventricular Fibrillation – a life-threatening cardiac rhythm – that needs immediate correction.



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Student Can demonstrate the following competencies without prompting and can explain the clinical reasoning for each listed below:

1. Demonstrates proper assessment techniques / Physical skills.
 - a. Scene Survey
 - b. HPI – Complete
 - c. Signs and Symptoms
 - d. SAMPLE
 - e. OPQRST
 - f. MOI – NOI
 - g. Need for ALS.
 - h. Pulse Ox
 - i. End Tidal CO₂
 - j. Place on Cardiac Monitor/Obtain 12 lead EKG.
 - k. IV Access
 - l. Primary Assessment
 - i. XABCDE Format
 - m. Life Threat Bleeding
 - i. Assessment
 - ii. Correction
 - n. Airway
 - i. Assessment
 - ii. Correction
 - o. Breathing
 - i. Assessment
 - ii. Correction
 - p. Circulation
 - i. Assessment
 - ii. Correction
 1. Need for CPR.
 2. Ventilate if possible, using warm O²
 - a. Secure Airway Supraglottic/ET tube

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3. Interpret Cardiac Monitor/AED
 - a. Refer to the Proper Cardiac Dysthymia Protocol
 - i. Shock only Once!**
- 4. IV Warm fluids if possible**
 - a. Drugs only 1 round**
 - b. If no response**
 - i. Continue CPR**
- q. Disability
 - i. Assessment
 - ii. Correction
- r. Exposure
 - i. Assessment
 - ii. Correction
2. Demonstrates the following skills.
 - a. Proper Physical Exam
 - i. Head to toe format
 - ii. All major body parts/systems
 - iii. Vital Signs / Documentation
 - b. Remove patient from the environment as soon as possible.
 - c. Remove all wet clothing as soon as possible.
 - d. Start rewarming process as soon as possible.
 - e. Treat/move the patient gently – to reduce the potential for V-Fib onset
 - f. Pulse Ox Measurement – may not work due to cold extremity.
 - g. Oxygen/Ventilation based on Assessment.
 - h. Demonstrates the appropriate transport mode and destination.
 - i. Transport as soon as safe to do so to the proper destination.

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Environmental – Heat Exposure - ALS: Heat Exhaustion Heat Stroke

OVERVIEW:

The body temperature is contingent upon the balance between heat production and heat loss.

Regulation of body temperature is dependent upon the principals of conduction, Convection, and evaporation.

Populations at a greater risk for hyperthermia emergencies include: the elderly, the poor, persons who lack adequate air conditioning, those who suffer from malnutrition, and those who have chronic illnesses or substance addiction.

Predisposing factors commonly intervene over days rather than minutes or hours.

Hyperthermia may occur in the presence of numerous host factors.

Host factors include many that affect thermoregulation through heat loss mechanisms (lack of acclimatization, fatigue, lack of sleep, dehydration, and skin disorders), while others contribute to heat production (obesity, lack of physical fitness, febrile illness, or sustained exercise).

Changes in cognitive function appear to occur before the development of the physical symptoms associated with heat stress.

Time distortion, memory impairment, and/or deterioration in attention are frequent characteristics associated with heat stress.



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 - f. MOI – NOI
 - g. Need for ALS.
 - h. Pulse Ox
 - i. End Tidal CO₂
 - j. Place on Cardiac Monitor/Obtain 12 lead EKG.
 - k. IV Access
 - l. Primary Assessment
 - i. XABCDE Format
 - m. Life Threat Bleeding
 - i. Assessment
 - ii. Correction
 - n. Airway
 - i. Assessment
 - ii. Correction
 - o. Breathing
 - i. Assessment
 - ii. Correction
 - p. Circulation
 - i. Assessment
 - ii. Correction
 1. Need for CPR.
 - q. Disability
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- ii. Correction
- r. Exposure
 - i. Assessment
 - ii. Correction
- s. Fluids per Current Hypotension/Shock Protocol
- 2. Demonstrates the following skills.
 - a. Proper Physical Exam
 - i. Head to toe format
 - ii. All major body parts/systems
 - iii. Vital Signs / Documentation
 - b. Remove patient from the environment as soon as possible.
 - c. Start cooling process as soon as possible.
 - i. Do NOT allow/cause the patient to Shiver (increases heat production)**
 - d. Heat Cramps
 - i. PO fluids – patient must be able to maintain a patent airway and not vomiting.
 - e. Heat Stroke
 - i. Remove clothing as soon as possible.
 - ii. NPO
 - iii. Moisten skin.
 - 1. Room temperature /Lukewarm water
 - 2. Apply moist sheets if good airflow present.
 - f. Pulse Ox Measurement – may not work due to cold extremity.
 - g. Oxygen/Ventilation based on Assessment.
 - h. Demonstrates the appropriate transport mode and destination.
 - i. Transport as soon as safe to do so to the proper destination.

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Injury – Bites and Envenomation – ALS

OVERVIEW:

Insect stings and human, animal, snake, or spider bites from a variety of species can result in serious illness and injury.

Animal bites from wild animals such as skunks, bats, raccoons, and foxes pose a special risk of rabies.

Snakebites or stings from insects or spiders inject poisonous venom into their victims, generally affecting the cardiovascular or neurological system.

Individual reactions to venom vary greatly depending on the person's sensitivity.

Five percent of the general population is allergic to the stings of wasps, bees, hornets, yellow jackets, and ants.

Insect stings cause twice as many deaths as snakebites each year.

Anaphylactic shock can occur from any source, refer to the:

Allergic Reaction / Anaphylaxis Patient Care Protocol as needed.

Do not apply ice or cold packs to snakebites as this can cause additional tissue damage.

However, ice or cold packs can be applied to insect bites to reduce pain and swelling.



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 - f. MOI – NOI
 - g. Need for ALS.
 - h. Pulse Ox
 - i. End Tidal CO₂
 - j. Place on Cardiac Monitor/Obtain 12 lead EKG.
 - k. IV Access
 - l. Primary Assessment
 - i. XABCDE Format
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 - i. Assessment
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 - i. Assessment
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 - i. Assessment
 - ii. Correction
 - p. Circulation
 - i. Assessment
 - ii. Correction
 1. Need for CPR.
 - q. Disability
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- ii. Correction
- r. Exposure
 - i. Assessment
 - ii. Correction
- 2. Demonstrates the following skills.
 - a. Proper Physical Exam
 - i. Head to toe format
 - ii. All major body parts/systems
 - iii. Vital Signs / Documentation
 - b. Frequently assess for shock
 - c. Locate the site of the bite/sting as soon as possible.
 - i. Clean site/wound(s)
 - ii. Remove any rings/bracelets or any other constricting items from the extremity that has the bite/sting as soon as possible.
 - iii. Immobilize affected extremity.
 - 1. If possible, below the level of the heart
 - a. When not possible keep below the level of the heart
 - iv. DO NOT Apply Light Constriction Bands Above or Below Site(s)**
 - v. If envenomation is suspected:
 - 1. Mark on skin advancing edema Q 15 min document time.
 - 2. Consult Medical Control and or Poison Control
 - 3. Determine the need for Anti-Venom and its location.
 - a. Transport as soon as possible to the proper site via the most appropriate method
 - 4. If shock develops follow the appropriate Shock Protocol**
 - d. Make the best effort to make identification of source species, if possible, safely.
 - i. Picture if safe to obtain.
 - e. DO NOT Bring Live species to the transport destination.**
 - f. Pulse Ox Measurement – may not work due to cold extremity.
 - g. Oxygen/Ventilation based on Assessment.
 - h. Demonstrates the appropriate transport mode and destination.
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Injury – Diving Emergencies Injury - ALS

Injury – Drowning/Near Drowning – ALS

OVERVIEW:

Drowning is a leading cause of accidental death.

Drowning, like other causes of death, often strikes young or otherwise healthy people.

Prevention of drowning and near-drowning is the most effective way to reduce the number of deaths.

The outcome of a patient following near-drowning is dependent upon rapid recognition, rescue, and resuscitation.

Treatment of near-drowning begins at the scene with rapid, cautious removal of the victim from the water.

Spinal precautions should be observed if there is suspicion of a significant mechanism of injury, such as high-velocity impact, diving, or surfing.

The concern of saltwater vs. freshwater aspiration is not of immediate importance in the pre-hospital environment.

Factors that increase survivability include younger age, cold water, and less time submerged.

If diving emergency establish depth of dive, time at depth, bring patients diving computer/depth gauge equipment with the patient to the hospital.



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 - i. Head to toe format
 - ii. All major body parts/systems
 - iii. Vital Signs / Documentation
 - b. Frequently assess for shock
 - c. Determine the need for C-Spine precautions as soon as possible.
 - d. Remove wet clothing.
 - e. Prevent heat loss.
 - i. Dry patient if required based on assessment
 - ii. Consult Hypothermia Protocol if appropriate.
 - f. If shock develops follow the appropriate Shock Protocol
 - g. Obtain 12 lead EKG.
 - h. Pulse Ox Measurement – may not work due to cold extremity.
 - i. Oxygen/Ventilation based on Assessment.
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