

Injuries of Temperature Extreme



At the end of this module the participant will be able to:

- Identify the temperature survival requirements of the human body
- Explain how cold and heat are managed in the homoeothermic body
- Explain how the outdoor environment affects major systems of the body
- Identify methods of adapting to function in an outdoor environment
- Identify potential life-threatening injuries caused by high temperature extremes, particularly respiratory tract burns
- Estimate burn size, and determine the presence of associated injuries
- Discuss initial resuscitation, treatment and stabilisation of patients with burn, heat and cold injuries
- Classify the three types of burn injury
- Classify frostbite and associated injuries using the four category classification system
- Demonstrate emergency care techniques for thermal burns
- Describe the characteristics of electrical, chemical and radiation burns
- Describe the illnesses and injuries caused by exposure to cold temperatures
- Assess and treat casualties of hypothermia

Study Guide

Body Metabolism

- Heat exchange - radiation, convection, respiration, conduction, evaporation
- Muscular activity
- Core temperature and peripheral temperature control

Systemic Hypothermia

- Categorisation and body temperature ranges
- Signs and symptoms
- Preventing further heat loss
- Managing and handling the casualty
- Transporting the casualty

Localised Cold Injuries

- Sign, symptoms and management of Frostbite
- Sign, symptoms and management of Frostnip

Burns

- Skin structure and the relationship to the burn classification
- Estimating the burn area by the 'rule of nines'
- Treatment of burns
- Treatment of specialised types of burns: electrical, chemical, radiation, sun glare, sun blindness

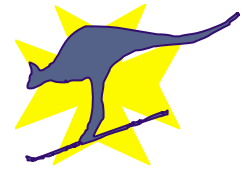
Systemic Heat Injuries

- Escalation of body overheating: heat cramps, heat exhaustion, heat stroke
- Signs, symptoms and management of hyperthermia

Equipment Used to Treat Hypothermia

- Core Rewarmer operation

Sample Questions



- The best treatment for minor frostbite is:
 - Rub the affected area
 - Apply direct heat
 - Rub the affected are with snow
 - Warm the part gradually by using body heat
- You encounter a casualty who presents with the following signs: irrational and uncharacteristic behaviour, impaired speech, muscle rigidity, blue-grey extremities; slow pulse and respiration. You would suspect that she:
 - Has had a stroke
 - Is drunk
 - Is a diabetic approaching a coma
 - Has systemic hypothermia
- What are treatment principles for injuries of extreme temperature'?
- What preventative measures can be used to protect against hypothermia?
- List 5 factors that increase the risk of hypothermia.
- Describe the treatment of a casualty with third degree burns to both arms?
- Describe the 'rule of nines'. What is it used for? (How is this system different for children?)
- Over 600 people a year are struck by lightning in the United States. Describe the nature of the wound(s) and the treatment.
- Ultraviolet light, direct from the sun or reflected from snow, can damage eyes. In its extreme form, what is it called, list four signs or symptoms, and describe the treatment.
- What mechanisms does Wind Chill rely on to be effective? (Describe three ways of limiting the effects of high wind speed in sub-zero environments.

References

Primary Reference: ASPA First Aid Manual - Chapter 12
Approach to a Casualty: ASPA First Aid Manual - Chapter 3
Circulatory functions and Skin: ASPA First Aid Manual - Chapter 2

Three Degrees of Burn

Superficial - First degree

Superficial, red, pain, no blisters

Partial Thickness - Second degree

Partial thickness, deeper, red / mottled, painful, wet, weeping with broken blisters, pale, oversensitive, generally heal well

Full Thickness - Third degree

Full thickness, pale, white charred and leathery, fat exposed, shrunken, dry surface, broken skin, painless or insensitive, oedema

Rule of Nines

