



VIRGINIA DEFENSE FORCE

VDF 106: First Aid



VDF 106 Purpose

Action: Discuss First Aid and disaster life-saving fundamentals

Conditions: Interactive classroom

Standard: Understand basic medical response to routine and traumatic conditions and injuries

- ***SILENCE CELLPHONES**
- ***50/10 TIMEKEEPER**
- ***SIGN IN FOR CREDIT**
- ***TESTABLE**
- ***SAFETY BRIEF**





Course Objectives

At the completion of this period of instruction, you should be familiar with the following:

- **Recognize life-threatening injuries**
- **Perform head-to-toe assessment**
- **Utilize techniques for opening airway, controlling bleeding, and, and treating for shock**
- **Apply splints to suspected fractures and sprains**
- **Employ basic treatments for other injuries**



Three “Killers”



- **Emergency medicine life threatening injuries, or “Killers”**
 - **Airway obstruction**
 - **Bleeding**
 - **Shock**
- ***First priority* of medical operations:**
 - **Open airway**
 - **Control excessive bleeding**
 - **Treat for shock**



Where & When



- **Light damage: Assess in place**
- **Moderate damage: Move to treatment area first**
- **Assess and tag everyone**
- **Both verbal and hands on**





Approaching Victim

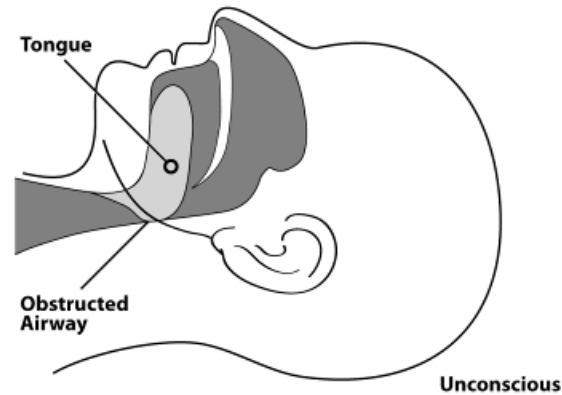
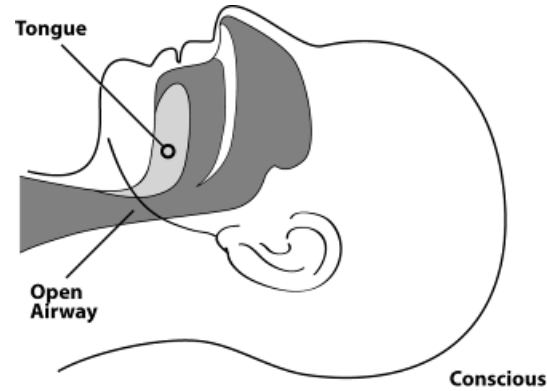


- **Rescuer should wear safety equipment (when available)**
- **Be sure victim can see you**
- **Identify yourself**
 - **Your name and name of your organization**
- **Request permission to treat, if possible**
- **Respect cultural differences**
- **Patients are entitled to confidentiality**



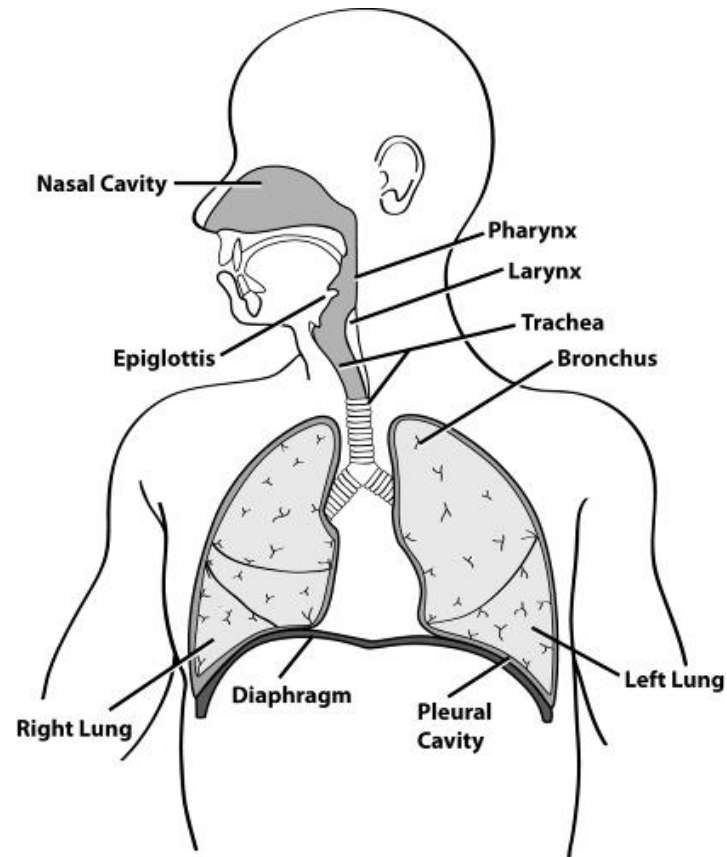


Open v. Obstructed Airway





Open the Airway





Head Tilt, Chin Lift, & Jaw Thrust Methods



Head-Tilt / Chin-Lift



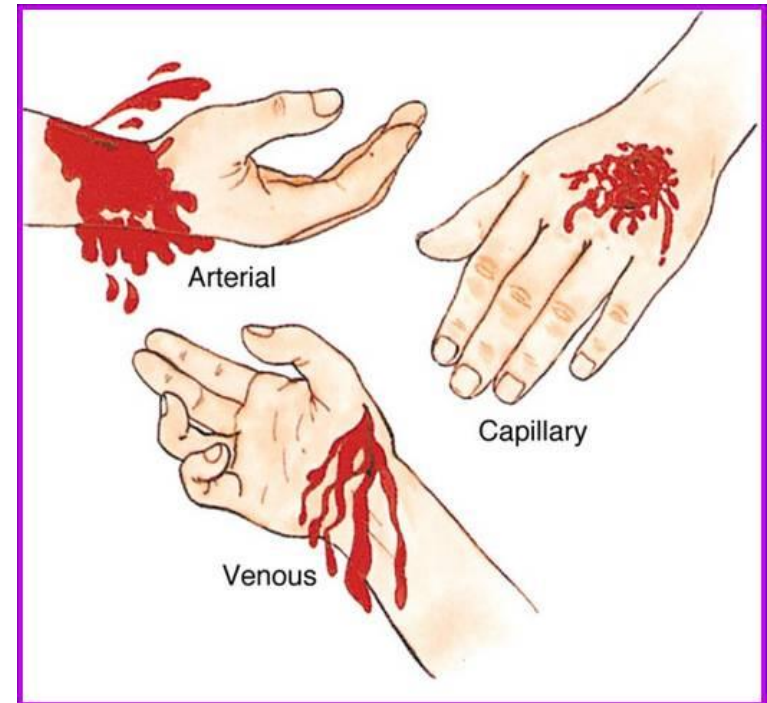
Jaw-Thrust



Types of Bleeding



- **Arterial bleeding**
 - **Bleeding from artery spurts**
- **Venous bleeding**
 - **Bleeding from vein flows**
- **Capillary bleeding**
 - **Bleeding from capillaries oozes**





Control Bleeding



- **3 main methods for controlling bleeding:**
 - **Direct pressure**
 - **Elevation**
 - **Pressure points**





Tourniquets



- **Rescuers will use direct pressure on the wound and pressure points, also use elevation to manage most bleeding.**
- **If bleeding cannot be stopped using these methods and professionals are delayed in responding, a tourniquet may be a viable option to save a person from bleeding to death.**



Tourniquets



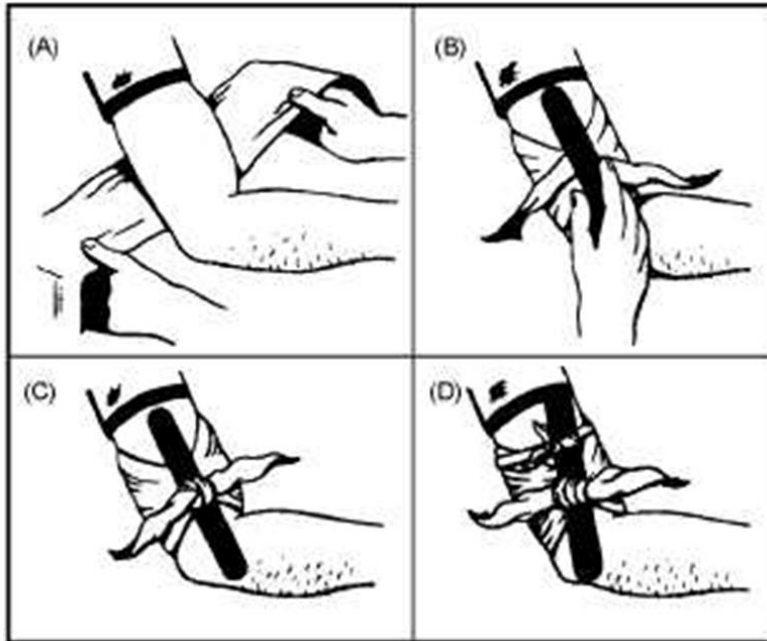
- **A tourniquet is a bandage which, when placed around a limb and tightened, cuts off the blood supply to the part of the limb beyond it.**
- **A tourniquet can do harm to the limb, but it can halt severe blood loss when all other means have failed.**
- **Use any long, flat, soft material (bandage, neck tie, belt, or stocking). Do not use materials like rope, wire, or string that can cut into the patient's flesh.**



Tourniquets



Improvised Tourniquet



CAT Arm / Leg





Head-to-Toe Assessment



- **Objectives of head-to-toe assessment:**
 - **Determine extent of injuries**
 - **Determine type of treatment needed**
 - **Document injuries**





Conducting Head-to-Toe Assessment



- **Pay careful attention**
- **Look, listen, and feel**
- **Check own hands for patient bleeding**
- **If you suspect a spinal injury in unconscious victims, treat accordingly**
- **Check PMS in all extremities**
 - **Pulse, Motor, Sensation**
- **Look for medical identification**



Order of Assessment



- 1. Head**
- 2. Neck**
- 3. Shoulders**
- 4. Chest**
- 5. Arms**
- 6. Abdomen**
- 7. Pelvis**
- 8. Legs**

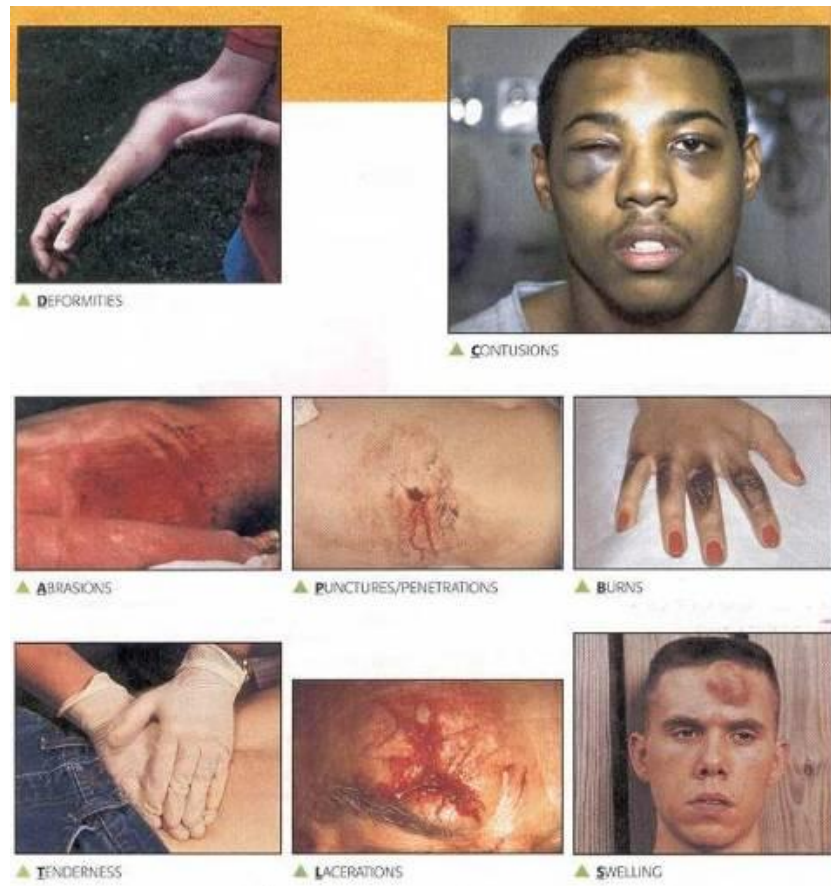




DCAP BTLS



- **Deformities**
- **Contusions**
- **Abrasions**
- **Punctures**
- **Burns**
- **Tenderness**
- **Lacerations**
- **Swelling**





Shock



- **Result of ineffective circulation of blood**
- **Remaining in shock will lead to death of:**
 - **Cells**
 - **Tissues**
 - **Entire organs**





Recognizing Shock



- **Main signs of shock**
 - **Rapid and shallow breathing**
 - **Capillary refill of greater than 2 seconds**
 - **Failure to follow simple commands, such as “Squeeze my hand”**
- **Symptoms of shock are easily missed... pay careful attention to your victim!**



Treating Shock



- **Treating Shock**

- **The body initially compensates for blood loss and masks the symptoms of shock**
- **Shock is often difficult to diagnose.**
- **It is possible and common for an individual suffering from shock to be fully coherent and not complaining of pain.**
- **Pay attention to subtle clues, as failure to recognize shock will have serious consequences.**



Controlling Shock



• Procedures for Controlling Shock

1. Maintain an open airway.
2. Control obvious bleeding.
3. Maintain body temperature (e.g., cover the ground and the victim with a blanket if necessary; remove wet clothing).

• Notes

- Avoid rough or excessive handling.
- Do not provide food or drink.



Closed-Head, Neck, and Spinal Injuries



- **Do no harm**
 - **Minimize movement of head and neck**
- **Keep spine in straight line**
- **Stabilize head**



Treating Burns



- **Conduct thorough size-up**
- **Treat with first aid**
 - **Cool burned area**
 - **Cover with sterile or clean cloth to reduce risk of infection**
 - **Do not apply ointments, creams, oils, butter, etc**



Burn Severity



- **Factors that affect burn severity:**
 - **Temperature of burning agent**
 - **Period of time victim exposed**
 - **Area of body affected**
 - **Size of area burned**
 - **Depth of burn**
 - **Exercise caution around victims having burns with no obvious cause**

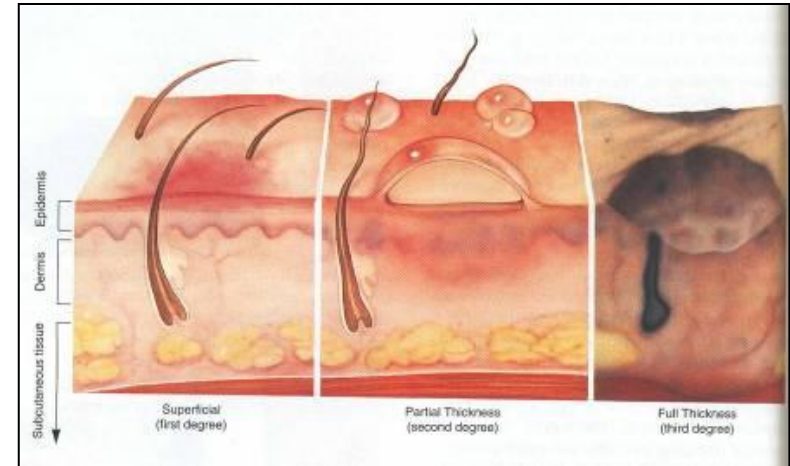




Burn Classification



- **Superficial: epidermis**
- **Partial Thickness: dermis and epidermis**
- **Full Thickness: subcutaneous layer and all layers above**





Burn Treatment: Do's and Don'ts



- **When treating a burn victim, DO:**
 - **Cool skin or clothing if they are still hot**
 - **Cover burn loosely with dry, sterile dressings to keep air out, reduce pain, and prevent infection**
 - **Elevate burned extremities**
- **When treating a burn victim, DON'T:**
 - **Use ice**
 - **Apply antiseptics, ointments, or other remedies**
 - **Remove shreds of tissue, break blisters, or remove adhered particles of clothing**



Treatment for Chemical Burns



- **Remove cause of burn + affected clothing/jewelry**
- **If irritant is dry, gently brush away as much as possible**
 - **Always brush away from eyes, victim, and you**
- **Flush with lots of cool running water**
- **Apply cool, wet compress to relieve pain**
- **Cover wound loosely with dry, sterile or clean dressing**
- **Treat for shock if appropriate**





Treating Burns



- **Conduct thorough sizeup**
- **Treat with first aid**
 - **Cool burned area**
 - **Cover with sterile or clean cloth to reduce risk of infection**
 - **Do not apply ointments, creams, oils, butter, etc.**



Wound Care



- **Control bleeding**
- **Clean wound**
- **Apply dressing and bandage**





Cleaning and Bandaging Wounds



- **Clean by irrigating with clean, room temperature water**
 - **NEVER** use hydrogen peroxide
 - Irrigate but do not scrub
- **Apply dressing and bandage**
 - **Dressing applied directly to wound**
 - **Bandage holds dressing in place**



Rules of Dressing



- **If active bleeding:**
 - **Redress OVER existing dressing**
- **If no active bleeding:**
 - **Remove bandage and dressing to flush wound**
 - **Check for infection every 4-6 hours**
 - ✓ **Fever, malaise, wound area hot to touch, swelling/hardening of wound area, redness of wound area or red streaks radiating from wound , increased pain at wound site**



Rules of Dressing



- **Signs of possible infection**
 - **Swelling around wound site**
 - **Discoloration**
 - **Discharge from wound**
 - **Red striations from wound site**





Amputation



- **Control bleeding; treat shock**
- **If amputated body part is found:**
 - **Save tissue parts, wrapped in clean material and placed in plastic bag**
 - **Keep tissue parts cool, but NOT directly on ice**
 - **Keep severed part with victim**



Impaled Objects



- **When foreign object is impaled in patient's body:**
 - **Immobilize affected body part**
 - **Do not attempt to move or remove**
 - **Try to control bleeding at entrance wound**
 - **Clean and dress wound, making sure to stabilize impaled object**



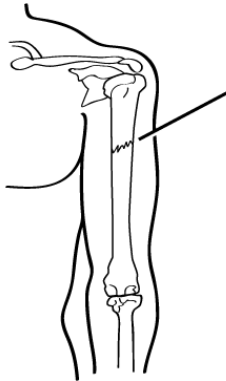
Fractures, Dislocations, Sprains & Strains



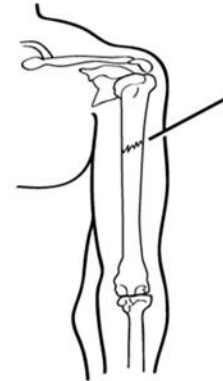
- **Immobilize injury and joints immediately above and below injury site**
- **If uncertain of injury type, treat as fracture**



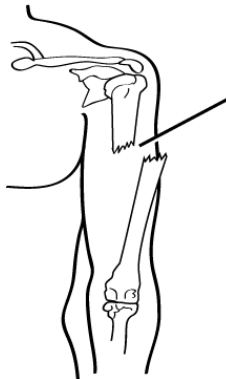
Types of Fractures



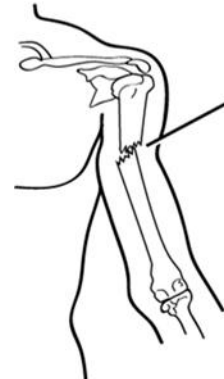
Closed Fracture
Closed Fracture in which the fracture does not puncture the skin.



Nondisplaced Fracture
Nondisplaced fracture, in which the fractured bone remains aligned.



Open Fracture
Open Fracture in which the bone protrudes through the skin.



Displaced Fracture
Displaced fracture in which the fractured bone is no longer aligned.



Types of Fractures



- **Do not draw exposed bone ends back into tissue**
- **Do not irrigate wound**
- **Cover wound with sterile dressing**
- **Splint fracture without disturbing wound**
- **Place moist dressing over bone end**



Treating Open Fractures



- **Do not draw exposed bone ends back into tissue**
- **Do not irrigate wound**
- **Cover wound with sterile dressing**
- **Splint fracture without disturbing wound**
- **Place moist dressing over bone end**



Dislocations



- **Dislocation is injury to ligaments around joint**
 - **So severe that it permits separation of bone from its normal position in joint**
- **Treatment**
 - **Immobilize; do NOT relocate**
 - **Check PMS before and after splinting/ immobilization**
-



Signs of Sprain



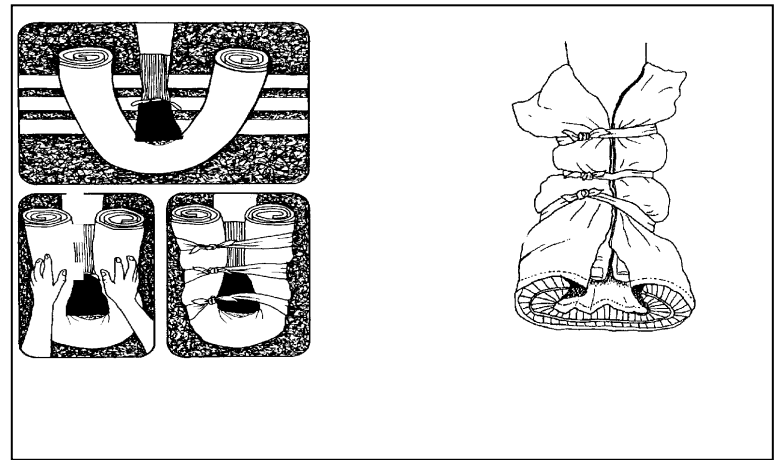
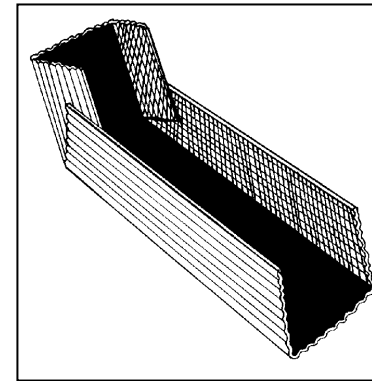
- **Tenderness at site**
- **Swelling and bruising**
- **Restricted use or loss of use**



Damaged vessels from an ankle sprain can cause bruising



Splinting





Splinting Guidelines



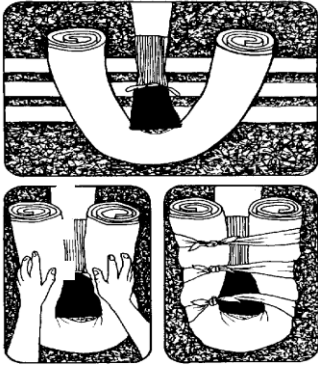
- 1. Support injured area above and below injury**
- 2. Assess PMS in extremity**
- 3. Splint injury in position that you find it**
- 4. Don't try to realign bones or joints**
- 5. Fill voids to stabilize and immobilize**
- 6. Immobilize above and below injury**
- 7. After splinting, reassess PMS**



Splinting Illustrations



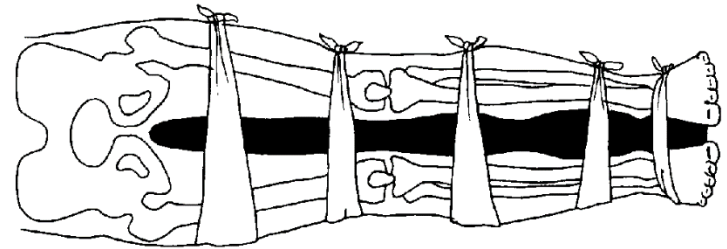
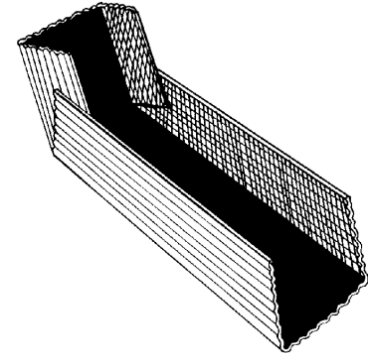
Cardboard Splint in which the edges of the cardboard are turned up to form a "mold" in which the injured limb can rest.



Cardboard Splint in which the edges of the cardboard are turned up to form a "mold" in which the injured limb can rest.



Pillow splint, in which the pillow is wrapped around the limb and tied.



Anatomical splint in which the injured leg is tied at intervals to the non-injured leg, using a blanket as padding between the legs.



Nasal Injuries



- **Causes**

- **Blunt force to nose**
- **Skull fracture**
- **Nontrauma conditions, e.g., sinus infections, high blood pressure, and bleeding disorders**

- **Cautions**

- **Large blood loss from nosebleed can lead to shock**
- **Actual blood loss may not be evident because victim will swallow some amount of blood**

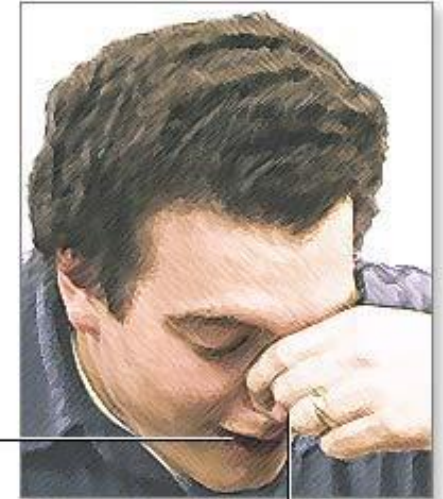


Treatment of Nasal Injuries



- **Control nasal bleeding:**
 - **Pinch nostrils or put pressure on upper lip under nose**
 - **Have victim sit with head forward, NOT back**
- **Ensure that airway remains open**
- **Keep victim calm**

Sit and lean forward slightly



Breath through mouth

Pinch nostrils



Cold Related Injuries



- **Hypothermia :**
 - **Occurs when body's temperature drops below normal**
- **Frostbite:**
 - **Occurs when extreme cold shuts down blood flow to extremities, causing tissue death**



Symptoms of Hypothermia



- **Body temperature of 95° F or lower**
- **Redness or blueness of skin**
- **Numbness and shivering**
- **Slurred speech**
- **Unpredictable behavior**
- **Listlessness**





Hypothermia Treatment



- **Remove wet clothing**
- **Wrap victim in blanket**
- **Protect victim from weather**
- **Provide food and drink to conscious victims**
- **Do not attempt to massage to warm body**
- **Place unconscious victim in recovery position**
- **Place victim in warm bath**



Symptoms of Frostbite



- **Skin discoloration**
- **Burning or tingling sensation**
- **Partial or complete numbness**



FIGURE 29-8 ▲ Edema and blister formation 24 hours after frostbite injury in an area covered by a tightly fitted boot. (From Auerbach PS: *Wilderness medicine*, ed 4, St Louis, 2001, Mosby.)



Treatment of Frostbite



- **Immerse injured area in warm (NOT hot) water**
 - Warm slowly!
- **Do NOT allow part to re-freeze**
- **Do NOT attempt to use massage**
- **Wrap affected body parts in dry, sterile dressing**





Heat Related Injuries



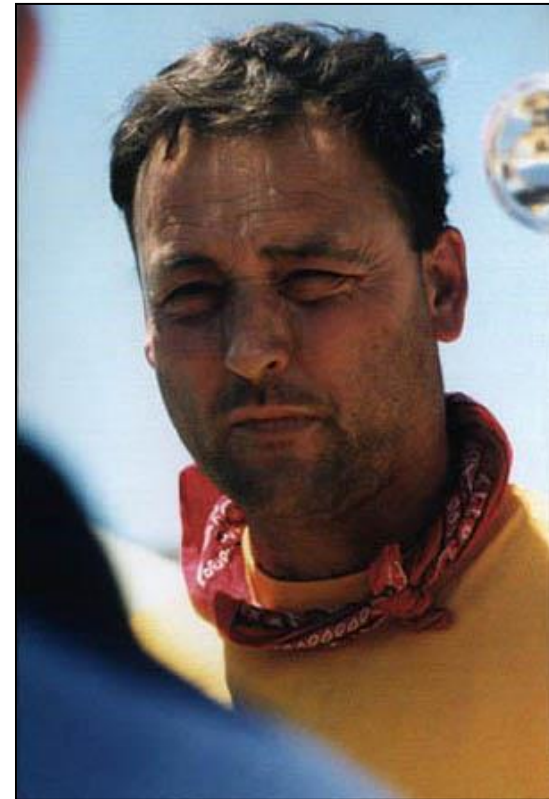
- **Heat cramps:**
 - **Muscle spasms brought on by over-exertion in extreme heat**
- **Heat exhaustion:**
 - **Occurs when exercising or working in extreme heat results in loss of body fluids**
- **Heat stroke:**
 - **Victim's temperature control system shuts down**
 - **Body temperature rises so high that brain damage and death may result**



Symptoms of Heat Exhaustion



- **Cool, moist, pale or flushed skin**
- **Heavy sweating**
- **Headache**
- **Nausea or vomiting**
- **Dizziness**
- **Exhaustion**





Symptoms of Heat Stroke



- **Hot, red skin**
- **Lack of perspiration**
- **Changes in consciousness**
- **Rapid, weak pulse and rapid, shallow breathing**



Treatment of Heat Related Injuries



- **Remove from heat to cool environment**
- **Cool body slowly**
- **Have the victim drink water, SLOWLY**
- **No food or drink if victim is experiencing vomiting, cramping, or is losing consciousness**



Treatment for Bites & Stings



- **If bite or sting is suspected, and situation is non-emergency:**
 - **Remove stinger if still present by scraping edge of credit card or other stiff, straight-edged object across stinger**
 - **Wash site thoroughly with soap and water**
 - **Place ice on site for 10 minutes on and 10 minutes off**



Anaphylaxis



- **Check airway and breathing**
- **Calm individual**
- **Remove constrictive clothing and jewelry**
- **Find and help administer victim's Epi-pen**
- **Watch for signs of shock and treat appropriately**





Summary



- **You should now be able to:**
 - **Recognize life-threatening injuries, including 3 “killers”**
 - **Conduct head-to-toe assessments**
 - **Apply techniques for opening the airway, controlling bleeding, and treating for shock**
 - **Treating wounds, fractures, sprains, and other common injuries**
 - **Employ basic treatments for other injuries**





Questions?