



**Wilderness First  
Responder**

# Course outline

Version 1 - 12-11-2022  
Canada - English



**MEDICINE  
BEYOND LIMITS**









### Learning Objectives

- Explain the goals and objectives of the course
- Explain course policies related to participation and attendance
- Explain the certification and assessment process
- List of instructor and participant expectations for the course
- Describe SIRIUSMEDx courses and recruitment services

### Teaching Methodology

- Greeting customers upon arrival
- Distribution manual, registration forms
- Check the list of classes
- Introduction of students: name, experience, expectations
- Introducing SIRIUSMEDx instructors
- Icebreaker activity and name game
- Overview of the scope of the program and its limitations
- Present SIRIUSMEDx courses and recruitment services

### Key points

- This is an important part of the program as it sets the tone for the rest of the course.
- The material provided in this course will be very different from what clients may have learned in urban courses.

### Required material

- Course Registration Forms
- Name game
- Course manuals and teaching materials

### Assessment

- N/A

### Duration

- Theory: 30min
- Practice: 0min

### Content

- Curriculum Development
- Certification
- Evaluation
- Course Manual

### Learning Objectives

- Defining First Aid
- Defining Wilderness First Aid
- Explain the components and role of the Emergency Medical Services system
- Define the roles and responsibilities of the rescuer
- List of Wilderness Features
- Identify the limits imposed by the wilderness
- List of pre-trip management considerations

### Teaching Methodology

- Introduce the basic principles of first aid (in an urban setting)
- Introducing the EMS system
- Current Responsibilities of Rescuers
- Identify why protocols are limited
- Present the characteristics of a wilderness environment
- Emphasize that emergency care in the wilderness is more than first aid. Give examples: wound cleansing, long term care
- Emphasize that the seriousness of decisions requires more information and a better understanding of physiology.
- Explain that wilderness first aid protocols and standards are well established - Wilderness Medical Society

### Key points

- Wilderness medicine is much more than first aid.
- There is a rationale for wilderness area standards and guidelines.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 0min

### Content

- Emergency Services
- Lay Rescuers and Healthcare Providers
  - Responsibilities of a First Aider
  - Levels of First Aid Training
  - Basic First Aid for an Urban Environment
- Wilderness First Aid
  - Challenges of Providing Remote Care
  - Preparation for Wilderness Excursions
- Leadership Considerations
  - Leaders
  - Participants and remote area workers
  - Preparatory Meetings
  - Medical Forms
  - Knowledge of Geographical Area
  - Risk management plan
  - Contingency Plan
  - Road map/ plan
  - Diseases and Local Hazards

### Learning Objectives

- Defining responsibility and obligations
- Explain the responsibility of the rescuer in the exercise of his duties
- Explain the laws of the Good Samaritan - applications and limitations
- Explain the relationship between the duty and the standard of care
- List of the elements of the law that concern first aid
- Discuss the importance of reports and documentation

### Teaching Methodology

- Current Overhead Costs on Liability and Obligation
- Discuss applications with the class
- Highlight aspects of the legislation that are relevant to the class.

### Key points

- Canadian law is based on what is reasonable.
- Liability can arise at any level of management when others rely on us.
- Supervisors and managers have a duty of care and must work to a standard of
- We have to do what is necessary - as far as our training and confidence allow.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 60min
- Practice: 0min

### Content

- Canada's Legal Systems
- Litigation
- Joint or Multiple Liability
- First Aid in the Workplace
- Duty to Care
- Standard of Care
- Good Samaritan Laws

Good Samaritan laws vary from jurisdiction to jurisdiction, but the principle remains the same. There is no liability for emergency aid given unless gross negligence is proven.

Civil Code of Québec 1471.

Where a person comes to the assistance of another person or, for an unselfish motive, disposes, free of charge, of property for the benefit of another person, he is exempt from all liability for injury that may result from it, unless the injury is due to his intentional or gross fault. (1991, c. 64, a. 1471)

Good Samaritan Act, British Columbia (RSBC, 1996, Chapter 172)

- Foreseeability
- Negligence
- Informed Consent
- Right to Refuse Treatment
- Implied Consent
- Non-Competency
- Consent to Care for Minors
- In Loco Parentis
- Confidentiality
- Abandonment
- Accident Reports

### Learning Objectives

- Defining universal precautions
- List of disease transmission routes
- List of prevention techniques
- Demonstration of glove application and removal
- Describe cleaning and waste disposal methods
- Describe the management of exposure to pathogens
- List and describe the types of communicable diseases

### Teaching Methodology

- Defining disease and disease transmission
- Current Pathways of Disease Transmission
- Current prevention techniques
- Demonstrate the use of personal protective equipment
- Disposal of existing waste and clean-up
- Management of Current Exposure Incidents
- Current types of communicable diseases

### Key points

- Knowing the current types of communicable diseases
- Managing exposure to pathogens

### Required material

- PowerPoint presentation
- Drawing board, pens
- Examination gloves

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 10min

### Content

- Disease and Disease Transmission
  - Direct Contact
  - Indirect Contact
  - Airborne Transmission
  - Vector Transmission
- Universal Health Precautions
  - Protective Gloves
    - Safe Glove Use
    - Glove Removal
  - Masks (respirator) or Shields
    - Face Shields
    - Pocket Masks
  - Protective Eyewear and Clothing
  - Cleaning Up
  - Disposing of Used Supplies and Bloodied Objects
  - Washing Hands
    - How to Wash Hands
- Exposure Incident Management
  - Blood-Borne Pathogen Exposure and Management
- Communicable Diseases
  - Bacteria
  - Viruses
    - Flu Viruses
    - Hepatitis
      - Hepatitis A Virus
      - Hepatitis B Virus
      - Hepatitis C Virus
    - HIV
  - Parasites
  - Fungi
- Immunization

### Learning Objectives

- Defining homeostasis
- List of the 7 important elements necessary to maintain homeostasis
- Explain how the 7 elements contribute to the maintenance of homeostasis.
- Explain the metabolism and function of cells
- Explain how the major systems of the human body interact to maintain homeostasis
- Explain how each element enters the body and how it is held in place.

### Teaching Methodology

- Current cell structure
- Discuss the 7 elements and the problems associated with each one.
- Current Role of the Cardiovascular and Respiratory System in Maintaining Homeostasis

### Key points

- Physiology and homeostasis are the basis for effective disease prevention and intervention
- The key concepts will be reviewed throughout the course.
- Emphasize the need for continuous management of the 7 elements

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 45min
- Practice: 0min

### Content

- The Body's Structures
- Homeostasis
  - The Cell
    - Intracellular and Extracellular Fluids
    - Chemical Elements and Metabolism
    - Permeability
    - Diffusion
  - Organic Compounds: Carbohydrates, Lipids and Proteins
  - Enzymes
- 7 Essential Elements
  - Water (H<sub>2</sub>O)
    - Water's Functions
    - Water-Related Problems
  - Oxygen (O<sub>2</sub>)
    - Oxygen's Functions
    - Oxygen-Related Problems
      - Principal Causes of Interrupted or Diminished Oxygen Supply
  - Glucose (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>)
    - Glucose Function
    - Glucose-Related Problems
      - Common Causes of Interrupted Glucose Supply
  - Electrolytes (K<sup>+</sup>, Na<sup>+</sup>, Cl<sup>-</sup>)
    - Electrolyte Function
      - Body Hydration
      - Muscle and Nerve Activity
    - Electrolyte-Related Problems
      - Common Causes of Electrolyte Imbalance
  - Blood Pressure (BP)
    - Blood Pressure Function
    - Pressure-Related Problems



# Homeostasis and the cell

## Course outline

- Common Causes of Blood Pressure Problems
- Temperature (°C)
  - Temperature Function
    - Common Causes of Temperature Problems
- Acid-Base Balance (pH)
  - pH Regulation
  - pH-Related Problems
    - Common Causes of Altered pH Values



### Learning Objectives

- List of important surface anatomical landmarks
- List of components of the skeletal and muscular system
- Defining anatomical terms related to first aid

### Teaching Methodology

- Current anatomy of the skeletal and muscular systems
- Present anatomical planes, terms and positions
- Current joint movement

### Key points

- Create a general overview as additional details will be covered in specific lessons if necessary

### Required material

- Required material 1
- Required material 2

### Assessment

- PowerPoint presentation
- Drawing board, pens
- Skeleton

### Duration

- Theory: 20min
- Practice: 0min

### Content

- Surface Anatomy
- Axial and Appendicular Skeleton
- Major Muscles of the Body
- Anatomical Position
  - Positional Terms
- Anatomical Planes and Sections

- Anatomical Directions and Locations
- Anatomical Cavities
  - Dorsal Cavities
  - Ventral Cavities
- Joint Movements

### Learning Objectives

- Describe how the main body systems communicate and work together to maintain homeostasis.
- Explain the anatomy and function of major body systems
- Explain how systems react together to compensate for a lack of oxygen

### Teaching Methodology

- Current anatomy and function of the respiratory system

### Key points

- Systems react together to compensate for a lack of oxygen

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 0min

### Content

- Upper Airway
  - The Pharynx
  - The Epiglottis
- Lower Airway
  - The Larynx
  - The Trachea

- The Lungs
  - The Bronchi
  - The Bronchioles
  - The Alveoli
- Thoracic Cavity
  - The Mediastinum and Pleural Cavities
- Breathing Process
  - Breathing measurement
  - Components Required for Breathing
  - Gas Exchange
  - Regulation of Breathing

### Learning Objectives

- Describe how the main body systems communicate and work together to maintain homeostasis.
- Explain the anatomy and function of major body systems
- Explain how systems react together to compensate for a lack of oxygen

### Teaching Methodology

- Current Anatomy and Function of the Cardiovascular System
- Current elements involved in blood pressure maintenance

### Key points

- Systems react together to compensate for a lack of oxygen

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 0min

### Content

- The Cardiovascular System
  - Functions of the Cardiovascular System
- Blood Vessels
- The Heart
  - The Heart's Electrical System

- Blood
  - Blood's Functions
  - Blood Composition
- Cardiac Cycle
  - Cardiac Output
  - Pulse
  - Blood Pressure
    - Blood pressure measurement
    - **Systolic blood pressure**
    - Diastolic blood pressure
    - Mean arterial pressure

### Learning Objectives

- Describe how the main body systems communicate and work together to maintain homeostasis.
- Explain the anatomy and function of major body systems
- Explain how systems react together to compensate for a lack of oxygen

### Teaching Methodology

- Current anatomy and function of the lymphatic system

### Key points

- Systems react together to compensate for a lack of oxygen

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 0min

### Content

- The Spleen

### Learning Objectives

- Describe how the main body systems communicate and work together to maintain homeostasis.
- Explain the anatomy and function of major body systems
- Explain how systems react together to compensate for a lack of oxygen
- Describe how the nervous system controls the functioning of other systems

### Teaching Methodology

- Current anatomy of the nervous system
- Current function and actions of the nervous system
- To present how the nervous system controls homeostasis.

### Key points

- Systems react together to compensate for a lack of oxygen

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 0min

### Content

- Structural Division of the Nervous System
  - Central Nervous System (CNS)
    - The Brain

- The Spinal Cord
- The Meninges, Cerebrospinal Fluid and Intracranial Pressure
- CNS Hierarchy
- Peripheral Nervous System (PNS)
  - Nervous System Communication
  - Sensory Neurons
  - Sensory receptors
  - Motor Neurons
  - Reflexes
- The endocrine systems
- Functional Division of the Nervous System
  - Voluntary Nervous System (VNS)
  - Autonomic Nervous System (ANS)
    - Sympathetic Nervous System
    - Parasympathetic Nervous System
  - Overview of autonomous effects on various systems, tissues and functions



### Learning Objectives

- Defining shock
- Identify four types of shock and the causes of each type
- Defining the signs and symptoms of shock
- Demonstrate shock management in the backcountry
- List of complications of shock

### Teaching Methodology

- Defining shock
- Current types of shocks
- Explain compensatory vs. decompensatory shock
- Examine signs and symptoms of shock
- Current measurement of vital signs
- Present and practice management
- Demonstration of the isothermal envelope against hypothermia (burrito)
- Have the students practice the isothermal envelope against hypothermia (burrito).

### Key points

- Real shock vs. acute stress reaction (sympathetic vs. parasympathetic)
- Signs of shock indicate a systemic problem but do not indicate the cause.
- Acting early in the management of the shock, which includes stabilizing the environment

### Required material

- PowerPoint presentation
- Drawing board, pens
- Sleeping Bags
- Tarp
- Sleeping pad
- Simulation Kits
- Simulation equipment

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 10min

### Content

- Maintaining Circulation and Perfusion
- Types of Shock
  - Hypovolemic Shock
    - Causes of Hypovolemic Shock
  - Cardiogenic Shock
    - Causes of Cardiogenic Shock
  - Distributive or vasodilatory shock
    - The causes of the distributional shock
  - Anaphylactic Shock
  - Neurogenic Shock
  - Psychogenic or vasovagal shock
  - Septic Shock
  - Toxin shock
- Obstructive or respiratory shock
  - Causes of obstructive shock
- Stages of Shock
  - Compensated Shock
  - Decompensated Shock
  - Irreversible Shock
- Factors Influencing the Severity of Shock
  - Physical Condition
  - Pain
- Shock in Infants and Children
- Assessment of Shock
  - Compensated Shock (early stages)
    - Symptoms
    - Vital Signs



- Decompensated Shock (late stages)
  - Symptoms
  - Vital Signs
  - Additional Considerations
- General Management of Shock
  - Body Positions
    - Supine Position
    - Fowler's Position
    - Recovery Position
- Acute Stress Reaction (ASR)
  - Sympathetic Reaction
  - Parasympathetic Reaction
- Evacuation Guidelines for Shock
  - Patient Packaging

### Learning Objectives

- List of scene survey Elements

### Teaching Methodology

- Current Components and Order of Scene Survey
- Demonstration of Scene Survey Elements
- Supervise the practice of skills by students

### Key points

- Importance of following procedures in a systematic way

### Required material

- PowerPoint presentation
- Drawing board, pens
- Sleeping pad

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 10min

### Content

- Scene Safety
  - Hazards
- Universal Precautions
- Mechanism of Injury (MOI)
  - Trauma Considerations
  - Illness Considerations
- Number of Patients and Bystanders

### Learning Objectives

- List of primary survey Items
- Demonstrate the ability to conduct a primary survey when presented with a variety of situations and scenarios
- Demonstrate the ability to manage a victim with a suspicious spinal injury.
- Demonstrate the use of personal protective equipment during the primary survey

### Teaching Methodology

- Current components and order of primary survey
- Demonstration of the elements of the primary survey
- Demonstration of the management of a victim with a suspected spinal injury
- Supervise the practice of skills by students

### Key points

- Victim assessment skills take time to master - these will be reviewed throughout the course.
- Importance of following procedures in a systematic way

### Required material

- PowerPoint presentation
- Drawing board, pens
- Sleeping pad

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 20min
- Practice: 20min

### Content

- X Extreme bleeding
  - Possible immediate interventions if YES
- 2 - Responsiveness
  - Immediate interventions possible if NOT conscious
- 3 - Airways
  - Immediate interventions possible if NOT cleared
- 4 - Breathing
  - Immediate interventions possible if NO
- 5 - Circulation
  - Internal - Carotid pulse examination
  - External - Rapid body survey for severe bleeding
  - Immediate intervention possible if NO
- 6 - Disability
  - Immediate intervention if NO
- 7 - Environment
  - Immediate intervention if NO

### Learning Objectives

- Define the components of the secondary survey
- Describe the methods required to obtain vital signs
- Describe the methods used to examine the patient
- Describe the methods used to obtain a medical history.
- Identify normal ranges for vital signs
- Demonstrate the ability to conduct secondary investigation

### Teaching Methodology

- Presenting the secondary survey as three blocks of information
- Current Vital Signs
- Demonstrate the skills required to obtain vital signs
- Supervise student practice
- Current medical history
- Demonstrate the taking of a medical history on the conscious and unconscious patient
- Supervising students' medical history taking practice
- Current Physical Examination
- Demonstration of the patient's physical examination
- Supervise the practice of physical examination by students
- Conduct a simulation that asks students to approach a patient and complete a full secondary survey (1 in 1)
- Discuss the protection of the patient from the outside environment during the secondary survey.
- Discuss ongoing assessment and long term care
- Examination of challenges, difficulties, realistic application of skills
- Conducting a "Round Robin" simulation in small groups using a variety of medical problems and illnesses.

### Key points

- Emphasize the need for a stable and safe stage before performing the secondary survey.
- A solid foundation of skills and assessment procedures is essential.
- Students should be as systematic as possible
- Students will improve their skills during the course through repetition and practice.

### Required material

- PowerPoint presentation
- Drawing board, pens
- PAS Card
- Examination gloves
- Sleeping pad

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 20min
- Practice: 40min

### Content

- Vital Signs
  - Level of Consciousness (LOC)
    - AVPU Scale
      - A = Alert
      - V = Verbal
      - P = Pain
      - U = Unresponsive
    - Glasgow Coma Scale (GCS)
      - Eye-Opening Response
      - Verbal Response



- Motor Response
- Respiration
- Pulse
  - Most Common Locations to Take a Pulse
- Skin Signs
- Blood Pressure
  - Measuring Blood Pressure with a Sphygmomanometer
- Pupils
  - Checking Pupils PERRLA
- Temperature
  - Types of thermometers
    - Digital Thermometers
    - Glass Bulb Thermometers
    - Low-Reading Thermometer
  - Taking a Temperature
    - How to Take an Oral Temperature
    - How to Take a Rectal Temperature
- Vital Signs
- Medical History
  - SAMPLE
    - S Symptoms
      - Description of Pain and Other Symptoms (PQRST)
    - Allergies
    - Medications
    - Past History
    - Last Meal
    - Events
- Physical Exam
  - Important Considerations
  - Detailed Mechanism of Injury
  - Assessing Distal Circulation, Sensation and Motion (CSM)
    - Distal Circulation (C)
    - Capillary Refill
    - Distal Sensation (S)
    - Distal Motion (M)
- Exam Techniques
  - Observation
- Questioning
- Palpation
- Percussion
- Listening
- Flexing
- Comparing
- Smelling
- Exam Procedure

### Learning Objectives

- Explain the value of accurately recording results
- Demonstrate the ability to accurately record the information obtained in the secondary examination

### Teaching Methodology

- Introduce the SAP card and explain the importance of recording information and making decisions about the patient's condition.
- Supervise student practice
- Review of the use of SAP cards

### Key points

- Students will improve their skills during the course through repetition and practice.

### Required material

- PowerPoint presentation
- Drawing board, pens
- PAS Card
- Examination gloves
- Sleeping pad

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 10min

### Content

- PAS Card
  - Subjective data

- Objective data
- Analysis of collected data
- Plan

### Learning Objectives

- Explain the value of accurately recording results for long-term management
- Ongoing patient assessment

### Teaching Methodology

- Introduce the SAP card and explain the importance of recording information and making decisions about the patient's condition.
- Supervise student practice
- Review of the use of SAP cards

### Key points

- Students will improve their skills during the course through repetition and practice.

### Required material

- PowerPoint presentation
- Drawing board, pens
- PAS Card
- Examination gloves
- Floor mats

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 10min

### Content

### Learning Objectives

- List and describe factors to be considered when planning an evacuation.
- Describe means of maintaining patient comfort and safety during evacuation
- Explain why there are many factors to consider before planning an evacuation

### Teaching Methodology

- Current Considerations for Rescuer and Patient Safety during Evacuations
- Present additional considerations for evacuation planning
- Current need to maintain access to the patient's airway, vital signs and injuries during evacuation
- Current need for careful monitoring of patient and rescuer during evacuation
- Conducting a simulation that requires careful planning and execution of an evacuation
- Evaluate the effectiveness of the simulation according to the principles covered in class

### Key points

- There are many factors to consider before planning an evacuation

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation Equipment
- Simulation Kits
- Examination gloves
- PAS Card

### Assessment

- Assessment during the practical skills session
- Final Practical Examination

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 0min

### Content

- Condition of the Patients
- Condition of the Group
- Location
- Physical Resources
- Type of Assistance Required
- Type of Assistance Available
- Weather Conditions
- Time of Day
- Sending Messengers
- Written Messages

### Learning Objectives

- Describe priorities in managing multiple patients
- List and describe the four categories of triage patients
- Describe the components of START
- Describe the four steps of START
- Demonstrate the application of triage in multiple patient scenarios
- Explain backcountry sorting considerations
- Discussing ethical considerations

### Teaching Methodology

- Define sorting
- Provide examples of cases where triage would be used.
- List of the four sorting categories
- Present START
- Describe the four steps of START
- Demonstrate the application of the starting system and assign the appropriate category to the patients.
- Conducting a simulation that requires students to implement the sorting system
- Supervise and review the simulation
- Review backcountry sorting considerations

### Key points

- Priorities in managing multiple patients

### Required material

- PAS Card
- Examination gloves
- Identification material for sorting

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 15min

### Content

- Red—Immediate Care
- Yellow—Delayed Care
- Green—Minor Injuries
- Black—Non-Salvageable
- Tagging Patients
- START – Simple Triage and Rapid Treatment
  - Ethical Considerations
  - Initiating START
    - Step 1 – Clear the Site
    - Step 2 – Respiration
    - Step 3 – Circulation
    - Step 4 – Level of Consciousness
- Primary and Secondary Surveys



### Learning Objectives

- Objective 1: Lorem ipsum dolor sit amet, consectetur adipiscing elit
- Objective 2: Lorem ipsum dolor sit amet, consectetur adipiscing elit

### Teaching Methodology

- Method 1
- Method 2

### Key points

- Key point 1
- Key point 2

### Required material

- Required material 1
- Required material 2

### Assessment

- Evaluation 1
- Evaluation 2

### Duration

- Theory: 0min
- Practice: 0min

### Content

### Learning Objectives

- Describe the anatomy of the skin and soft tissues
- Describe the function of the skin

### Teaching Methodology

- Current skin and soft tissue anatomy
- Current skin function

### Key points

- The skin completely covers the body and is the largest of all human organs.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 0min

### Content

- The Skin's Functions
- The Skin's Layers
  - Epidermis
  - Dermis
  - Subcutaneous Tissue
  - Underlying Tissues

### Learning Objectives

- Describe natural defenses and the soft tissue healing process

### Teaching Methodology

- Current natural defense and normal healing process

### Key points

- The body's response to injury to the skin or underlying tissue is immediate.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 0min

### Content

- Stop the Bleeding
  - Vessel Retraction
  - Vasoconstriction
  - Platelet Plug Formation
  - Inflammation
- Restoring Homeostasis
  - Inflammatory Process
  - Tissue Regeneration
- Factors Deterring Healing
  - Interrupted Blood Supply
  - Mechanical Stress

- Infection
  - Abscess
  - Anaerobic Infections

### Learning Objectives

- Describe the types of bleeding
- List of soft tissue injury types - mechanism of injury, assessment

### Teaching Methodology

- Present the different types and classification of soft tissue injuries
- Present images of various soft tissue lesions and discuss each - mechanism of injury, principles and management issues.

### Key points

- Soft tissue injuries can be classified

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits
- PAS Card
- Examination gloves

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 0min

### Content

- Types of Force Applied
  - Penetrating Force
  - Blunt Force

- Wound Types
  - Open Wounds
  - Closed Wounds
- Wound Depth
  - Superficial wounds
  - Partial-thickness wounds
  - Full-thickness
  - Deep wounds
- Types of Bleeding
  - External Bleeding
    - Capillary bleeding
    - Venous bleeding
    - Arterial bleeding
  - Internal Bleeding
    - Internal bleeding

### Learning Objectives

- List and describe the principles of soft tissue injury management.
- Describe factors related to healing
- Demonstrate management of soft tissue injuries
- Describe long-term care for soft tissue injuries

### Teaching Methodology

- Current Principles of Soft Tissue Management
- Current assessment and management of local and systemic infection
- Wound management demonstration: wound irrigation, cleansing, closure, sterile dressings, occlusive dressings, blisters, long-term care
- Wound cleansing exercise with chicken thighs
- Conducting a simulation that includes soft tissue injury management and other courses covered to date

### Key points

- Control bleeding - focus on direct pressure - apply permanent dressings only when the wound has stabilised
- Wound cleansing is essential for long-term care
- The moist, clean wound environment heals better and faster.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits
- Chicken pieces for cleaning
- PAS Card
- Examination gloves

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 25min

### Content

- Principles of Wound Management
- 1) Control Bleeding
  - Targeted local compression and wound packing
    - Stages of care
      - Complication of Persistent Hemorrhage
      - Quickly consider the use of a tourniquet
    - Hemostatic dressings
      - Agents that increase the concentration of coagulation factors
  - Using a Tourniquet to Control Severe Bleeding – a Last Resort
    - Commercial vs. Improvised tourniquet.
    - Key principles for the application of the improvised and commercial tourniquet :
    - Steps for applying an improvised or commercial tourniquet
    - Tourniquet conversion
    - Important points to remember
  - Other Factors that Could Affect Bleeding Control
    - Anticoagulants (Heparin, ASA and others)
    - Blood-Clotting Disorders (Hemophilia)
- 2) Prevent Infection
  - Assessment of Infections
    - Signs of a Local Infection
    - Signs of a Systemic Infection
  - Management of Infections
    - Re-Clean Infected Wounds



# Wound Management

## Course outline

- Allow for Drainage
- Long-Term Patient Care
- When to Administer Antibiotics
- 3) Promote Healing
  - Keep the Wound Moist
    - Dry Dressings
    - Occlusive Dressings
  - Wound Closure
    - Wound Closure Strips (Steri-Strips®, Curi-Strips®)
  - Large Gaping Wounds

### Learning Objectives

- Describe types of bleeding and their management
- List of soft tissue injury types - mechanism of injury, assessment and management
- Demonstrate management of specific soft tissue injuries
- Describe long-term care for specific soft tissue injuries

### Teaching Methodology

- Current Principles of Soft Tissue Management
- Current assessment and management of local and systemic infection
- Present the different types and classification of soft tissue lesions
- Present images of various soft tissue lesions and discuss each - mechanism of injury, principles and management issues.
- Wound management demonstration: wound irrigation, cleansing, closure, sterile dressings, occlusive dressings, blisters, long-term care

### Key points

- Control bleeding - focus on direct pressure - apply permanent dressings only when the wound has stabilised
- Wound cleansing is essential for long-term care
- The moist, clean wound environment heals better and faster.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits
- Chicken pieces for cleaning
- PAS Card
- Examination gloves

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 30min

### Content

- Closed Wounds
  - Closed Injuries
    - Management
  - Crush Injuries
    - Management
  - Ring Removal
    - Management
  - Subungual Hematoma
    - Management
- Open Wounds
  - Abrasions
    - Management
  - Lacerations
    - Management
  - Avulsions
    - Management
  - Amputations
    - Management
  - Punctures
    - Management
  - Impaled Objects
    - Management
    - Complications
  - Splinters and Slivers
    - Management
  - Gunshot Injuries
    - Management
  - Animal Bites



# Management of Specific Wounds

## Course outline

- Human Bites
  - Management
- Fish Hooks
  - Management
- Pressure Injection Injuries
- Evacuation Guidelines for High Risk Soft Tissue Injuries



### Learning Objectives

- Describe the types of burns and their management
- List of types of burns - mechanism of injury, assessment and management
- Demonstrate burn management
- Describe long-term care for burns

### Teaching Methodology

- Current principles of burn management
- Present the different types and classification of burns
- Present images of various burns and discuss each one - injury mechanism, policy and management issues.
- Demonstration of burn management.

### Key points

- General burn management includes keeping wounds clean, relieving pain, and maintaining fluid balance and body temperature.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits
- PAS Card
- Examination gloves

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 30min

### Content

- Depth
  - First Degree Burns
  - Second-degree Burns
  - Third-degree burns
- Location
  - Extent
    - Children and the Elderly
- Burn Management
  - General Burn Management
  - First Degree Burns
  - Second and Third Degree Burns
  - Additional Considerations
    - The risk of hypothermia.
    - Dressings
    - Hydrate and Treat for Shock
- Specific Types of Burns and Additional Treatment Considerations
  - Chemical Burns
    - Management
  - Electrical Burns
    - Management
  - Inhalation Burns
    - Management
  - Sunburns
    - Management
- Evacuation Guidelines for Burns

### Learning Objectives

- Describe light blisters and their management
- Blisters - injury mechanism, assessment and management
- Demonstrate blisters management
- Describe long-term care for blisters

### Teaching Methodology

- Current principles of blisters management
- Present images of various blisters and discuss each one - injury mechanism, principle and management issues.
- Demonstration of blisters management.

### Key points

- Prevention

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits
- PAS Card
- Examination gloves

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 5min

### Content

- Hot Spots

- Blister Management
- Prevention

### Learning Objectives

- List and describe different types of dressings and bandages
- List and describe the different specialist dressings and their use
- Describe the materials that can be used to improvise bandages and dressings
- Demonstrate appropriate management of various soft tissue injuries using appropriate bandaging and dressing materials

### Teaching Methodology

- Present various types of bandages and dressings
- Presenting various specialty dressings and their use
- Demonstration of materials that can be used to improvise bandages and dressings
- Demonstrate appropriate management of various soft tissue injuries using appropriate bandaging and dressing materials
- Conduct a hands-on exercise to allow students to practice wound management using a variety of materials.
- Driving simulation integrating wound management and dressing

### Key points

- Technical dressings are more expensive per unit than loose dressings but require far fewer applications in many cases.
- Occlusive (waterproof) dressings are essential for the long-term management of backcountry injuries.

### Required material

- Dressing materials
- First Aid Kits
- Examination gloves
- Simulation Kits

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 90min

### Content

- Sterile Dressing
- Non-Sterile Dressing
- Bandages
- Bandages, Dressings and Tapes
- Technical Dressings

### Learning Objectives

- List of anatomical characteristics of the head and face
- Describe the mechanism of injuries to the facial area
- List and describe the mechanism of injury, assessment and management of facial injuries
- Demonstrate the care of various wounds in the facial area

### Teaching Methodology

- Present the anatomical characteristics of the head and face
- Current mechanism of facial area injuries
- List and describe the mechanism of injury, assessment and management of facial injuries
- Demonstrate the care of various wounds in the facial area

### Key points

- Many facial injuries can be avoided if safe work practices are followed and personal protective equipment is worn.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton
- Bandage materials

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 10min

### Content

- Anatomy of the Face and Neck Area
  - General Assessment for Injuries to the Face and Neck
  - General Management for Injuries to the Face
- Soft Tissue Injuries to the Neck Area
  - Assessment and Management

### Learning Objectives

- List of anatomical characteristics of the eyes
- Describe the mechanism of eye injuries
- List and describe the mechanism of injury, assessment and management of eye injuries
- Demonstrate the care of various eye injuries
- Describe eye injury prevention

### Teaching Methodology

- Present the anatomical characteristics of the eyes
- Current mechanism of eye injuries
- List and describe the mechanism of injury, assessment and management of eye injuries
- Demonstrate the care of various eye injuries
- Discuss eye injury prevention

### Key points

- Many eye injuries can be prevented if safe work practices are followed and personal protective equipment is worn.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton
- Bandage materials

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 5min

### Content

- Anatomy of the Eye
- Eye-Related Problems
  - Foreign Bodies in the Eye
    - Management
  - Impaled and Embedded Objects in the Eye
    - Management
  - Eye Infections
    - Signs and Symptoms
    - Management
  - Corneal Abrasions
  - Blunt Trauma and Eye Contusions
    - Management
  - Eye Lacerations
    - Management
  - Extruded Eyeball
    - Management
  - Snow Blindness
    - Assessment
    - Signs and Symptoms
    - Management
  - Chemical Burns in the Eye
    - Management
  - Contact Lenses
    - Lens Removal

### Learning Objectives

- List of anatomical characteristics of the nose
- Describe the mechanism of nose injuries
- List and describe the mechanism of injury, assessment and management of nose injuries
- Demonstrate the care of various nose injuries
- Describe the prevention of nose injuries

### Teaching Methodology

- Present the anatomical characteristics of the nose
- Current mechanism of nose injuries
- List and describe the mechanism of injury, assessment and management of nose injuries
- Demonstrate the care of various nose injuries
- Discuss prevention of nose injuries

### Key points

- Many nose injuries can be prevented if safe work practices are followed and personal protective equipment is worn.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton
- Bandage materials

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 5min

### Content

- Anatomy of the Nose
- Problems that affect the nose
  - General Management of Nose Injuries
- Sinusitis

### Learning Objectives

- List of anatomical characteristics of the ears
- Describe the mechanism of ear injuries
- List and describe the mechanism of injury, assessment and management of ear injuries
- Demonstrate the care of various ear injuries
- Describe the prevention of ear injuries

### Teaching Methodology

- Present the anatomical characteristics of the ears
- Current mechanism of ear injuries
- List and describe the mechanism of injury, assessment and management of ear injuries
- Demonstrate the care of various ear injuries
- Discussing the prevention of ear injuries

### Key points

- Many ear injuries can be prevented if safe work practices are followed and personal protective equipment is worn.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton
- Bandage materials

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 5min

### Content

- Anatomy of the Ear
- Ear-Related Problems
  - Soft tissue damage to the ear.
  - Viral Infections in the Ear
  - Swimmer's Ear
  - Ruptured Eardrums
    - Management
- Foreign Bodies in the Ear

### Learning Objectives

- List of anatomical characteristics of the teeth
- Describe the mechanism of dental injury
- List and describe the mechanism of injury, assessment and management of dental injuries
- Demonstrate the care of various dental injuries
- Describe the prevention of dental injuries

### Teaching Methodology

- Present the anatomical characteristics of the teeth
- Current mechanism of tooth injury
- List and describe the mechanism of injury, assessment and management of dental injuries
- Demonstrate the care of various dental injuries
- Discuss prevention of dental injuries

### Key points

- Many dental injuries can be prevented if safe work practices are followed and personal protective equipment is worn.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton
- Bandage materials

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 5min

### Content

- The anatomy of the tooth
- Tooth injuries
  - Avulsed Tooth
    - Management
  - Management of Avulsed Fillings and Dental Fractures



### Learning Objectives

- List of anatomical characteristics of the skull and brain
- List and describe the mechanism of head trauma.
- List and describe the different types of head injuries.
- Describe the complications of head injuries
- Describe the assessment and care of different types of head injuries
- Describe ways to prevent head injuries
- Describe early and late signs/symptoms of head injuries
- Demonstration of the management of various head injuries

### Teaching Methodology

- Current anatomy of the skull and brain
- Current mechanism of head injuries
- Present different types of head injuries
- Explain the complications of head injuries
- Current assessment and care of various types of head injuries
- Explain the importance of early and late signs and symptoms of head injury.
- Current means of preventing brain injuries
- Supervise student practice in evaluation and management techniques
- Perform a simulation that includes head and facial injuries

### Key points

- Any head injury will require immediate attention and supervision.
- Management of head injuries with increased ICP has priority over all other injuries.
- Many head injuries are associated with spinal cord injuries.
- Monitor the patient carefully for early signs of head trauma.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton
- Simulation equipment
- PAS Card

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Anatomy of the Head
  - Skull and Face Bones
  - Brain
    - Meninges
    - Cerebrospinal Fluid (CSF)
    - Intracranial Pressure (ICP)
- Mechanisms and Types of Head Injuries
  - Open Head Injuries
  - Closed Head Injuries
- Head Injuries
  - Scalp Lacerations
  - Skull Fractures
- Brain Injuries
  - Concussions
  - Contusions and Intracranial Bleeding
  - Cerebral Contusion
  - Intracranial Pressure (ICP)
- Assessment of Head and Brain Injuries
  - Early Signs and Symptoms
  - Late Signs and Symptoms
  - Management of Head and Brain Injuries



# Head Injuries

## Course outline

- Complications of Head Injuries
  - Vomiting and Airway Obstruction
  - Cervical Spine Injury
  - Headaches
- Prevention

### Learning Objectives

- Describe the anatomy and function of the spine
- Describe the mechanism of spinal cord injury
- List the different types of spinal injuries and describe their management.
- Describe precautions for patients who may have spinal cord injury.
- Describe the process of exclusion of spinal cord injury
- Describe complications of spinal injuries
- Demonstrate the proper use of spinal transport and stabilization devices

### Teaching Methodology

- Describe the anatomy and function of the spine
- Describe the mechanism of spinal injuries
- List the different types of spinal injuries and describe their management.
- Describe precautions for patients who may have spinal injuries
- Describe the process of exclusion of spinal injuries
- Describe complications of spinal injuries
- Demonstrate the correct use of spinal immobilizers
- Demonstration of movement techniques for a patient with a suspicious spinal injury
- Training session on the use of spinal transport and stabilization devices

### Key points

- The management of spinal injuries requiring Spinal Motion Restriction (SMR) involves stabilizing the spine in an anatomical position to minimize the effects of muscle contractures and swelling that result from most joint injuries.

### Required material

- PowerPoint presentation
- Drawing board, pens

- Splinting material
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Practical Examination
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 45min

### Content

- Anatomy of the Spine and Spinal Cord
  - The Spine
    - Cervical Spine
    - Thoracic Spine
    - Lumbar Spine
    - The Sacrum and the Coccyx
  - The vertebrae
  - Spinal Cord
- Injuries to the Spinal Cord and Associated Structures
  - Mechanisms of Spinal Injury
  - Nerve Injuries
  - Vertebral Dislocation and Fractures
  - Injuries to the Intervertebral Discs
  - Strains and Sprains of the Back Muscles or Spine
- Complications of Spinal Injuries
  - Respiratory Difficulties
  - Neurogenic Shock
- Assessment and Management of Spinal Injuries
  - Mechanism of Injury Assessment
  - Management of Spinal Injury
  - Extraction / initial movement
  - Secondary Survey and stabilization for transport
- Spinal transport and stabilization devices
  - Stabilization in an immobilizing mattress



# Spinal Injuries

## Course outline

- Stabilization in an evacuation basket
- Secure the spine on a SCOOP stretcher
- Secure the spine with a K.E.D. ( Kendrick Extraction Device )
- Stabilization of the spine with Spine Board
- Application of a Cervical Collar

### Learning Objectives

- List of anatomical characteristics of the chest and organs located in the chest cavity
- Describe the types of chest injuries
- Describe the assessment and management of chest injuries
- Describe complications of chest injuries
- Demonstrate immediate management of open chest injuries

### Teaching Methodology

- Current anatomy of the chest and thoracic cavity
- Current types of chest injuries
- Current assessment and management of chest injuries
- Demonstrate immediate management of open chest injuries
- Current Complications of Chest Injuries

### Key points

- Emphasize the need for close monitoring of patients with chest injuries
- Any major chest injury reduces respiratory function.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Mechanism of Chest Injuries
  - Closed Chest Injuries
  - Open Chest Injuries
- General Assessment and Management of Chest Injuries
  - Assessment
  - General Signs and Symptoms
  - General Management of Chest Injuries
- Types of Chest Injuries
  - Blunt Injuries
    - Pulmonary Contusion
    - Myocardial Contusion
  - Penetrating Injuries
  - Injury of the Major Vessels
  - Pericardial Tamponade
  - Pneumothorax
    - Signs and Symptoms
    - Open Pneumothorax Management
  - Spontaneous Pneumothorax
  - Tension Pneumothorax
    - Signs and Symptoms
    - Tension Pneumothorax Management
  - Hemothorax
- Chest Fractures
  - Fractured Ribs
  - Flail Chest
  - Fractured Sternum
  - Chest Fracture Assessment
    - Signs and Symptoms
    - Chest Fracture Management
- Other Chest Injuries
  - Blast Injuries

### Learning Objectives

- Describe the systems and organs located in each of the 4 quadrants
- Distinguishing between solid and hollow organs
- Describe the different mechanisms of injury to the abdominal organs
- Describe complications associated with blunt and penetrating trauma to the abdomen
- Demonstrate the assessment and management of various traumatic abdominal injuries

### Teaching Methodology

- Present anatomy of the abdominal cavity
- To present the difference between solid and hollow organs
- Present various mechanisms of injury to the abdominal organs
- Present the complications associated with blunt and penetrating trauma to the abdomen.
- Demonstrate the assessment and management of various traumatic abdominal injuries

### Key points

- Blunt trauma to the abdomen can affect the underlying organs - the upper quadrant contains solid organs with a lot of blood flow.
- A contusion can extend as deep as it is wide on the surface...

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Anatomy of the Abdomen
  - Hollow Organs
  - Solid Organs
- Traumatic Abdominal Injuries
  - Closed Injuries
  - Open Injuries
- General Assessment and Management of Abdominal Injuries
  - Assessing Pain
  - Signs and Symptoms
  - General Management
- Additional Considerations for Open Abdominal Injuries

### Learning Objectives

- Describe the anatomy and function of the skeletal system
- Describe the anatomy and function of the muscular system
- Describe the anatomy of a joint

### Teaching Methodology

- To present the anatomy and function of the skeletal system
- Present the anatomy and function of the muscular system
- To present the anatomy of a joint

### Key points

- The musculoskeletal system is made up of two structures: the skeleton and the musculature.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 20min
- Practice: 0min

### Content

- Bones
  - The Human Skeleton
  - Types of Bones

- Axial and Appendicular Skeleton
  - The Axial Skeleton
    - The Skull
    - The Spine
    - The Chest
  - The Appendicular Skeleton
    - The Upper Appendicular Skeleton
    - The Lower Appendicular Skeleton
- Joints
  - Types of Joints
    - Freely Movable or Synovial Joints
    - Types of Synovial Joints
- Muscles and Tendons
  - Muscles
  - Tendons
  - Origin and Insertion

### Learning Objectives

- List and describe the different injury mechanisms associated with musculoskeletal injuries.
- Describe and demonstrate the principles of musculoskeletal injury assessment
- Describe and demonstrate the principles of RICE
- Explain the rationale for reducing angular fractures and dislocations
- Demonstrate assessment and management of musculoskeletal injuries - fractures, sprains, strains, dislocations

### Teaching Methodology

- Current Mechanisms of Injury Associated with Musculoskeletal Injuries
- To present the principles of musculoskeletal injury assessment
- Describe and demonstrate the principles of RICE

### Key points

- Describe and demonstrate the principles of RICE

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 20min

### Content

- Mechanisms of Musculoskeletal Injuries
  - General Assessment of Musculoskeletal Injuries
  - General Management of Musculoskeletal Injuries



### Learning Objectives

- List and describe the injuries associated with each tissue type.
- Describe and demonstrate the principles of musculoskeletal injury assessment
- Describe and demonstrate the principles of RICE
- Explain the rationale for reducing angular fractures and dislocations
- Demonstrate the assessment and management of musculoskeletal injuries - fractures, dislocations

### Teaching Methodology

- Present the injuries associated with each tissue type
- To present the principles of musculoskeletal injury assessment
- Demonstrate the specific assessment and management of musculoskeletal injuries, fractures, dislocations, etc.
- View photos of musculoskeletal injuries and discuss the principles and management of each.
- Describe and demonstrate the principles of RICE

### Key points

- Inflammation associated with joint injury will decrease circulation, increasing the risk of local cold injury and frostbite - monitor distal CSM
- Ensure that fractures and angular dislocations are reduced as soon as possible.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Written Examination

- Ongoing evaluation throughout the course

### Duration

- Theory: 40min
- Practice: 60min

### Content

- Closed Fractures
  - Management
- Open Fractures
  - Management
- Angulated and Displaced Fractures
  - Reduction
    - Reduction of Angulated Fractures and Dislocations
- Specific fractures
  - Fractured Clavicle
    - Assessment
    - Assessment Signs and Symptoms
    - Management
  - Upper Arm Fractures
    - Assessment
    - Management
  - Forearm Fractures
  - Wrist Injuries
  - Fractured Hip and Anterior Dislocation of the Hip
    - Assessment
    - Assessment Signs and Symptoms
    - Management
  - Fractured Pelvis
    - Assessment Signs and Symptoms
    - Management
  - Fractured Femur
    - Assessment
    - Assessment Signs and Symptoms
    - Management
  - Fractured Leg
    - Assessment Signs and Symptoms
    - Management

### Learning Objectives

- List and describe the injuries associated with each tissue type.
- Describe and demonstrate the principles of musculoskeletal injury assessment
- Describe and demonstrate the principles of RICE
- Explain the rationale for reducing angular fractures and dislocations
- Demonstrate the assessment and management of musculoskeletal injuries - fractures, dislocations

### Teaching Methodology

- Present the injuries associated with each tissue type
- To present the principles of musculoskeletal injury assessment
- Demonstrate reduction of fractures and angular dislocations
- Demonstrate the specific assessment and management of musculoskeletal injuries, fractures, dislocations, etc.
- View photos of musculoskeletal injuries and discuss the principles and management of each.
- Describe and demonstrate the principles of RICE

### Key points

- Ensure that fractures and angular dislocations are reduced as soon as possible.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 20min
- Practice: 20min

### Content

- Dislocation of the Patella
  - Signs and Symptoms
  - Management
- Dislocation of the Shoulder Joint
  - Assessment of Elbow Dislocation Signs and Symptoms
  - Management
  - Traction and External Rotation
- Hanging Traction (Stimson Technique)
- Separated Shoulder
  - Assessment of Elbow Dislocation Signs and Symptoms
  - Management
- Dislocated Elbow
  - Assessment of Elbow Dislocation Signs and Symptoms
  - Management
- Digit Dislocations

### Learning Objectives

- List and describe the injuries associated with each tissue type.
- Describe and demonstrate the principles of musculoskeletal injury assessment
- Demonstrate the assessment and management of musculoskeletal injuries - sprains and strains.
- Describe and demonstrate the principles of RICE

### Teaching Methodology

- Present the injuries associated with each tissue type
- To present the principles of musculoskeletal injury assessment
- Demonstrate the assessment and management of an inversion ankle sprain
- Demonstrate the specific assessment and management of musculoskeletal injuries, sprains and strains.
- View photos of musculoskeletal injuries and discuss the principles and management of each.
- Describe and demonstrate the principles of RICE

### Key points

- Inflammation associated with joint injury will decrease circulation, increasing the risk of local cold injury and frostbite - monitor distal SCM

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 10min

### Content

- Sprains
  - Assessment
  - Signs and Symptoms
  - Management
- Ankle Sprain
  - Assessment
  - Signs and Symptoms
  - Management
- Knee Sprain
  - Assessment
  - Signs and Symptoms
  - Management

### Learning Objectives

- List and describe the injuries associated with each tissue type.
- Describe and demonstrate the principles of musculoskeletal injury assessment
- Demonstrate assessment and management of musculoskeletal injuries
- Describe and demonstrate the principles of RICE

### Teaching Methodology

- Present the injuries associated with each tissue type
- To present the principles of musculoskeletal injury assessment
- Demonstrate specific assessment and management of musculoskeletal injuries
- View photos of musculoskeletal injuries and discuss the principles and management of each.
- Describe and demonstrate the principles of RICE

### Key points

- Inflammation associated with joint injury will decrease circulation, increasing the risk of local cold injury and frostbite - monitor distal CSM

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 10min

### Content

- Strains
  - Signs and Symptoms
  - Management
- Bursitis

### Learning Objectives

- Describe the benefits of the capital asset
- Describe the general principles of splinting
- List and description of splint types
- Demonstration of the use of various types of prepared and improvised splints
- Demonstrate the management of musculoskeletal injuries using immobilization and splinting techniques.

### Teaching Methodology

- Present the benefits of capital assets
- Introduce the general principles of splinting
- List and describe types of splints
- Demonstration of the use of various types of prepared and improvised splints
- Demonstrate the management of musculoskeletal injuries using immobilization and splinting techniques.
- Supervise student immobilization and splinting practice
- Realization of a simulation integrating musculoskeletal injuries

### Key points

- Evaluate distal SCM before and after splint application
- Immobilized limbs will be more susceptible to cold injuries.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Skeleton
- Simulation Equipment
- Bandage material
- Advanced splints
- Splinting equipment

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 120min
- Practice: 180min

### Content

- Types of Splints
  - Soft Splints
  - Rigid Splints
  - Anatomical Splints
  - Traction Splints
- Splints
  - Kendrick Traction
  - Vacuum splinting
  - Application of Speed Splint
  - Applying a SAM® splint
  - Application of Sling
  - Application of Tubular Sling
  - Splint using foam sleeping pad
  - Splint using inflatable sleeping pad.
  - General Principles of Splinting
    - Cold Weather Considerations

### Learning Objectives

- Defining hypothermia
- Describe the mechanism of hypothermia
- Describe the assessment of hypothermia
- Demonstrate field assessment and management of the different stages of hypothermia
- Describe the complications of hypothermia
- Describe the prevention of hypothermia
- Defining frostbite
- Describe the mechanism of the injury and contributing factors.
- List and describe degrees of frostbite
- Describe frostbite management
- Describe reheating principles and complications.
- List and describe ways to prevent frostbite.
- Describe the evaluation and management of the immersion foot

### Teaching Methodology

- Physiological response of the current body to a cold environment
- Current hypothermia as a balance between heat production and heat loss
- Current Mechanism of Injury and Stages of Hypothermia
- Current assessment of hypothermia
- Management of hypothermia depends on the stage of the hypothermia and the history of the disease.
- Management Options for Mild Hypothermia
- Options for Managing Severe Hypothermia
- Warming Complications
- Demonstration and discussion on hypothermia wrap
- Defining frostbite
- Current mechanism of injury and contributing factors.
- Current levels of frostbite
- Current general management of frostbite
- Current warming principles and complications

- Present and discuss the factors to be considered for warming the terrain
- Review frostbite photos and discuss the assessment and management of each.
- List and describe ways to prevent frostbite.
- Current assessment and management of the immersion foot

### Key points

- Adequate travel management and access to water, food, rest, clothing, accommodation
- Emphasize the need for prevention
- Anything that reduces circulation to the extremities increases the risk of frostbite.
- Careful consideration should be given to the decision to warm up in the field.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Sleeping Bags
- Sleeping pad
- Simulation equipment

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 120min
- Practice: 60min

### Content

- Mechanisms of Heat Transfer
  - Heat Production
    - Digestion and Metabolism
    - Exercise

- Shivering
- External Factors Contributing to Heat Gain
  - Radiation
- Heat Loss
  - Radiation
  - Evaporation
  - Conduction
  - Convection
  - Respiration
- External Factors Contributing to Heat Loss
  - Clothing
  - Wind Chill
  - Water Exposure
- Hypothermia
  - Definitions of Hypothermia
    - Chronic Hypothermia
    - Acute Hypothermia
    - Immersion Hypothermia
  - Physiological Adaptations to a Cold Environment
  - Levels of Severity
    - Mild Hypothermia
    - Acute Hypothermia
    - Moderate to Severe Hypothermia
  - Management of Hypothermia
    - General Management of Hypothermia
    - Management of Mild Hypothermia
    - Management of Moderate to Severe Hypothermia
  - SPECIAL CONSIDERATIONS IN RESUSCITATION
  - Complications of Rewarming
    - Afterdrop
    - Circulatory Complications
    - Tissue Acidosis
  - Prevention of Hypothermia
- Frostbite
  - Contributing Factors
  - Prevention of frostbite
- Evaluation of frostbite
  - Field classification
    - Signs and symptoms of frostbite
  - Four-level classification

- The Cauchy classification method
- Management of Frostbite
  - The initial management of frostbite
  - Protocol for Rapid Rewarming
  - Spontaneous thawing
  - Long-term care
  - Advanced medical care
  - Evacuation Considerations
- Raynaud's Phenomenon
- Immersion Foot
  - Prevention
- Assessment and management of the immersion foot
  - Signs and symptoms of immersion foot
  - Management of Immersion Foot



### Learning Objectives

- Describe the mechanism of the injury and contributing factors
- List and describe the types of heat-related illnesses
- Describe management principles and complications.
- Describe the management of specific stages of heat-related illness
- List and describe ways to prevent heat-related illnesses.
- Defining dehydration
- List of signs of dehydration
- Describe methods for oral rehydration solutions
- Define exercise-associated hyponatremia or overhydration
- List of signs of hyponatremia
- Describe the management of hyponatremia

### Teaching Methodology

- Defining hyperthermia and heat-related illness
- Mechanisms for the revision of heat generation
- Current Heat Loss Mechanisms and Moisture Effects
- Examine hydration balance - fluid in vs. fluid out
- Current Factors Contributing to Heat-Related Illnesses
- Current Assessment and Management of Heat Depletion
- Current Heat Stroke Assessment and Management
- Current Prevention of Heat-Related Illnesses
- Current dehydration
- Current signs of dehydration
- Current methods for oral rehydration solutions
- Current hyponatremia
- Current assessment and management of burnout Hyponatremia

### Key points

- Electrolyte replacement is necessary in case of severe dehydration.
- Adequate management of travel and access to water, rest
- Thirst is a poor indicator of adequate hydration.
- The key to prevention is regular water consumption.
- Hyponatremia associated with exercise or overhydration is not uncommon

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 75min
- Practice: 30min

### Content

- Factors Contributing to Heat Illness
  - High Air Temperature
  - High Humidity
  - Physical Activity
  - Dehydration
  - Body Build
  - Clothing
  - Failure to Acclimatize
  - Illness
  - Drug Interactions
- Heat-Related Injuries
  - Heat Cramps



- Heat Exhaustion
- Heat Stroke
- Assessment and Management of Heat-Related Disorders.
- Dehydration
  - Signs of Dehydration
- Rehydration
  - Oral Rehydration Solutions (ORS)
    - Circumstances Requiring Oral Rehydration Solutions
  - ORS Ingredients
    - Home Rehydration Preparation
- Hyponatremia associated with exercise or overhydration
  - Signs of hyponatremia
  - Management of Hyponatremia

### Learning Objectives

- Describe the mechanism of lightning injuries
- Describe the assessment and management of lightning injuries
- Describe lightning prevention strategies

### Teaching Methodology

- Current mechanism of lightning injuries
- Current Assessment and Management of Lightning Injuries
- Presenting storm prevention strategies
- Current Need for a Comprehensive Secondary Assessment
- Current Implications for CPR

### Key points

- Emphasize the need for the safety of the leader and the group
- Follow-up at the medical centre required for victims with loss of consciousness

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Cloud-to-Cloud Lightning and Cloud-to-Ground Lightning
  - Facts about Lightning
  - Types of Lightning Injuries
- Problems Associated with Lightning Strikes
  - Management of Lightning Injuries
    - Cardiopulmonary Failure
    - Neurological Disorders
    - Burns
    - Traumatic Injuries
- Prevention of Lightning Injuries

### Learning Objectives

- List of animals and insects that pose a risk in Canadian nature
- Describe the assessment and management of common bites and stings
- Describe diseases transmitted by Canadian wildlife and their management
- Describe methods to prevent encounters with animals and insects

### Teaching Methodology

- Current animals and insects that pose a risk in Canadian nature
- Describe the assessment and management of each issue
- Describe the diseases (vector-borne) that are transmitted by Canadian wildlife.
- Describe the assessment and management of vector-borne diseases
- Describe methods to prevent encounters with animals and insects

### Key points

- Search for potentially problematic animals and insects for each area to be crossed.

### Required material

- PowerPoint presentation
- Drawing board, enclosure

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 45min
- Practice: 30min

### Content

- Mammal Bites
  - Assessment of Mammal Bites
  - Management of Blunt Bite Injuries
  - Management of Penetrating Bite Injuries
- Rabies
  - Management
- Snake Bites
  - Crotalidae or Pit Vipers
  - Elapidae
  - Management of Snakebites
    - Management
- Arachnid Bites and Arachnid-Borne Diseases
  - Spiders
    - Spider Bite Assessment
    - The brown recluse
      - Assessment
    - The black widow
      - Assessment
  - Scorpions
    - Scorpion Bite Assessment
  - Management and prevention of spider and scorpion bites
    - Management
    - Prevention when in an environment known to have harmful arachnids
  - Ticks and Lyme Disease
    - Assessment
    - Tick Removal and Wound Management
    - Prevention
- Insect-Borne Diseases
  - West Nile Virus
    - Assessment Signs and Symptoms
    - Management



# Bites and Stings

## Course outline

- Malaria
  - Assessment
  - Management and Prevention
- Insect Repellents
  - Topical Repellents
  - Clothing Repellents
  - Extreme Conditions

### Learning Objectives

- Describe the mechanism of the injury
- Describe factors contributing to survival
- List and describe the basic principles of water rescue
- Current Management of the Drowning Victim
- Describe the effects of hypothermia on a drowning victim
- Implications for CPR

### Teaching Methodology

- Current Mechanism of Injury
- Current Factors Contributing to Survival
- Present the basic principles of water rescue
- Current Management of Drowning Victims
- Describe the effects of hypothermia on a drowning victim
- Implications for CPR

### Key points

- Artificial respiration can only be started once the airway can be maintained.
- CPR requires a flat, solid surface
- Follow-up in a medical facility required for victims of near-drownings

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Types of Drowning
  - Dry Drowning
  - Wet Drowning
- Factors Influencing the chance of Surviving a Drowning
  - Duration of the flooding
  - Water Temperature
  - Condition of Patient
  - Quality of the Water
  - Quality of Care
- Management of a Patient in an Aquatic Emergency
  - Management
- Water Rescue
  - Rescuer's Personal Safety Checklist

### Learning Objectives

- Describe the effects of altitude on the body
- Describe the concept of acclimatization and its effects on the body
- List of types of altitude-related diseases
- Describe the assessment and management of altitude sickness
- Describe measures to prevent altitude-related illnesses

### Teaching Methodology

- Current and high altitude
- Present the effects of altitude on the body
- Current acclimatization and its effects on the body
- Current types of altitude-related diseases
- Present the assessment and management of altitude sickness
- Current measures to prevent altitude sickness

### Key points

- The best way to prevent altitude sickness is to climb slowly so that the body can acclimatize.
- The best management for any altitude sickness is to descend to a lower altitude...

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Atmospheric Pressure
  - Atmospheric Pressure and Oxygen Saturation
  - Altitude Classification
  - Acclimatization
- High Altitude Illnesses
  - Acute Mountain Sickness (AMS)
    - Management of AMS
  - High Altitude Cerebral Edema
    - Management of HACE
  - High Altitude Pulmonary Edema
    - Management of HAPE
- Assessment and management of altitude illnesses
  - Hyperbaric Oxygen Therapy
  - Predisposition to Altitude Sickness
  - Prevention
  - Medication
    - Acetazolamide (Diamox)
    - Dexamethasone (Decadron®)
    - Nifedipine

### Learning Objectives

- Describe the environmental conditions that contribute to diving injuries.
- Describe common diving injuries
- Describe the assessment and management of common diving emergencies

### Teaching Methodology

- Current environmental conditions that contribute to diving injuries
- Common Diving Injuries
- Current assessment and management of current diving emergencies

### Key points

- Diving courses include detailed information on the prevention and management of diving injuries.
- If persons other than divers present with a diver-related injury, consult a physician as soon as possible.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 15min
- Practice: 0min

### Content

- Basic principles of scuba diving physiology
  - Impact on gas exchange in the body

- Safety stops vs. decompression stops
- From decompression tables to dive computers
- Diving Injuries or Barotraumas
  - Barotrauma related to the mask
    - Signs and Symptoms
    - Management
  - Barotitis
    - Signs and Symptoms
    - Management
  - Barotrauma of the inner ear
  - Barotrauma of the sinuses
    - Signs and symptoms
    - Management
  - Decompression Sickness
    - Signs and Symptoms
    - Management
  - Pulmonary Overpressure Syndrome
    - Signs and Symptoms
    - Management
  - Arterial Gas Embolism
    - Signs and Symptoms
    - Management
- Freediving related accidents
- General recommendations after a dive



### Learning Objectives

- Defining water disinfection
- List of the four types of water-borne pathogens
- List and description of three water disinfection methods
- Describe pre-treatment techniques
- Describe post-processing techniques
- List of factors that will influence halogen treatment

### Teaching Methodology

- Defining water disinfection
- Present the types of pathogens born in water
- Present the three methods of water disinfection
- Current pre-treatment techniques
- Current post-processing techniques
- Current factors that will influence halogen treatment

### Key points

- In the wilderness, all bodies of water are susceptible to disease transmission.

### Required material

- PowerPoint presentation
- Drawing board, pens
- First aid kits

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 60min
- Practice: 0min

### Content

- Water Disinfection Techniques

- Clarification Techniques
  - Sedimentation
  - Coagulation-Flocculation
  - Pre-Treatment Filtration
- Purification and Disinfection Techniques
  - Heat Disinfection
  - Filtration
  - Ultra-Violet (UV) Disinfection
    - Important Considerations
  - Chemical Disinfection
- Solution Concentration
  - Contact Time
  - Water Clarity
  - Water Temperature
- Post-Treatment Techniques

### Learning Objectives

- Describe the anatomy and function of the heart
- Identify coronary arteries and the electrical system of the heart
- Describe the development of atherosclerosis
- List of risk factors for cardiovascular disease
- List of controllable risk factors
- Describe the prevention of cardiovascular disease
- List of causes of sudden death
- Describe the differences between angina, heart attack, myocardial infarction and cardiac arrest
- Describe the signs and symptoms of a heart attack
- Describe the immediate management of angina pectoris and heart attack
- Describe the role of CPR and AED administration in the management of heart attacks.

### Teaching Methodology

- Present the anatomy and function of the heart
- Present the development of atherosclerosis
- To present the risk factors for cardiovascular disease
- Describe the prevention of cardiovascular disease
- Current causes of sudden death
- Present the differences between angina pectoris, heart attack, myocardial infarction and cardiac arrest
- Presenting the signs and symptoms of a heart attack
- Introduce the immediate management of angina pectoris and heart attack
- Present the role of CPR and AED administration in heart attack management.
- Current Wilderness Implications in Heart Attack Management

### Key points

- Knowledge of group members who have a history of heart disease or heart surgery prior to departure

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30 min
- Practice: 30 min

### Content

- Coronary Artery Disease
  - Angina
    - Signs and Symptoms
  - Heart attack
    - Signs and Symptoms
  - Acute myocardial infarction
    - Signs and Symptoms
  - Cardiac arrest
    - Signs and Symptoms
- Management of Angina and Heart Attack
  - The Role of ASA and Nitroglycerin

### Learning Objectives

- Defining Stroke and Transient Ischemic Attack (TIA)
- Describe the causes of stroke
- Describe stroke assessment
- Describe the immediate management of stroke

### Teaching Methodology

- Present the anatomy of the brain and cerebrovascular system
- Current Mechanism of Stroke and TIA
- Current Stroke Assessment
- Current immediate stroke management

### Key points

- The important signs and symptoms of stroke tend to develop quickly.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Cerebrovascular Accident (CVA)
- Transient Ischemic Attack (TIA)
- Assessment of a Stroke or TIA
  - Signs and Symptoms
  - Management of a Stroke or a TIA

- Risk Factors for Cardiovascular and Cerebrovascular Diseases
  - Hypertension (High Blood Pressure)

### Learning Objectives

- Defining Seizure
- List of different types of seizures and their characteristics
- List of conditions that can precipitate seizures
- Describe complications of recurrent seizures
- Describe seizure assessment
- Describe immediate management
- Describe long-term care

### Teaching Methodology

- CNS and Neurological Function Examination
- Current definition and types of epileptic seizures.
- Current conditions that may precipitate seizures.
- Current definition of epileptic seizure.
- Revision of seizure assessment
- Current immediate management of an epileptic seizure

### Key points

- Anything that can cause an imbalance in homeostasis can cause an epileptic seizure - 7 elements
- Consult a physician as soon as possible for any seizure in a patient with no history of epileptic seizures.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Conditions Known to Cause Seizures
- Types of Seizures
  - Partial
  - Generalized
  - Status Epilepticus
  - Non-Epileptic Seizures
  - Febrile Seizure
- Assessment of Seizure Disorders
  - Symptoms of Seizure Disorders
  - Management of Seizures

### Learning Objectives

- Defining Diabetes
- Explain the role of the pancreas and insulin
- Describe the conditions that can precipitate problems in a person with diabetes.
- List and describe two types of diabetes
- Describe the conditions that can precipitate problems in a person with diabetes in a wilderness setting.
- Defining hypoglycemia and hyperglycemia
- Describe and demonstrate the assessment and management of hypoglycemia
- Describe and demonstrate the assessment and management of hyperglycemia
- Describe ways to prevent problems for people with diabetes when travelling in the wilderness.

### Teaching Methodology

- Defining Diabetes
- Present the role of the pancreas and insulin
- Present the role that diet, metabolism and insulin play in maintaining a healthy balance.
- Introduce the two types of diabetes
- Current conditions that may precipitate problems in a person with diabetes
- Current hypoglycemia and hyperglycemia
- Describe the assessment and management of hypoglycemia
- Describe the assessment and management of hyperglycemia
- Explain the need for a detailed medical history
- Describe ways to prevent problems for people with diabetes when travelling in the wilderness.

### Key points

- Emphasize the need for good travel management
- Emphasize the need for a screening group and interview with diabetics

- Hypoglycemia is more common in a wilderness environment and tends to occur rapidly.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Simulation equipment
- Simulation Kits

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Physiology of the Pancreas
  - Insulin and Glucagon
  - Hyperglycemia and Hypoglycemia
- Types of Diabetes
  - Type I Diabetes
  - Type II Diabetes
  - Gestational Diabetes
- Management of Diabetes
  - Diet
  - Metabolism
  - Insulin Production and Administration
- Emergency Complications of Diabetes
  - Hypoglycemia
    - Causes
    - Symptoms
    - Signs
    - Management
  - Hyperglycemia
    - Breakdown of Steps in Hyperglycemia



# Diabetes

## Course outline

- Assessment
- Symptoms
- Signs
- Management
- Comparative Hypoglycemia / Hyperglycemia

### Learning Objectives

- Describe the anatomy of the abdominal cavity and gastrointestinal system
- List of causes of abdominal diseases
- Describe the assessment and management of common abdominal conditions
- List of critical signs - red flags
- List of evacuation instructions
- Describe ways to prevent gastroenteritis during wilderness travel

### Teaching Methodology

- Current anatomy of the abdominal cavity and gastrointestinal system
- Current causes of abdominal diseases
- Current assessment and management of common abdominal diseases
- Current critical signs - red flags
- Current evacuation guidelines

### Key points

- The patient with an acute abdomen should be evacuated as soon as possible.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 30min

### Content

- Acute Abdomen
  - Assessment
  - Signs and Symptoms
  - Management
- Gastroenteritis
  - Assessment
  - Signs and Symptoms
  - Management
- Peritonitis
  - Signs and Symptoms
  - Management
- Appendicitis
  - Signs and Symptoms
  - Management

### Learning Objectives

- Defining asthma
- Describe the anatomy of the lower respiratory system
- Describe the effects of asthma on the respiratory system
- List of common causes of asthma - triggers
- Describe the conditions that can aggravate asthma
- List two types of asthma medications
- Describe the assessment and management of asthma
- Define an allergic reaction and describe the mechanism by which we become allergic to a particular substance.
- Explaining the effect of histamine on the body
- List common allergens and identify how they are absorbed by the body.
- Describe ways to prevent allergic reactions
- List common allergic reactions and describe the assessment and management of each.
- Defining Anaphylaxis
- Describe the assessment and management of anaphylaxis
- Demonstration of the use of an epinephrine auto-injector - EpiPen™ and Twinject™
- Describe the limits of single-dose auto-injectors in a wilderness environment
- Describe the action of antihistamines
- Describe considerations for the management of allergic reactions in the natural environment

### Teaching Methodology

- Present the anatomy of the lower respiratory system
- Present the mechanism of asthma
- Current common causes of asthma - triggers
- Current medications used in asthma management
- Current assessment of asthma
- Introducing asthma management
- Defining the allergy
- Current mechanism of allergic reactions

- Current types of allergens
- Current portals - entry routes into the body
- Presents the local and systemic effects of histamine
- Present the action of antihistamines
- Presenting the action of epinephrine
- Assessment and Management of Current Allergic Rhinitis (Hay Fever)
- Assessment and Management of Current Allergic Contact Dermatitis (poison sumac)
- Assessment and management of existing hives
- Current anaphylaxis
- Current assessment and management of anaphylaxis
- Current instructions on the use of epinephrine auto-injectors - EpiPen™ and Twinject™
- Presenting the limitations of single-dose epinephrine auto-injectors in a remote environment
- Discussing the management of fatal allergic reactions in the wilderness setting

### Key points

- We can't rely on history to rule out allergies in group members...
- Epinephrine has a rapid onset but short duration - in a remote environment, multiple doses may be required and an antihistamine is indicated.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Example of an asthma pump
- PAS Card
- Trauma kit
- Examination gloves
- Epinephrine self-injection trainers

### Assessment

- Assessment during the practical skills session
- Final Written Examination





# Non-Traumatic Respiratory Emergencies

## Course outline

- Ongoing evaluation throughout the course

### Duration

- Theory: 135min
- Practice: 60min

### Content

- Signs of Ineffective Breathing
- Common Terms in Respiratory Distress
  - Hypoxia
  - Anoxia
  - Asphyxia
- Asthma
  - Factors Precipitating Asthma Attacks
- Assessment of Asthma
  - Signs and Symptoms
  - Management
- Medications
  - Steroid Medications
  - Bronchodilators
- Allergic Reactions
  - Portals through which Allergens May Be Absorbed
  - Mechanism of an Allergic Reaction
  - Effects of Histamine on the Body
    - Symptoms of an Allergic Reaction Can Include
  - The process of sensitization
- Types of allergic reactions
  - Allergic rhinitis
    - Signs and Symptoms
    - Management
  - Allergic Contact Dermatitis
    - Poison Ivy, Poison Oak, Poison Sumac
    - Assessment
    - Signs and Symptoms
    - Management
  - Urticaria (Hives)
    - Assessment

- Signs and Symptoms
- Management
- Anaphylaxis
  - Common Allergens Responsible for Anaphylactic Reactions
- Assessment and Management of Anaphylaxis
  - Assessment
  - Management
- Epinephrine
  - EpiPen®
  - Directions for EpiPen® Use

### Learning Objectives

- List of types of poisons and routes of absorption
- Poisons Management Considerations
- Processing Options
- Assessment and management of common poisons

### Teaching Methodology

- Defining Poisons
- Current Poisons Action
- Current Poisons Management Considerations
- Current processing options
- Current assessment and management of common poisons

### Key points

- Know the options for action, assessment and treatment for all available toxic substances

### Required material

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Assessment

- Evaluation 1
- Evaluation 2

### Duration

- Theory: 30min
- Practice: 15min

### Content

- Ingested Poisons
  - Binding Ingested Poisons with Activated Charcoal
- Inhaled Poisons

- Carbon Monoxide Poisoning
  - Assessment Sign and Symptoms
  - Management

### Learning Objectives

- Describe the anatomy of the urinary system
- Describe the anatomy of the male and female reproductive systems
- Describe the assessment and management of common problems of the genitourinary system
- Describe normal labour and delivery
- Describe the management of obstetrical emergencies
- Describe the management of obstetrical emergencies

### Teaching Methodology

- Present the anatomy of the urinary system
- To present the anatomy of the male and female reproductive system
- To present the assessment and management of common problems of the genitourinary system
- Current normal childbirth and birth
- Current management of obstetrical emergencies
- Current management of common complications of obstetric emergencies

### Key points

- The patient with a serious genitourinary emergency should be evacuated as soon as possible.

### Required material

- PowerPoint presentation
- Drawing board, pens

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 15min

### Content

- Anatomy and Physiology of the Urinary and Reproductive Systems
  - The Urinary System
  - The Reproductive System
    - Male Reproductive System
    - Female Reproductive System
  - Pregnancy
    - The Menstrual Cycle
- Genito-Urinary Emergencies
  - Kidney Stones
    - Signs and Symptoms
    - Management
  - Male-Specific Emergencies
    - Inguinal Hernia
      - Signs and Symptoms
      - Management
    - Epididymitis
      - Signs and Symptoms
      - Management
  - Female-Specific Emergencies
    - Premenstrual Syndrome (PMS)
    - Vaginal Infections (VI)
      - Signs and Symptoms
      - Management
      - Preventative Measures
    - Urinary Tract Infections (UTI)
      - Signs and Symptoms
      - Management
    - Toxic Shock Syndrome (TSS)
      - Signs and Symptoms
      - Management
    - Obstetrical emergencies
      - Labour
      - Assisting with Emergency Delivery
        - The necessary equipment and supplies
        - Assisting the Mother
    - Emergency Complications during the Birth Process
      - Breech Birth



# Genito-Urinary Emergencies

## Course outline

- Prolapsed Cord
- Miscarriage and Stillbirth

### Learning Objectives

- List of essential materials to be included in a leader's kit
- Describe the general considerations for the design of medical kits
- Describe the types of items to be included in a medical kit

### Teaching Methodology

- Present the essential items to be included in a leader kit
- Present general considerations for the design of medical kits
- Describe the types of items to be included in a medical kit
- Demonstration of a Sirius guide kit as an example of a commercial kit
- Demonstration of additional material samples that can be included in the medical kit

### Key points

- No kit is perfect - careful planning and thought must be given to preparing a travel specific medical kit.

### Required material

- PowerPoint presentation
- Sirius Demo Kits and Bandage Samples
- First Aid Kits
- Trauma Kit

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 60min
- Practice: 30min

### Content

- First Aid Kit — General Considerations
  - Activity/Environment
  - Group Members
  - Type
  - Kit Container
  - Kit Size
  - Versatility of Items
  - Leader's Responsibility
- First Aid Supplies
  - Universal Precautions
    - Gloves
    - Face Shield
    - Eye Protection
    - Face Mask
    - Biohazard Bag
    - "Sharps" Container
  - Instruments
    - Oropharyngeal Airways and Portable Suction Unit
    - Sphygmomanometer
    - Stethoscope
    - EMT Shears
    - Bandage Scissors
    - Iris Scissors
    - Oral Thermometer
    - Hypothermia Thermometer
    - Pen Light
    - Irrigation Syringe 40-60 cc.
    - Tweezers
    - Forceps
    - Large Safety Pins
    - Sterile Needle
    - Dental Mirror

- Disposable Razor
- Surgical Scrub Brush
- Dressing Materials
  - Triangular Bandage
  - Abdominal Pad
  - Sterile Gauze Pad
  - Non-Stick Gauze Pad (Telfa®)
  - Non-Sterile Gauze
  - Sterile Gauze Roll
  - Elastoplast Strip
  - Cotton Tip Applicators
  - Non-sterile Cotton Applicators
  - Trainer's Tape
  - Surgical Hypoallergenic Tape
- Technical Dressings
  - Sterile Wound Closures (Steri-Strips®)
  - Spenco Second Skin®
  - Occlusive Dressing (Biopore®, Tegaderm®, Opsite®)
  - Opsite® Spray
  - Moleskin
  - Compeed®
  - Spenco Adhesive Knit®
- Miscellaneous Items
  - Oral Rehydration Solutions
  - Glucose Gel
  - Sam Splint
  - Wire Splint
  - Compressor Bandage (Tensor®)
  - Cold Compress (instant cold pack)
  - Sunscreen
  - Dental Paste (Cavit G®)
  - Dental Wax
  - Rescue Blanket
  - Surveyor's Tape
  - Waterproof Plastic Containers
  - Ziploc Bags
  - Sanitary Napkins
  - Antiseptic Wipes
  - Antiseptic Solution
  - Eye Irrigation Solution (Murine®, Tears®)
- Analgesic Pads
- Antibiotic Ointment (Polysporin®)
- Analgesic Ointment (Xylocaine®)
- Tincture of Iodine – 2.5 percent
- Tincture of Benzoin
- Alcohol 70 percent
- Leader's Essentials
  - Shelter
  - Heat Source
  - Water
  - Food
  - Extra Clothing
  - Map and Compass
  - Knife
  - Rope
  - Whistle and Signalling Mirror
  - Sleeping Bags
  - Insulating Pad
  - Paper and Pencil
  - Headlamp
  - First Aid Kit

### Learning Objectives

- Defining drugs
- Explain why knowledge of any medication taken while travelling is essential.
- Reference list for drug information
- List of Drug Considerations
- List some of the leadership considerations for drugs in the hinterland

### Teaching Methodology

- Defining drugs
- Present why knowledge of any medication taken while travelling is essential.
- Current references for drug information
- Current Drug Considerations
- Current Leadership Considerations for Hinterland Drug Issues
- Presents some common drug classes that can be considered for medical kits

### Key points

- Knowledge of any medication taken while travelling is essential.
- Drug information should be documented and kept in the medical kit for easy reference.

### Required material

- PowerPoint presentation

### Assessment

- Final Written Examination

### Duration

- Theory: 90min
- Practice: 0min

### Content

- Drug Considerations Drug Names
- Classification
- Ingredients
- Action
  - Reaction Time
  - Therapeutic Effect
  - Side Effects
  - Adverse Reactions
- Precautions
- Drug Interactions
- Indications
- Contraindications
- Patient Medication History
- Route of Administration
  - Oral
  - Sublingual
  - Buccal (from the Latin for cheek and mouth)
  - Subcutaneous
  - Intramuscular
  - Intravenous
  - Transdermal
  - Topical
  - Rectal
  - Respiratory
- Dosage
- Stability
- Considerations
- Medications Commonly Used in the Backcountry
  - Analgesics (Pain Medication)
    - Acetaminophen (Tylenol®)
    - Acetaminophen with Codeine Phosphate (Tylenol 3®)
    - Benzocaine (Orajel Maximum Strength®)
    - Lidocaine 5% (Xylocaine®)
  - Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)
    - Ibuprofen (Advil®, Motrin®)
  - Angina and Heart Attack

- ASA Acetylsalicylic Acid (Aspirin®) (non-enteric-coated)
- Nitroglycerin
- Allergic Reactions
  - Epinephrine (Epi-Pen®)
  - Diphenhydramine Hydrochloride (Benadryl®)
  - Loratadine (Claritin®)
  - Hydrocortisone 0.5% or 1% (Cortoderm®)
- Asthma/Bronchitis
  - Salbutamol Sulphate (Ventolin®)
- Gastrointestinal Disorders
  - Calcium Carbonate; Simethicone (Maalox®)
  - Dimenhydrinate (Gravol®)
  - Oral Rehydration Salts (Gastrolyte Regular®)
  - Loperamide Hydrochloride (Imodium®)
- Diabetes and Glucose Disorders
  - Oral Glucose Gel (Insta-Glucose®)
- Antiseptics, Topical Antibiotics and Antifungals
  - Povidone-Iodine (Proviiodine®)
  - Benzalkonium Chloride
  - Polymyxin B Sulphate; Gramicidin (Polysporin® Antibiotic Eye Drops)
  - Polymyxin B Sulphate; Bacitracin Zinc; Neomycin Sulphate (Neosporin® Antibiotic Ointment)
  - Clotrimazole 1% (Canesten® Topical)
- Insect Repellents
  - DEET (OFF®)
- Other
  - Artificial Tears



### Learning Objectives

- List and describe the basic principles of search and rescue.
- Identify organizations that play a role in search and rescue functions in Canada
- Identify 3 classes of search tactics
- Describe the components of the incident command system
- Apply basic principles to a simulated search and rescue exercise

### Teaching Methodology

- Present the basic principles of search and rescue
- Introduce the organizations that play a role in search and rescue functions in Canada.
- Present the 3 classes of search tactics
- Present the components of the incident command system
- Have students apply the basic principles to a simulated search and rescue exercise.

### Key points

- Searching for SAR capabilities in an area before embarking on a trip
- Registration of the travel plan with the competent authorities prior to departure

### Required material

- PowerPoint presentation
- Simulation equipment
- Drawing board, pens

### Assessment

- Final Written Examination

### Duration

- Theory: 45min
- Practice: 45min

### Content

- Locate
- Access
- Stabilize
- Transport
- Search and Rescue Tactics
  - Definitions
    - Bastard Search
    - Hasty Search
    - Loose Grid Search
    - Tight Grid Search
    - Point Last Seen (PLS)
    - Probability of Area (POA)
    - Probability of Detection (POD)
    - Probability of Success (POS)
- Incident Command System (ICS)
  - Command
  - Operations
  - Logistics
  - Planning
  - Finance
- Efficient Incident Management
  - Span of Control
  - Chain of Command

### Learning Objectives

- To identify the warning signs of a mental health problem, particularly associated with post-traumatic stress disorder and to support victims of this syndrome.
- Explain the differences between short-term and long-term stress
- Describe the symptoms that may be associated with stress and fear related to the incident.
- Describe stress management
- Describe follow-up options

### Teaching Methodology

- Present the different responses to stress
- Current short- and long-term stress
- Presents symptoms that may be associated with stress and fear of the incident
- Current Stress Management
- Current monitoring options
- Discuss the importance of being well prepared and anticipating problems to help relieve stress.
- Discuss relevant situations that the instructor or students may have encountered.

### Key points

- Fear is a normal component of stress and must be anticipated and managed in any critical situation.

### Required material

- PowerPoint presentation

### Assessment

- Final Written Examination

### Duration

- Theory: 60min
- Practice: 0min

### Content

- Assessment
- Management
- Follow Up
- Preparation

### Learning Objectives

- Describe the principles of CPR and AED use

### Teaching Methodology

- Introduce the principles of CPR and AED

### Key points

- Immediate Recognition of an emergency and Activation of Emergency Medical Services.
- Prompt CPR administration - Any delay in administering CPR dangerously affects the victim's prognosis.
- Rapid Defibrillation – Rapid defibrillation is essential to restoring the electrical rhythm of the heart.

### Required material

- PowerPoint presentation
- Drawing board, pens
- CPR Mannequins and AED Trainers

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 10min

### Content

- A Note on the Presentation of CPR Material
  - Lay Rescuer and Healthcare Providers
- Definitions of Death
- The Chain of Survival

### Learning Objectives

- Describe the principles of CPR and AED use
- Describe the steps of CPR for adults and children
- Describe the steps of the adult and child AED
- Describe the special considerations of CPR and AED
- Demonstrating the steps of CPR for adults and children
- Demonstration of the steps for adult and child AEDs
- Describe advanced techniques and considerations for health care professionals
- Demonstration of advanced techniques for health care professionals

### Teaching Methodology

- Introduce the principles of CPR and AED
- Introduce the steps of CPR for adults and children
- Demonstrating the steps of CPR for adults and children
- Supervise student CPR practice for adults and children
- Current Special Considerations on CPR
- Introduce the steps of the adult and child AED
- Demonstration of the steps for adult and child AEDs
- Supervise student practices for adult and child AEDs
- Present advanced techniques and considerations for health care providers
- Demonstration of advanced techniques for health care professionals
- Supervise student practice for advanced techniques for health care professionals

### Key points

- 1) Immediate Recognition of an emergency and Activation of Emergency Medical Services.
- Prompt administration of CPR - Any delay in the administration of CPR dangerously affects the victim's prognosis.

- 3) Rapid Defibrillation – Rapid defibrillation is essential to restoring the electrical rhythm of the heart.

### Required material

- PowerPoint presentation
- Drawing board, pens
- CPR Mannequins and AED Trainers

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 20min
- Practice: 60min

### Content

- Basic Life Support Sequence
  - Assessing Scene Safety
  - Assessing Responsiveness
  - EMS Activation
    - When to Activate EMS
    - EMS in remote environments
    - Automated External Defibrillator (AED)
  - Assessing Circulation - Checking the Pulse and assessing breathing simultaneously
  - Assessing breathing
  - CPR 1) Administering Chest Compressions
    - Chest Compressions
    - How Chest Compressions Work
    - If the thrusts are effective
  - CPR 2) Opening the Airway
    - Head Tilt – Chin Lift
    - Jaw Thrust
  - CPR 3) Delivering Rescue Breaths
    - If the first breath does not go in
    - How to Give Breaths



- Mouth-to-Mouth
- Adult CPR cycle
  - Situations Involving 2 Rescuers
    - Two rescuers take turns performing CPR
    - Two rescuers practice CPR as a team
  - CPR special considerations
    - Compressions without Ventilations
    - Mouth-to-Stoma
- Complications of Ventilation
  - Gastric Distension
    - To Minimize this Possibility
  - What to do if the patient vomits?
  - What to do if the patient is wearing dentures?
  - What to do if the patient's face is bleeding?
- Rapid Defibrillation
  - Ventricular Fibrillation (VF)
  - Ventricular Tachycardia (VT)
  - Asystole
  - Early Defibrillation
- When to Use the AED
  - How the AED Works
  - Operating an AED
    - Power Button
    - Connecting the Electrode Pads
    - Analyzing the Heart Rhythm
    - Clearing the Patient
    - "Shock Advised"
    - "Shock not Advised – Resume CPR"
  - AED Maintenance
  - Special Considerations

### Learning Objectives

- Demonstrate the steps in the management of obstructed airways in adults and children.

### Teaching Methodology

- Present the differences between adult, pediatric and infant CPR and the management of obstructed airways
- Present the steps in the management of obstructed airways in adults and children.
- Demonstrate the steps in the management of obstructed airways in adults and children.
- Supervise student practice for the management of obstructed airways in adults and children

### Key points

- Immediate Recognition of an emergency and Activation of Emergency Medical Services.
- Prompt CPR administration - Any delay in administering CPR dangerously affects the victim's prognosis.
- Rapid Defibrillation – Rapid defibrillation is essential to restoring the electrical rhythm of the heart.

### Required material

- PowerPoint presentation
- Drawing board, pens
- CPR Mannequins and AED Trainers

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 15min

### Content

- Obstructed Airways
  - Obstructed Airway in a Conscious Patient
    - Signs and Symptoms of Choking
    - Assessment of Obstructed Airway in Conscious Patient
    - Management of Obstructed Airway in Conscious Patient
  - Management maneuvers
    - How to deliver back blows
    - How to Deliver Abdominal Thrusts
    - Chest Thrusts
    - Obstructed Airway if You Are Alone
- Obstructed Airway in an Unresponsive Patient
  - Witnessed Collapse
  - Unwitnessed Collapse
- Management of an Obstructed Airway in an Unresponsive Patient
  - Chest Compressions
  - Open Airway
  - Look in the Mouth
  - Deliver Rescue Breaths

### Learning Objectives

- Describe the principles of CPR and AED use
- Describe the steps of CPR for adults, children and infants
- Describe the steps in the management of obstructed airways in adults, children and infants.
- Describe the differences between adult, pediatric and infant CPR and management of obstructed airways
- Describe the steps of the AED Adult, Child
- Describe the special considerations of CPR and AED
- Demonstrate the steps of adult, child and infant CPR
- Demonstration of the steps for AEDs adults, children
- Demonstrate the steps in the management of obstructed airways in adults, children and infants.
- Describe advanced techniques and considerations for health care professionals
- Demonstration of advanced techniques for health care professionals
- Describe the implications of wilderness for CPR and AED

### Teaching Methodology

- Introduce the principles of CPR and AED
- Introduce the steps of CPR for children and infants
- Present the differences between adult, child and infant CPR
- Demonstrating the steps of CPR for children and infants
- Supervise student CPR practice for children and infants
- Introduce the steps of the Child and Infant AED
- Demonstration of steps for child and infant AEDs
- Supervise student practices for child and infant AEDs

### Key points

- Immediate Recognition of an emergency and Activation of Emergency Medical Services.

- Prompt administration of CPR - Any delay in the administration of CPR dangerously affects the victim's prognosis.
- Rapid Defibrillation – Rapid defibrillation is essential to restoring the electrical rhythm of the heart.

### Required material

- PowerPoint presentation
- Drawing board, pens
- CPR Mannequins and AED Trainers

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 40min

### Content

- Responsiveness
- EMS Activation
- Checking the Pulse and breathing simultaneously
- CPR 1) Administering Chest Compressions
  - Child Chest Compressions
  - Infant Chest Compressions
- CPR 2) Opening the Airway
  - Opening a Child's Airway
  - Opening an Infant's Airway
- CPR 3) Delivering Rescue Breaths
  - Child Breaths
  - Infant Breaths
- Child and Infant CPR Ratios
  - 2-Rescuer CPR:
- AEDs for Children and Infants
  - When to Use the AED with Children and Infants
  - Pediatric AEDs

### Learning Objectives

- Describe the steps in the management of obstructed airways in children and infants
- Describe the differences between the management of obstructed airways in adults, children and infants
- Demonstrate the steps in the management of obstructed airways in adults, children and infants.

### Teaching Methodology

- Present the differences between the management of obstructed airways in adults, children and infants.
- Present the steps in the management of obstructed airways in children and infants.
- Demonstrate the steps in the management of obstructed airways in children and infants
- Supervise student practice for the management of obstructed airways in children and infants

### Key points

- Immediate Recognition of an emergency and Activation of Emergency Medical Services.
- Prompt CPR administration - Any delay in administering CPR dangerously affects the victim's prognosis.
- Rapid Defibrillation – Rapid defibrillation is essential to restoring the electrical rhythm of the heart.

### Required material

- PowerPoint presentation
- Drawing board, pens
- CPR Mannequins and AED Trainers

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 15min

### Content

- Obstructed Airway in a Conscious Child or Infant Patient
  - Choking Children
  - Choking Infants
    - When the maneuver is effective.
    - If the infant becomes unconscious



### Learning Objectives

- Describe the implications of wilderness for CPR and AED

### Teaching Methodology

- Current Wilderness Implications for CPR and AED

### Key points

- Immediate Recognition of an emergency and Activation of Emergency Medical Services.
- Prompt administration of CPR - Any delay in the administration of CPR dangerously affects the victim's prognosis.
- Rapid Defibrillation – Rapid defibrillation is essential to restoring the electrical rhythm of the heart.

### Required material

- PowerPoint presentation
- Drawing board, pens
- CPR Mannequins and AED Trainers

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 5min
- Practice: 25min

### Content

- When to Stop CPR
- When Not to Start CPR
- Hypothermia and Avalanche Burial
- Submersion
- Lightning Strike

- Avalanche Burial
- Smoke Inhalation and Burns

### Learning Objectives

- Define medications during resuscitation maneuvers
- Explain why knowledge of any medication taken while travelling is essential.
- Reference list for drug information
- List of Drug Considerations
- List some of the leadership considerations for drugs in the hinterland

### Teaching Methodology

- Define medications during resuscitation maneuvers
- Present why knowledge of any medication taken while travelling is essential.
- Current references for drug information
- Current Drug Considerations
- Current Leadership Considerations for Hinterland Drug Issues
- Presents some common drug classes that can be considered for medical kits

### Key points

- Certain drugs can be administered in the case of respiratory arrest or cardiorespiratory arrest, such as epinephrine and Naloxone, in order to increase resuscitation rates.

### Required material

- PowerPoint presentation

### Assessment

- Final Written Examination

### Duration

- Theory: 10min
- Practice: 15min

### Content

- Epinephrine (EpiPen)
- Naloxone (Narcan)

### Learning Objectives

- Describe the anatomy and structure of the airways and respiratory system
- Describe and demonstrate techniques for opening and maintaining airways
- Describe and demonstrate the use of the bag-valve mask
- Describe and demonstrate the use of aspiration
- Explain the precautions and complications of mechanical devices for maintaining an open airway

### Teaching Methodology

- Current anatomy and structure of the airways and respiratory system
- Present and demonstrate techniques for opening and maintaining airways
- Presentation and demonstration of the use of the pocket and valve mask
- Introduce and demonstrate the use of suction
- Present the precautions and complications of mechanical devices for maintaining an open airway

### Key points

- The patient with mechanical devices to keep the airway open should be constantly monitored.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Commercial Cervical Collar
- Oxygen and airway equipment
- Trauma Kit
- PAS Card
- Examination gloves

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 60min
- Practice: 60min

### Content

- Oropharyngeal Airway (OPA)
  - Sizing the Oropharyngeal Airway
  - Inserting the Oropharyngeal Airway
  - Contraindications and Problems with the Use of the Oropharyngeal Airway
- Nasopharyngeal Airway
  - Sizing the Nasopharyngeal Airway
  - Contraindications and Problems with the Use of the Nasopharyngeal Airway
- Supraglottic intubation devices
  - Combitube
  - I-Gel
  - Laryngeal mask
  - King LT® laryngeal tube
  - Bag-Valve-Mask (BVM)
    - Bag-Valve-Mask (BVM)
    - Technique for 1 Rescuer
    - Technique for 2 Rescuers (prescribe method at any time)

### Learning Objectives

- Describe the principles of supplemental oxygen administration
- Describe oxygen equipment components
- Demonstrate the correct use of oxygen equipment, including the selection and use of appropriate devices and flow rates
- List the types of oxygen masks and describe their use and associated flow rates.
- Describe considerations for the use of oxygen in the natural environment

### Teaching Methodology

- To introduce the principles of supplemental oxygen administration
- Demonstration of oxygen equipment components
- Demonstrate the correct use of oxygen equipment, including the selection and use of appropriate delivery apparatus and flow rates
- Explain the types of oxygen masks and describe their use and associated flow rates
- Explain the considerations related to the use of oxygen in the natural environment
- Introduce and demonstrate safety considerations for the use of oxygen equipment
- Supervise students' oxygen administration practice

### Key points

- Oxygen is indicated for all patients suffering from cardiovascular or respiratory problems or injuries that may lead to shock.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Oxygen and airway equipment
- Trauma kit

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 30min
- Practice: 90min

### Content

- Indications for Oxygen Use
- Oxygen Delivery Equipment
  - Oxygen Cylinder
  - Pressure Regulator
  - Flow Meter
  - Pin Indexing System
- Mask Attachments for Breathing Patients
  - Non-Rebreathing Mask
  - Partial Rebreathing Face Mask
  - Simple Face Mask
  - Nasal Canula
- Summary of Breathing Devices Used to Administer Oxygen to a Breathing Patient
- Operating Procedures of the Oxygen Delivery Device.
  - To Turn the Device Off
- Oxygen Administration
  - Oxygen Administration to a Breathing Patient
    - Oxygen Removal from a Breathing Patient
  - Oxygen Administration to a Non-Breathing Patient
- Safe Handling Practices
  - Workplace Hazardous Materials Information System (WHMIS)
- Special Considerations
  - No Contraindications to Administering O<sub>2</sub> in the Field
  - Oxygen-Powered Resuscitators
  - Pulse Oximeter
  - Suction Devices



# Oxygen Administration

## Course outline

- Suction Device Components
- Operation

### Learning Objectives

- Describe the principles of patient movement
- Describe the principles of BEAM
- Describe the specific principles of drags
- Describe the specific principles of lifts
- Describe the specific principles of carries
- Describe the specific principles of rolls
- Demonstration of patient rolls
- Demonstration of the use of drags
- Demonstration of patient lifting
- Demonstration of patient carries
- BEAM Demonstration
- Demonstration of the use of improvised stretchers

### Teaching Methodology

- Describe the principles of patient movement
- Describe the principles of BEAM
- Describe the specific principles of drags
- Describe the specific principles of lifts
- Describe the specific principles of carries
- Describe the specific principles of rolls
- Demonstration of patient drags
- Demonstration of the use of rolls by 1 or 2 people
- Demonstration of patient carries
- Demonstration of patient lifts
- BEAM Demonstration
- Demonstration of the use of improvised stretchers
- Supervise student practice in patient movement and transportation
- Assessing student performance in patient movement and transportation

### Key points

- Maintaining alignment of the patient's airway and spine should be considered a priority for all patient movement, regardless of the number of rescuers involved.

- Patients suspected of having spinal injuries should be evacuated on a rigid spine board.

### Required material

- PowerPoint presentation
- Drawing board, pens
- Commercial Cervical Collar
- Sleeping Bags
- Tarp
- Sleeping pad
- Spine board and straps

### Assessment

- Assessment during the practical skills session
- Final Written Examination
- Ongoing evaluation throughout the course

### Duration

- Theory: 10min
- Practice: 10min

### Content

- Considerations
- Drags
  - Shoulder Drag
  - Blanket Drag
- Rolls
  - Pulling Patient towards Rescuer – 1 Rescuer
  - Multiple-Person Rolls
- Lifts
  - BEAM
    - Two-person lift
    - Multiple-Person Lifts
- Carries
  - Fireman's Carry
  - Backpack Carry
  - Back Carry
  - Split Coil Carry



# Patient Moving and Transportation

## Course outline

- Litters
  - Tarp Litter
  - Jacket Litter
  - Internal Frame Pack Stretcher
  - External Frame Pack Stretcher
  - Rope Stretcher



- First Aid Kit contents





2685, rue Rolland, Suite 303  
Sainte-Adèle, Québec  
Canada J8B 1C9

T. 514.509.2112  
info@siriusmed.com

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[siriusmedx.com](http://siriusmedx.com)