1.1 Introduction to First Aid

First Aid is the basic medical care provided to someone experiencing a sudden injury, pain, or any uneasiness. It consists of the initial support provided to someone during a medical emergency. This action by the person trying to help might help the victim survive until medical help arrives.

1.11 Definition & Importance

First aid means providing medical care immediately after an injury to a person. In order to provide initial treatment at the spot of the injury, some basic training is required. The person should be able to deal with the situation at hand.

The person giving first aid should be equipped with some basic techniques that can be performed in most situations with minimum equipment. It includes preparation, education, and training to deal with such emergency conditions. Remember, giving first aid might not be sufficient. Sometimes follow-up medical attention is required.

First aid includes:

- Situational assessment
- Preparation and implementation of a first aid and victim support plan
- Ensuring everyone's safety
- Providing initial psychological support, if necessary
- Quick decision based on judgement, experience, and available resources

1.12 Aims and Objective

Aims of first aid can be understood with the help of **'the three Ps':**

- **Preserve life:** The aim of all medical care including first aid, is to save lives and minimize death. First aid reduces the patient's level of pain and calms them down during the treatment process.

- **Prevent further harm:** Prevent further harm by addressing both external factors, such as moving a patient away from the cause of harm, and using techniques to prevent the condition from worsening, such as making a sling for a fractured arm.

- **Promote recovery:** First aid intends to start the recovery process from the illness or injury and, in some cases, might involve the completion of the treatment, such as applying a plaster to a small wound.

1.2 Roles and Responsibilities: Necessary Requirements for First Aid

1.21 Principles of First Aid

1. Preserve Life
2. Prevent Deterioration
3. Promote Recovery
4. Taking immediate action
5. Calming down the situation
6. Calling the Medical Assistance
7. Apply the relevant treatment.

1.22 Steps to Follow

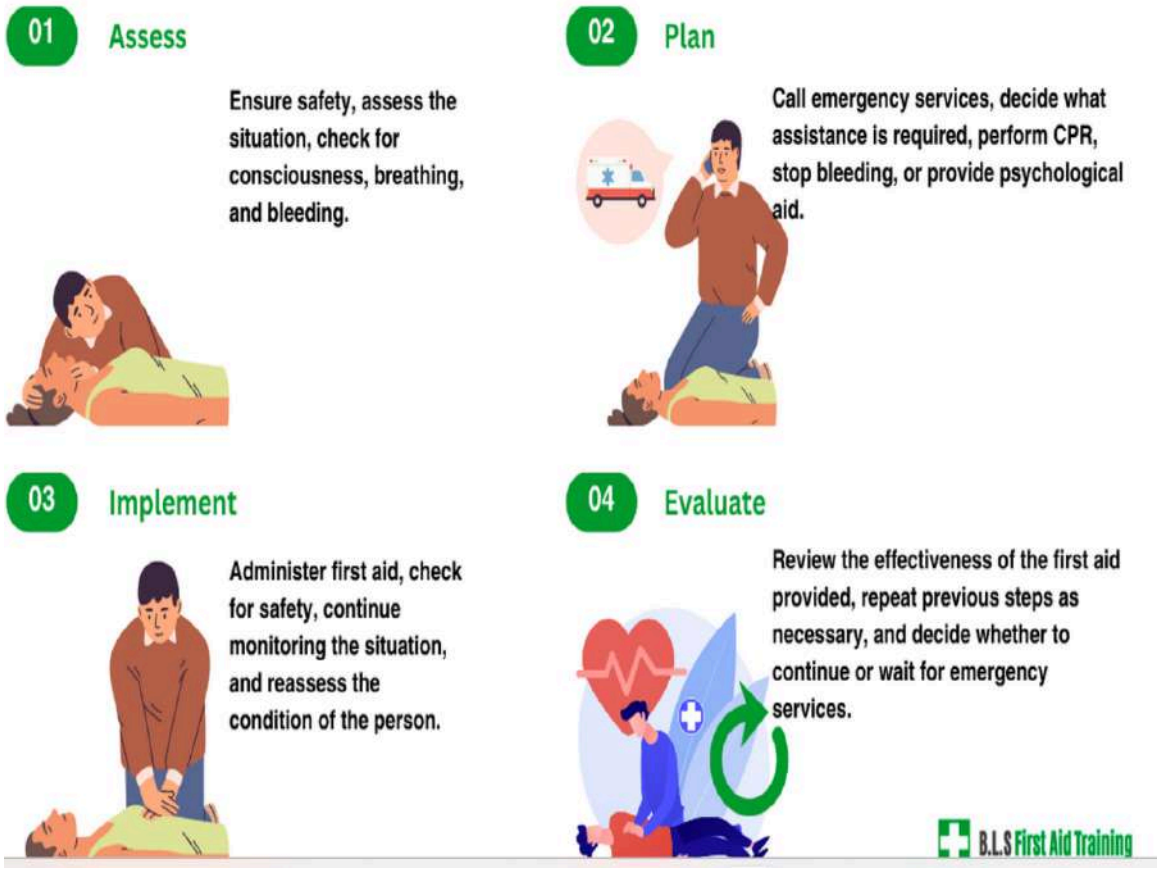
If you want to know how to provide First Aid, you'll need to understand the four steps that apply to every single emergency:

1. **Assess**

2. **Plan**

3. **Implement**

4. **Evaluate**



1.23

Quick Assessment: Deciphering Complexity in Moments

First Aid helps people give immediate care, but it's just the start of medical help. Knowing the limits of your skills and resources is crucial, so getting professional help is important. Once you're on the scene, time is of the essence, and calling for professional medical services quickly is vital. This can mean dialling emergency services, asking bystanders for help, or assigning someone to get professional medical aid. Providing clear and accurate information about the situation is key. Details like the injuries, the number of people affected, and the exact location help emergency responders bring the right resources and personnel, improving the chances of a positive outcome. Seeking professional help is more than just organising things; it's a powerful

way to make sure emergency medical services act promptly and effectively.

1.24 Setting the priorities

There are certain steps that need to be followed through the prescribed protocols. These are - ATLS, SAFE-POINT, and BATLS, based on defining the priorities and procedures to save human life through the correct execution of the individual steps.

Basic protocols can be understood through the mnemonic ABCDE or cABCDE:

- ❖ catastrophic bleeding (external bleeding, which is excessive, is added in some protocols).
- ❖ Airway (clearing airways)
- ❖ Breathing (ensuring respiration)
- ❖ Circulation (ensuring effective cardiac output)
- ❖ Disability (neurological condition), and/or Defibrillation (cardio-respiratory failure, which can also be included as 'Breathing' or 'Circulation')
- ❖ Exposure (overall examination, environment)

A major benefit of these protocols is that they require minimum resources, time, and skills with a great degree of success in saving lives under conditions unfavourable for applying first aid.

ABCDE method

Airway (clearing airways):

If the patient responds in a normal voice, it means that the airway is clear. Airway obstruction can be partial or complete. A changed voice, noisy breathing, and increased

breathing effort are signs of an obstructed respiratory passage or airway. With a completely obstructed airway, there is no respiration despite great effort (i.e., paradox respiration, or "see-saw" sign). A reduced level of consciousness is a common cause of airway obstruction, partial or complete. Snoring is the most common sign of obstruction in the airway.

Untreated airway obstruction can rapidly lead to cardiac arrest. All health care professionals, regardless of the setting, can assess the airway as described and use a head-tilt and chin-lift maneuver to open the airway. Proper equipment can be used to suck out and remove obstructions like blood and vomit from the airway. In case of complete obstruction of the airway, current guidelines should be followed. In brief, first aid for conscious patients of choking uses anti-choking procedures (usually five back blows, alternating with five abdominal thrusts, or alternating with five chest thrusts in the case of pregnant and very obese victims, until the obstruction is relieved). If the victim becomes unconscious, act according to the guidelines, call for emergency medical help. If you are trained to give Cardiopulmonary Resuscitation (CPR), then proceed with providing medical aid to the victims of choking. It is important to provide high-flow oxygen timely to all critically ill people.

Breathing (ensuring respiration):

If First aid is to be given to the victim, attention should be given to the breathing pattern. It should be ensured that the victim has access to clean air and is away from crowded places. In case the victim is unable to breathe, call for medical help immediately and start with assisted ventilation and rescue breaths (CPR).

Circulation (internal bleeding):

In every setting, the first thing to check is the pulse rate. If there are any visible circulatory problems on the skin, such as color changes, sweating, or a low level of

consciousness, they are signs of decreased blood flow. Measurement of blood pressure followed by an ECG, if possible, are the next steps. Hypotension is a sign to go for immediate medical help. The effects can be decreased by placing the patient in a supine position and elevating the victim's legs.

Disability (neurological condition):

A patient's consciousness can be checked by using the AVPU method.

A- Alert

V- Voice responsive

P- Pain responsive

U- Unresponsive

Limb movements should be checked for responsiveness. The best treatment for any kind of brain or cerebral condition is checking the airway, breathing, and circulation (ABC). When the patient is only pain-responsive or unresponsive, airway clearance must be ensured by placing the patient in the recovery position and calling qualified personnel. After this, measure blood glucose and check for light reflexes in the eye pupils. Loss of consciousness due to low blood glucose can be immediately treated by giving glucose orally.

Exposure (overall examination, environment):

The victim should be observed for signs of trauma, such as skin reactions (rashes), needle marks, bleeding, etc. A thorough physical examination after removing clothes (keeping in mind the dignity of the victim) should be done. Use a thermometer to check body temperature, or else feel the skin for changes in temperature.

1.25 First aid Kit

What exactly should your first aid kit include?

- Gauze pads (at least 4 x 4 inches)
- 2 large gauze pads (at least 8 x 10 inches)
- Box adhesive bandages (Band-Aids)
- 1 package of gauze roller bandages at least 2 inches wide
- Two triangular bandages
- Antiseptic liquid or similarly sealed wet tissues
- Scissors
- At least one blanket
- Tweezers
- Adhesive tape
- Latex gloves
- Resuscitation equipment such as an airway or pocket mask
- Two elastic wraps

- Splint
- Directions for requesting emergency assistance

1.3 Summary

First aid is not a medical treatment but the first response to prevent death or serious injury from worsening. It involves making common sense decisions by first responders before a trained practitioner arrives.

There are certain principles, steps, and protocols for such responses, which are discussed in the unit. Understanding the immediacy of treatment according to injuries or illness through basic knowledge of first aid is possible. Arranging and maintaining a first-aid box at all times is a necessity.

Injuries and fractures

2.1 Introduction

An injury is damage or harm to your body caused by an accident, fall, weapon, hit, and more**.** These injuries can be minor, major, or life-threatening. They can occur both indoors and outdoors, during sports play, at work, or while driving a car.

Injuries can compromise your quality of life, mobility, and function because of the pain and discomfort that come with them. Different injuries affect your body differently. Small injuries can heal themselves, but only after cleaning and treating them correctly. Some injuries are serious and may require a visit to emergency care. Similarly, a deep wound that is not healing or stopping bleeding also demands urgent care.

2.11 Classroom injuries

Classroom injuries commonly lead to bruises, scratches, cuts, etc. These may be

caused by collisions with furniture, small fights, pushing, and pulling that students engage in the absence of teachers. Generally, a small First-Aid box is sufficient to deal with these injuries. But in some cases like fracture, profuse bleeding, epilepsy, and alike, medical help is urgently required.

2.12 Playground injuries

Playground injuries occur when children are excited and run around mindlessly. Many of them are caused by falling from playground apparatus such as a see-saw, swing, monkey bars, jungle gym, and others. These injuries are most common in kids, as their elbows and forearms are not very strong. Children may slip and fall while playing, which causes fractures and bruises. These require medical help and, most commonly, at least a tetanus injection. As first aid, cleaning the wound and consoling the child can help.

2.13 On road injuries

Road injuries are a leading cause of death for children and young adults between the ages of 5 and 29.. These are the results of rash driving, traffic irregularities, rule-breaking, and inattentiveness on the roads. Pedestrians and cyclists are the most common victims of such injuries. Students coming and going to school lose attention on the roads given to walking in groups, pushing each other, and using phones on the go; road safety is not their priority. First aid for road injuries includes assessing the victim's wounds and injuries, tending to the wounds immediately, and calling the ambulance.

2.14 At home injuries

Injuries at home are common among kids. It is important for parents to know about basic first aid so that they can attend to their immediate needs before calling for medical help. At home, the most common injuries are cuts, bruises, burns, shocks, fractures, and the like. A basic first-aid kit needs to be kept at home for such emergencies.

2.2 Types of injuries and identification

Some common types of injuries are discussed below. Also, how do they affect your body?

2.21 Bleeding (Cuts and Wounds)

Cuts and wounds are a common type of injury that happens at home and school. Children are prone to these even in playgrounds while playing with friends. These wounds are sudden, such as a cut, a fall, or a bad knock. Some other examples of wounds are grazes and lacerations. Cuts may be caused by a sharp object like a knife or glass, sometimes even a sheet of paper. Deep cuts or tears of the skin that usually have irregular, jagged edges are called lacerations.

2.22 Swelling

Any abnormal enlargement of a body part may be swelling. Typically, inflammation or a buildup of fluid results in swelling. If there is swelling in the tissue outside of the joint, it is described as edema. A swelling that is inside a joint, such as a swollen ankle or knee, is called an effusion.

2.23 Sprains and Muscle Pull

When a fall causes a ligament and a band of tissues that join the ends of bones to tear or stretch, it causes a sprain. A sprain can be a minimally stretched ligament (first degree) or a complete ligament tear (third degree). When an ankle, knee, or wrist has a sprain, urgent care is required.

Sometimes even overstretching or over-contraction also results in strain. A strain is a pull, twist, or tear in a muscle or tendon. This can be seen in the form of muscle

spasms, pain, and a loss of strength. If not treated professionally, it can cause damage or loss of muscle function.

2.24 Fractures and dislocation of joints

A fracture is caused when a bone breaks. They happen because of falls, car accidents, or injuries during sports. Also suffering from osteoarthritis or having low bone density, bones become more vulnerable to fractures. Intense pain, swelling, tingling, numbness, and deformity at the site of the fracture can be experienced. A fracture requires urgent, professional medical care.

2.25 Electric shocks

An Electric shock occurs when an electric current passes from a live outlet to part of the body.

Electric shocks can result from contact with:

- faulty electrical appliances or machinery.
- household wiring
- electrical power lines
- lightning
- electricity outlets

Domestic electricity in a typical household, with some appliances needing 240 V. Whereas, industrial power lines carry more than 100,000 V. Deep burns are caused by high voltage currents of 500 V, while low voltage currents (110–120 V) can result in muscle spasms. It can be an electric shock through contact with an electric current from even a small household appliance, wall outlet, or extension cord that affects a

person. These shocks cause severe trauma or complications only on a few occasions.

2.3 General principles and care

Injury and fracture care hinge on fundamental principles including rapid assessment, stabilization, immobilization, diagnostic evaluation, treatment planning, supportive care, rehabilitation, and recovery optimization to address underlying reasons or causes, mitigate complications, facilitate healing, and restore function across diverse musculoskeletal, neurological, and systemic symptoms**.**

(i) Rapid Assessment: Conduct rapid and systematic assessment of injuries and fractures, encompassing history, mechanism of injury, clinical presentation, physical examination, neurovascular assessment, imaging studies, laboratory tests, and multidisciplinary evaluation to understand the problem and its underlying reasons, severity, extent, associated injuries, complications, and management considerations.

(ii) Stabilization and Immobilization: Prioritize stabilization and immobilization of injured and fractured regions through splinting, casting, bracing, traction, fixation, reduction, alignment, and supportive interventions to minimize further injury, prevent complications, reduce pain, promote healing, and optimize functional outcomes across diverse musculoskeletal structures, joints, and anatomical regions.

(iii) Diagnostic Evaluation and Treatment Planning: Employ diagnostic evaluation modalities, including radiography, computed tomography (CT), magnetic resonance imaging (MRI), ultrasound, laboratory tests, and other relevant investigations to delineate injury and fracture characteristics, guide treatment planning, inform clinical decision-making, and facilitate targeted interventions across diverse clinical scenarios, patient populations, and contexts.

2.31 Specific Considerations for Head, Neck, and Spinal Injuries

Head, neck, and spinal injuries present unique considerations requiring specialized assessment, intervention, management, and care coordination to optimize outcomes, prevent complications, minimize neurological deficits, and enhance recovery across diverse clinical scenarios, patient populations, and contexts.

(i) Head Injuries: Evaluate head injuries through comprehensive neurological assessment, Glasgow Coma Scale (GCS) scoring, imaging studies, clinical monitoring, supportive care, neurosurgical consultation, and multidisciplinary management to elucidate injury severity, intracranial pathology, neurological deficits, complications, and treatment considerations, optimizing outcomes, survival, and recovery across diverse traumatic, non-traumatic, acute, chronic, and high-risk scenarios.

(ii) Neck Injuries: Assess neck injuries through thorough clinical evaluation, radiological imaging, neurovascular assessment, airway management, cervical spine precautions, stabilization techniques, supportive interventions, and multidisciplinary collaboration to delineate injury characteristics, stability, complications, treatment considerations, and outcomes across diverse traumatic, non-traumatic, acute, chronic, and high-risk scenarios.

(iii) Spinal Injuries: Manage spinal injuries through rapid assessment, immobilization, radiological evaluation, neurosurgical consultation, orthopedic intervention, rehabilitation planning, supportive care, and multidisciplinary

collaboration to elucidate injury severity, stability, neurological deficits, complications, treatment considerations, and outcomes across diverse traumatic, non-traumatic, acute, chronic, degenerative, pathological, and high-risk scenarios.

Immobilization Techniques and Considerations

Immobilization techniques and considerations encompass a range of strategies tailored to specific injury and fracture patterns, anatomical regions, severity, stability, mobility, alignment, complications, and patient factors to optimize outcomes, facilitate healing, and enhance recovery across diverse musculoskeletal, neurological, and systemic manifestations.

(i) Splinting and Casting: Utilize splinting and casting techniques for stabilizing and immobilizing fractures, dislocations, sprains, strains, and other musculoskeletal injuries through the application of plaster, fibreglass, thermoplastic materials, orthopedic devices, custom fittings, and supportive interventions to maintain alignment, reduce pain, prevent complications, and promote healing across diverse anatomical regions, injury patterns, and patient populations.

(ii) Bracing and Traction: Employ bracing and traction techniques for managing complex fractures, joint injuries, spinal conditions, and orthopedic disorders through the application of external supports, mechanical devices, orthotic appliances, weight-bearing strategies, countertraction mechanisms, and rehabilitative interventions to facilitate stabilization, alignment, mobility, function, and recovery across diverse clinical scenarios, patient needs, and contexts.

(iii) Surgical Interventions: Consider surgical interventions for managing complex, unstable, displaced, intra-articular, open, comminuted, pathological, and high-risk

fractures through open reduction, internal fixation, external fixation, arthroscopic techniques, minimally invasive procedures, bone grafting, joint replacement, and other specialized interventions to optimize alignment, stability, healing, function, and outcomes across diverse anatomical regions, injury patterns, patient factors, and clinical scenarios.

2.32 Specific considerations for bleeding

For severe bleeding, take these first-aid steps.

- **Call 102 or your local emergency number if the wound is deep or you're not sure how serious it is.** Don't move the injured person except if needed to avoid further injury. Before checking the wound, disposable gloves and other personal protective equipment should be put on, if you have them.

- **Remove any clothing or debris from the wound.** Look for the source of the bleeding. There could be more than one injury. Remove any obvious debris, but don't try to clean the wound. Don't remove large or deeply embedded objects; don't probe the wound.

- **Stop the bleeding.** Always cover the wound with a clean cloth or sterile gauze. Press on the wound firmly with your hand until the bleeding stops. But don't press on an eye injury or embedded object. Don't press on a head wound if you suspect a skull fracture. Wrapping the wound with a thick bandage or a clean cloth and tape will help. If possible, lift the wound above heart level.

- **Help the injured person lie down.** To prevent loss of body heat, place the person on a rug or blanket. If any signs of shock, such as weakness, clammy skin, or a rapid pulse, are seen, elevate the feet of the victim. Calmly reassure the injured person.

- **Add more bandages as needed.** Add more gauze or cloth on top of the existing bandage if the blood seeps through the bandage. Then press firmly on the affected area.

- **Keep the person still.** If you're waiting for emergency help to arrive, try to keep

the injured person from moving. If you haven't called for emergency help, get the injured person to an emergency room as soon as possible.

- **Wash your hands.** After helping the injured person, wash your hands, even if it doesn't look like any blood has gotten on them.

2.33 Specific considerations for shocks

A sudden drop in blood flow through the body brings about a critical condition called shock. It can be caused by trauma, heatstroke, blood loss, or an allergic reaction. It can also be a result of severe infection, poisoning, severe burns, or other causes. When a person is in shock, their organs don't get enough blood or oxygen. It can lead to permanent organ damage or even death if not treated properly.

Symptoms of shock depend on circumstances and may vary. These include:

- Cool, clammy skin.
- Pale or ashen skin.
- Lips or fingernails show a grey or bluish tinge.
- Rapid pulse.
- Rapid breathing.
- Nausea or vomiting.
- Enlarged pupils.
- Weakness or fatigue.
- Dizziness or fainting.
- Changes in behaviour or mental status, such as agitation or anxiousness.

Seek emergency medical care

If you see that the victim is in shock, **call 102 or local emergency number.** Then take the following steps right away:

- Lay the person down and slightly elevate the feet and legs, unless this may cause further injury or pain.
- Keep the person still and don't move the person unless necessary.
- If the person shows no signs of life, like not breathing, moving, or coughing, BEGIN CPR.
- If needed, cover the person with a blanket to prevent chilling and loosen tight clothing.
- Don't let the person eat or drink anything.
- If no spinal injury is suspected but the victim vomits or is bleeding from the mouth, turn them onto one side to prevent choking.

2.4 Summary

Injuries and fractures are emergencies that need quick recognition, assessment, intervention, and management across diverse musculoskeletal, neurological, and systemic manifestations. By elucidating the general principles of injury and fracture care, immobilization techniques, and specific considerations for head, neck, and spinal injuries, healthcare professionals, individuals, caregivers, communities, and stakeholders can navigate these critical clinical conditions effectively, reduce event complications, and enhance recovery across diverse settings, populations, and healthcare contexts. Furthermore, prioritizing research, innovation, education, advocacy, collaboration, and community engagement cultivates a comprehensive understanding, awareness, prevention, management, and support framework for

injuries and fractures, fostering resilience, empowerment, well-being, and quality of life for affected individuals, families, communities, healthcare systems, and societies globally.

ILLUSTRATIONS AND DIALOGUES

Injuries and Fractures

2.1 Introduction

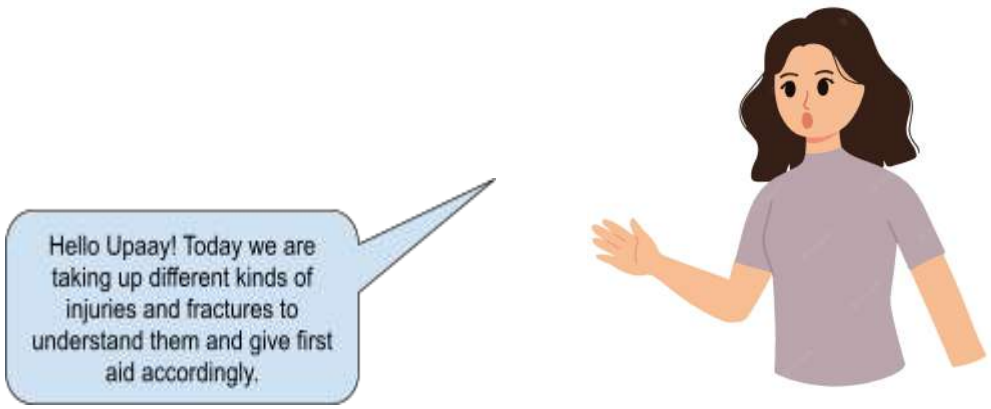
2.11 Classroom injuries

2.12 Playground injuries

2.13 On road injuries

2.14 At home injuries

Suraksha and Upaay are talking about Injuries and Fractures today.



That's great Suraksha, there are different injuries according to the places where they take place. Like- Classroom injuries, these may be caused due to collision with furniture, small fights, pushing and pulling, that student's engage in absence of teachers. Generally, a small First-Aid box is sufficient to deal with these injuries.

Suraksha: Then there are playground injuries, which take place while playing. These are caused when they fall from playground apparatus such as a see-saw, swing, monkey bars, jungle gym, and others. As a first aid, cleaning the wound and consoling the child can help.

Upaay : Do you know, Suraksha, that road injuries are a leading cause of death for children and young adults between the ages of 5 and 29??

Suraksha: That's shocking and very concerning Upaay. See how simple considerations could have avoided these accidents and injuries on the road.

Upaay : Rule-breaking and inattentiveness on the roads by students coming and going to school and also walking in groups, pushing each other, using phones on the go, road safety is not their priority. First aid for road injuries includes assessing the victim's wounds and injuries, tending to the wounds immediately and calling the ambulance.

Suraksha : Upaay, all of us can relate to these accidents that happen at home all the time. For these, we need a basic knowledge of first aid and a first-aid box at home too. The most common injuries at home are cuts, bruises, burns, shocks, fractures, and alike.

2.2 Types of injuries and identification

2.21 Bleeding (Cuts and Wounds)

2.22 Swelling

2.23 Sprains and Muscle pull

2.24 Fractures and dislocation of joints

2.25 Electric shocks

DIALOGUES

Suraksha: We need to discuss some common types of injuries that occur and need tending through First Aid.

Upaay: Suraksha! I think bleeding cuts and wounds need to be discussed first of all. They are a common type of injury that happens at home, school and playgrounds as well. Cuts may be caused by a sharp object like a knife or glass, sometimes even a sheet of paper.

Suraksha: Upaay, there are some other examples of wounds, like grazes and lacerations.

Upaay: Lacerations???

Suraksha: Yes, lacerations are deep cuts or tears of the skin that usually have irregular, jagged edges.

Upaay: Okay, I believe all these first and foremost require cleaning, tending, and dressing from the first aid box at hand.

Suraksha: That is true. But there are other injuries as well, like swelling, sprains, muscle pulls, fractures, joint dislocation, and electric shocks, that will require specific care and attention.

Upaay: Also, Suraksha I know about some general principles for caring for such types of injuries. These can be summarised as rapid assessment, stabilization, immobilization, diagnostic evaluation, and treatment planning.

Suraksha: We need to know about specific actions that are required during these injuries because most of them need professional medical help as well.

2.3 General principles and care

2.31 Specific considerations for Head, Neck and Spinal injuries

2.32 Specific considerations for bleeding

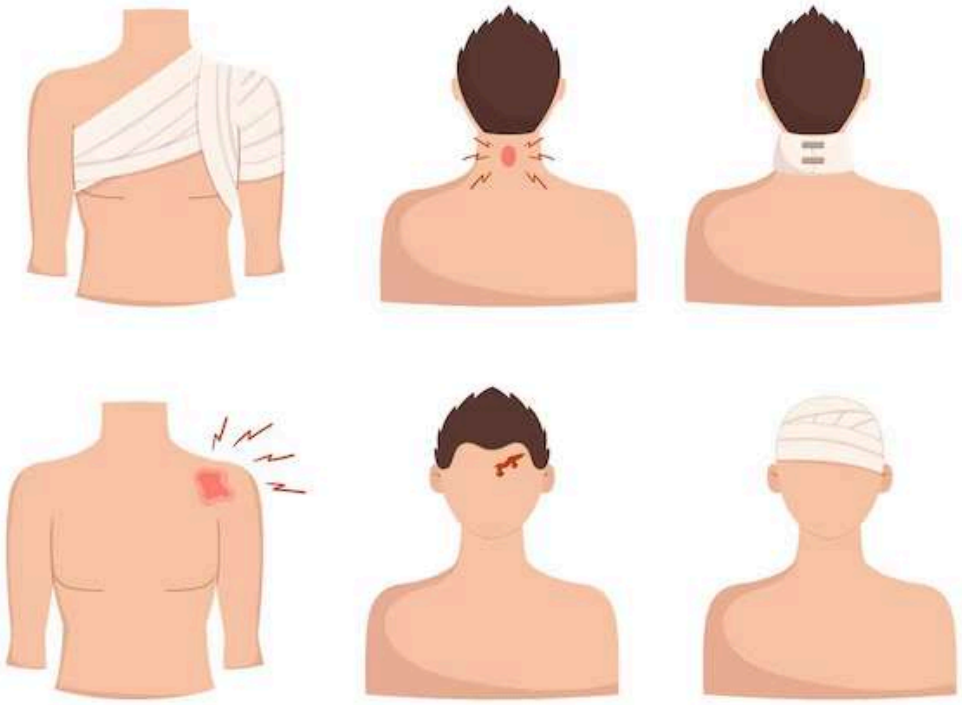
2.33 Specific considerations for shocks

DIALOGUES

Upaay: Let us start by discussing Head, Neck and Spinal injuries.

Suraksha: Yes, after all the 1/6th upper body controls our whole lower body.

Upaay: The first step is to evaluate head injuries through comprehensive neurological assessment through procedures like Glasgow Coma Scale (GCS) scoring. Then, to understand injury severity, deficits, complications, and treatment considerations, Calling an ambulance for a specialised neurological consultation is a must.



Suraksha: For neck injuries like these, assess them through a thorough clinical evaluation. Radiological imaging, neurovascular assessment, airway management, cervical spine precautions, stabilization techniques are required. These can be made available only at a hospital, so call an ambulance first.

Upaay: Spinal injuries are most crucial. Keeping the patient undisturbed and reaching out to a specialist is a must. Manage spinal injuries through rapid assessment, immobilization and after that, a radiological evaluation, neurosurgical consultation, orthopedic intervention at the hospital will be required.

Suraksha: Upaay, what to do for immobilization? Do you know about any special considerations for injuries that require it?

Upaay: Yes, Suraksha. There are three special considerations to be kept in mind: Splinting and Casting, Bracing and Traction and Surgical Interventions.

Suraksha: Bleeding is a common outcome of cuts, wounds, and injuries that need to be attended to immediately. What are some solutions that you suggest, Upaay?

Upaay: Yes, Suraksha, I can suggest some steps that are important in cases of bleeding. See this poster.

(Create a poster and have both characters look at it.)

- First, call 102 or your local emergency number if the wound is deep or you're not sure how serious it is.
- Remove any clothing or debris from the wound.
- Stop the bleeding by pressing on the wound firmly with your hand until the bleeding stops.
- Wrapping the wound with a thick bandage or a clean cloth and tape will help.
- Help the injured person lie down. Add more bandages as needed.Then press firmly on the affected area.
- Keep the person still. If you're waiting for emergency help to arrive, try to keep the injured person from moving.
- Wash your hands, even if it doesn't look like any blood has gotten on your hands.

Suraksha: Upaay, another important injury that requires attention is- shock. I have this book that talks about shock and its symptoms.

(Both looking at the book) and symptoms as a book page

Symptoms of shock include:

- Cool, clammy skin.
- Pale or ashen skin.
- Lips or fingernails show a grey or bluish tinge.
- Rapid pulse.
- Rapid breathing.
- Nausea or vomiting.
- Enlarged pupils.
- Weakness or fatigue.
- Dizziness or fainting.
- Changes in behaviour or mental status, such as agitation or anxiousness.

Upaay: Okay! Are there any considerations given in the book as well, Suraksha?

Suraksha: Yes they have given, I will read them to you.

(Suraksha reading and Upaay listening)

Take the following steps right away:

1. Lay the person down and slightly elevate the feet and legs, unless this may cause further injury or pain.
2. Keep the person still and don't move the person unless necessary.
3. If the person shows no signs of life, like not breathing, moving, or coughing,

BEGIN CPR.

4. If needed, cover the person with a blanket to prevent chilling and loosen tight clothing.

5. Don't let the person eat or drink anything.

6. If no spinal injury is suspected but the victim vomits or is bleeding from the mouth, turn them onto one side to prevent choking.

Variations in/ Fluctuating Body Temperature

3.1 Introduction

3.11 Fever: Understanding Its Causes, Symptoms, and Management

Fever is a common physiological response of the body that serves as an indicator of an underlying issue. It is not a disease in itself but rather a symptom signaling that the body is fighting off an infection, inflammation, or other medical conditions. Understanding fever requires delving into its causes, associated symptoms, and appropriate management.

3.11.1 Causes of Fever

(i) Infections: One of the primary reasons for a fever is an infection caused by bacteria, viruses, fungi, or parasites. Conditions such as the common cold, flu, urinary tract infections, and pneumonia can trigger elevated body temperatures.

(ii) Inflammatory Conditions: Diseases like rheumatoid arthritis, lupus, and inflammatory bowel disease can induce fever due to the body's immune response.

(iii) Heat Exhaustion: Prolonged exposure to high temperatures can lead to heat exhaustion, causing a rise in body temperature.

(iv) Medications: Certain medications, including antibiotics, antihistamines, and medications for hypertension or seizures, can induce fever as a side effect.

(v) Cancer: Some types of cancer, particularly blood cancers like leukemia and lymphoma, can result in fever as a symptom.

(vi) Vaccinations: After receiving certain vaccinations, individuals might experience a low-grade fever as the body mounts an immune response.

3.11.2 Symptoms Associated with Fever

Apart from an elevated body temperature, individuals experiencing a fever might manifest other symptoms, including:

- **Chills and Sweating:** A fever often alternates between chills and sweating as the body tries to regulate its temperature.
- **Headache:** Many people with a fever report headaches due to the body's

inflammatory response.

- **Muscle Aches:** Generalized muscle aches and fatigue are common accompanying symptoms.
- **Loss of Appetite:** Fever can suppress appetite, leading to reduced food intake.
- **Dehydration:** Elevated body temperature can result in increased sweating, potentially leading to dehydration if fluid intake is inadequate.

3.11.3 Management and Treatment

(i) Stay Hydrated: Consuming ample fluids is crucial to prevent dehydration, especially when experiencing a fever. Water, electrolyte solutions, and herbal teas can be beneficial.

(ii) Medications: Over-the-counter antipyretics like acetaminophen and ibuprofen can help reduce fever and alleviate associated symptoms. However, it's essential to consult a healthcare professional before taking any medication, especially for children or those with pre-existing conditions.

(iii) Rest: Adequate rest allows the body to focus its energy on combating the underlying cause of the fever. Engaging in strenuous activities can exacerbate symptoms and prolong recovery.

(iv) Cool Compresses: Placing cool, damp cloths on the forehead or taking a lukewarm bath can help lower body temperature and provide relief from discomfort.

(v) Identify the Underlying Cause: If the fever persists or is accompanied by severe symptoms like breathing difficulties, persistent vomiting, or an altered mental state, seeking medical attention is imperative. Effective management is possible only by identifying and treating the underlying cause.

When to Seek Medical Attention

While most fevers resolve with self-care measures, certain red flags warrant immediate medical attention:

- **High Fever:** A temperature above 103°F (39.4°C) in adults or 100.4°F (38°C) in infants requires prompt evaluation.
- **Persistent Fever:** If the fever persists for more than three days despite home remedies and medications.
- **Severe Symptoms:** Symptoms like difficulty breathing, chest pain, confusion, persistent vomiting, or seizures necessitate urgent medical intervention.
- **Underlying Health Conditions:** Individuals with chronic illnesses, compromised

immune systems, or those who have recently travelled to areas with infectious diseases should consult a healthcare provider promptly.

3.12 Hyperthermia

Hyperthermia is a term that is used for heat-related illnesses that occur if your body temperature uncontrollably rises. Spending too much time outdoors and overexerting yourself in hot or humid weather are some of the most common causes of hyperthermia.

When body temperature gets too high, symptoms like a rapid heart rate, confusion, and dry and hot skin develop. It becomes a medical emergency if there is a heat stroke, or a body temperature that is higher than 106 degrees. Hyperthermia can be prevented by taking some easy steps, by staying hydrated, and dressing in light layers.

More about hyperthermia, including the symptoms of heat-related illnesses, how they can be treated, and when to call professional medical help.

Common forms of hyperthermia are:

- Heat cramps: Muscle pains or spasms after exercising outdoors in excessive heat.
- Heat exhaustion: many days of exposure to high temperatures and improper hydration. This heat exhaustion, if untreated, becomes heat stroke.

- Heat rash: Too much sweating causes a skin rash.

- Heat stroke: One of the most severe heat illnesses, happens when the body temperature is higher than 106 degrees. The brain and other vital organs may be damaged due to extremely high body temperatures.

- Heat syncope: Feeling dizzy or fainting after exposure to high temperatures.

- Rhabdomyolysis:Body temperatures get higher-than-normal and might cause muscle tissue to break down. Muscle fiber content gets released into the blood, which may cause kidney damage.

3.12.1 Causes

Hyperthermia is not like fever, which happens when the body raises its temperature to fight off an infection. In contrast, the body is unable to control how high your body temperature may rise.

This commonly occurs if you are outdoors on a very humid, hot day, or if overexertion occurs in high temperatures. Sometimes it may develop in people who are indoors in a very hot room for a prolonged period.

The body typically sweats to cool itself down in very hot weather. Sweating regulates the body temperature. In hyperthermia, the body's ability to cool itself fails due to the high

temperature.

3.12.2 Symptoms

Hyperthermia symptoms vary depending on the type of heat-related illness you have. Many types of hyperthermia exist, and some cause worse symptoms than others.

Heat stroke symptoms include:

- An abnormally high body temperature (106 degrees or higher)
- Dry, hot skin
- Feeling confused
- Heavy sweating
- Losing consciousness
- Quick heart rate
- Seizures
- Slurred speech

3.12.3 Management

The First aid treatment is to lower the body temperature and bring it back to normal. Mild hyperthermia cases can be treated at home without any long-term complications.

Steps that can be taken at home to keep hyperthermia in control:

- Get the person out of the heat right away. Make them lie down in a shady or air-conditioned room if possible.
- Encourage the person to shower, bathe or sponge with cool water.
- A cold, wet cloth can be applied to their armpits, wrists, groin, or neck.
- A lot of fluids, like water or fruit and vegetable juices, should be given to treat dehydration if the person can swallow them safely. Alcohol and caffeine should be avoided.

When to Seek Medical Attention

Contact professional medical help if first-aid treatments do not settle the hyperthermia symptoms. Hyperthermia becomes critical when the body develops a heat stroke and the temperature is 106 degrees or higher. This is an emergency that needs immediate medical attention.

In addition to an extremely high body temperature, call 102 right away if you or someone else shows signs of heat stroke, such as:

- Change in mental state (e.g., confusion)
- Losing consciousness

- Rapid breathing and heart rate
- Seizures

Summary

Hyperthermia is a group of heat-related illnesses that occur if your body temperature rises uncontrollably, typically due to hot and humid weather. Signs that your body temperature is too high include a rapid heart rate, confusion, and dry and hot skin. Prevent hyperthermia by drinking plenty of fluids and staying in air-conditioned spaces when it's hot outside.

You can usually treat hyperthermia at home with cool compresses and fluids. If the victim develops heat stroke, or a body temperature of 106 degrees or higher, immediate medical attention should be seeked.

3.13 Hypothermia

Hypothermia is a life-threatening medical condition characterized by a core body temperature below 35°C (95°F) due to prolonged exposure to cold temperatures, inadequate insulation, or immersion in cold water. As winter approaches and outdoor activities increase, understanding hypothermia becomes essential for both healthcare providers and the general

public. This article delves into the multifaceted aspects of hypothermia, including its causes, symptoms, treatment modalities, and preventive strategies.

Definition and Classification

Hypothermia is categorized based on severity and onset:

(i) **Mild Hypothermia** : The Core body temperature ranges between 32-35°C (89.6-95°F). Symptoms include shivering, mild confusion, and an increased heart rate.

(ii) **Moderate Hypothermia** : Core body temperature drops to 28-32°C (82.4-89.6°F). Clinical manifestations encompass severe shivering, lethargy, slurred speech, and impaired coordination.

(iii) **Severe Hypothermia** : Core body temperature falls below 28°C (82.4°F). This critical condition is characterized by paradoxical undressing, loss of consciousness, bradycardia, respiratory depression, and potential cardiac arrest.

3.13.1 Causes

Several factors contribute to the development of hypothermia:

(i) **Environmental Exposure** : Prolonged exposure to cold, windy, or wet conditions

without adequate protection increases the risk of heat loss and hypothermia.

(ii) **Immersion in Cold Water** : Accidental immersion in cold water, such as boating accidents or falls through ice, accelerates heat loss due to water's high thermal conductivity.

(iii) **Inadequate Clothing** : Wearing insufficient or wet clothing compromises thermal insulation and exacerbates heat loss.

(iv) **Alcohol and Drug Consumption** : Alcohol, sedatives, and certain medications impair thermoregulatory mechanisms, increase heat loss, and impair judgement, predisposing individuals to hypothermia.

(v) **Underlying Health Conditions** : Hypothyroidism, malnutrition, cardiovascular disorders, and neurological conditions compromise metabolic heat production and thermoregulatory responses, elevating susceptibility to hypothermia.

3.13.2 Symptoms

Recognizing the signs and symptoms of hypothermia is crucial for early intervention:

(i) **Neurological Manifestations** : Confusion, disorientation, lethargy, impaired judgement, slurred speech, and progressive loss of consciousness.

(ii) **Musculoskeletal Symptoms** : Shivering, muscle stiffness, impaired coordination, and difficulty walking.

(iii) **Cardiovascular Complications** : Tachycardia initially, followed by bradycardia, hypotension, and potential cardiac arrhythmias in severe cases.

(iv) **Respiratory Distress** : Shallow breathing, hypoventilation, and respiratory failure in advanced stages.

(v) **Dermatological Changes** : Pale, cold, and cyanotic skin, accompanied by numbness or tingling sensations.

3.13.3 Management

Immediate intervention is paramount when suspecting hypothermia:

(i) **Move to a Warm Environment** : Transfer the individual to a sheltered area, remove wet

clothing, and insulate with dry blankets or clothing layers.

(ii) **Passive Rewarming** : Employ body-to-body contact, share body heat, and cover the individual with warm blankets or sleeping bags.

(iii) **Active External Rewarming** : Use external heat sources, such as heating pads, hot water bottles, and warm blankets, to facilitate gradual rewarming. Ensure heat sources are not too hot to avoid burns.

(iv) **Active Core Rewarming** : Implement advanced rewarming techniques, including:

- Warm Intravenous Fluids : Administer warmed intravenous fluids to raise core body temperature.

- Extracorporeal Rewarming : Utilize extracorporeal membrane oxygenation (ECMO) or hemodialysis for severe hypothermia cases unresponsive to conventional measures.

(v) **Cardiopulmonary Resuscitation (CPR)** : Initiate CPR for individuals with absent or unstable vital signs, including pulseless electrical activity (PEA), asystole, or ventricular fibrillation.

Prevention Strategies

Preventing hypothermia necessitates a proactive approach, encompassing various preventive measures:

(i) Dress Appropriately : Wear layered, breathable clothing, including thermal insulators, moisture-wicking fabrics, windproof, and waterproof outer layers. Ensure head, hands, feet, and core are adequately covered.

(ii) Stay Dry : Avoid wet clothing and maintain dryness by using waterproof gear, changing wet clothing promptly, and seeking shelter during rain or snow.

(iii) Stay Hydrated and Nourished : Maintain adequate fluid and nutrient intake, including high-energy foods, carbohydrates, proteins, and fats, to fuel metabolic heat production.

(iv) Avoid Alcohol and Drugs : Refrain from consuming alcohol or medications that impair judgement, impair thermoregulation, and increase susceptibility to hypothermia.

(v) Seek Shelter and Warmth : Prioritize sheltered environments, utilize heat sources, such as fire, heaters, or warm shelters, and recognize early signs of cold-related illnesses to initiate timely intervention.

Summary

Hypothermia remains a critical medical emergency with profound implications for affected individuals, communities, and healthcare systems. Understanding the causes, recognizing early symptoms, implementing prompt intervention strategies, and adopting preventive

measures are essential components of comprehensive hypothermia management. By fostering awareness, promoting education, enhancing healthcare infrastructure, and prioritizing public health initiatives, we can mitigate the impact of hypothermia, protect vulnerable populations, and create resilient communities capable of navigating the challenges posed by extreme cold environments. Collaboration among healthcare providers, policymakers, environmental scientists, and the general public is a must to address this pressing issue effectively.

3.2 Summary

Fever is a physiological response indicating that the body is combating an infection, inflammation, or other medical condition. While it is a natural defense mechanism, understanding its causes, associated symptoms, and appropriate management is essential to ensuring timely intervention and preventing complications. By staying informed and recognizing when to seek medical attention, individuals can navigate fevers effectively and prioritize their health and well-being.

Epilepsy

4.1 Understanding Epilepsy

Epilepsy

Epilepsy is a neurological disorder characterized by recurrent seizures, which are brief episodes of involuntary movement that may involve a part of the body (partial) or the entire body (generalized). Seizures are caused due to some abnormal electrical activity in the brain.

Understanding epilepsy requires delving into its types, causes, symptoms, diagnosis, treatment, and impact on individuals and society.

Types of Epilepsy

Epileptic seizures are broadly categorized into focal (partial) and generalized seizures. Focal seizures originate in one part of the brain and can be further classified as focal aware seizures (previously known as simple partial seizures) where the person remains conscious, and focal impaired awareness seizures (previously known as complex partial seizures) where consciousness is altered or lost. Generalized seizures involve both hemispheres of the brain from the onset and include various types such as tonic-clonic, absence, myoclonic, and atonic seizures.

4.11 Signs and symptoms

Symptoms

The primary symptom of epilepsy is recurrent seizures. Depending on the type, seizures can manifest differently. Generalized tonic-clonic seizures, for instance, involve stiffening of the body (tonic phase) followed by jerking movements (clonic phase). Focal seizures may produce symptoms like altered emotions, repetitive movements, or sensory changes such as tingling or hallucinations.

4.12 Causes:

The exact cause of epilepsy is often unknown, but several factors can contribute:

(i) Genetics: Some forms of epilepsy run in families, suggesting a genetic predisposition.

(ii) Brain Injury: Traumatic brain injuries, strokes, tumours, or infections like meningitis can lead to epilepsy.

(iii) Developmental Disorders: Conditions like neurofibromatosis, tuberous sclerosis, or Down syndrome are associated with a higher risk of epilepsy.

(iv) Prenatal Injury: Exposure to toxins, infections, or oxygen deprivation during pregnancy can increase the risk.

4.13 Management

Diagnosis

Diagnosing epilepsy involves a thorough neurological evaluation, which includes:

(i) Medical History: Understanding the patient's symptoms, triggers, and family history.

(ii) Electroencephalogram (EEG): A test that records the brain's electrical activity to detect abnormal patterns.

(iii) Imaging Tests: MRI or CT scans may reveal brain abnormalities or lesions that could be causing seizures.

(iv) Blood Tests: To rule out other conditions that may mimic epilepsy.

Treatment:

The primary goal of epilepsy treatment is to control seizures while minimizing side effects. Treatment options include:

(i) Medications: Antiepileptic drugs (AEDs) like valproate, carbamazepine, or lamotrigine are often the first line of treatment.

(ii) Ketogenic Diet: A high-fat, low-carbohydrate diet that may help control seizures in some individuals, especially children.

(iii) Vagus Nerve Stimulation (VNS): A device implanted under the skin that sends regular electrical pulses to the brain to reduce seizures.

(iv) Surgery: In cases where seizures originate from a specific brain area and medication fails to control them, surgical removal of the seizure focus may be considered.

4.2 Summary

Epilepsy is a complex neurological disorder characterized by recurrent seizures resulting from abnormal brain activity. Understanding its types, causes, symptoms, diagnosis, and

treatment is crucial for effective management. While advancements in medical science have provided various treatment options, living with epilepsy remains a challenge for many individuals due to the associated stigma and limitations. Enhancing public awareness, fostering research, and providing comprehensive care are essential steps towards improving the lives of people affected by epilepsy.

Diarrhea

Child/ Son: Mummy I am having acute stomach aches, cramps and have gone to the washroom thrice since morning. I had a watery stool too.

Mother (puts her hand on her child's forehead): Come here, child, let me look. Oh! Your forehead is warm, it seems you have a fever. (She touches his belly gently.)

Child: No, Maa… Please don't touch… It hurts. I am feeling nauseated and weak too.

Mother (recalls): It seems the food that you had yesterday at the marriage party didn't suit you. You have developed an infection.

Mother rings up her elder sister to seek advice

Mother: (Image of mother standing outside the washroom and son sitting on the toilet seat)

Mother: My son has constant pain in the stomach. He is experiencing loose stools. Has been

to the washroom four times since morning. What to do?

The elder sister: let him rest. Give him lots of fluids in the form of salt and sugar water. Let him eat a banana. Don't give him spicy food, tea, or coffee.

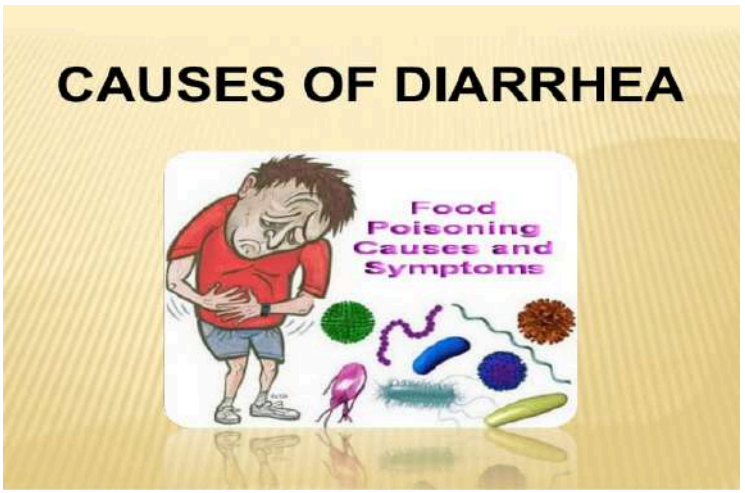
Seek medical help if the fever rises or the watery stools continue.

5.1 Introduction

Diarrhoea: Causes, Symptoms, Treatment, and Prevention

Diarrhoea is a prevalent gastrointestinal condition characterized by frequent, loose, and watery stools. While often temporary and benign, severe or prolonged episodes can lead to dehydration and other complications. Understanding the causes, symptoms, treatment, and prevention of diarrhoea is essential for effective management and optimal health.

5.11 Causes



Causes of Diarrhoea

(i) Infections: Viral, bacterial, or parasitic infections of the gastrointestinal tract are among the most common causes of acute diarrhoea. Pathogens like Norovirus, Rotavirus, Escherichia coli (E. coli), and Salmonella are frequent culprits.

(ii) Food Poisoning: Consuming contaminated food or water contaminated with bacteria, viruses, or parasites can trigger diarrhoea. Improper food handling, storage, or preparation can increase the risk of foodborne illnesses.

(iii) Medications: Certain medications, including antibiotics, antacids containing magnesium, cancer drugs, and laxatives, can disrupt the natural balance of the intestinal flora, leading to diarrhoea.

(iv) Intolerance and Allergies: Lactose intolerance, gluten sensitivity, and other food allergies or intolerances can result in diarrhoea upon consuming trigger foods or beverages.

(v) Digestive Disorders: Conditions like irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), Crohn's disease, and celiac disease can cause chronic diarrhoea due to underlying gastrointestinal issues.

(vi) Surgery or Medical Treatments: Surgeries involving the digestive system or medical treatments like radiation therapy can result in diarrhoea as a side effect.

5.12 Symptoms

Symptoms of Diarrhoea

- **Frequent Bowel Movements:** Diarrhoea is characterized by loose, watery stools occurring more frequently than usual.

- **Abdominal Cramps:** Many individuals experience abdominal pain or cramping accompanying diarrhoea.

- **Nausea and Vomiting:** Some people may also experience nausea, vomiting, or a general feeling of malaise.

- **Dehydration:** Symptoms of dehydration include dry mouth, increased thirst, dark-colored urine, fatigue, and dizziness.

- **Fever:** Infections causing diarrhoea may be accompanied by fever, indicating the body's immune response.

5.13 Treatment

Treatment and Management

(i) Hydration: Replenishing fluids lost through diarrhoea is crucial to prevent dehydration. Oral rehydration solutions containing electrolytes are recommended, especially for infants, children, and older adults.

(ii) Dietary Changes: Consuming bland foods like bananas, rice, applesauce, and toast

(BRAT diet) can help firm up stools and alleviate symptoms. Avoiding spicy, fatty, or dairy-rich foods may also be beneficial.

(iii) Medications: Over-the-counter antidiarrheal medications like loperamide (Imodium) can help reduce bowel movements and alleviate symptoms. However, they should be used cautiously and under medical guidance, especially if the diarrhoea is severe or accompanied by fever.

(iv) Probiotics: Incorporating probiotics, either through supplements or fermented foods like yoghurt, can help restore the balance of beneficial bacteria in the gut and aid in recovery from diarrhoea.

(v) Avoidance of Trigger Foods: Identifying and avoiding foods or beverages that exacerbate diarrhoea, such as caffeine, alcohol, spicy foods, and dairy products (for those lactose intolerant), can help manage symptoms.

5.14 Prevention

Prevention Strategies

(i) Hand Hygiene: Practicing proper handwashing techniques, especially after using the toilet, changing diapers, and before eating or preparing food, can reduce the risk of

diarrhoea-causing infections.

(ii) Safe Food Handling: Ensuring proper food storage, preparation, and cooking can prevent contamination and reduce the risk of foodborne illnesses.

(iii) Clean Water: Consuming clean, purified water and avoiding untreated or contaminated water sources is essential, especially when travelling to regions with unsafe water supplies.

(iv) Vaccinations: Vaccines against pathogens like Rotavirus can help prevent diarrhoea, particularly in infants and young children.

(v) Limit Medication Side Effects: When prescribed medications that can cause diarrhoea, discussing potential side effects with a healthcare provider and monitoring symptoms closely is advisable.

5.2 Further steps

When to Seek Medical Attention

While most cases of diarrhoea resolve within a few days with home care measures, certain circumstances warrant medical evaluation:

- **Severe Dehydration:** Symptoms like rapid heartbeat, sunken eyes, lethargy, or

decreased urine output indicate severe dehydration requiring immediate medical attention.

- **Persistent Symptoms:** Diarrhoea lasting more than two days, especially if accompanied by a high fever, bloody stools, severe abdominal pain, or vomiting, necessitates medical evaluation.

- **Underlying Health Conditions:** Individuals with compromised immune systems, chronic illnesses, or those who have recently travelled to areas with endemic diarrhoeal diseases should seek medical advice promptly.

5.3 Summary:

Diarrhoea is a common gastrointestinal ailment characterized by loose, watery stools resulting from various causes, including infections, food intolerances, medications, and underlying digestive disorders. By understanding the causes, recognizing associated symptoms, implementing appropriate treatment strategies, and adopting preventive measures, individuals can effectively manage diarrhoea, promote recovery, and maintain optimal gastrointestinal health.

Heatstroke

6.1 Understanding heat strokes

Heatstroke: Causes, Symptoms, Treatment, and Prevention

Heatstroke stands as a severe and potentially life-threatening condition resulting from prolonged exposure to high temperatures, coupled with dehydration and inadequate heat dissipation mechanisms. As global temperatures rise due to climate change, understanding heat stroke becomes increasingly vital. This article delves into the intricacies of heatstroke, exploring its causes, symptoms, treatment options, and preventive measures.

Definition and classification

Heatstroke represents the most severe form of heat-related illness, characterized by a core

body temperature exceeding 40°C (104°F) and central nervous system dysfunction. :There are two types of heat strokes:

(i) Exertional Heat Stroke : Occurs during strenuous physical activity, particularly in hot and humid environments. Athletes, military personnel, and outdoor labourers are at heightened risk.

(ii) Non-exertional (Classic) Heatstroke : Typically affects vulnerable populations, including the elderly, infants, individuals with chronic illnesses, and those residing in poorly ventilated settings without adequate cooling.

A Student collapses in the school playground. All his classmates gathered around him, worried. One student rushes to inform the Physical Education Teacher (PET). PET Madam rushes to the side of the fainted student.

PET Madam: What happened?

Student 1: Madam, Nishant was playing with all of us. He collapsed suddenly.

Madam: "OK, Let me check, all students should move away to give space. It's so hot right now. Neeraj, help me take Nishant to Shade. Ruhi, get me a water bottle quickly.

6.11 Causes

Causes and Risk Factors

Several factors contribute to the onset of heatstroke:

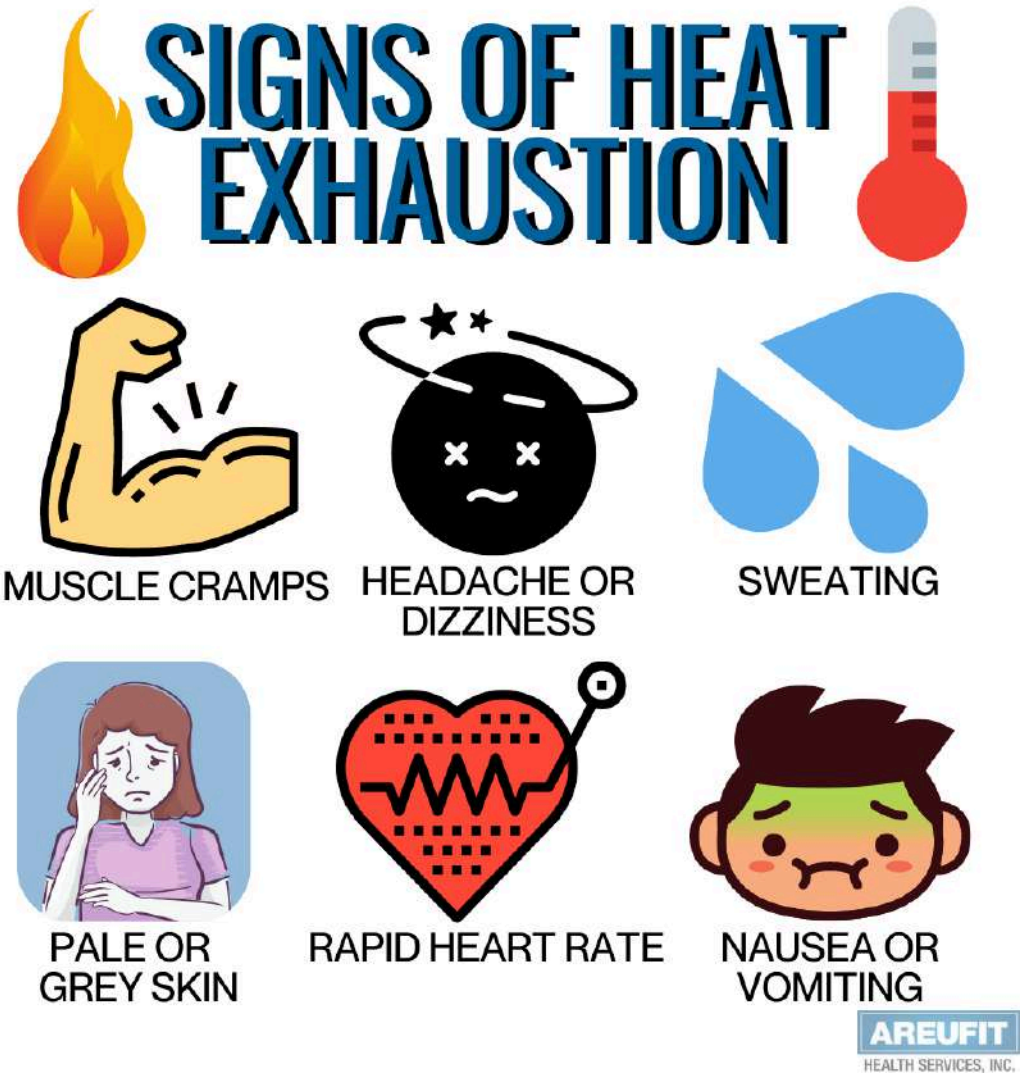
(i) Environmental Conditions : High ambient temperatures, especially when accompanied by high humidity levels, hinder sweat evaporation and heat dissipation.

(ii) Dehydration : Inadequate fluid intake or excessive fluid loss through sweating, vomiting, or diarrhea exacerbates heat retention.

(iii) Prolonged Sun Exposure : Direct exposure to sunlight, especially during peak hours, intensifies heat absorption and increases the risk of heat-related illnesses.

(iv) Underlying Health Conditions : Chronic diseases like cardiovascular disorders, respiratory conditions, and obesity impair thermoregulatory mechanisms, predisposing individuals to heatstroke.

6.12 Symptoms



Suggestive Image

Clinical Symptoms

Recognizing the signs and symptoms of heatstroke is crucial for timely intervention:

(i) Neurological Manifestations : Altered mental status, confusion, disorientation, agitation, seizures, and coma.

(ii) Thermoregulatory Dysfunction : Elevated core body temperature (>40°C or 104°F), hot and dry skin (in classic heatstroke), or profuse sweating (in exertional heatstroke).

(iii) Cardiovascular Complications : Tachycardia, hypotension, palpitations, and potential cardiac arrhythmias.

(iv) Respiratory Distress : Rapid, shallow breathing, hyperventilation, and respiratory failure in severe cases.

(v) Gastrointestinal Symptoms : Nausea, vomiting, diarrhea, and abdominal cramps.

6.13 Treatment

Emergency Management

Immediate intervention is most important when suspecting heatstroke:

(i) Move to a Cool Environment : Transfer the individual to a shaded or air-conditioned area and remove excessive clothing.

(ii) Hydration : Administer fluids orally or intravenously to rehydrate the individual and restore electrolyte balance.

(iii) Cooling Measures : Implement rapid cooling strategies, including:

- **Cold Water Immersion :** Immerse the individual in a cold water bath or apply cold,

wet towels to the body.

- **Evaporative Cooling :** Use fans and misting sprays to facilitate heat loss through evaporation.

- **Ice Packs :** Apply ice packs to the groin, armpits, neck, and back to expedite cooling.

(iv) Monitor Vital Signs : Continuously monitor core body temperature, heart rate, blood pressure, respiratory rate, and neurological status.

(v) Medical Evaluation : Seek immediate medical attention for further evaluation, laboratory tests, and supportive care, including intravenous fluids, electrolyte replacement, and pharmacological interventions as warranted.

Dialogues:

Girl 1: What to do when someone shows symptoms of Heat Stroke

In the dialogue box

Girl 2:

We must move the patient to a cooler place.

We must keep them cool with a cold compress and make them drink water.

Further, we must seek medical assistance.

HEAT EXHAUSTION OR HEAT STROKE?

HEAT EXHAUSTION SYMPTOMS

1. Faint or dizzy
2. Excessive sweating
3. Cool, pale, clammy skin
4. Nausea, vomiting
5. Rapid, weak pulse
6. Muscle cramps

HOW TO TREAT IT

1. Move to cooler location
2. Drink water
3. Take a cool shower or use cold compresses

HEAT STROKE SYMPTOMS

1. Throbbing headache
2. No sweating
3. Body temp above 103°
   Red, hot, dry skin
4. Nausea, vomiting
5. Rapid, strong pulse
6. May lose consciousness

HOW TO TREAT IT

1. Get emergency help
2. Keep cool until treated

6.14 Prevention

Prevention Strategies

Preventing heatstroke necessitates a proactive approach, encompassing various preventive measures:

(i) Hydration : Maintain adequate fluid intake, particularly during hot weather or strenuous activities. Opt for water, electrolyte-replenishing drinks, and avoid excessive caffeine or

alcohol consumption.

(ii) Limit Outdoor Activities : Minimize outdoor activities during peak heat hours (typically midday to late afternoon) and seek shaded or cooler environments when outdoors.

(iii) Wear Appropriate Clothing : Choose lightweight, breathable fabrics that facilitate sweat evaporation and wear hats, sunglasses, and sunscreen for additional protection.

(iv) Acclimatization : Gradually adapt to hot environments by increasing exposure duration and intensity over time, allowing the body to adjust its thermoregulatory mechanisms.

(v) Monitor Vulnerable Populations : Regularly check on elderly individuals, infants, and those with chronic illnesses to ensure adequate hydration, ventilation, and cooling measures are in place.

6.2 Conclusion

Heatstroke remains a critical public health concern, particularly in the context of escalating global temperatures and changing climate patterns. Understanding the causes, recognizing early symptoms, implementing prompt intervention strategies, and adopting preventive measures are essential components of comprehensive heat stroke management. By fostering

awareness, promoting education, enhancing healthcare infrastructure, and prioritizing public health initiatives, we can mitigate the impact of heatstroke, protect vulnerable populations, and create resilient communities capable of navigating the challenges posed by extreme heat events. Collaboration among healthcare providers, policymakers, environmental scientists, and the general public is imperative to address this pressing issue effectively.

Choking

7.1 Understanding Choking

Understanding Choking: A Critical Medical Emergency

Choking occurs when a foreign object obstructs the trachea (windpipe), preventing the passage of air to the lungs. This obstruction triggers a cascade of distressing symptoms, including coughing, wheezing, cyanosis (bluish discoloration of the skin), and, if untreated, loss of consciousness and potential fatality. The gravity of choking underscores the importance of immediate recognition and intervention to alleviate the obstruction and restore normal breathing.

Choking: Causes, Prevention, and Lifesaving Interventions

Choking is a scary emergency where something blocks the airway, making it hard for the person to breathe. Whether it's food, a foreign object, or something else causing it, dealing with choking requires quick and clear action. This detailed discussion explores the details of choking, explaining what causes it, how to prevent it, and life-saving actions to help people be informed and ready.

7.11 Causes

Common Causes of Choking:

(i) Food: Consuming improperly chewed or large pieces of food, especially hard or sticky items like meat, nuts, candies, or grapes, can lead to choking.

(ii) Foreign Objects: Small objects, toys, coins, or parts of objects can inadvertently / **unintentionally** enter the mouth, posing a risk of **lung involvement** and choking.

(iii) Medical Conditions: Certain medical conditions, such as neurological disorders, swallowing disorders, or dental problems, can increase the risk of choking.

(iv) Age-Related Factors: Infants and young children, elderly individuals, and individuals with cognitive impairments may be more susceptible/ **likely** to choke due to developmental or physiological factors.

7.12 Prevention

Prevention Strategies: A Proactive Approach

Prevention stands as the key factor in reducing the risk of choking, emphasizing proactive measures, awareness, and education to safeguard individuals across diverse settings.

(i) Food Preparation and Consumption: Ensure thorough chewing, especially with young children and individuals prone to swallowing difficulties. Cut foods into manageable / **small** pieces, avoid offering hard candies to young children, and supervise meals to monitor eating behaviors and intervene promptly if signs of choking emerge.

(ii) Safe Environment: Maintain a clutter-free environment, particularly in homes with young children, to minimize access to small objects, toys, or hazardous items that pose a choking risk.

(iii) Education and Training: Educate individuals, caregivers, and communities about choking risks, preventive measures, and appropriate responses. Training in basic First Aid and CPR equips individuals with essential skills to intervene effectively in choking emergencies, encouraging readiness and confidence in managing critical situations.

7.13 Life-saving Interventions

Lifesaving Interventions / Saving lives : Choking Emergencies

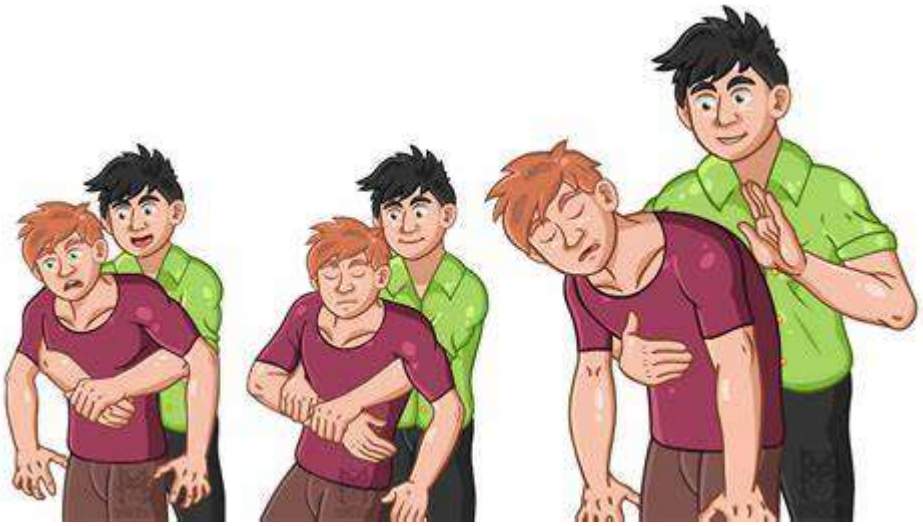
First Aid for Choking

If The Victim is Conscious

1. Stand behind the person and wrap one arm around their chest. Firmly strike the person on the back between the shoulder blades 5 times.
2. If the back blows do not dislodge the object, wrap both your arms around the abdomen. Make a fist with one of your hands and place it thumb side in the center of the abdomen. Grasp your fist with the other hand.
3. Give 5 abdominal thrusts by making a quick hard movement inward and upward 5 times. Keep giving 5 back blows and 5 abdominal thrusts until the object is coughed up or the person loses consciousness.

If The Victim is Unconscious

1. Lay the victim on his/her back.
2. Face the victim and kneel astride the victim's hips.
3. With one of your hands on top of the other, place the heel of your bottom hand on the abdomen below the rib cage and above thenavel.
4. Use your body weight to press into the victim's abdomen with a quick upward thrust. Repeat until object is expelled.
5. Should the victim vomit, quickly place him/her on his/her side and wipe out his/her mouth to prevent vomit from being drawn into the throat.
6. After the object is dislodged, the victim should really see a doctor.



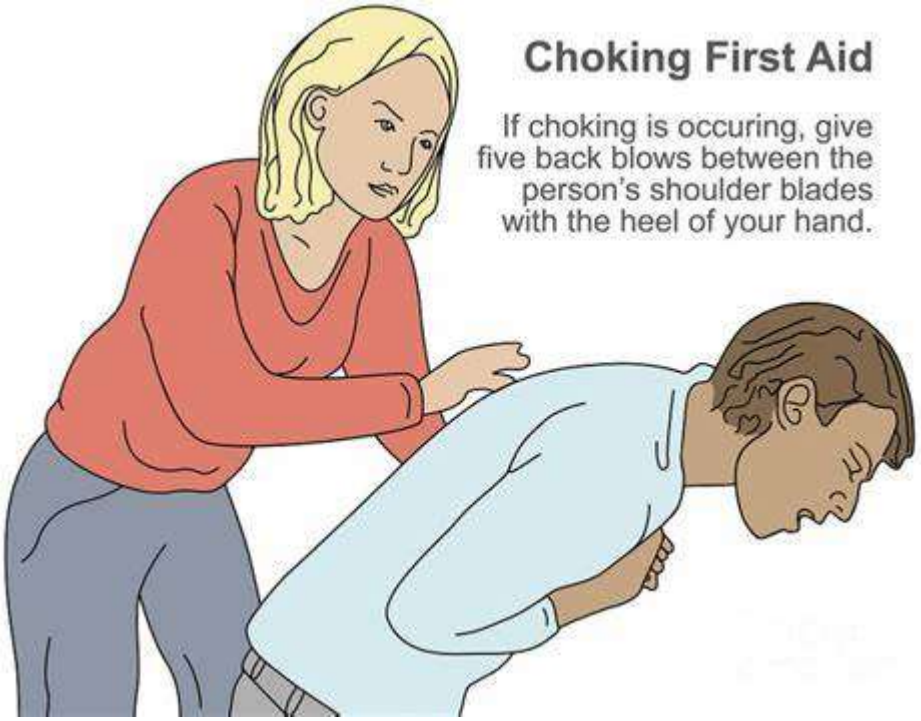
Dialogues for all 3 images above

If the victim is conscious,

1. Stand behind the individual, wrap your arms around their waist, make a fist with one hand, position it above the navel and below the ribcage,

2. grasp your fist with the other hand, and perform rapid upward thrusts until the obstruction dislodges.

3. lightly tap on the back side/ shoulder to help remove the obstruction



In the event of a choking emergency, swift / **fast** and decisive action becomes **crucial** to **clear** the obstruction, restore airflow, and **prevent /** avert potential complications.

(i) Recognize the Signs: Familiarize yourself with common signs of choking, including sudden coughing, difficulty breathing, cyanosis, clutching the throat, and, in severe cases, loss of consciousness. Prompt recognition enables timely intervention, enhancing the likelihood of a favorable outcome.

(ii) Perform Abdominal Thrusts (Heimlich Maneuver): For conscious adults and children over one year of age, the Heimlich maneuver serves as a primary intervention to expel obstructing objects. **Use this technique only if you are trained in it.** Stand behind the individual, wrap your arms around their waist, make a fist with one hand, position it above the navel and below the ribcage, grasp your fist with the other hand, and perform rapid upward thrusts until the obstruction dislodges.

(iii) Back Blows and Chest Thrusts for Infants: For infants you 3. Back Blows and Chest Thrusts for Infants: For infants younger than one year of age or individuals unable to stand, administer back blows and chest thrusts with caution. Support the infant's head and neck, place them face-down along your forearm, administer five back blows between the shoulder blades using the heel of your other hand, and, if unsuccessful, turn the infant face-up and perform five chest thrusts using two fingers at the center of the breastbone.

(iv) Call for Emergency Assistance: If initial interventions fail, the individual loses consciousness, or if you are unsure about the nature or severity of the obstruction, call emergency services immediately. Communicate the situation, location, and any pertinent information to expedite professional medical intervention.

Dialogues based on the above image:

Person 1 (Trainee) – Are there any precautions that we need to follow in case of choking?

Trainer — Yes

1 Don't ask them if they are ok. Instead ask them if they are choking.

2 Don't attempt to perform the Heimlich manoeuvre unless you are trained and have sufficient practice. It can break ribs and cause damage.

Trainee: Noted Sir, anything else?

3 Don't try to reach inside their mouth by putting your fingers in. You cannot remove a foreign object in this way, rather can push it further down!

4 Don't give a breath first if you need to start CPR, always remember to start with compressions first.

5 Don't pick up a child and turn him upside down.

Grade 8 students of ABC Public School received First Aid Training a few weeks ago.

Rohan was home with his mother and both were eating their lunch. Suddenly his mother Mala began choking. Rohan leapt into action and cleared his mother's windpipe by slapping her on the back.

Rohan's "immensely proud" mother explained to his father how she had started struggling to breathe during a meal.

Mala said his son "got up and patted her on the back".

Rohan, " I knew how to do a back slap and the blockage came out."

Mala," Rohan was so confident and sure of what he was doing because of what he had learnt in the school.

Rohan, " Yes and I had already planned to carry out abdominal thrusts if the back-slap had not worked.

Mala, " I am so proud of him. He was so confident, not only in doing what he needed to do to resolve the immediate issue, but what the next steps would be if that hadn't worked.

The father was impressed, he said, " First Aid Training is so important. The choking life-saving tips that my son learnt at school in such a short space of time has helped us avoid a dangerous situation. All should mandatorily learn First Aid skills.

Rahul added: " The training taught me skills that I will never forget and it felt good that I had saved somebody's life and I had only learnt it recently.

7.32 Summary

Choking is not just a medical term; it's a serious emergency that requires careful attention, preparation, and quick action to save lives. By understanding the causes, using preventive measures, and learning life-saving techniques like the Heimlich maneuver, back blows, and chest thrusts, people can confidently and effectively handle choking situations with compassion. Prioritizing education, training, and community awareness creates a safety-focused culture, giving individuals the knowledge and skills to address choking risks in

various settings. Essentially, the fight against choking emphasizes the ongoing need for vigilance, education, and proactive measures, guiding everyone towards safety, recovery, and well-being.

7.3 Quiz

1. What should you avoid before giving "abdominal thrusts" on a choking person?

A. Leaning the choking person backwards

B. Shouting for help

C. Telling the choking person to cough

D _____

Answer: A. Leaning the choking person backwards

2. When a kid is gagging and cannot cry out or breath due to some marbles, what should you do first?

A. Carry out chest thrusts and back blows

B. Do rescue breaths and compressions

C. Perform CPR

Answer: A. Carry out chest thrusts and back blows

The teacher was watching over the children in her class as they were eating lunch. Suddenly, one of the children choked. What could have caused the choking?

a) The child chewed the food too much but did not swallow.

b) The food was not cut into small enough pieces and the child chewed the food.

c) The food was cut into large pieces and it took too long to chew.

d) The child swallowed the food without chewing.

Suffocation / asphyxiation

Suffocation or asphyxiation happens when your body doesn't get enough oxygen to keep you from passing out. It can be a life-threatening situation.

Understanding the suffocation caused by smoke, its effects and reasons is very important to provide timely help.

8.1 Understanding causes of suffocation

Suffocation by smoke arises from inhalation of toxic fumes, particulate matter, and noxious gases emitted during combustion processes. Whether ignited by structural fires, industrial accidents, vehicular mishaps, or natural calamities, smoke rapidly permeates/ **enters** environments, compromising respiratory function and precipitating life-threatening emergencies.

Primary Causes of Smoke-Induced Suffocation:

(i) Structural Fires: Residential, commercial, and industrial fires constitute predominant sources of smoke-induced suffocation. Combustible materials, furnishings, electrical malfunctions, or arson can ignite infernos, releasing copious volumes of toxic smoke into confined spaces, compromising air quality, and precipitating/ **causing** suffocation.

(ii) Industrial Accidents: Chemical spills, explosions, machinery malfunctions, or industrial mishaps can generate smoke laden with hazardous chemicals, particulates, and gases, exacerbating respiratory compromise and necessitating immediate intervention to safeguard affected individuals.

(iii) Vehicular Incidents: Automobile accidents, vehicular fires, or transportation mishaps can produce smoke-rich environments, **demanding fast** /swift action to extricate/ **save** individuals, mitigate exposure, and avert suffocation.

Toxic Components of Smoke:

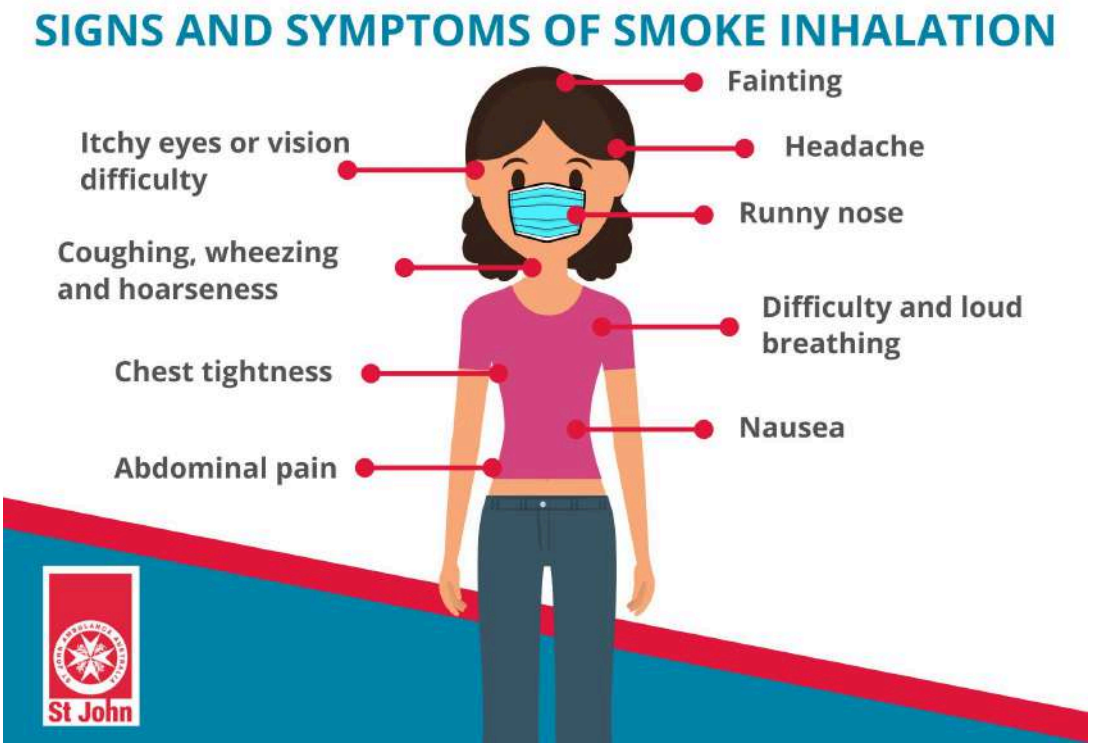
Smoke comprises a complex mixture of toxic components, including:

(i) Carbon Monoxide (CO): A colorless, odorless gas, CO binds avidly to hemoglobin, impairing oxygen transport and precipitating hypoxia, neurological compromise, and

life-threatening complications.

(ii) Particulate Matter: Inhalation of fine particulates, ash, soot, and debris irritates respiratory passages, compromises lung function, and exacerbates inflammation, contributing to respiratory distress and compromised oxygenation.

(iii) Noxious Gases: Combustion processes release poisonous gases, including hydrogen cyanide, ammonia, sulfur dioxide, and formaldehyde, each exerting deleterious effects on respiratory, cardiovascular, and neurological systems, precipitating rapid deterioration and life-threatening complications.



Trainer and Trainees

Trainer: List the common signs and symptoms of smoke inhalation

Trainee 1: Sir - The patient/ survivor may experience itchy eyes or unclear vision

Trainer: Yes, what else?

Trainee 2 : Patient may have chest tightness

Trainee 3: Coughing, difficulty in breathing as well

Trainer: Very good, there are other symptoms too. What are they?

Trainee 4: The person may feel dizzy and even faint

Trainee 5: Sir - The patient/ survivor may experience headache, nausea, running nose and abdominal pain

Trainer: Yes… as a First Aid Provider, we should immediately notice if the patient is experiencing any of the symptoms listed by you. We should try to provide relief and seek immediate medical assistance.

8.2 Effects

Effects of Smoke-Induced Suffocation:

(i) Respiratory Compromise: Inhalation of toxic smoke compromises respiratory function, precipitating coughing, wheezing, dyspnea, and acute respiratory distress syndrome (ARDS), necessitating aggressive interventions to restore ventilation and oxygenation.

(ii) Neurological Impairment: Hypoxia, resulting from carbon monoxide poisoning or oxygen deprivation, precipitates neurological compromise, manifesting as confusion, dizziness, seizures, loss of consciousness, and irreversible brain damage in severe cases.

(iii) Cardiovascular Instability: Carbon monoxide poisoning exerts harmful effects on cardiovascular function, precipitating tachycardia, hypotension, arrhythmias, and cardiac arrest, that needs immediate help.

Trainee: Please explain life saving measures and interventions while navigating smoke-induced emergencies

Trainer: Sure, this information is very important. Look at this slide here while I explain each measure.

Trainees listen carefully and look at the screen

Trainer: In the situation of smoke-induced emergencies, (1) quick group actions help in saving precious lives. (2) Immediate focus must be on evacuation from smoke filled places. (3) Use of appropriate masks such as N95 masks help in minimizing smoke inhalation. (4)

Immediately call for medical assistance.

8.3 Lifesaving Measures

Lifesaving Interventions: Navigating Smoke-Induced Emergencies

In the situation of smoke-induced emergencies, rapid, coordinated, and decisive action becomes paramount to reduce morbidity, mortality, and long-term impact , necessitating proficiency in lifesaving measures and multidisciplinary collaboration.

(i) Immediate Evacuation: Prioritize immediate evacuation from smoke-rich environments, utilizing predetermined exit routes, emergency evacuation protocols, and evacuation equipment to speed up evacuation, safeguard individuals, and mitigate exposure to toxic fumes and gases.

(ii) Respiratory Protection: Employ appropriate respiratory protection, including N95 masks, self-contained breathing apparatus (SCBA), or oxygen therapy devices, to safeguard airway, optimize oxygenation, and minimize inhalation of toxic contaminants.

(iii) Emergency Medical Assistance: Activate emergency medical services (EMS) immediately, communicating the nature, location, and severity of the incident to speed up professional medical intervention, coordinate resources, and facilitate rapid deployment of specialized personnel and equipment.

(iv) Cardiopulmonary Resuscitation (CPR): In cases of respiratory or cardiac arrest, initiate cardiopulmonary resuscitation (CPR) promptly, incorporating high-quality chest compressions, rescue breathing, defibrillation, and advanced cardiac life support (ACLS) interventions to restore circulation, oxygenation, and maximize survival outcomes.

Dialogues based on above image

person 1

What should we do if we find a person non responsive due to suffocation

6 dialogues as reply

(by a trainer)

1. Shake and shout
2. Call for medical assistance
3. Check for breathing
4. Place your hands on the center of the patients' chest
5. Push hard and fast, about twice per second
6. If you are trained, then give mouth to mouth to resuscitate.

(v) Decontamination and Supportive Care: Implement decontamination measures, administer supportive care, and monitor vital signs, neurological status, and respiratory function to mitigate complications, optimize outcomes, and facilitate recovery in affected individuals.

8.4 Summary

Smoke-induced suffocation is a serious medical emergency that requires preparedness, vigilance, and proficiency in life-saving interventions. Understanding the causes, toxic components, effects, and necessary interventions is crucial for individuals, caregivers, and communities to navigate emergencies confidently and compassionately. Prioritizing education, training, and collaboration among stakeholders creates a culture of safety, providing people with the knowledge and skills to address and prevent smoke-induced emergencies, ensuring the well-being of individuals and communities in challenging situations.

a.

- Protect yourself by a towel or a cloth (preferably wet) over your mouth and nose.
- Keep low and remove the casualty as quickly as possible away from the area.

SUFFOCATION BY POISONOUS GASES:

Definition: suffocation occurs when no air enters the rooms and to the nose and the room is a confined space where all the oxygen is used up like caves, holes and wells without water.

Carbon Monoxide (lighter than air): This gas is present in car-exhaust fumes, in household coal gas: during incomplete combustion of charcoal stoves and in coal mines.

Management:

- The first aid treatment consists in removing the person from the area, applying artificial respiration and giving pure oxygen, if available.
- Ensure circulation of fresh air before entering the room by opening the doors and windows.
- Before entering the enclosed space take two or three deep breaths and hold your breath as long as you can.
- Crawl along the floor (as the gas is lighter than air)
- Remove the casualty as quickly as possible to fresh air.

Extra

The Genesis of Smoke-Induced Suffocation

The origin of Smoke-Induced Suffocation

Smoke, a harmful byproduct of combustion, possesses the potential to transform

confined spaces into lethal / toxic environments, precipitating suffocation and catastrophic consequences for individuals caught in its ?

Definition: Smoke inhalation trauma/injury refers to an injury due to inhalation or exposure to hot gaseous products of combustion. This can cause serious respiratory complications. Smoke inhalation is the primary cause of death for victims of indoor fires. Smoke inhalation can involve CO poisoning, Hydrogen Cyanide (HCN) poisoning and burns.

Asthma

9.1 Understanding the Condition

https://www.who.int/news-room/fact-sheets/detail/asthma#:

Asthma is a lung condition that can affect people of all ages. Its chief cause is inflammation and muscle tightening around the airways. As a result, normal breathing becomes difficult.

9.11 Symptoms

Symptoms of asthma can vary from person to person and can sometimes get significantly worse. This is known as an asthma attack. Symptoms can worsen at night or during exercise. They can be mild or severe and can repeat themselves.

Common symptoms of asthma include:

- a persistent cough, especially at night
- wheezing when exhaling and sometimes when inhaling
- difficulty in breathing due to shortness of breath
- chest tightness

A change in weather or cold can worsen symptoms in some people. Symptoms are triggered by dust particles, smoke and fumes, grass and tree pollen, animal fur or feathers, strong soaps and perfumes.

There can be other triggers also. People who suffer from asthma must talk to a healthcare provider.

9.13 Causes:

There are multiple factors that can increase risk of developing asthma. Some of them are-

- Asthma is generally hereditary. It is more likely that if any other family member has asthma, then the person can inherit it.

- People who have some allergic conditions can have asthma.
- Multiple lifestyle factors including obesity, can be a factor that can cause asthma.
- Early life events like low birth weight, premature birth, or exposure to tobacco smoke, can cause asthma as they can affect the developing lungs.
- Exposure to indoor and outdoor air pollution, house dust mites, moulds, fumes or dust can also cause asthma.

9.2 Triggers

Triggers and Precipitating Factors: A Diverse Spectrum

Asthma triggers include a diverse spectrum of allergens, irritants, infections, medications, environmental factors, and physiological stressors, necessitating individualized assessment,

and effective management to minimize exposure and reduce complications.

(i) Allergens: Common allergens are dust mites, pollen, mold spores, pet dander, cockroach droppings, and specific foods.

(ii) Irritants: Environmental irritants, include tobacco smoke, air pollutants, chemical fumes, strong odors, and respiratory irritants.

(iii) Infections: Respiratory infections, viral or bacterial, can induce asthma symptoms, cause airway inflammation.

9.3 Management

Management Strategies: Optimizing Control and Quality of Life

Asthma management revolves around multifaceted strategies including pharmacotherapy, environmental modifications, patient education, monitoring, and collaborative care to achieve optimal control, minimize complications, and enhance quality of life.

(i) Pharmacotherapy: Asthma pharmacotherapy includes medications and procedures tailored to individual needs, severity, responsiveness, and preferences to achieve symptom control, prevent complications, and optimize respiratory function.

(ii) Environmental Modifications: Environmental modifications, including allergen avoidance, air filtration systems, smoke cessation, pollution control, humidity regulation, and trigger mitigation strategies, foster a conducive environment, minimize exposure, and mitigate asthma complications.

(iii) Patient Education and Self-management: Asthma self-management encompasses patient education, inhaler techniques, symptom monitoring, action plans, trigger identification, lifestyle modifications, adherence promotion, and collaborative care, empowering individuals to navigate asthma effectively, optimize control, and improve resilience.

9.4 Prognosis:

Prognosis and Future Directions: Embracing Hope and Innovation

Asthma prognosis depends on early diagnosis, individualized management, adherence to treatment, environmental modifications, patient education, monitoring, and collaborative care, managing optimal outcomes, quality of life, and resilience in the face of this chronic respiratory condition.

(i) Research and Innovation: Ongoing research, innovation, and advancements in asthma care promise to revolutionize asthma management, enhance outcomes, and foster a brighter future for individuals living with asthma.

(ii) Collaborative Care and Advocacy: Collaborative care, advocacy, community engagement, awareness campaigns, research initiatives, policy development, and stakeholder collaboration synergize efforts to enhance asthma understanding, management, prevention, and support, fostering a comprehensive approach to asthma care, resilience, and empowerment.

9.5 Summary :

Asthma, a common chronic respiratory condition, results from a complex variety of genetic, environmental, immunological, and physiological factors. This leads to inflammation, increased sensitivity of airways, and restricted airflow. Understanding the causes, symptoms, and management of asthma is crucial for individuals, caregivers, communities, healthcare providers, and stakeholders. By prioritizing research, innovation, collaboration, advocacy, education, and support, a comprehensive approach to asthma care can be developed. This empowers individuals, prevents issues, and engages communities for a better future for those living with asthma and their families across diverse settings

Dialogues:

https://youtu.be/s1R0dL1VB0I?feature=shared

https://youtu.be/CSpr9mvMtLo?feature=shared

A group of friends are playing in the playground.

Suddenly one boy starts coughing.

Speaker 1- Hey! What happened? Are you all right?

Speaker 2- Why is your face so red?

Speaker 3: I am going to call the teacher.

Speaker 4: He suffers from asthma. I think he is getting an attack.

Quick, look into his bag. There will be some medicine in it.

Speaker 2: Look , what did I find in the bag.

Speaker 3: It's a pump.

Speaker 1: No, it's an inhaler. I have seen it before.

Speaker 4: Oh look, the teacher is here.

Speaker 2: Ma'am, we found this in his bag.

Teacher: It's all right. Let him sit straight. Give me the inhaler. Here… take four puffs… Now there… Easy… Easy… try to breathe calmly.

It was good that all of you were here with him. You acted on time, informed me and found the inhaler. All of you saved precious time that was of great help to him. Now, let's take him to the clinic and call the doctor.

At the clinic-

Burns

10.1 Understanding kinds of burns

Burns: Causes, Types, Treatment, and Prevention

Medical burns are injuries to skin or other tissue that are caused by heat, cold, chemicals, medical treatments or interventions.

Types of Medical Burns

Medical burns can be categorized into the following:

10.11 Thermal Burns : These burns result from exposure to heat sources such as hot liquids, steam, flames, or heated objects. Surgical procedures such as laser treatments can also cause thermal burns.

10.12 Radiation Burns : Overexposure to ionizing radiation during diagnostic imaging or radiation therapy can lead to radiation burns, characterized by localized skin damage and tissue necrosis.

10.13 Chemical Burns : Exposure to caustic substances, including medications, antiseptics, or cleaning agents, can cause chemical burns, leading to tissue destruction.

10.14 Friction Burns : These burns occur due to prolonged friction or pressure against the skin, commonly seen in patients confined to bed or immobilized for extended periods.

10.15 Electrical shocks and burns

An electric burn occurs when electricity passes through the body causing injury. These burns damage the surface of the skin but more often they damage the tissues under the surface.

10.2 Signs and Symptoms

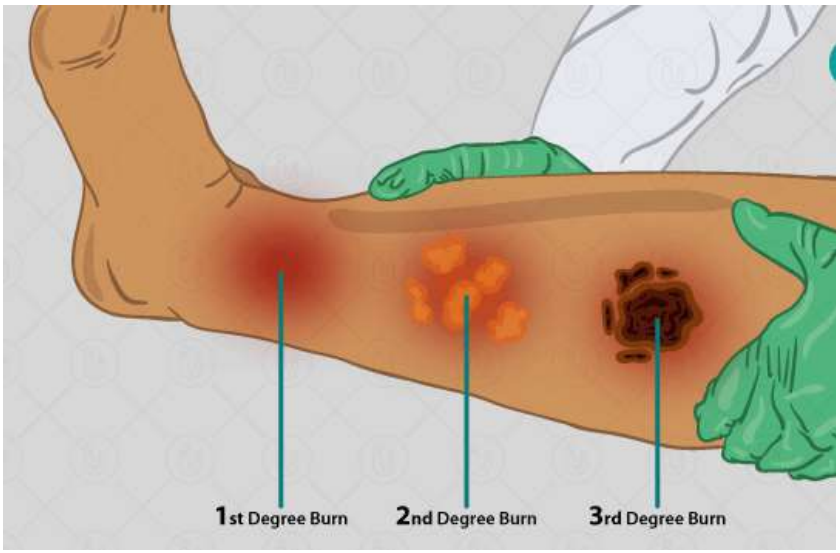
The characteristics of burns depend upon their depth. Superficial burns cause pain that can last upto two or three days followed by peeling of the skin over the next few days. They are generally dry and red/ pink in color. Some burns are moist and associated with blisters that are acutely painful. Burns can also impact deeper tissues and extend to the bones. These burns are black in color and can lead to amputation of the affected part.

10.3 Types

There are four types of burns:

1. Burns that affect the top layer of the skin are superficial burns or **First degree burns.** These burns cause redness of the skin and are usually without blisters. The pain due to burning lasts for two-three days.

2. When burns affect the second layer of the skin, it results in **Second degree burn.** Such burns have blisters present that are painful. Such burns take around eight weeks to heal and may leave a scar.



3. **Third degree burn** affects all layers of skin**.** In such cases medical aid is required for healing as it does not happen on its own.

4. **Fourth degree burn** includes damage to other tissues (muscle, tendons or bones). These burns

frequently result in losing that body part.

10.4 Treatment

Treatment and Management

The management of burns depends on their type, severity, and location. Here are general guidelines for treating burns:

(i) Assessment : Begin by assessing the burn's severity, depth, and extent. Minor burns may require topical treatments, while severe burns necessitate immediate medical intervention.

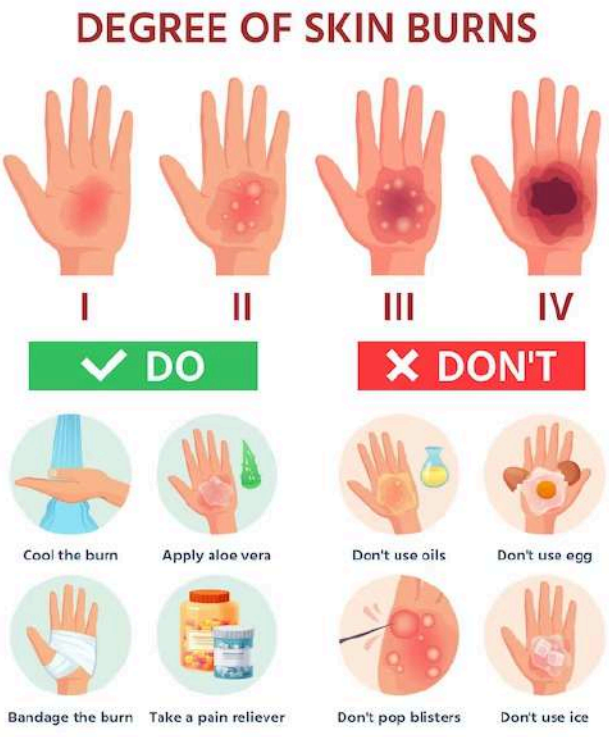
(ii) Cooling : For thermal or chemical burns, immediately cool the affected area with cool (not cold) water for 10 to 20 minutes to minimize tissue damage and alleviate pain.

(iii) Wound Care : Clean the burn area gently with mild soap and water to remove debris or contaminants. Apply a sterile, non-adhesive dressing to protect the wound and promote healing.

(iv) Pain Management : Administer analgesics such as acetaminophen or ibuprofen to alleviate pain and discomfort associated with the burn injury.

(v) Antibiotic Therapy : For burns at risk of infection, prescribe topical or systemic antibiotics to prevent bacterial growth and promote wound healing.

(vi) Surgical Intervention : Severe burns may require surgical debridement, skin grafting, or reconstructive surgery to remove damaged tissue and restore function.



(vii) Specialized Care : Consult specialists, including dermatologists, plastic surgeons, or burn care specialists, for complex or extensive burn injuries requiring specialized treatment.

10.5 Prevention Strategies

Preventing medical burns requires a multifaceted approach to ensure patient safety and minimize the risk of injuries:

(i) Training and Education : Healthcare providers should receive comprehensive training on the safe use of medical devices, equipment, and procedures to minimize the risk of burns.

(ii) Safety Protocols : Implement standardized protocols and guidelines for using heat-producing devices, radiation equipment, and chemical agents in healthcare settings.

(iii) Equipment Maintenance : Regularly inspect, maintain, and calibrate medical devices to ensure they function correctly and safely during patient care.

(iv) Patient Monitoring : Continuously monitor patients receiving heat therapy, oxygen therapy, or radiation treatments to prevent overexposure and minimize the risk of burn injuries.

(v) Quality Assurance : Conduct regular audits, reviews, and evaluations of healthcare practices to identify potential hazards, address safety concerns, and improve patient outcomes.

10.6 Summary:

Burns, though relatively common, pose significant risks to patients undergoing various healthcare treatments and interventions. Understanding the causes, types, treatment options, and preventive measures associated with burns

is crucial for healthcare providers, administrators, and patients alike. By prioritizing patient safety, implementing standardized protocols, and maintaining vigilant monitoring and quality assurance measures, healthcare facilities can minimize the incidence of medical burns and ensure optimal patient care outcomes. As with any medical condition, early recognition, prompt intervention, and comprehensive management are essential to avoid complications, promoting healing, and enhancing patient well-being.

Mother is preparing dinner. She is boiling potatoes. She lifts the pot full of boiling water and takes it to the sink to drain it. Her son comes running into the kitchen and bumps into her. The pot of boiling water falls on her as well as her son's legs. There is a lot of screaming and shouting due to pain. The elder son hears the cries and comes to the kitchen.

Elder son: Oh! What happened? Both of you are burned!

Mother: Quick, bring ice from the freezer and put it on the burnt area.

Elder son: No… we have to pour cold water on the burnt area. Quickly, come over to the bathroom.

The mother rushes to the bathroom. The younger son is carried by his elder brother. Both of them sit under the tap. Cold water is poured over the burnt area until it stops hurting.

Elder son: Right, now let's get your clothes changed.

Mother and younger son change their clothes.

Elder son : Let's put some aloe vera gel on the burnt area.

Younger son: Why aloe vera?

Mother: because it's good for burns and will cool it.

Elder son: Now take a painkiller and cover the affected area with a light bandage to protect it.

Mother: I am very proud of you. You helped us a lot. How do you know so much about what to do in cases of burns?

Elder son: I did a MOOC on First Aid. It had a section on burns. I learned all about treating burns from there.

Chest pain / Discomfort

11.1 Understanding Chest pain/ Discomfort

Chest Discomfort: Understanding Causes, Evaluation, and Management

Chest discomfort can happen anywhere. It includes a number of symptoms, ranging from slight pain between neck and upper abdomen to life-threatening cardiac arrest. Recognizing the actual problem, evaluating the situation, and its management is paramount for healthcare professionals, individuals, and caregivers alike. This comprehensive exploration aims to offer insights, guidance, and awareness to facilitate timely intervention, optimize outcomes, and enhance quality of care across diverse populations and contexts to resolve the multifaceted nature of chest discomfort.

11.2 Signs and Symptoms

Someone having chest discomfort may:

- have severe pain in the centre of their chest. This pain may spread to their jaw, and down to either one or both arms.
- be breathless or gasping for breath.
- be sweating profusely.
- experience pain similar to indigestion.
- collapse without warning.
- complain of dizziness.
- have pale skin and bluish lips.
- have a rapid, weak or irregular pulse.
- have a feeling of impending doom.

11.3 Causes

11.31 Cardiovascular

11.32 Respiratory

11.33 Gastrointestinal

11.34 Psychological (Panic attacks, shocks and anxiety)

Defining Chest Discomfort: Beyond Surface Symptoms

Chest discomfort is commonly perceived as isolated pain or discomfort localized to the chest region. It can include a variety of sensations, triggers, and implications, necessitating comprehensive assessment, differential diagnosis, and targeted management strategies.

(i) Clinical Manifestations: Chest discomfort manifests through diverse symptoms, including pain, pressure, tightness, heaviness, burning, radiating pain to the neck, jaw,

shoulders, back, arms, and associated symptoms such as palpitations, nausea, and lightheadedness, each contributing to the complexity and severity of chest discomfort.

(ii) Etiological Factors/ Underlying reasons : Chest discomfort related symptoms are due to a variety of factors including-

- cardiovascular events (angina, myocardial infarction, pericarditis),
- pulmonary conditions (pneumonia, etc),
- gastrointestinal disorders (gastroesophageal reflux disease, gastritis, peptic ulcer disease),
- musculoskeletal issues (costochondritis, muscle strain, rib fracture),
- psychological issues (anxiety, stress, panic disorder,
- respiratory infections, shingles, and other systemic conditions

11.4 Evaluation, and Management

Evaluation Strategies: Navigating Diagnostic Pathways

The evaluation of chest discomfort necessitates a systematic, comprehensive, and multidisciplinary approach including clinical assessment, diagnostic testing, risk calculation, and collaborative decision-making to elucidate underlying conditions, optimize management strategies, and facilitate timely intervention.

(i) Clinical Assessment: A thorough clinical assessment should be conducted to know patient history, symptom characterization (onset, duration, location, quality, radiation), associated symptoms, precipitating factors, alleviating or exacerbating factors, medical history, medication use, risk factors (smoking, family history, comorbidities), physical examination, vital signs, and clinical judgment to guide differential diagnosis, risk stratification, and targeted evaluation.

(ii) Diagnostic Testing: Diagnostic testing modalities (ECG, EchoCardiography, CT,

MRI, etc) to be employed under professional medical supervision to facilitate targeted intervention.

Management Approaches: Tailoring Care to Individual Needs

The management of chest discomfort hinges on accurate diagnosis, risk calculation, correct identification, and individualized care plan, lifestyle modifications, supportive care, monitoring, and collaborative management to optimize outcomes, alleviate symptoms, prevent complications, and enhance quality of life across diverse populations and contexts.

(i) Lifestyle Modifications: Lifestyle modifications to foster a holistic approach to enhance overall health, and mitigate risk factors contributing to onset of chest discomfort symptoms, sudden worsening, or recurrence to be advocated. It includes dietary adjustments, weight management, smoking cessation, alcohol moderation, stress reduction, regular exercise, medication adherence, follow-up care, symptom monitoring, self-management strategies, and supportive resources.

(iii) Supportive Care and Monitoring: Supportive care, monitoring, and follow-up evaluations, alongwith patient education, to be implemented to ensure patient well-being across diverse settings, and healthcare contexts.

Dialogue:

Speaker 1: Oh my! Look there… That man suddenly fell on the ground.

Speaker 2: He is gripping his chest. What do we do?

Speaker 1: Quick, he needs CPR. Ask people to move and make space.

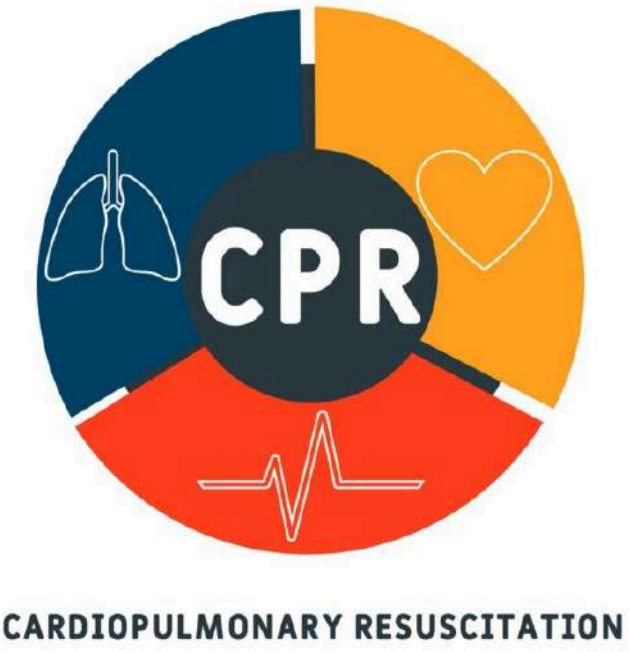
Speaker 2: Place one hand on his forehead and gently tilt his head back. Lift chin up.

Speaker 1: Make sure that there is nothing in his mouth or nose that obstructs the airway.

Speaker 2: No… checked, there's nothing.

Speaker 1: Then, start with the CPR.

11.5 Securing an Open Airway Cardiopulmonary Resuscitation (CPR) and the Recovery Position: Lifesaving Techniques Unveiled



In emergency situations, particularly with unconscious individuals or individuals with compromised breathing, securing an open airway, administering Cardiopulmonary Resuscitation (CPR), and positioning the individual in the recovery position are the most important actions that can make the difference between life and death. This in-depth exploration looks into these important techniques, explaining their importance, methods, and how they can be used in different situations.

Securing an Open Airway: The Foundation of Effective Resuscitation

An open airway is crucial for effective resuscitation, allowing uninterrupted oxygen flow to the lungs and vital organs. In unconscious individuals, a blocked airway is a serious problem that needs immediate attention.

Methodologies for Securing an Open Airway:

(i) Head-Tilt Chin-Lift Technique: This technique involves placing one hand on the

individual's forehead and gently tilting the head back, while simultaneously lifting the chin upward with two fingers of the other hand. This action helps to align the airway, facilitating unobstructed airflow.

(ii) Jaw Thrust Technique: Employed primarily in cases of suspected cervical spine injuries. This technique entails placing hands on either side of the victim's face, using the index fingers to push the lower jaw forward, thereby opening the airway without tilting the head.

(iii) Clearing Obstructions: If visible obstructions such as foreign objects, vomit, or secretions obstruct the airway, cautiously remove them with gentle finger sweeps or suction devices. Take care not to push the obstruction further into the airway.

Cardiopulmonary Resuscitation (CPR): Breathing Life into Critical Moments

CPR emerges as a vital intervention in cases of cardiac arrest or respiratory failure. It serves as a bridge to professional medical care while providing help on spot. The objective of CPR revolves around maintaining blood circulation and oxygenation until help arrives.

Components and Techniques of CPR:

(i) **Compression:** Initiate chest compressions by placing the heel of one hand on the center of the individual's chest (typically between the nipples) and interlocking the fingers of both hands. Perform compressions at a rate of 100-120 compressions per minute, ensuring adequate depth (approximately 2 inches for adults) and allowing for full chest recoil between compressions.

(ii) Ventilation: Following each series of compressions (usually after 30 compressions), administer two rescue breaths using a face mask. Ensure proper head-tilt chin-lift or jaw thrust technique to maintain an open airway, delivering breaths with sufficient volume and duration to visibly elevate the chest.

(iii) Cycle: Continue cycles of 30 compressions and two breaths, maintaining a ratio of 30:2 until the individual exhibits signs of recovery, and professional medical assistance arrives, or the rescuer becomes physically exhausted and unable to continue.

The Recovery Position: Safeguarding the Unconscious Individual

Post-resuscitation **(after revival)** or in cases where an individual remains unconscious but resumes spontaneous breathing, transitioning to the recovery position becomes **very important.** The recovery position offers numerous benefits, including maintaining an open airway, facilitating drainage of fluids, and preventing aspiration in unconscious individuals.

Steps to Position an Individual in the Recovery Position:

(i) Lay the individual on their back: Gently roll the individual onto their back while ensuring a straight alignment of the head, neck, and torso/ **rest of the body.**

(ii) Extend the arm: On the side to which you intend to roll the individual, extend the arm that is farther from you, positioning it at a right angle to the body.

(iii) Bend the Knee: Bend the individual's knee that is closer to you, ensuring stability and preventing rolling during the transition.

(iv) Roll and Support: Grasping the extended arm and bent knee, gently roll the individual onto their side, facing towards you. Ensure the top hand supports the individual's head, maintaining an open airway, while the bottom arm stabilizes the position.

(v) Monitor and Re-assess: Continuously monitor the individual's breathing and circulation, re-assess the need for further intervention, professional medical assistance, or transition to alternative position as warranted by the evolving clinical scenario.

Conclusion:

Securing an open airway, administering Cardiopulmonary Resuscitation (CPR), and positioning an individual in the recovery position are essential life saving techniques. Mastery of these techniques demands not only theoretical knowledge but also practical skills, situational awareness, and the capacity to adapt interventions based on individual needs, and available resources. By embracing these techniques with diligence, empathy, and proficiency, individuals can navigate critical moments with confidence, compassion, and the commitment to preserve life, opening pathways to recovery, and developing resilience in the emergency.

11.6 Summary

Chest discomfort, a prevalent symptom, can be encountered at any place. It needs correct timely action to save the suffering individual. By identifying the underlying causes**,** quickly evaluating the situation, and managing the chest discomfort, life of the individual can be saved.

Drowning

12.1 Understanding drowning

Drowning: Causes, Prevention, Immediate Response, and Implications

Drowning, a tragic and often preventable event, represents a leading cause of unintentional injury-related deaths globally. It is defined as respiratory impairment due to submersion or immersion in liquid. Understanding drowning's

intricacies—its causes, preventive measures, immediate responses, and broader implications— is crucial for individuals, families, communities, and healthcare professionals alike.

12.2 Causes

Understanding Drowning: Beyond the Surface

Drowning transcends its common perception as a consequence of water submersion. It includes a spectrum of events, and consequences, each underscoring the gravity, complexity, and urgency associated with drowning incidents.

(i) Subtypes of Drowning: Drowning subtypes include-

- drowning with submersion,
- drowning without aspiration (dry drowning),
- drowning with aspiration (wet drowning),
- secondary drowning due to delayed pulmonary edema, and
- near-drowning events

(ii) Risk Factors: Following are the major risk factors of drowning-

- lack of swimming ability,
- absence of barriers (fencing, supervision),
- alcohol or substance use,
- medical conditions (seizures, cardiac conditions),
- environmental factors (rip currents, water turbulence), and
- behavioral factors (recklessness, overestimation of abilities),

All the above mentioned factors can be eliminated through awareness, vigilance, and preventive strategies.

12.3 Prevention

Prevention: A Multifaceted Approach

Drowning prevention hinges on a multifaceted approach that includes education, awareness, environmental modifications, supervision, skill development, policy development, and community engagement. The chief aim of preventive measures is to foster a safe, conducive, and vigilant aquatic environment.

(i) Water Safety Education: Educate individuals, families, caregivers, and communities about water safety, drowning risks, preventive measures, emergency responses, CPR training, lifeguard services, and supervised recreational activities, raising awareness, preparedness, and responsiveness.

(ii) Barriers and Environmental Modifications: Implement barriers (fencing, locked gates, safety nets), lifeguards, signage, rescue equipment, water safety protocols, hazard identification, and elimination strategies to foster a safe, regulated, and monitored aquatic environment conducive to prevention and early intervention.

(iii) Policy Development and Regulation: Advocate for policy development, regulation enforcement, safety standards, public health initiatives, research, funding, community engagement, and stakeholder collaboration to prioritize drowning prevention, awareness, education, and advocacy across diverse settings, populations, and jurisdictions.

12.4 Immediate Response and Care

Immediate Response: Navigating Critical Moments

In the event of a drowning incident, swift, coordinated, and effective response becomes paramount to maximize survival outcomes, minimize complications, and foster recovery, necessitating proficiency in lifesaving interventions, emergency care, and collaborative efforts.

(i) Assess the Scene: Assess the drowning scene, ensure personal safety, activate emergency medical services (EMS), communicate the situation, location, and nature of the incident, and enlist bystander assistance to expedite response, facilitate rescue, and initiate lifesaving interventions.

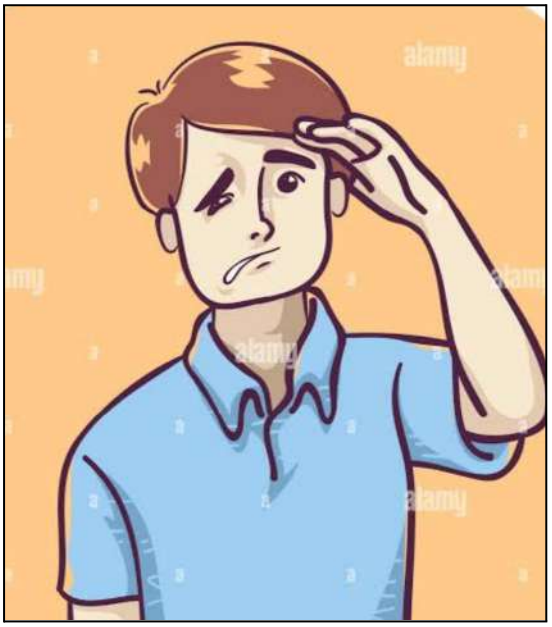
(ii) Rescue and Recovery: Perform safe rescue techniques, initiate cardiopulmonary resuscitation (CPR), provide rescue breaths, administer oxygen, utilize automated external defibrillators (AEDs), stabilize the individual, monitor vital signs, and transport to definitive care to optimize survival, mitigate complications, and foster recovery.

(iii) Post-Rescue Care: Implement post-rescue care, address hypothermia, aspiration, injuries, shock, psychological trauma, and complications, provide supportive care, initiate medical evaluation, treatment, rehabilitation, and follow-up to ensure comprehensive care, recovery, and holistic support for affected individuals and families.

12.5 Summary

Drowning is a serious and avoidable problem that goes beyond just being underwater. It has serious consequences and complexity of drowning incidents. Understanding the details, such as causes, prevention, immediate response, and broader implications, is crucial for individuals, families, communities, healthcare professionals, policymakers, researchers, and stakeholders. By gaining knowledge and awareness, we can address this public health issue more effectively, creating safer environments around water for everyone. Prioritizing ongoing efforts, collaboration, innovation, education, advocacy, and community engagement is key to a comprehensive approach for preventing drowning, promoting safety, providing support and raising awareness. This holistic approach aims to build resilience, empower individuals and communities, and enhance overall well-being globally.

12.6 Quiz



In Dialogues box -

Speaker 1 - Why is he/she looking so dizzy ?

Speaker 2 - Look, his/her face is drooping on one side.

Speaker 1 - Hurry let us move him/her to hospital

Speaker 2 -Medical assistance is most urgent,

Don’t give him anything to eat or drink.

Brain Stroke

13.1 Understanding brain stroke:-

13.2 Signs and symptoms :-

13.3 (a) Major causes of a Stroke :-

13.3 (b) Management :

13.4 Summary :-

13.5 Quiz:-

13.6 References and Citations

Van Swieten JC, Koudstaal PJ, Visser MC, et at. (1988)

Gordon, D.L.(n.d.) Update in Stroke management

Stroke Treatment and Prevention DOI: https://doi.org/10.1017/CBO9780511526893.020

Animal Bites

14.1 Know about animal bites :-

Dialogues in box -

Speaker 1 -oh, rush, see He/She is bitten by a dog or may be a cat !

Speaker 2 -Wash his /her wound with soap and water immediately.

Speaker 1 -let it dry and apply antibiotic ointment.

Speaker 2 - Call for medical assistance.

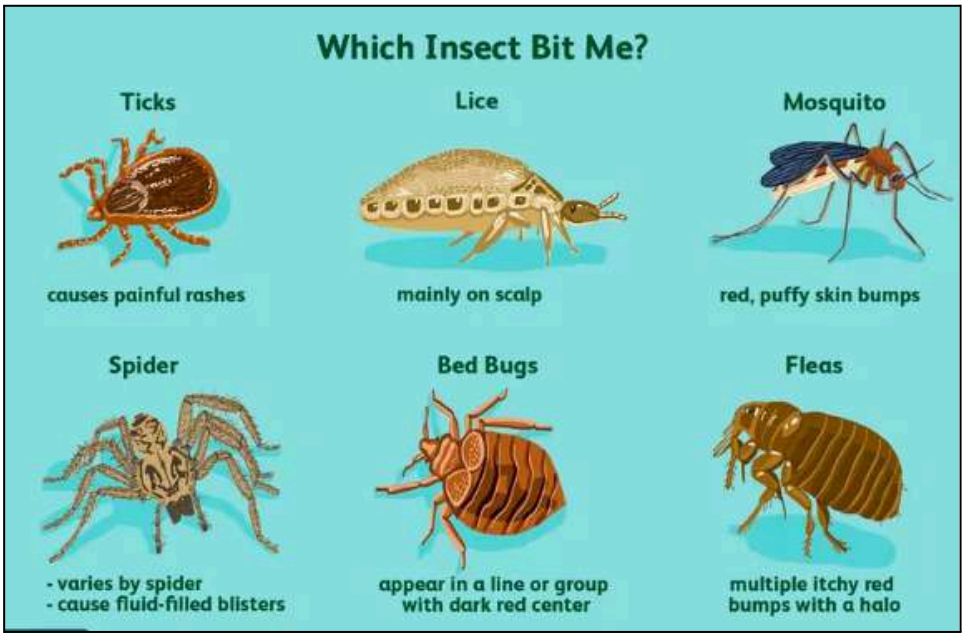
image is only for reference @Graphic Designer

14.11 Vertebrates

14.11.1 Companion animals- Dogs, cats, rats, monkeys :-

14.11.2 Wild animals- Bats, snakes :

14.12 Arthropods- ants, spiders, mosquito, leech, bees and wasps



Speaker 1 - Look at the swelling and redness

Speaker 2 - Seems to be an insect bite, redness is at the bite site

Speaker 1 - Wash the bite area quickly with soap and water

Speaker 2 - But see he having difficulty in breathing and dizzy also

Speaker 1 - We must seek medical assistance

14.2 Signs and symptoms :-

14.3 Causes :-

14.4 Consequences :-

14.5 Prevention and management :-

14.6 Management and Treatment :-

14.7 Summary :-

14.8 Quiz

14.9 References and Citations.

15 Poisoning

Speaker 1 - Seems to be the case of poisoning

Speaker 2 - Patient needs fresh air, please unbutton his shirt

Speaker 1 - Wash the poisoned area with running water for at least 15 minutes

Speaker 2 - Call for medical assistance, this can't be ignored

Speaker 1 - Oh my God, Food poisoning in School !

Speaker 2 - They need a lot of fluids.

Speaker 1 - Quickly arrange for an ambulance, we must take them all to hospital

Speaker 2 - Yes medical assistance is must to immediately stop diarrhea and vomiting and prevent dehydration

Speaker 1 - What is happening to these children ?

Speaker 2 - They are coming from Science Lab. oh ho, Chemical poisoning it is !

Speaker 1 - They need a lot of fluids and let us try, if they can vomit.

Speaker 2 - They need immediate medical assistance, let us take them to hospital

15.1 Understanding poisoning

15.2 Types and causes

Types of Poisons

15.3 Symptoms :-

15.4 Treatment :-

15.5 Prevention :-

15.6 Summary :-

15.6 Qu

15.7 References and Citation

16. Diabetes

16.1 Understanding Diabetes and its causes:-

There are two types of Diabetes :-

16.2 Signs and symptoms:-

16.3 Management :-

Speaker 1 - She/He is having low sugar levels, sweating and lack of coordination

Speaker 2 - Sleepiness also, Give her/him some glucose or toffee or any sweet food or drink

Speaker 1 - I never knew Diabetes could be so serious

Speaker 2 - Her/His spouse told me that she often gets hypoglycemic

Speaker 1 - Medical assistance is still a must

16.4 Summary:-

16.5 Quiz :-

16.6 References and Citations

https://vcu-alma-primo.hosted.exlibrisgroup.com/primo-explore/fulldisplay?docid

=VCU_ALMA21507361100001101&context=L&vid=VCUL&lang=en_US&search_scope=all_scope&adaptor=Local%20Search%20Engine&tab=all&query=any,contains,diabetes%20how%20to%20help&sortby=rank&facet=library,include,CHEC&offset=0

Is Diabetes Becoming the Biggest Epidemic of the Twenty-first Century?

Syed Amin Tabish, FRCP, FRCPE, FAMS, FACP, Editor-in-Chief

Effective interventions for reducing diabetes

distress: systematic review and meta-analysis

Jackie Sturt,**Kathryn Dennick,Danielle Hessler,Benjamin M. Hunter,Jennifer Oliver &Lawrence Fisher**

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17.1 Conclusion

17.2 Post Test

17. 3 Reflections

17.4 Pledge writing

Let's Check 👍

1. What is ABC in first aid?

2. What is DRABC in first aid?

3. What is the first step in providing first aid?

a) Assess the scene for safety

b) Apply direct pressure to the wound

c) Perform rescue breaths

d) Elevate the injured limb

A: a) Assess the scene for safety

2. Q: What is the recommended compression-to-breath ratio for CPR in adults?
a) 5 compressions to 1 breath
b) 15 compressions to 2 breaths
c) 30 compressions to 2 breaths
d) 30 compressions to 5 breaths

A: c) 30 compressions to 2 breaths

3. Q: What is the correct hand placement for chest compressions during CPR on an adult?
a) Lower half of the breastbone (sternum)
b) Middle of the chest, between the nipples
c) Upper abdomen, just below the ribcage
d) Side of the chest, over the ribs

A: b) Middle of the chest, between the nipples

4. Q: What is the first thing you should do when someone is choking?
a) Perform back blows
b) Begin CPR

c) Perform abdominal thrusts (Heimlich maneuver)

d) Offer them water to drink

A: a) Perform back blows

5. Q: How do you recognize the signs of a heart attack?

a) Chest pain or discomfort, shortness of breath, nausea

b) Dizziness, rapid heartbeat, sweating

c) Pale skin, weakness, confusion

d) Severe headache, slurred speech, numbness in one side of the body

A: a) Chest pain or discomfort, shortness of breath, nausea

6. Q: What is the correct method to control severe bleeding?

a) Apply a tourniquet above the bleeding site

b) Apply pressure directly to the wound with a clean cloth or your hand

c) Elevate the injured limb above the level of the heart

d) Apply ice to the bleeding area

A: b) Apply pressure directly to the wound with a clean cloth or your hand

7. Q: What is the primary purpose of the recovery position?

a) Maintain an open airway

b) Stop bleeding from a wound

c) Prevent further injury to the spine

d) Control severe bleeding

A: a) Maintain an open airway

8. Q: How should you remove a small embedded object, such as a splinter?

a) Use tweezers to pull it out

b) Cut around it with a scalpel

c) Push it further into the skin to avoid infection

d) Use a clean needle to gently lift it out

A: d) Use a clean needle to gently lift it out

9. Q: What should you do if someone is experiencing a seizure?

a) Place a spoon in their mouth to prevent them from biting their tongue

b) Hold them down to prevent movement during the seizure

c) Clear the area around them of any objects that could cause injury

d) Pour water over their face to wake them up

A: c) Clear the area around them of any objects that could cause injury

10. Q: What is the first step in caring for a burn?

a) Apply a cold compress or immerse the burn in cool water

b) Pop any blisters that have formed

c) Apply

ointment or butter to the burn

d) Cover the burn loosely with a sterile dressing

A: a) Apply a cold compress or immerse the burn in cool water

11. Q: What is the correct technique for using an automated external defibrillator (AED)?

a) Apply the pads directly on the chest without removing clothing

b) Place one pad on the chest and the other on the back

c) Rub the pads together to warm them before applying

d) Press the pads firmly on the bare chest as indicated by the AED

A: d) Press the pads firmly on the bare chest as indicated by the AED

12. Q: What is the recommended treatment for a nosebleed?

a) Tilt the head back to stop the bleeding

b) Pinch the nostrils together and lean forward slightly

c) Blow forcefully to clear the blood from the nose

d) Insert a cotton swab into the nostril to absorb the blood

A: b) Pinch the nostrils together and lean forward slightly

13. Q: What is the correct method to remove a bee stinger?

a) Scrape it off with a credit card or your fingernail

b) Squeeze it out with tweezers

c) Apply ice to numb the area, then pull it out with tweezers

d) Leave it in place and seek medical attention

A: a) Scrape it off with a credit card or your fingernail

14. Q: What should you do if someone is experiencing a severe allergic reaction (anaphylaxis)?

a) Offer them a glass of water to drink

b) Keep them warm and elevate their legs

c) Administer an epinephrine auto-injector if available and call emergency services

d) Apply a heat pack to the affected area

A: c) Administer an epinephrine auto-injector if available and call emergency services

15. Q: What is the correct procedure for removing a tick?

a) Burn it off with a match or lighter

b) Apply petroleum jelly to suffocate the tick, then pull it out

c) Use tweezers to grasp the tick as close to the skin as possible and pull upward with steady pressure

d) Twist the tick counterclockwise to remove it

A: c) Use tweezers to grasp the tick as close to the skin as possible and pull upward with steady pressure

First Aid (FA) is like a quick and important help when there's a sudden problem before doctors can arrive. It's the first thing to do in unexpected situations, and it needs a step-by-step plan based on some important ideas. These include being safe, getting help fast, checking the situation quickly, looking at how awake and breathing someone is, and keeping your hands clean. This discussion explores each of these ideas, explaining why they're so important and how they work together to make First Aid effective.

ABC stands for airway, breathing, and circulation.

The primary survey is a quick way to find out how to treat any life threatening conditions a casualty may have in order of priority. We can use DRABC to do this: Danger, Response, Airway, Breathing and Circulation.

Safety First: Protecting Rescuers and Victims

The saying "Safety First" is crucial in First Aid. After an accident or medical emergency, the scene can be chaotic and full of dangers. Even experienced

rescuers can face risks. So, before helping, it's important to make sure the surroundings are safe.

Hazards can manifest in various forms—live electrical wires, oncoming traffic, toxic fumes, or unstable structures, to name a few. By conducting a quick and correct risk assessment, rescuers can identify and understand immediate threats, creating a secure space conducive to administering aid.

Equally important is keeping yourself safe. If a rescuer gets hurt or faces dangers in the surroundings, they can become a problem instead of a help, making things worse for everyone. So, following safety rules, like wearing protective gear when possible and staying aware of the situation, is crucial in First Aid.

Seek Help: The Lifeline to Professional Care

First Aid: General Principles for Effective Intervention

The primary goal of first aid is to prevent death or serious injury from worsening.

It is important to note that first aid is not medical treatment and cannot be compared with what a trained medical professional provides. First aid involves making common sense decisions in the best interest of an injured person.

DIALOGUES

Suraksha:

Upaay:

Suraksha:

Upaay:

Suraksha: