

Aid Emergency and First Course

By

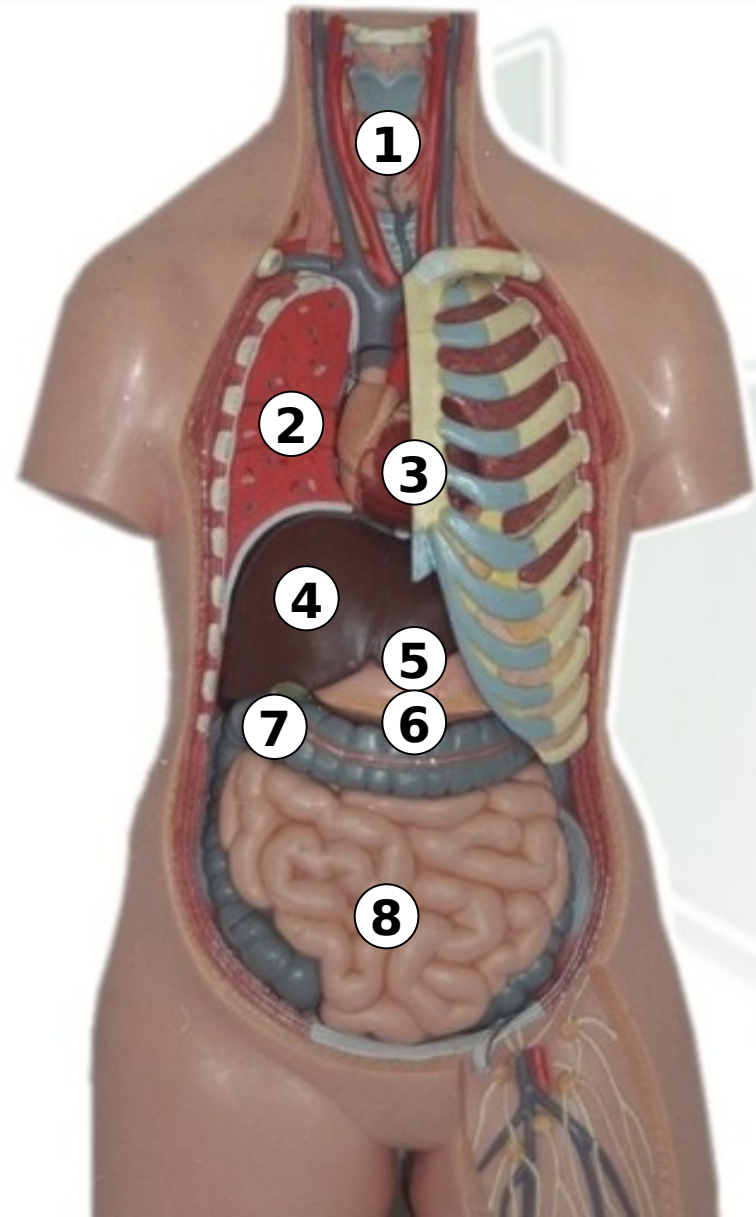
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Covered in this Session

- **Human Anatomy**
- **What is first aid**
- **Aims of first aid**
- **The Responsibilities of the First Aider**
- **Delegation / Confidence / Communication**
- **Incident / Casualty priorities**
- **Multiple casualties**
- **Staying Safe during First Aid**
- **Telephone the Emergency Services**

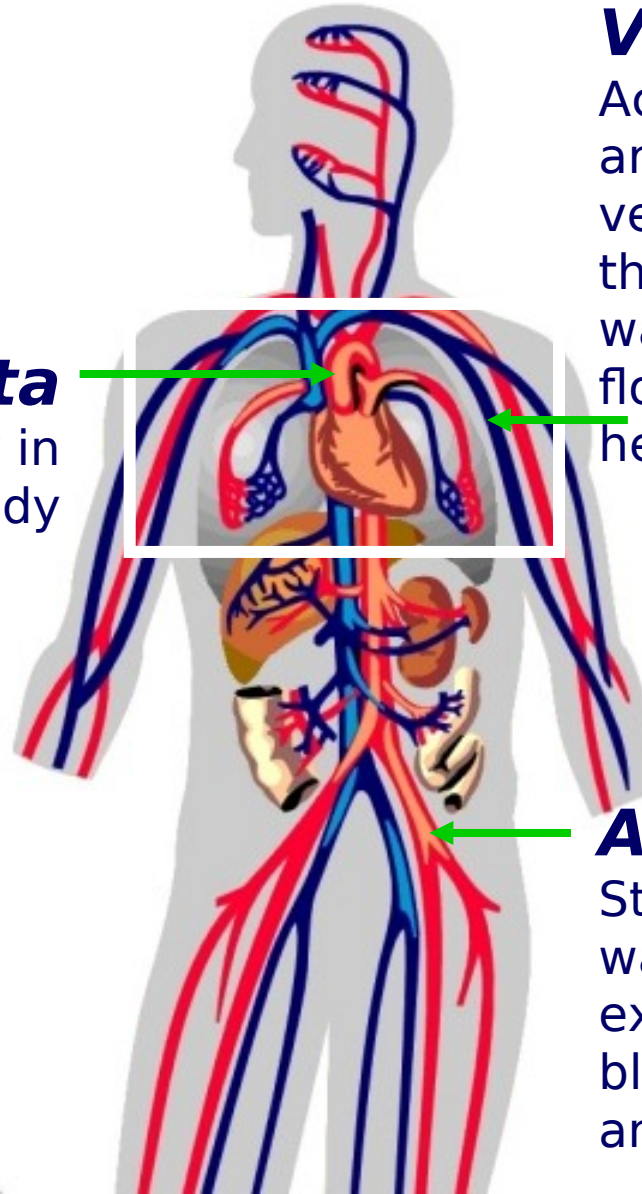
Human Anatomy (revise)

- 1. Trachea**
- 2. Lungs**
- 3. Heart**
- 4. Liver**
- 5. Stomach**
- 6. Pancreas**
- 7. Large intestine**
- 8. Small intestine**



Circulatory System

Aorta
Largest artery in
the body



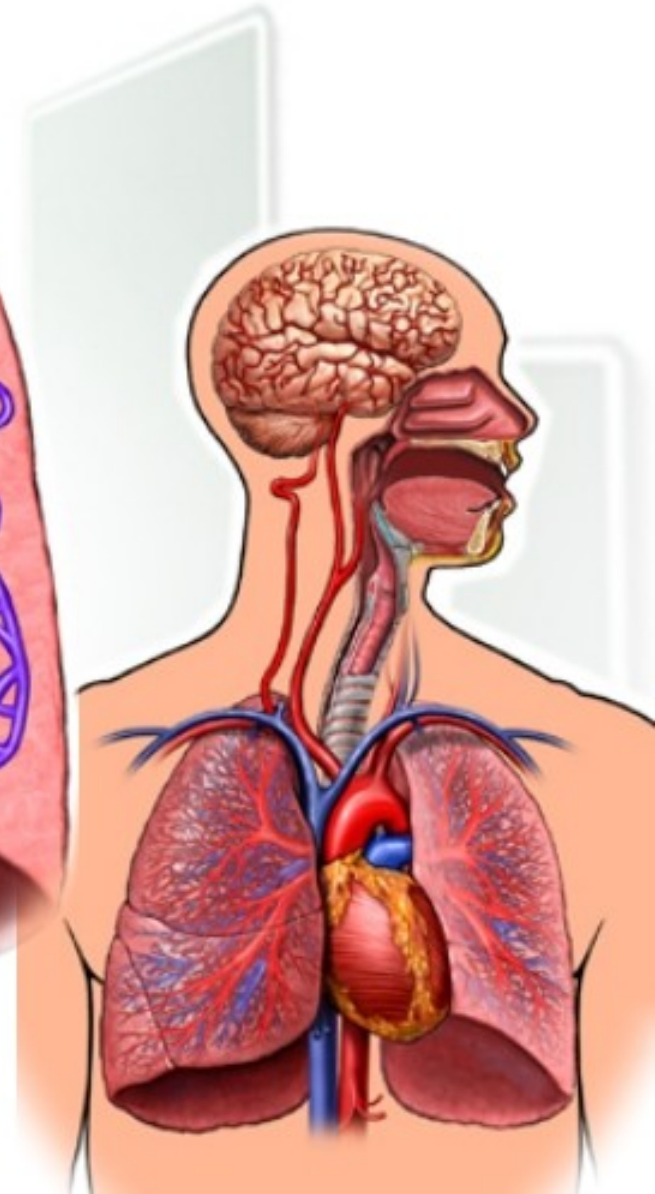
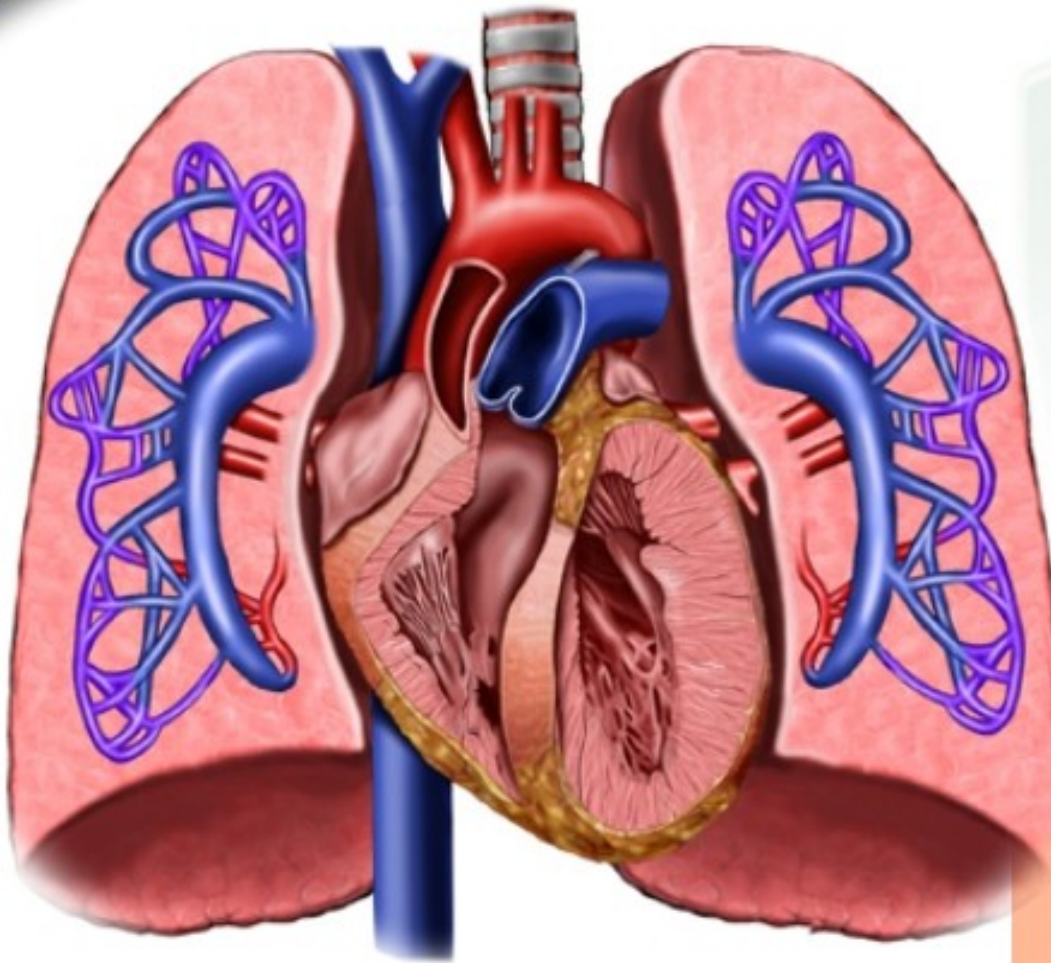
Veins

Action of muscles around these thin walled vessels squeezes blood through them, and one-way valves keep it from flowing back towards the heart

Arteries

Strong muscular, elastic walls enable arteries to expand with each surge of blood away from the heart and towards tissues

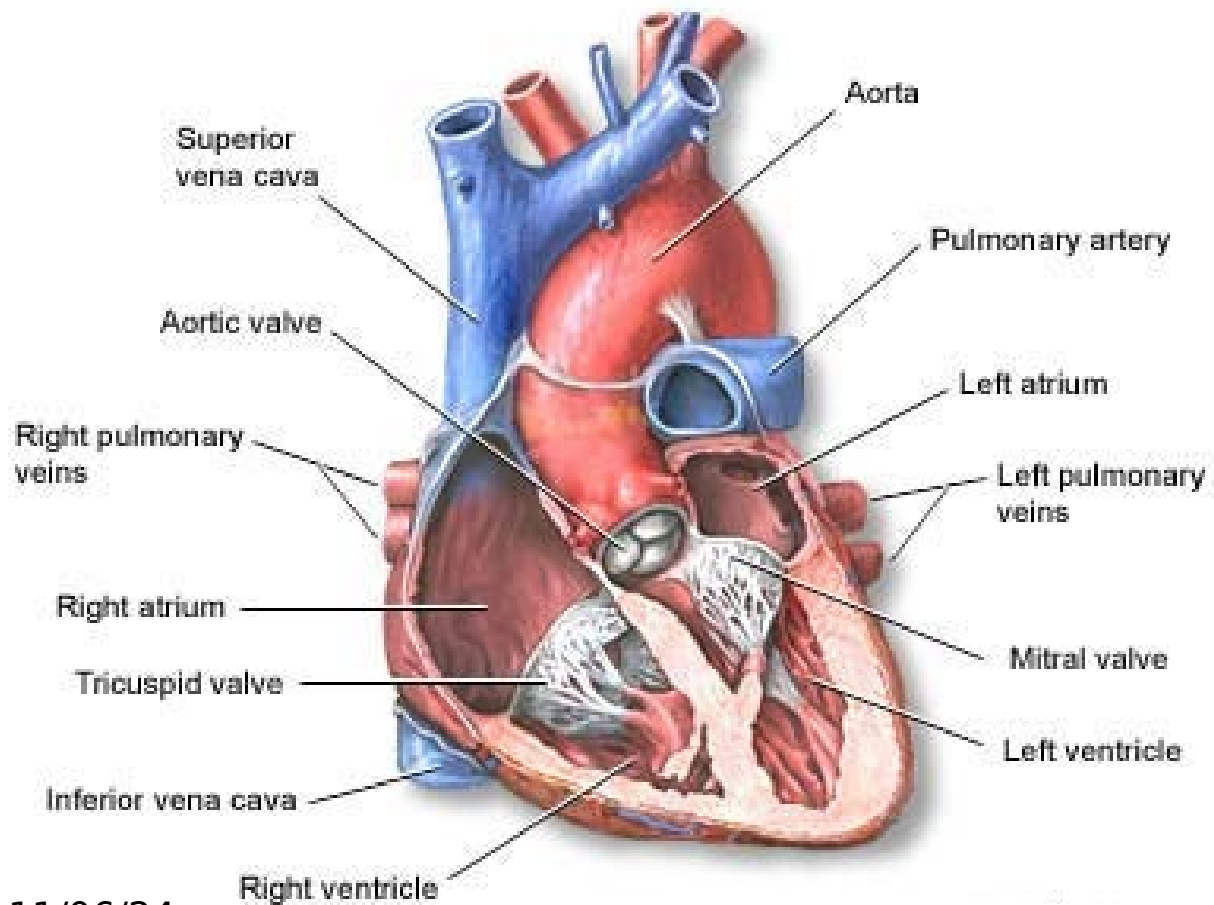
Circulatory System



"Nucleus Communications Inc. www.nucules.com"

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The Heart

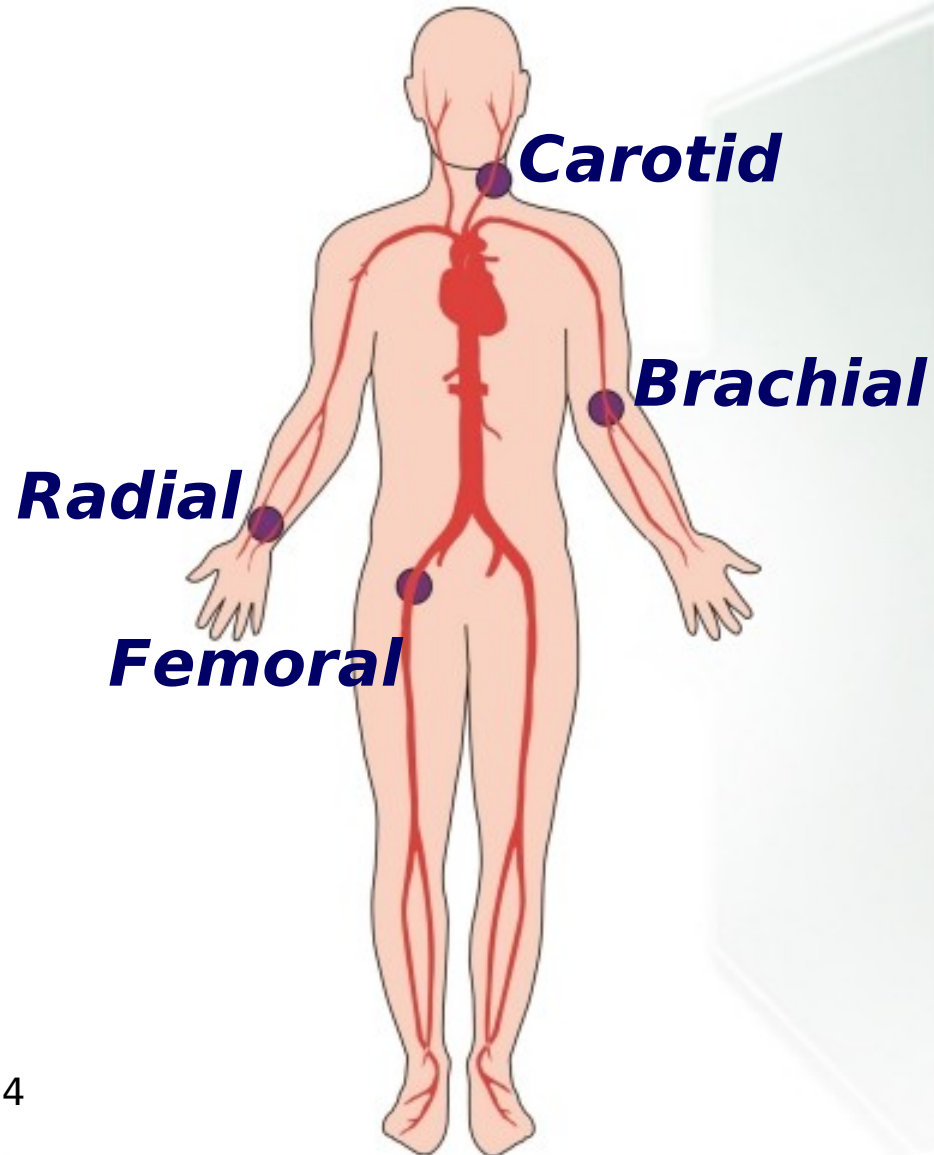


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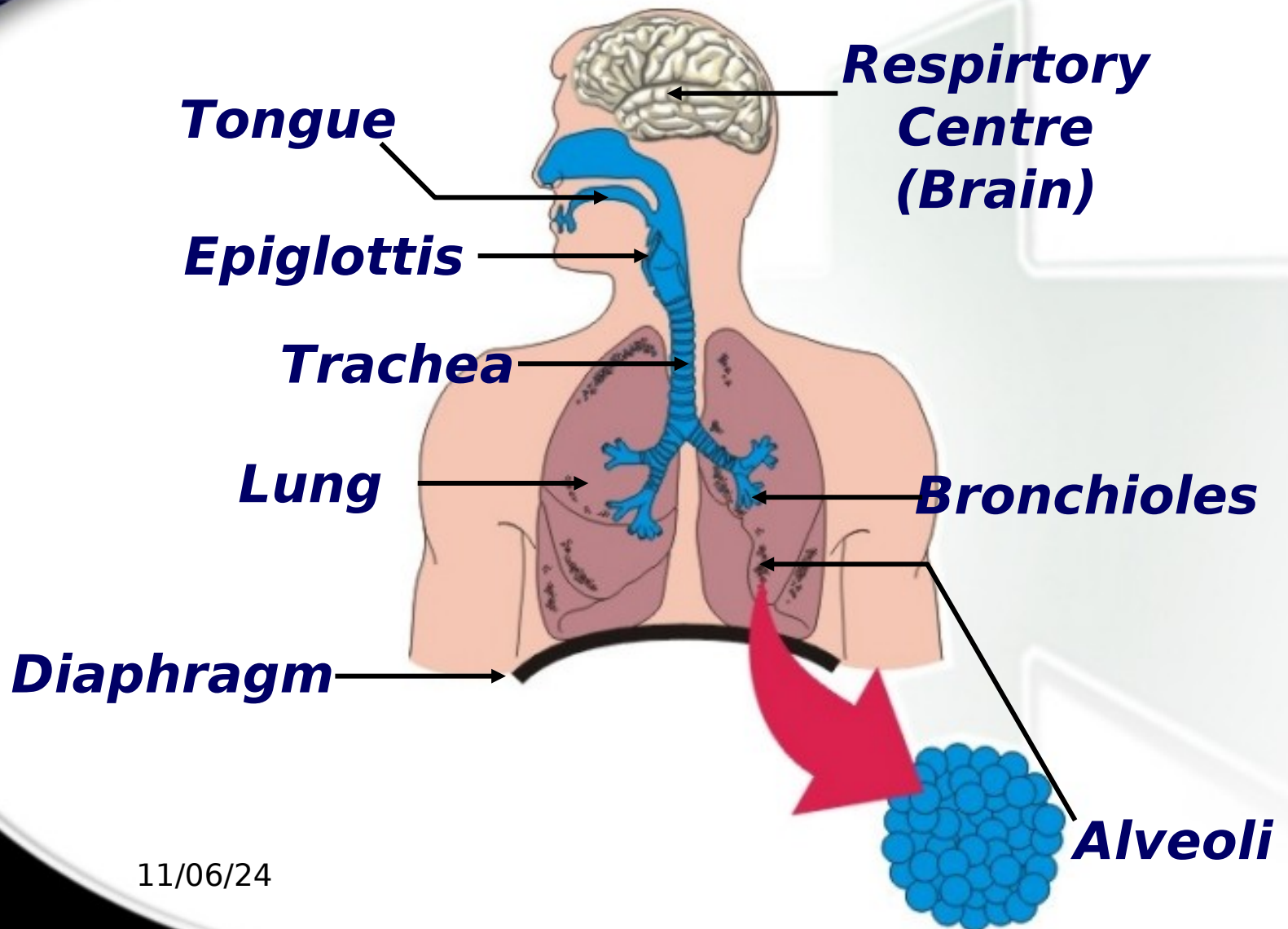
Functions of the Blood

- **Transportation of gases**
- **Nutrition**
- **Regulation**
- **Protection**
- **Excretion**

Pulse Points



The Respiratory System



Define Respiration

Respiration is the exchange of gases, oxygen and carbon dioxide, which takes place in the lungs and cells of the body.

FUNCTION

***Take in oxygen
Remove carbon dioxide***

What is First Aid

- **The treatment given for any injury, or sudden illness before the arrival of an ambulance, doctor or any other qualified person.**

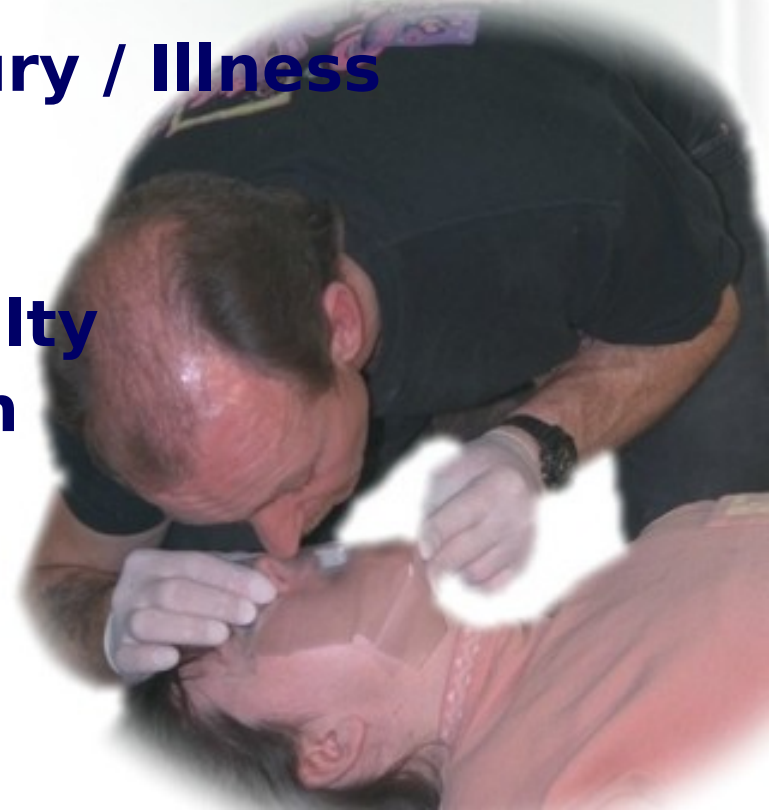


The Aims of First Aid

- To **P**reserve life
- To **P**revent the condition getting worse
- To **P**romote recovery

Responsibilities of First Aider

- **Incident Management** - Assess the situation / get help
- **Casualty Care** - Protect casualty and others from **Danger**
- Assess the casualty
- Identify casualty's injury / Illness
- Provide treatment
- Arrange transport
- Remain with the casualty
- Prevent cross infection



Approach and Action

- **Assess the situation**
- **Telephone for help**
- **Assess any further danger**
 - *Can you cope*
 - *Do you need assistance*
- **Begin Treatment**



Primary Assessment

Danger your present environment/assess your scene/scene size up

Responses of your casualty/assess for response
Airway

Breathing

Circulation

Levels of Response (AVPU)

A**Alert**

responds appropriately / aware of place, person & time

V**Verbal**

responds in some manner to voice

P**Pain**

responds in some manner to painful stimuli

U**Unresponsive**

Does not respond to painful stimuli

A-Airway

- **Before opening the airway (**check**) for any obstructions and remove (**clear**) them if possible**
- **By tilting the head back and lifting the chin forward, the tongue is drawn away (**open**) from the back of the throat.**
- **Jaw thrust to open-Suspected Spinal injuries or patient with unknown cause.**
- **In an unconscious casualties' the tongue may fall back to block the airway.**

OPEN AIRWAY

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B-Breathing Rates

Average Breathing Rates	
Adults	12 - 20 times per minute
Infants and young children	20 - 30 times per minute

Breathing

IF ABSENT BREATHE FOR YOUR CASUALTY !



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Self Protection

***ALWAYS
WEAR GLOVES***

***When dealing with blood
or body fluids***

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Staying Safe during First Aid

- **Blood and Bodily Fluid**
 - ***HIV***
 - ***Hepatitis B***
 - ***Always wear protective gloves and goggles when dealing with blood and body fluids***
- **Environmental Hazards**
 - ***Traffic***
 - ***Electrical Wires***
 - ***Gas Leak***



Emergency Services 339 A.A/use local emergency number

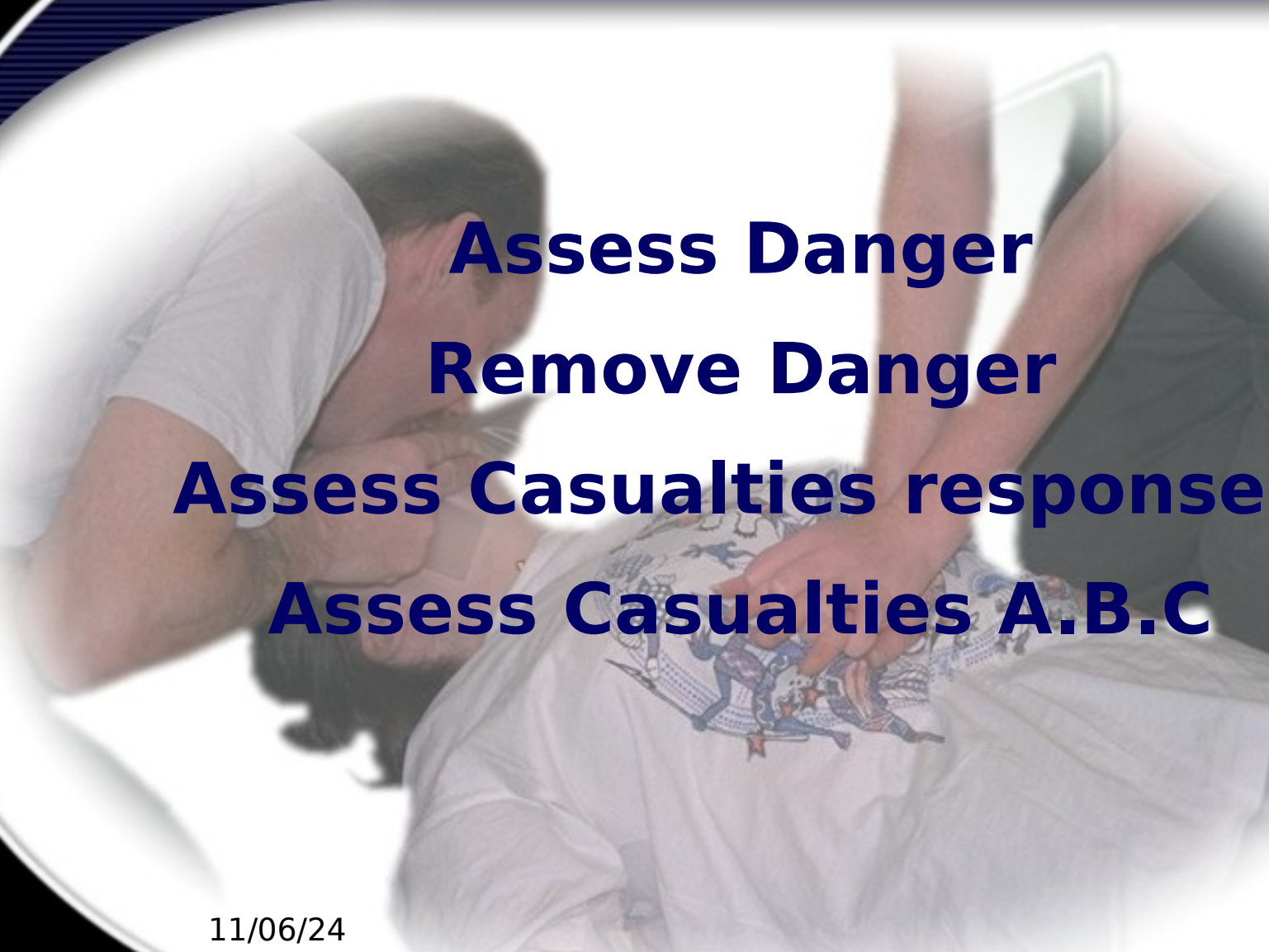
Always Give the Following Information:

- **Name and telephone number**
- **Give exact location**
- **Type of incident**
- **Seriousness of incident**
- **Number of casualties**
- **Condition of casualties**
- **Any hazards**

***DON'T HANG UP THE PHONE UNTIL
YOU ARE TOLD TO DO SO !***



Multiple Casualties

A photograph showing a person lying on their back on a light-colored surface. Another person is leaning over them, performing CPR. The person on the ground is wearing a white t-shirt with a graphic. The person performing CPR is wearing a white t-shirt. The background is a plain, light-colored wall.

Assess Danger
Remove Danger
Assess Casualties responses
Assess Casualties A.B.C

Immediate Care Conditions

- **Lack of Airway**
- **Lack of Breathing**
- **Lack of Pulse**
- **Suspected Spinal Injury**
- **Shock**



Life Threatening Conditions

- **Asphyxia**
- **Massive Bleeding**
- **Cardiac arrest**
- **Shock**



Principles of Resuscitation

- **For life to be sustained,:**
 - *A constant supply of oxygen must be maintained and delivered to the brain and other vital organs by circulating the blood.*
- **The “pump” that maintains this circulation:**
 - *Is the heart. If the heart stops (cardiac arrest) urgent action must be taken if death is to be prevented.*



Rescuer CPR Guidelines

- **Establish that the casualty is unresponsive**
 - *Dial to local emergency or ask for ambulance*
- **Open the Airway**
 - *Head tilt/chin lift or, if trauma is suspected, jaw thrust.*
 - *Check for normal breathing.*
 - *(look, listen, feel)*
- **If normal breathing is absent**
 - *Give 2 slow breaths (2 seconds per breath)*
 - *Ensure adequate chest rise, and allow exhalation between breaths.*

Rescuer CPR Guidelines

- **Check for signs of circulation**
 - *Normal breathing, coughing, or movement in response to the 2 breaths*
 - *If signs of circulation are present but there is no normal breathing, provide rescue breathing*
 - *1 breath every 6 seconds, about 10 breaths per minute*
- **If no signs of circulation are present,**
 - *Begin cycles of 30 chest compressions (≥ 100 compressions per minute) followed by 2 slow breaths*

C-Circulation

**IF NO PULSE PRESENT
COMMENCE CARDIAC MASSAGE
/CHEST COMPRESSION!**



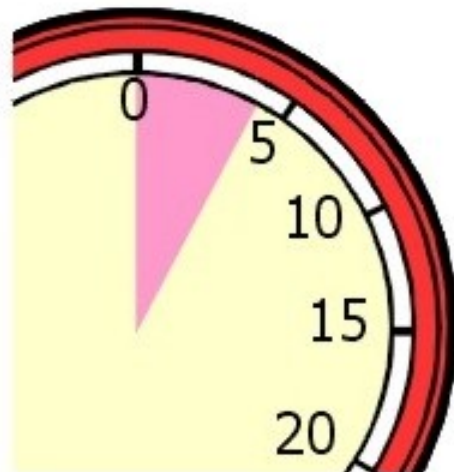
During CPR

- Push hard and fast (100/min)
- Ensure full chest recoil
- Minimize interruptions in chest compressions
- One cycle of CPR: 30 compressions then 2 breaths; 5 cycles $\approx$ 2 min
- Avoid hyperventilation
- Secure airway and confirm placement
- * After an advanced airway is placed, rescuers no longer deliver "cycles" of CPR. Give continuous chest compressions without pauses for breaths. Give 8 to 10 breaths/minute. Check rhythm every 2 minutes
- Rotate compressors every 2 minutes with rhythm checks
- Search for and treat possible contributing factors:
 - Hypovolemia
 - Hypoxia
 - Hydrogen ion (acidosis)
 - Hypo-/hyperkalemia
 - Hypoglycemia
 - Hypothermia
 - Toxins
 - Tamponade, cardiac
 - Tension pneumothorax
 - Thrombosis (coronary or pulmonary)
 - Trauma

Speed is Essential

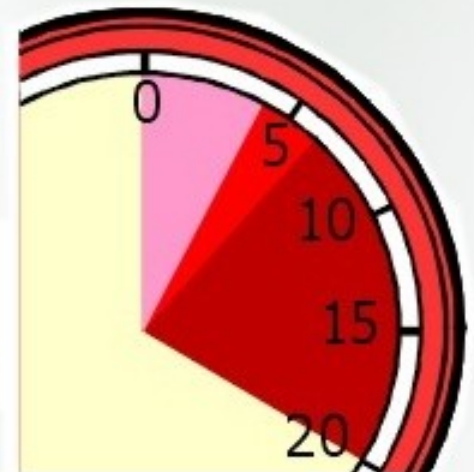
- **CPR if Commenced within 3 Minutes of Arrest can Prevent Permanent Brain Damage**
- **Buys Time to Allow Successful Defibrillation by Trained personnel**

**0-3
Mins**



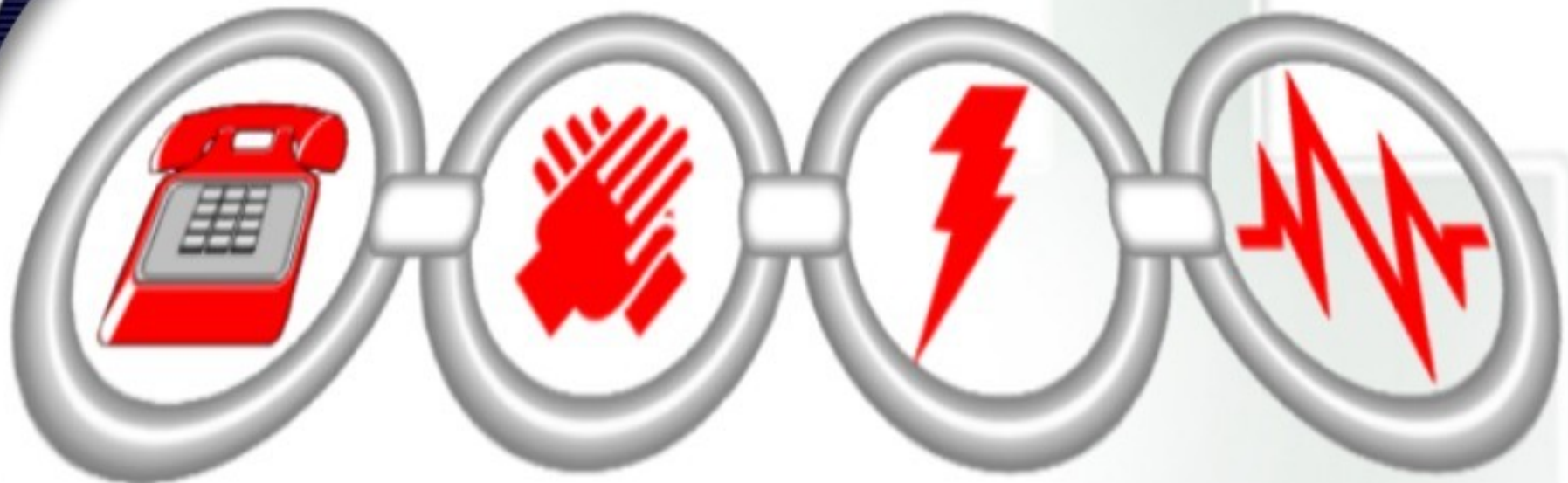
Clinical Death

**4-6
Mins**



Biological Death

The Chain of Survival



**Early
Access**

**Early
CPR**

**Early
Defibrillation**

**Early
Advanced
Cardiac Care**

Making a Diagnosis



Secondary Survey

Monitor Vital Signs

Breathing

Pulse

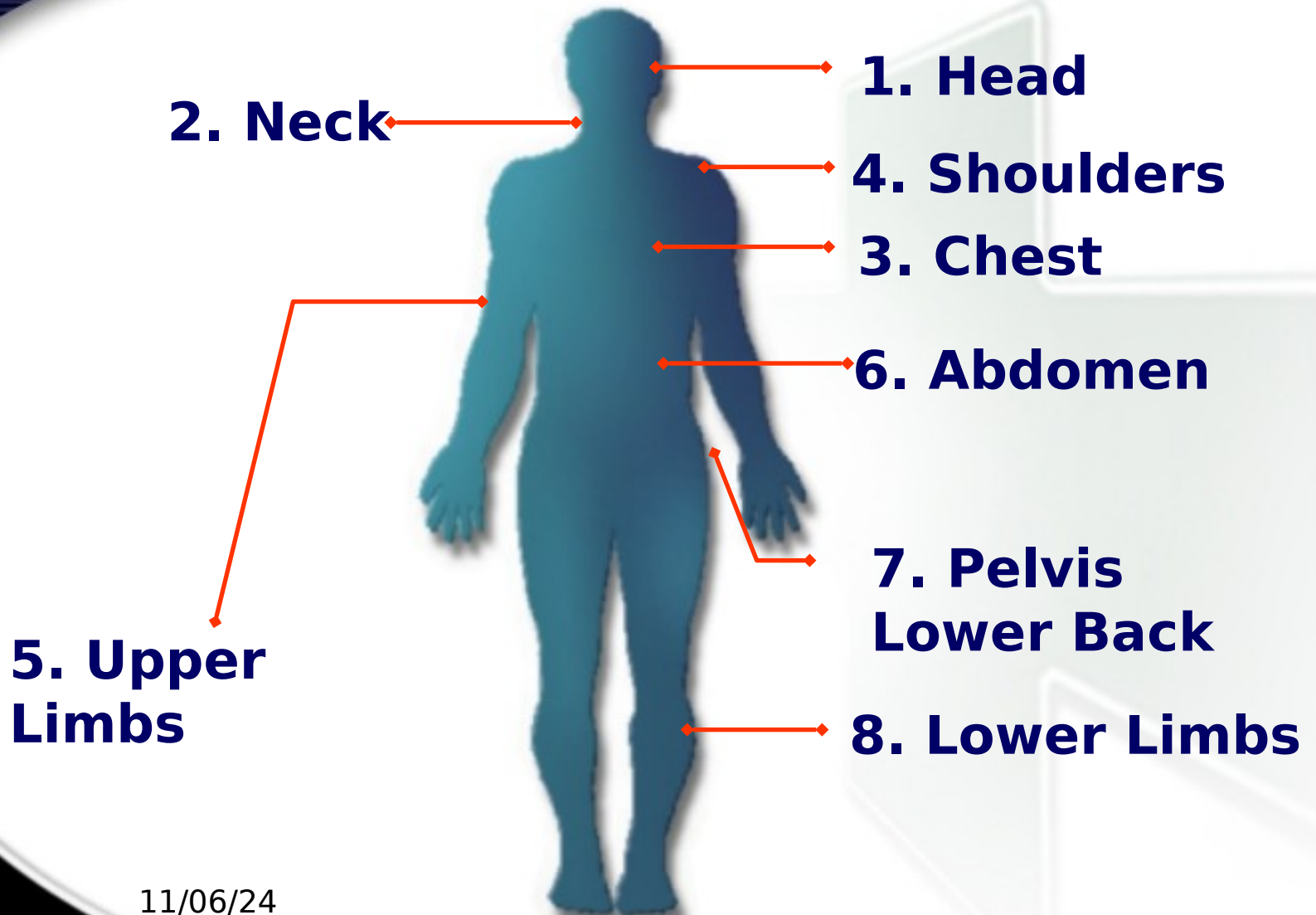
Skin Color

Temperature

Level of response

Complete Top to Toe Survey
Complete Definitive
Treatments

Top to Toe Survey



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Sequence of examination.

External Clues



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If casualty is Unconscious
Look for Clues

Treatment Priorities

- **A B C**
- **Maintain airway (Recovery position)**
- **Bleeding-control**
- **Treat large wounds and burns**
- **Immobilise bone and joint injuries**
- **Other injuries / Conditions**
- **Regularly monitor casualty for ABC**



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Reporting

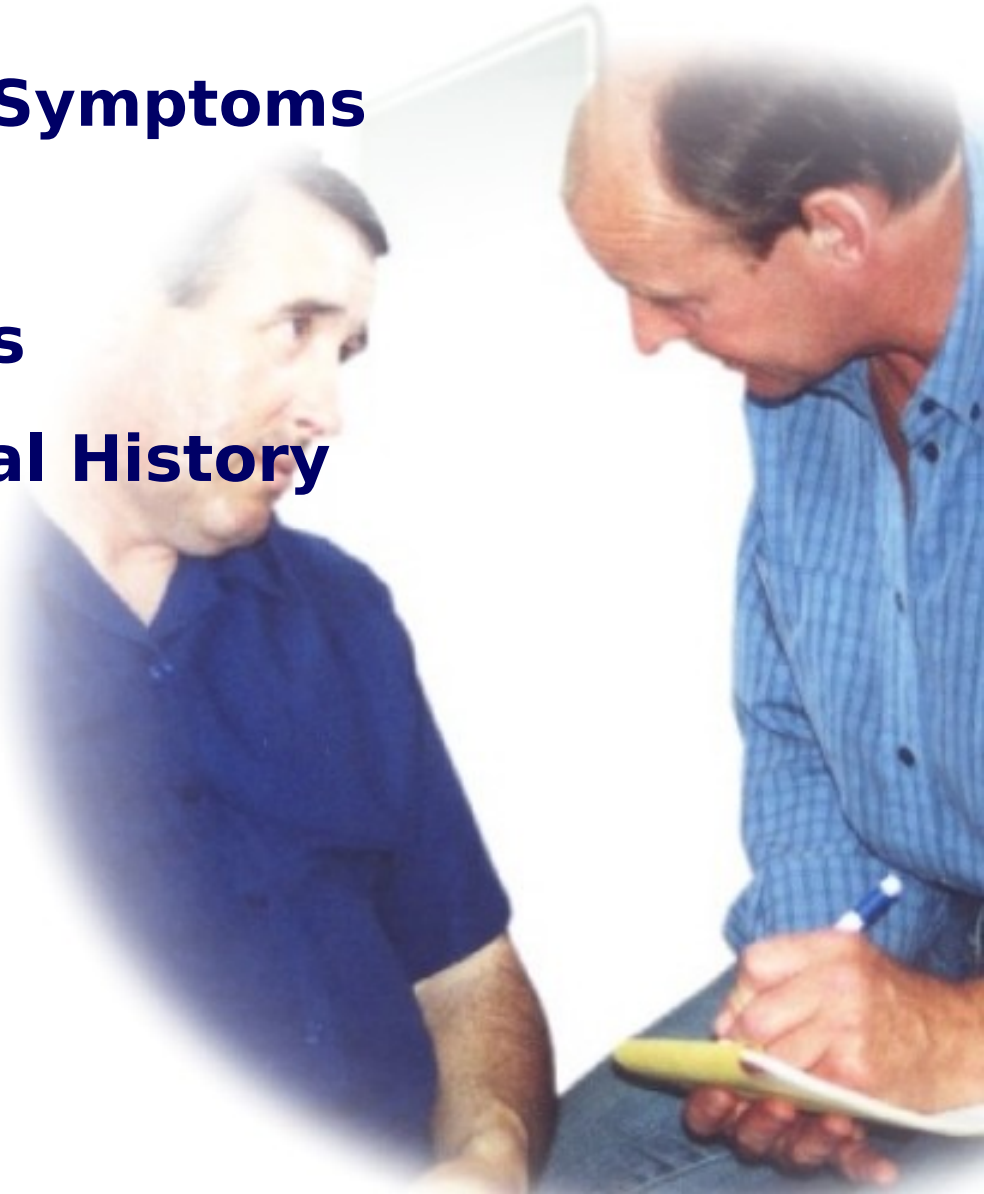
- **Casualty's name**
- **Casualty's address**
- **History of the incident**
- **Description of any injuries**
- **Any unusual behavior**
- **Treatment given**
- **Breathing**
- **Pulse**
- **Response level**

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Patient Interview

- **S** signs and Symptoms
- **A** Allergies
- **M** Medications
- **P** Past Medical History
- **L** Last Meal
- **E** Events



Dressings & Bandages: Uses

- **Dressings**
 - ***Control bleeding***
 - ***Reduce infection***
- **Bandages**
 - ***Direct pressure***
 - ***Securing dressings etc***
 - ***Reduce swelling, support limbs***
 - ***Restrict movement***



Rules for Applying Dressings

- **Wear disposable gloves**
- **If possible, wash hands**
- **Correct size**
- **Place pad directly onto wound**
- **Avoid touching wound**
- **Try not to cough or sneeze**



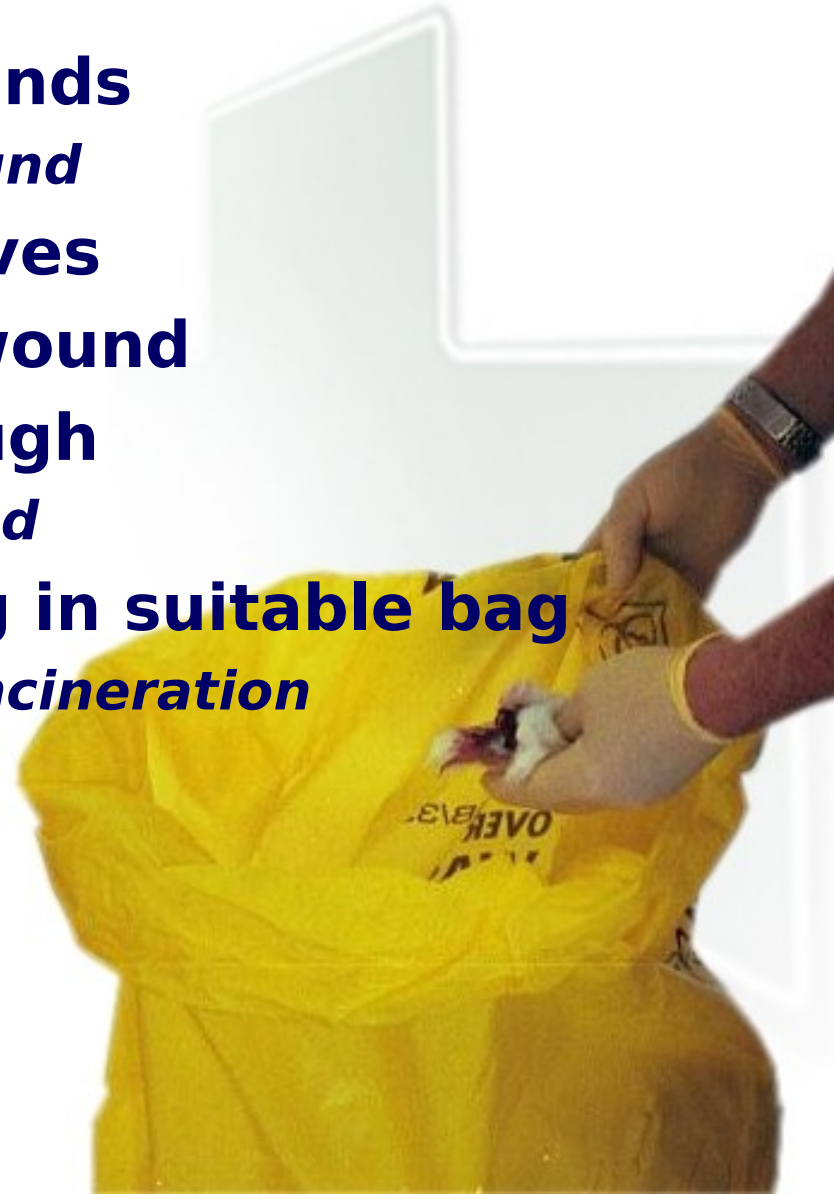
General Rules for Bandaging

- **Explain and reassure**
- **Posture**
- **Support**
- **Your positioning**
 - *Natural hollows*
 - *Apply bandages firmly*
 - *Exposure of digits*
 - *Check circulation*



Preventing Cross Infection

- **Always wash your hands**
 - *Before dressing a wound*
- **Wear disposable gloves**
- **Avoid touching the wound**
- **Do not sneeze or cough**
 - *When treating a wound*
- **Place soiled dressing in suitable bag**
 - *Seal and destroy by incineration*



The Choking Casualty

Recognition

- **Cannot Breathe**
- **Cannot Speak**
- **Cannot Cough**
- **May Clutch Throat**



What to do if a person starts to choke:

1 .If mild obstruction

- **Do a scene survey**
- **Encourage(tell them) to cough force fully**
- **Do not give the person anything to drink because fluids may take up space needed for the passage of air.**
- **Stay with the person and encourage him or her to cough until the obstruction is cleared.**

2. If sever obstruction

- A.abdominal thrusts ("Heimlich maneuver") should be attempted in adults and children older than one year of age,**
- This is a thrust that creates an artificial cough.**
 - It may be forceful enough to clear the airway.**
 - It is the quick, upward & in ward abdominal thrusts force the diaphragm upward very suddenly, making the chest cavity smaller.**
 - This has the effect of rapidly compressing the lungs and forcing air out.**
 - The rush of air out will force out whatever is causing the person to choke.**

How to perform abdominal thrusts

- **Lean the person forward slightly and stand behind him or her**
- **Make a fist with one hand.**
- **Put your arms around the person and grasp your fist with your other hand in the midline just below the ribs.**
- **Support him/her with your one thigh**
- **Make a quick, hard movement inward and upward in an attempt to assist the person in coughing up the object.**
- **This maneuver should be repeated until the person is able to breathe or loses consciousness**



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If the causality become unconscious

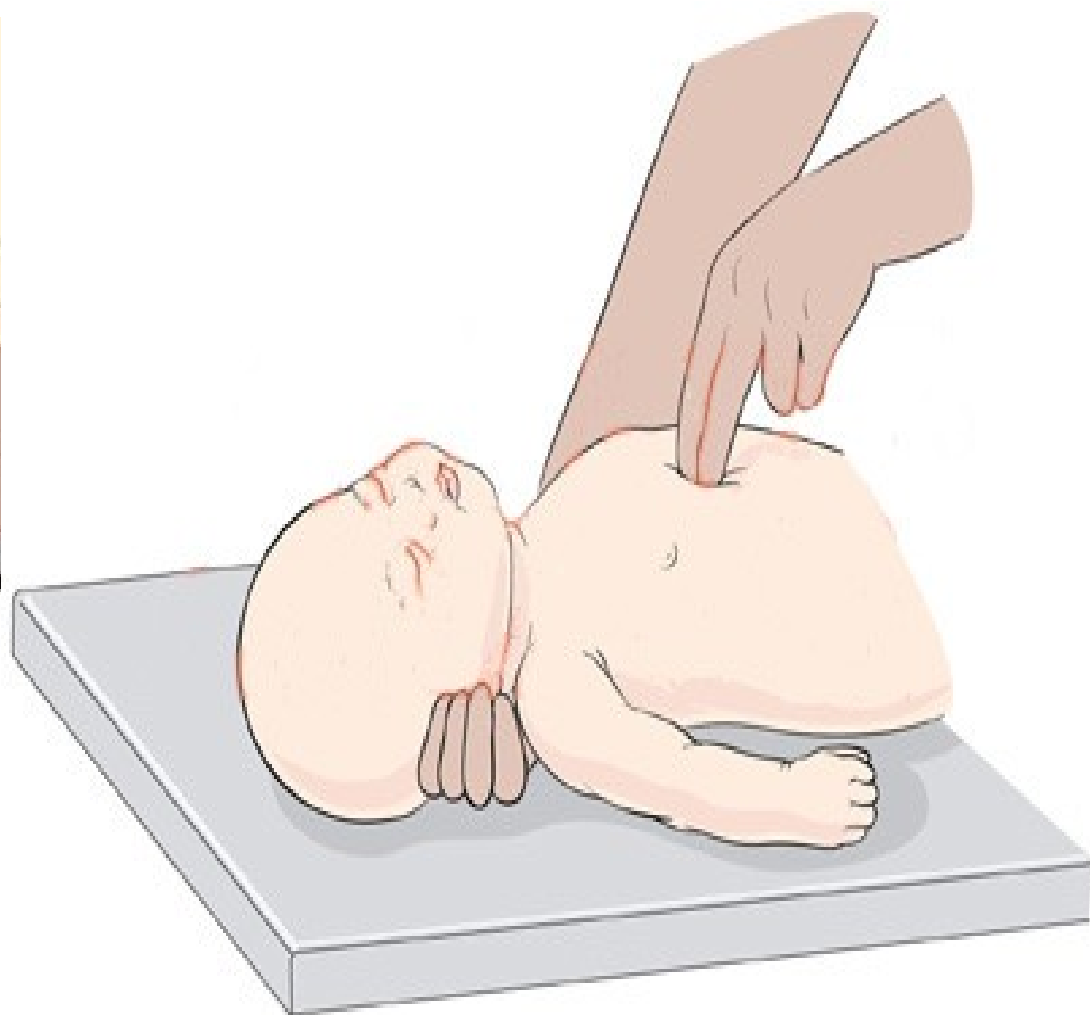
- **Lower them to the ground**
- **Send some one /call /for medical help , ambulance , get AED or defibrillator.**
- **Open the mouth & look for any foreign matter**
- **if you see some thing ,remove it by**
 - **finger sweeping**
 - **McGill forceps**
- **Continue BLS(basic life support) /ABCD/ until :**
 - the obstruction is removed**
 - ALS hands over**
- **Look the mouth for foreign body after 5 cycles of CPR**

B. Baby (Younger Than 1 Year)

- **If the baby can cough or make sounds, let him or her cough to try to get the object out.**
- **If you are worried about the baby's breathing, call .**
- **If a baby can't(breathe, cough, or make sounds), then:**
- **Put the baby facedown on your forearm so the baby's head is lower than his or her chest.**
- **Support the baby's head in your palm, against your thigh.**
- **Don't cover the baby's mouth or twist his or her neck.**
- **Use the heel of one hand to give up to 5 back slaps between the baby's shoulder blades.**

Cont...

- **If the object does not pop out, support the baby's head and turn him or her face up on your thigh.**
- **Keep the baby's head lower than his or her body.**
- **Place 2 or 3 fingers just below the nipple line on the baby's breastbone and**
- **give 5 quick chest thrusts**
- **Keep giving 5 back slaps and 5 chest thrusts until the object comes out or the baby faints/UNCONCIOUS).**
- **If so, continue CPR**



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Variations of abdominal thrusts for special circumstances:

- 1. The victim is seated: incase of disability**
 - The maneuver may be performed with the victim seated.**
 - In this instance, the back of the chair or the wall acts as a support for the victim.**
 - The rescuer still wraps his or her arms around the victim and proceeds as described above.**
 - The rescuer will often have to kneel down.**

cont...

2. For small rescuers and large victims, particularly children rescuing an adult: Instead of standing behind the victim, have the victim lie down on his or her back (supine). Straddle the victim's waist. Place one hand on the belly, halfway between the belly button and the edge of the breastbone. Thrust inward and upward. Or the provider can use his /her hands to provide abdominal thrust.

Cont...

- 3. You are choking and you are alone: You may deliver an abdominal thrust on yourself. This can be done in one of two ways.**
- You can deliver a true "self"-abdominal thrust with your own hands. This is done by positioning your hands in the same fashion as if you were performing the maneuver on another person and delivering an inward and upward thrust.**
 - Another option is to bend your belly over a firm object, such as the back of a chair, and thrust yourself into the object.**
 - You may pass out before you expel the object and before help**

- **Dial 939 Or 907 and leaving the phone line open, where this protocol is followed, you could be ensuring the arrival of rescue personnel in the event your "self"-abdominal thrust fails to clear the foreign body and you do pass out.**
 - **If the dispatcher has no response on an open line, the call must be investigated.**
- 4. Pregnant/obese people: Abdominal thrusts may not be effective in people who are in the later stages of pregnancy or who are obese.**
- **In these instances, chest thrusts can be administered.**
 - **For the conscious person sitting or standing, take the following steps:**
 - **Place your hands under the victim's armpits.**
 - **Wrap your arms around the victim's chest.**
 - **Place the thumb side of your fist on the middle of the breastbone.**
 - **Grab your fist with your other hand and thrust backward. Continue this until the object is expelled or until the person becomes unconscious.**

- 5. For the unconscious pregnant or obese person:**
- The sequence of events is the same as those for an unconscious adult . but in pregnancy slight left side tilting is recommended.**
 - Chest thrusts, rather than abdominal thrusts, are delivered.**
 - To position yourself for chest thrusts, take the following steps:**
 - Kneel on one side of the victim.**
 - Slide two fingers up the bottom edge of the rib cage until you reach the bottom edge of the breastbone called the xiphoid process.**

- **With your two fingers on the xiphoid , place your other hand on the breastbone, just above your fingers. The thrusts should be quick and forceful to remove the object.**
- **Care should be taken because complications such as rib fractures and heart muscle damage have been known to occur with chest thrusts.**
- **If at all possible, sub diaphragmatic (below the ribcage) abdominal thrusts should be used in the pregnant woman, especially if there is still room between the enlarging uterus and baby, and the rib cage to perform the maneuver.**

Treatment for Asthma

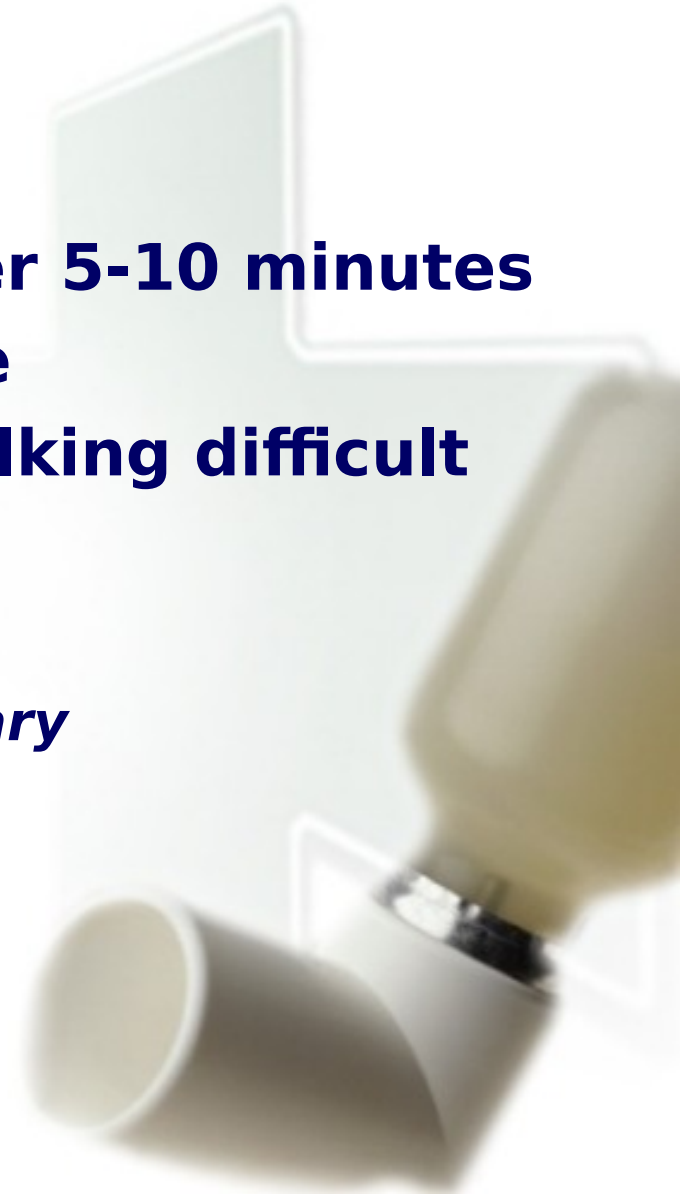
- **Ensure A, B, C**
- **Reassure the patient.**
- **Position patient up-right**
 - *Leaning forward.*
- **Ensure a good air supply.**
- **Monitor vital signs.**
- **Assist with medication.**
- **999?**



Medical Assistance for Asthma

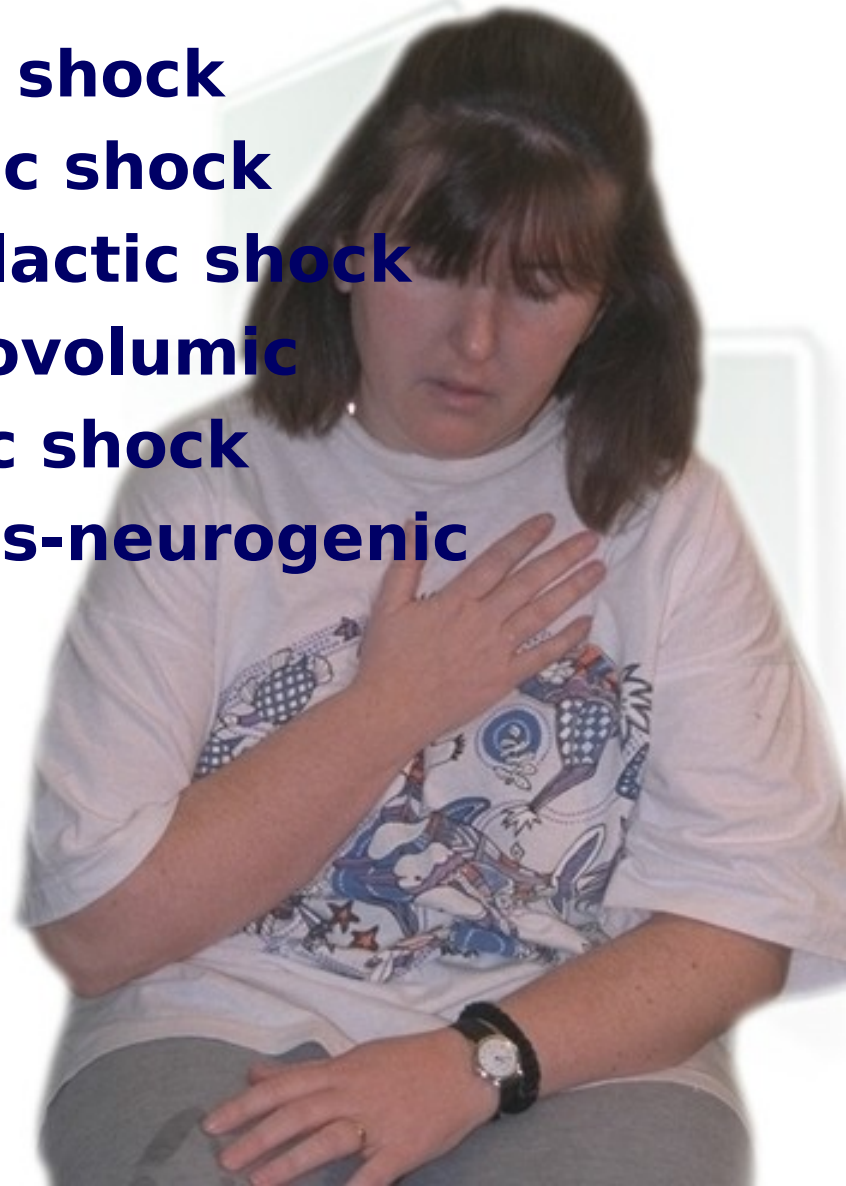
Seek medical assistance if:

- First attack or is severe
- Inhaler has no effect after 5-10 minutes
- Casualty is getting worse
- Breathlessness makes talking difficult
- Exhaustion
- Unconsciousness
 - *ABC, Resuscitate if necessary*



Causes of Shock

- **Blood loss-hemorrhagic shock**
- **Heart attack-cardiogenic shock**
- **Allergic reaction-anaphylactic shock**
- **Loss of body fluids-hypovolumic**
- **Massive infection-septic shock**
- **Damage to spinal nerves-neurogenic (spinal)**



Shock - First Signs

RECOGNITION:(adrenaline causes)

- **Rapid pulse**
- **Pale gray skin**
- **Cold clammy skin**
- **Sweating**



Treatment for Shock



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Causes of Fainting

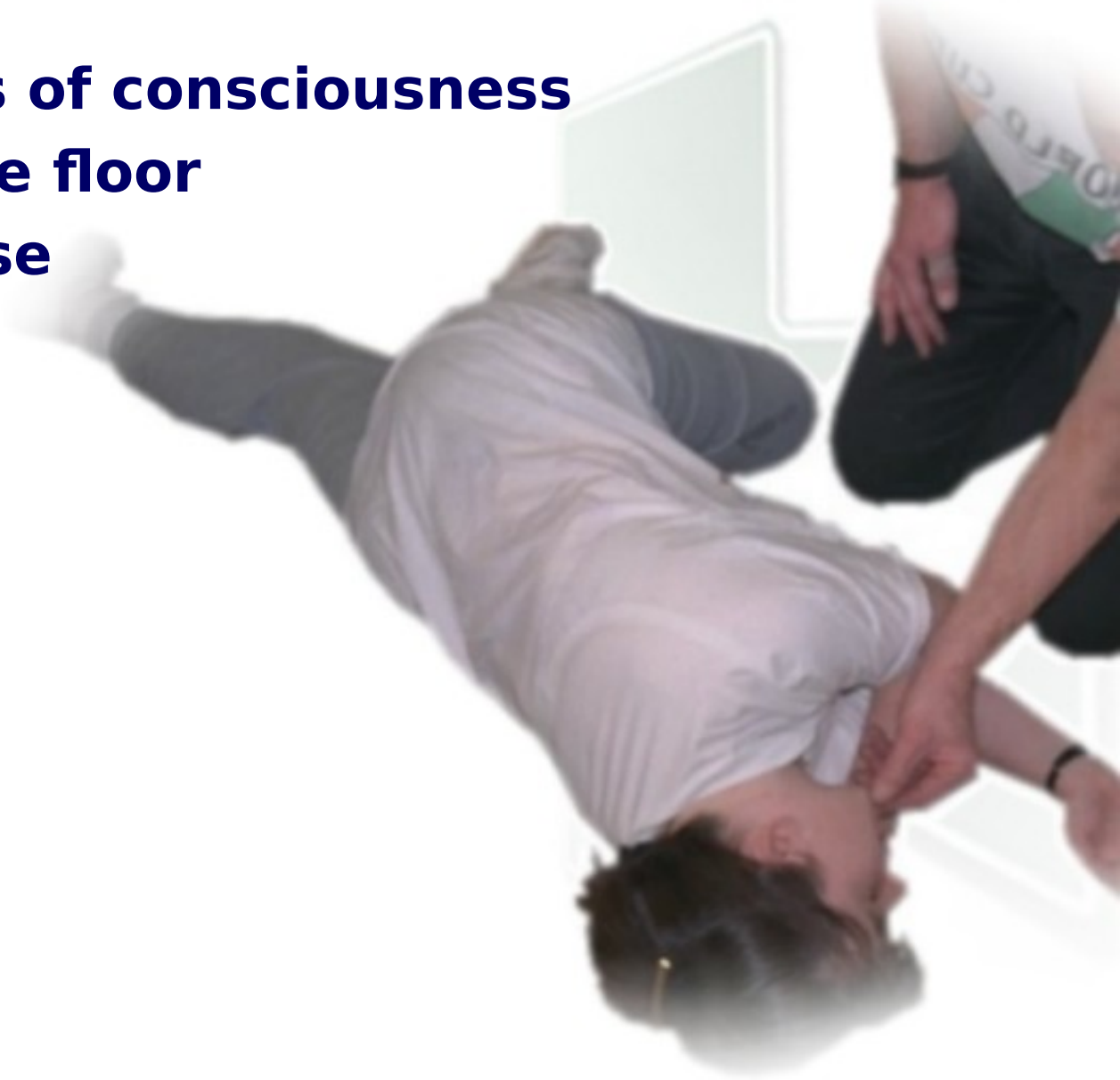
- **Temporary reduction of blood flow to the brain**
- **Reaction to pain or fright**
- **Emotional upset**
- **Exhaustion**
- **Lack of food**
- **Long periods of standing**

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Recognition of Fainting

- **Brief loss of consciousness**
- **Fall to the floor**
- **Slow pulse**
- **Pallor**



Treatment for Fainting

- **Raise and support lower limbs**
- **Fresh air, open window**
- **As they recover reassure casualty**
- **Assist casualty to sit up**
- **Treat any injuries**

**If unconsciousness persists
Call for the ambulance**

Anaphylactic Shock



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Anaphylactic Shock

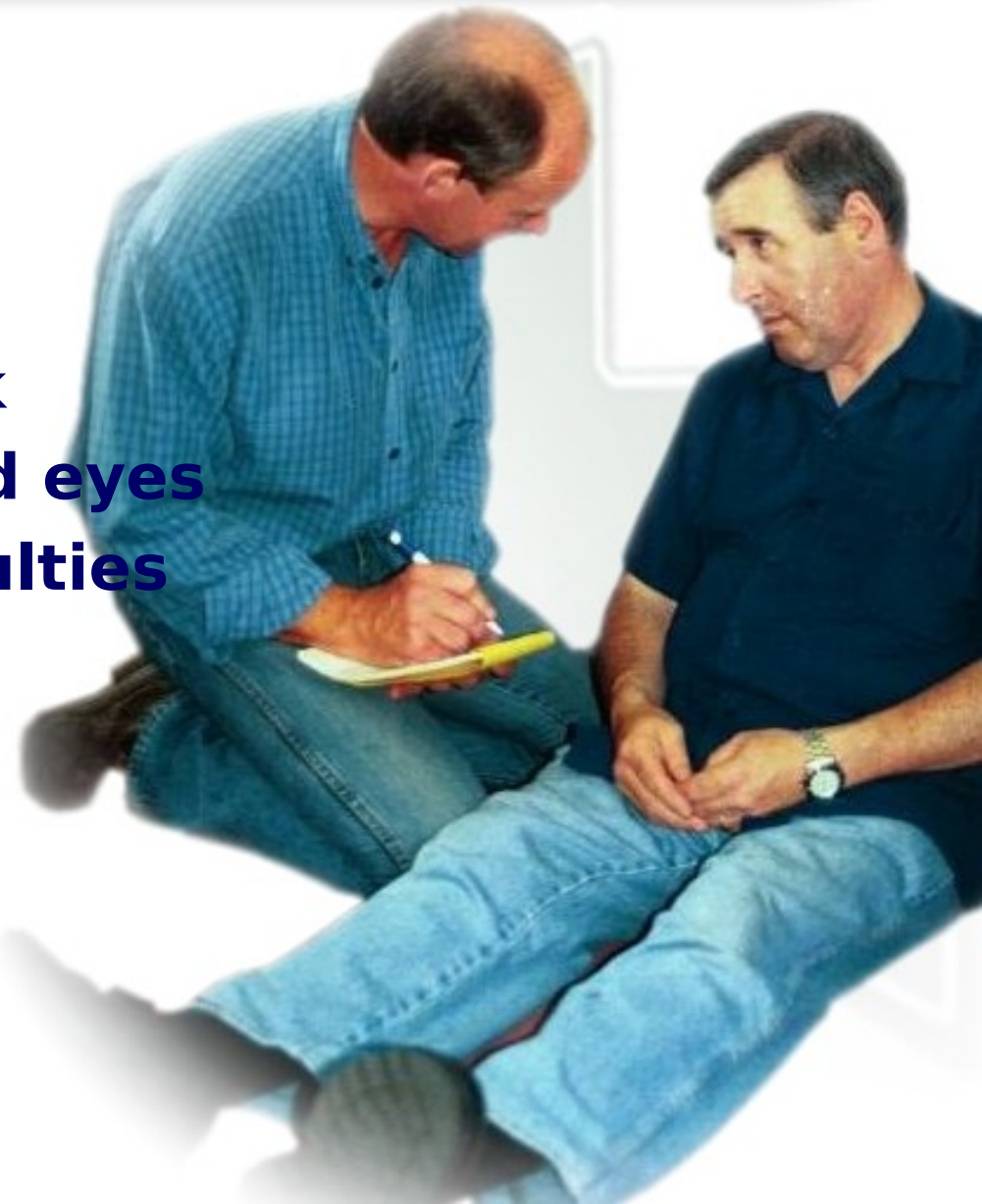
The name given to a major Allergic reaction within the body;

Causes:

- **Specific drugs**
- **Stings**
- **Ingestion of certain foods (peanuts)**
- **Chemical released into the blood stream causing the blood vessels to dilate thus restricting the airway.**

Severe Allergies

- **Anxiety**
- **Blotchy skin**
- **Swelling of face**
- **Swelling of neck**
- **Puffiness around eyes**
- **Breathing difficulties**
- **Rapid pulse**



Treatment of Severe Allergies

- Relieve Breathing
- Epi-pen

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Heart Attack Treatment

Your aims are;

- **Make casualty comfortable**
- **Phone for ambulance**
- **Monitor vital signs**
- **Reassure**
- **Prepare to resuscitate if necessary**



First aid priorities

- **Control blood loss**
 - *Pressure, Elevation*
- **Minimise shock**
- **Protect from infection**
- **Hospital**

The nature of the wounding force determines the type of wound and influences its treatment.

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Types of Bleeding

- **Arterial**
- **Venous**
- **Capillary**

Always

***wear protective gloves
and goggles when
dealing with blood and
body fluids***



Bleeding is the escaping of blood from the blood vessels .

CLASIFICATION

A. Internal bleeding, into :

peritoneal cavity

Pleural cavity

Closed broken bone into tissue

B. External bleeding which is much easier to diagnose and stop.

Bleeding can be: -

:-arterial bleeding in which the blood is **bright red & spurts with each heart beat .It is serious & often hard to control.**

:-Venous bleeding, in which the blood is **dark red, & flow more steadily, it is easier to stop than arterial bleeding.**

- **The most obvious sign of external bleeding is blood.**
 - **Depends on the amount of blood loss**
 - **Severe blood loss will result in S/S of shock:**
 - **pale, cool & clammy skin**
 - **Rapid pulse, gradually becoming weaker**
 - **fainting, dizziness, thirst & nausea.**
 - **restlessness, & apprehension(anxiety, worry, fear)**
- Shallow breathing, yawning, gasping**

- **The body has natural defenses against bleeding. Damaged blood vessels constricts to reduce blood flow. (vascular phase)**
- **Blood will clot as it is exposed to air, forming a seal at the wound. (platelet phase)**
- **Even so, the first aider should try to stop all bleeding as soon as possible, following ABC priorities.**

1. Direct pressure application

Press a large dressing firmly over wound and wait five minutes

- . If bleeding stops be thankful and roll of bandage tied firmly in places**



2. Elevation: If a patients limb is bleeding raise it.

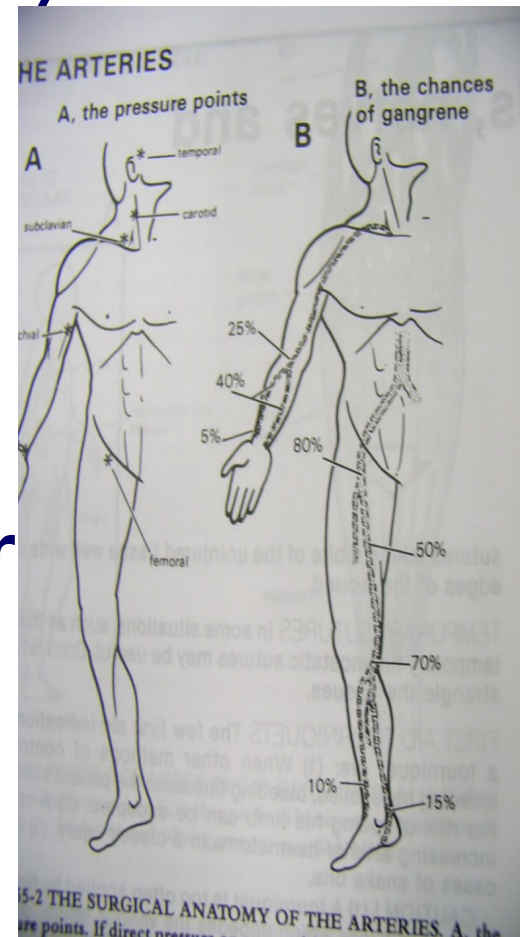
This will usually control venous bleeding



3. Pressure points compression / *Pressing the major arteries to the bone* /

- The patient's carotid artery against the transverse process of his 6th cervical vertebra
- temporal artery against his skull just in front of his ear
- subclavian artery against his first rib
- brachial artery against the middle of his humerus
- femoral artery over his mid inguinal point

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4. Packing

- Use this to control deep inaccessible bleeding when the above methods fail**
- Pack the wound with broad strips of folded gauze**
- If necessary hold it in place with deep sutures taking a bite of the un injured tissue well wide of the edges of the wound**

5. Temporary sutures

6. *tourniquets*

- Indications

= When other methods of controlling bleeding have failed (bleeding threatens the patients life and the risk of losing his limb can be accepted)

= A rapidly increasing arterial haematoma in a closed injury Caution

➤ A tourniquet

- should not be too tight**
- It must be supervised and released every 15- 20m**
- the site should be exposed**

prevention of contamination & infection

- **Wash your hands with soap & water & puts on gloves if available.**
- **Avoid breathing or blowing on wound**
 - *Irrigate under running water/saline*
 - *Irrigate wound for 5 minutes or until no foreign matter in wound*
 - *Pat area dry, apply sterile dressing, bandage*
- **Prevent contamination with dressing/bandage**
- **Following sterile technique**
- **Do not attempt to remove clothing stuck to wound**
 - *Cut around clothing and leave in place*
- **Do not scrub wound.**

Wound Types

Contusion



Laceration



Incised



Puncture



Bleeding Control

Pressure

Elevation

Shock

Infection

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Internal Bleeding

- **Bruising / Rigid abdomen**
- **Tender abdomen**
- **Guarding stomach**
- **Symptoms of shock**
- **Bleeding from orifices**



Internal Bleeding

- **Lungs**
- **Stomach**
- **Kidneys**
- **Upper / Lower Bowel**
- **Fractured base of skull**



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Treatment - Internal Bleeding

- **A, B, C**
- **Treat for shock**
 - *Elevate lower limbs if possible*
 - *Place in the recovery position if patient becomes unconscious*
 - *Reassure*
 - *Monitor vital signs*
 - *Urgent removal to hospital*



Scalp & Head Wounds

Treatment;

- **Displace skin flaps** (Split wounds)
- **Apply direct pressure** (Sterile dressing, secure)
- **Lay casualty down slightly raised head & shoulders**
- **Unconscious ABC** (Recovery position)

Lots of blood, Possible underlying injury

Minor Wounds

- **Minor wounds may need medical help**
 - *Dog bite,*
 - *Infected*
 - *Embedded object etc.*
- **Minor bleeding**
- **Foreign bodies**
- **Bruises**

HYGIENE

Bleeding from Orifices

- **Mouth**
- **Ear**
- **Nose**
- **Anus**
- **Urethra**
- **Vagina**



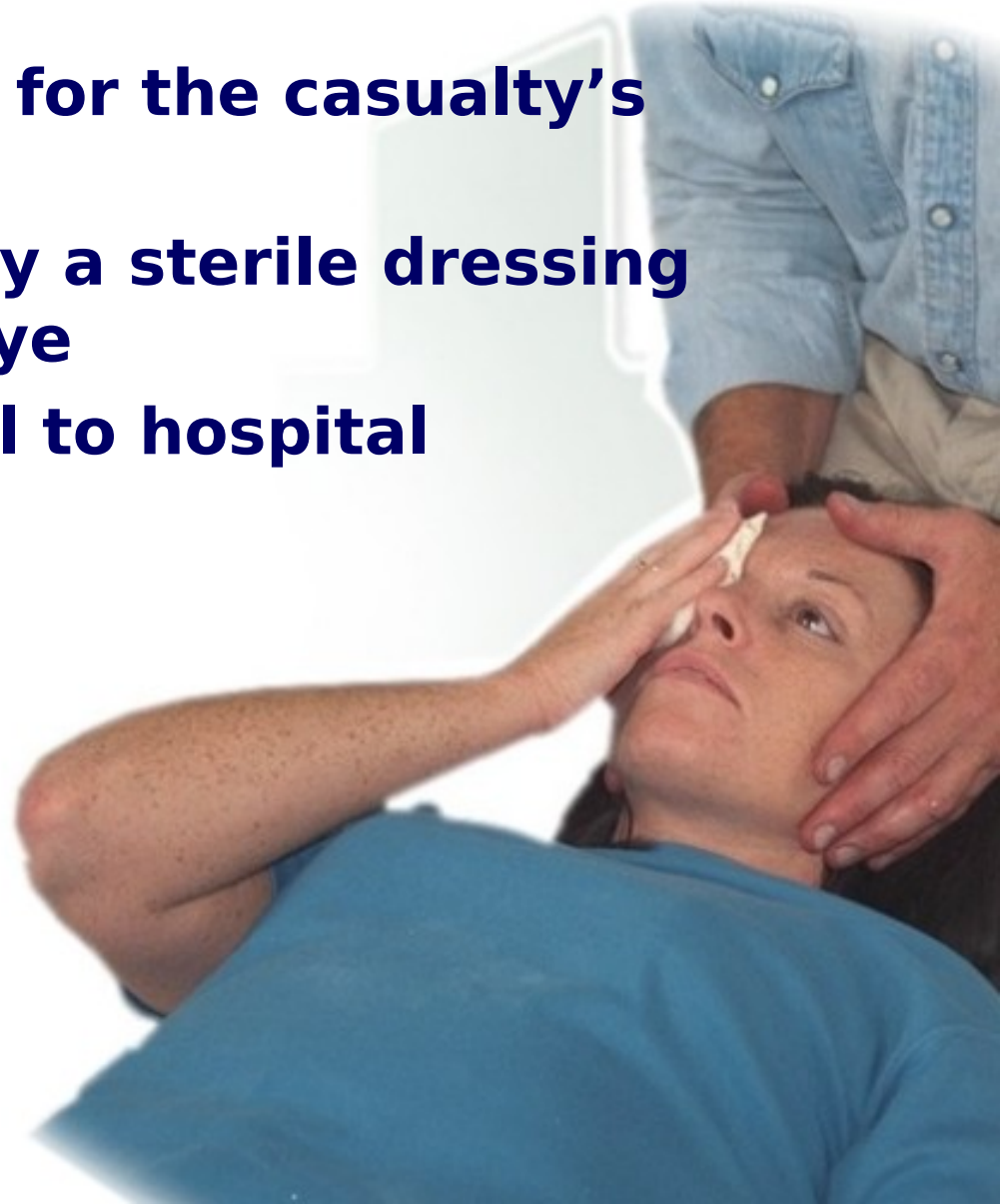
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Various Injuries

- **Palm wounds**
- **Bleeding varicose veins**
- **Wounds at joint creases**

Eye Injury

- **Provide support for the casualty's head**
- **Give the casualty a sterile dressing to hold on the eye**
- **Arrange removal to hospital**



Injury may result in:

- **perforation of eardrum**
- **Toning of tissue of the ear**
 - ✓ ***Apply sterile dressings with light pressure to control bleeding***
 - ✓ ***Save any torn tissue***
 - ✓ **Keep tissue cool and moist with sterile water or sterile normal saline**
 - ✓ **Send tissue to medical facility with victim**
- ***Keep victim lying flat , raise head***

- ***Place sterile gauze loosely in outer canal***
 - ***Do not put any liquids into the ear***
- **Obtain medical help immediately**
- **Clear fluid or blood- stained fluid draining from ear:**
 - ***Can be a sign of a skull or brain injury***
 - ✓ Allow fluid to flow from the ear
 - ✓ If possible turn victim on injured side
 - ✓ Elevate head and shoulders to allow fluid to drain
 - ***Obtain medical help immediately***

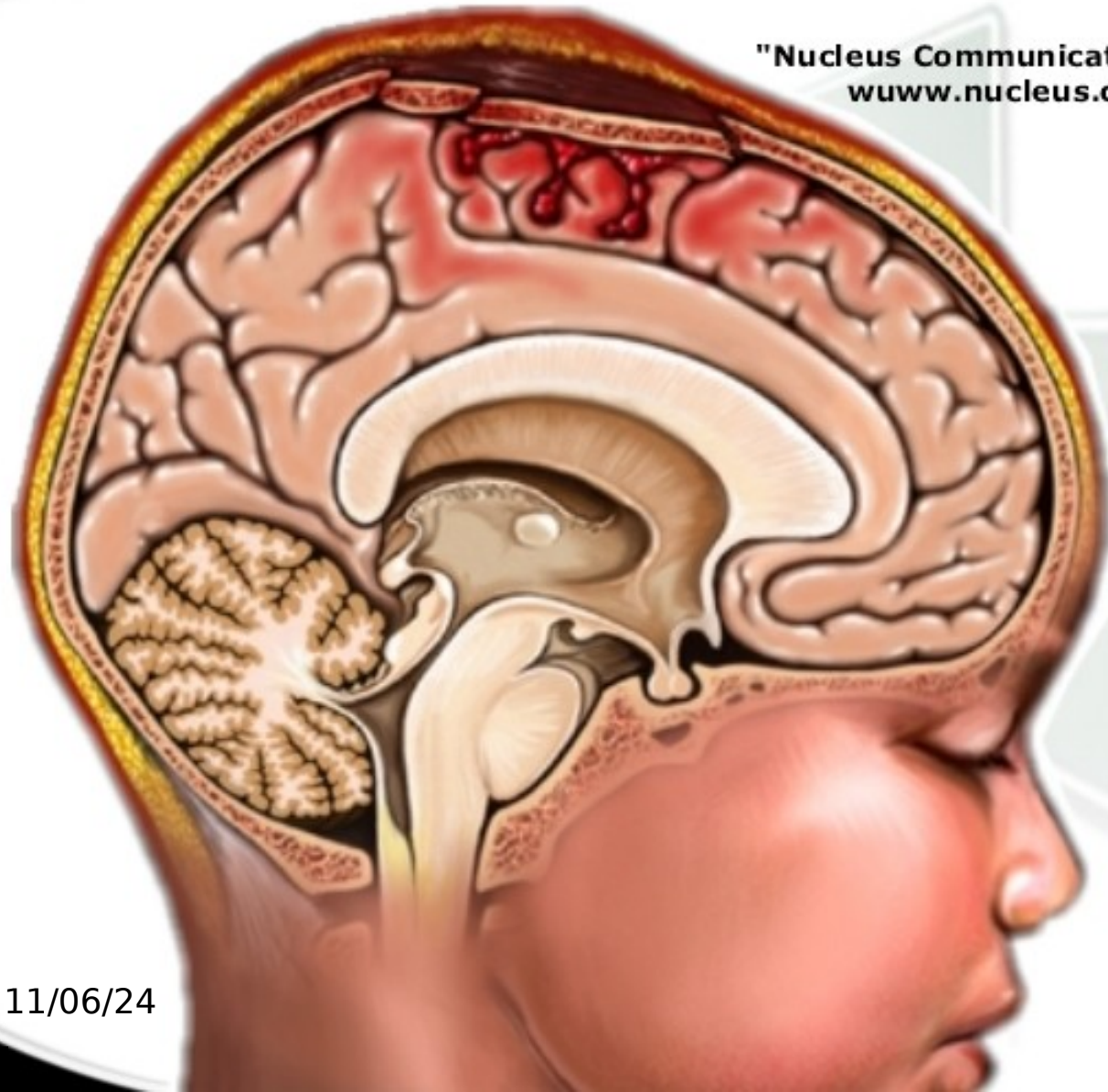
Types of Head Injury

All Head Injuries Are Serious;

- **Wounds to the scalp**
- **Fracture of the skull**
- **Concussion**
- **Cerebral compression**

Fractured Skull

"Nucleus Communications Inc.
www.nucleus.com



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Recognition of Concussion

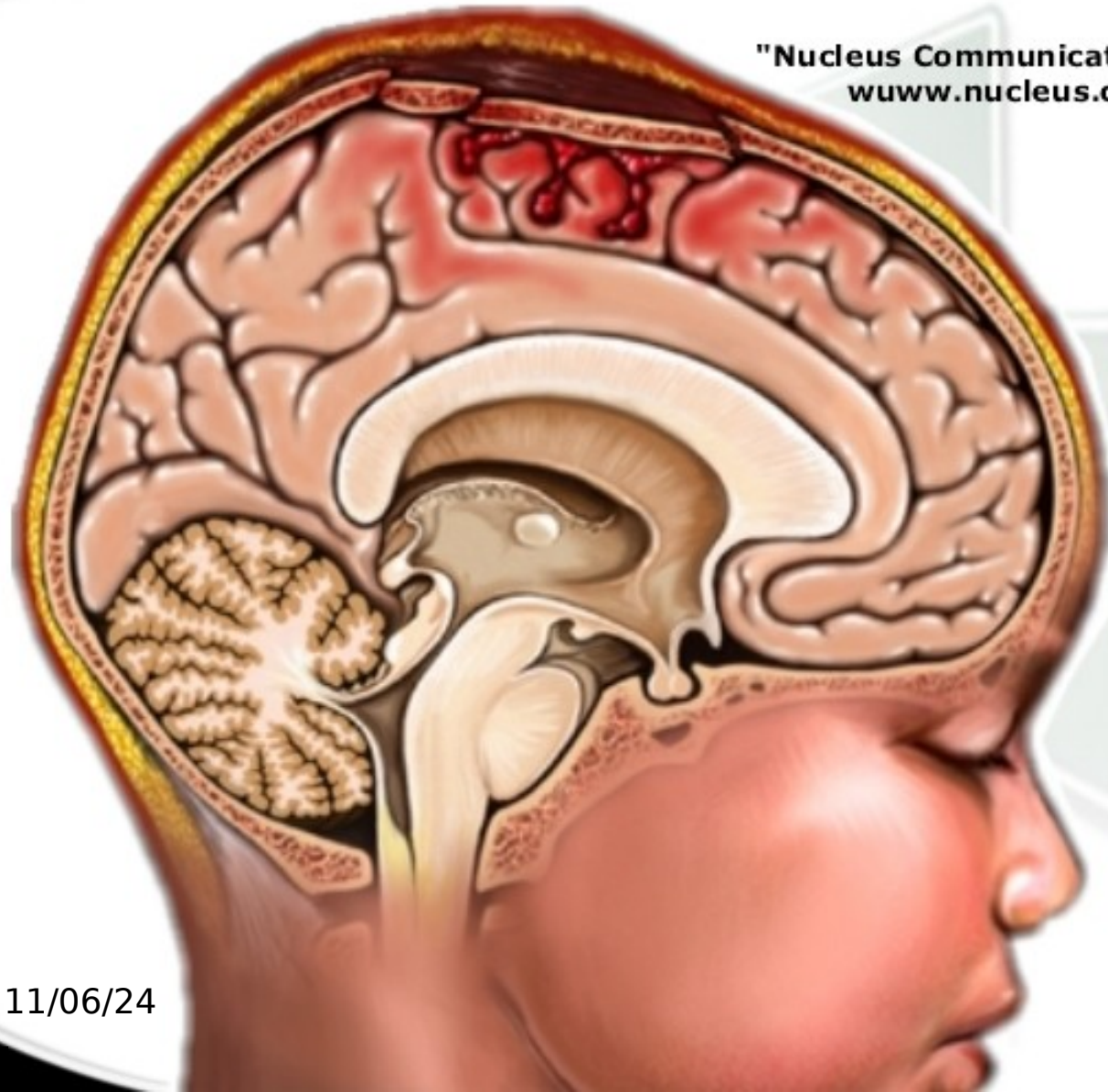
- **Brief or partial loss of consciousness**
- **Nausea,**
- **Dizziness on recover**
- **Memory loss**

Cerebral Compression

- **Noisy slow respiration's**
- **Slow, full and bounding pulse**
- **Flushed face**
- **Diminished level of response**
 - *going into unconsciousness*
- **Unequal or dilated pupils**
- **Intense headache**

Fractured Skull

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Causes of Unconsciousness

F Fainting

I Infantile convulsion

S Shock

H Head injury

S Stroke

H Heart Attack

A Asphyxia

P Poison

E Epileptic Fit

D Diabetes

CHEST TRAUMA

INITIAL MANAGEMENT- ABC of life

- PRIMARY SURVEY
 - *Identify & treat immediately life threatening conditions*



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CHEST INJURIES

Six fatal thoracic injuries

- ❖ **Airway obstruction**
- ❖ **Tension pneumothorax**
- ❖ **Open pneumothorax**
- ❖ **Massive haemothorax**
- ❖ **Flail chest**
- ❖ **Cardiac tamponade.**

Laryngeotracheal Injury

- **Rare**
- **Hoarseness**
- **Subcutaneous emphysema**
- **Manage in the primary survey as soon as possible**
 - **Intubate cautiously**
 - **Tracheostomy**

Tension Pneumothorax

- **Air enters the pleural space but cannot leave**
- **Intrathoracic pressure $\uparrow$**
- **Mediastinal shift**
- ∇ **$\downarrow$ venous return + $\downarrow$ cardiac output**
- **Respiratory distress and hypoxia**

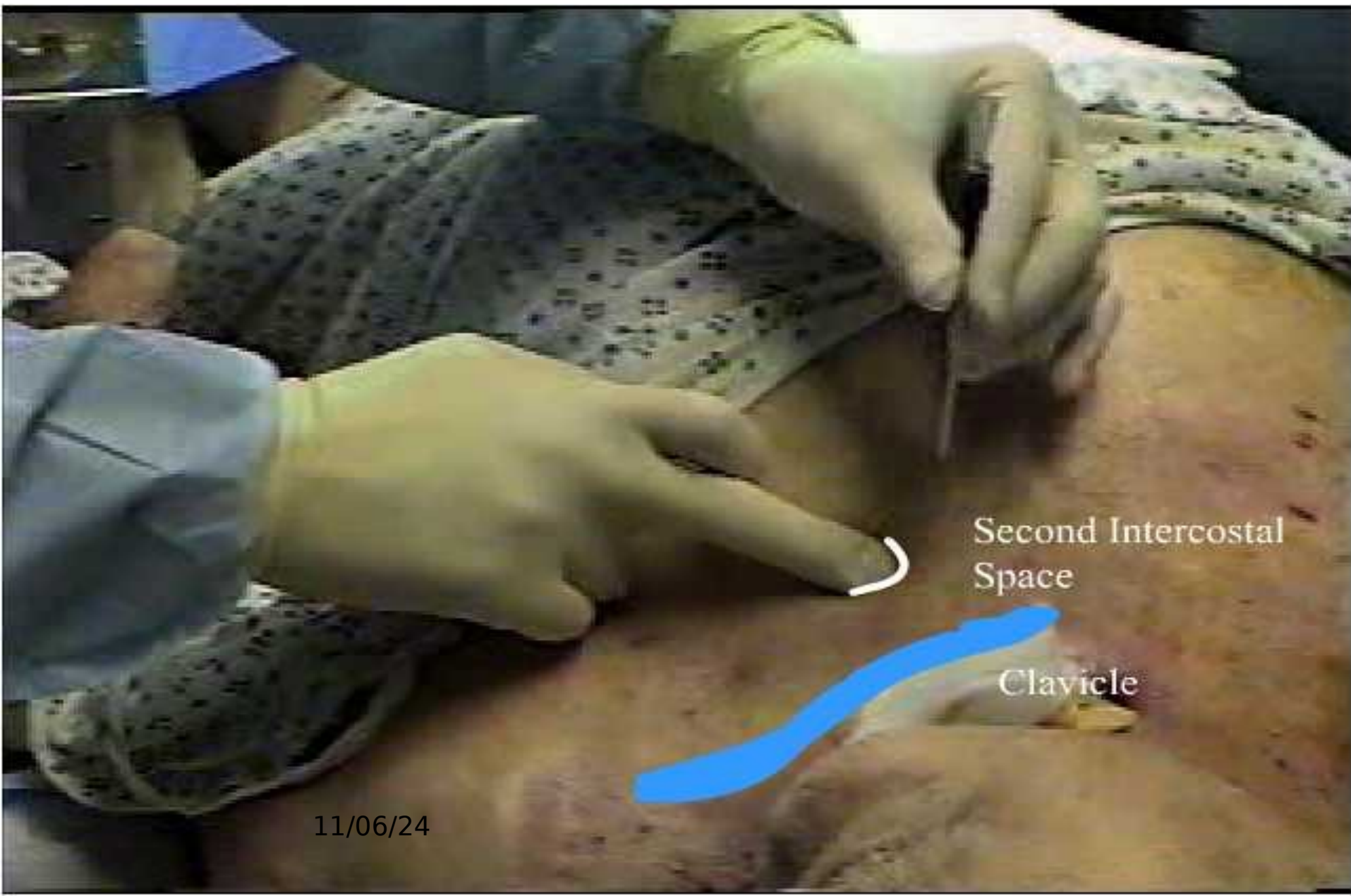
Tension Pneumothorax

- **Anxiety/
Restlessness**
- **Severe Dyspnea**
- **Absent Breath
sounds on
affected side**
- **Tachypnea**
- **Tachycardia**
- **Poor Color**
- **Accessory
Muscle Use**
- **JVD**
- **Narrowing
Pulse Pressures**
- **Hypotension**
- **Tracheal
Deviation**
(late if seen at
all)

Treatment

- The treatment of tension pneumothorax is ***immediate needle decompression***, which should not be delayed to perform a chest radiograph

Needle Decompression



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S/S of Open Pneumothorax

- **Dyspnea**
- **Sudden sharp pain**
- **Subcutaneous Emphysema**
- **Decreased lung sounds on affected side**
- **Red Bubbles on Exhalation from wound**

(a Sucking chest wound)

Treatment

- **The defect should be covered with a sterile waterproof dressing secured on three sides to act as a flutter valve.**

- **An intercostals drain should be placed away from the open wound.**
- **Surgical debridement and closure of the wound will be necessary later.**

Abdominal Injuries

Abdominal injuries fall into two groups...

Trauma related abdominal injuries.

Non – trauma related injuries.

Trauma related injuries...

Signs and symptoms...

Pain in the stomach

Feeling sick in stomach

Nausea and vomiting

Pale cold skin

Evidence of bleeding or obvious injury

Abdominal Injuries

Treatment...

Follow the ... DR ABCD

Control bleeding using direct pressure and bandages.

Consider internal bleeding. Look for pale cold clammy skin.

If the casualty is in shock lay them down and elevate the feet.

Flexing the knees may help reduce pain.

Don't allow the casualty to eat or drink.

Assist the casualty to be comfortable.

If stomach contents are visible, cover with plastic wrap, a non stick dressing or a wet dressing. Do not push the contents back into the stomach.

If an object is embedded in the abdomen, leave it in place and pad around it. It may be plugging any blood loss and removal may do further damage to surrounding tissue.

Abdominal Injuries

Non – trauma related injuries.

Signs and symptoms...

Right lower abdominal pain, evidence of fever – appendix

Right upper abdominal pain – gallstones

Referred back pain – kidneys

Severe tearing mid/upper abdominal pain – artery tear.

**Severe right or left lower abdominal pain in a female
casualty – possible ectopic pregnancy.**

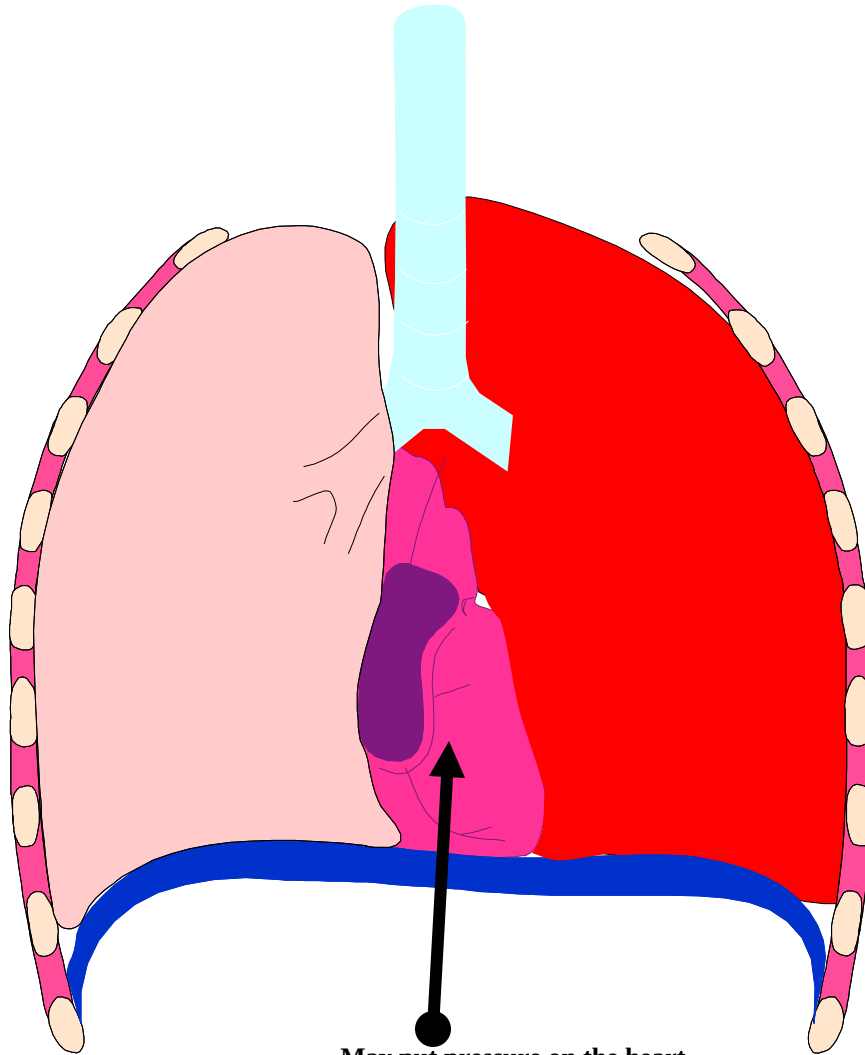
Red flushed skin if infection is present.

MASSIVE HAEMOTHORAX

- **Massive haemothorax is usually caused by penetrating injury, but it can also result from blunt trauma.**
- **A life-threatening haemothorax may result from major lung parenchymal laceration, injury to the pulmonary hilum, or from direct cardiac laceration.**

- **More than 1500 ml of blood in the hemithorax, or**
- **200 ml per hour (3 ml/kg/h) from the chest drain or**
- **More than 1L when tube first inserted**

Hemothorax



11/06/24 May put pressure on the heart

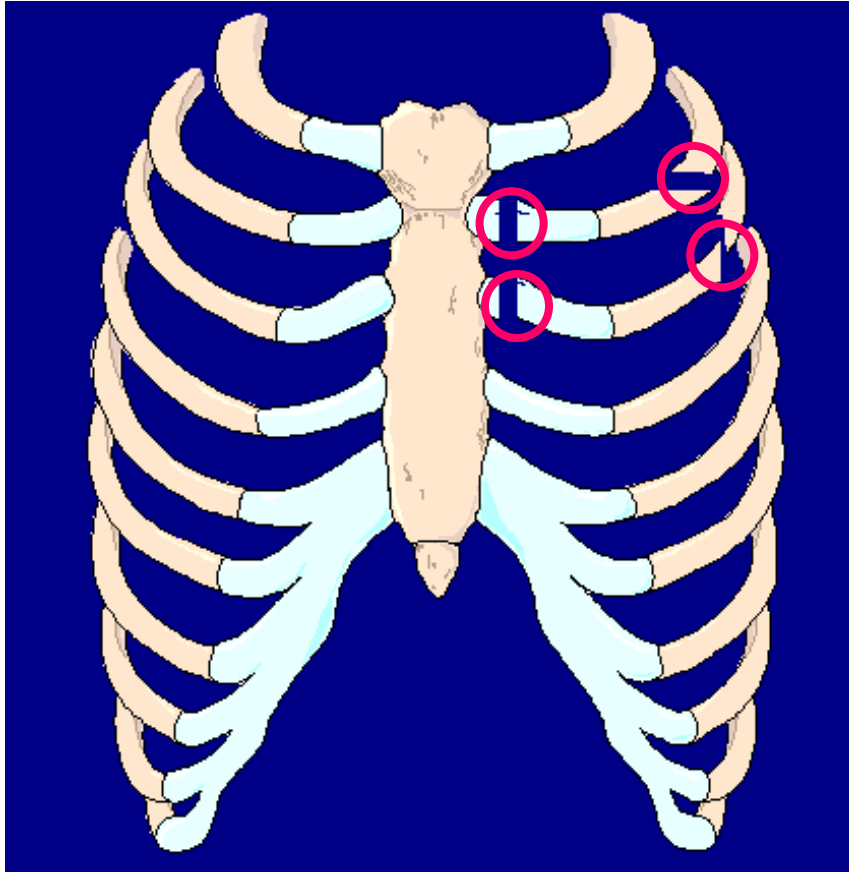
S/S of Hemothorax

- **Anxiety/Restlessness**
- **Tachypnea**
- **Signs of Shock**
- **Frothy, Bloody Sputum**
- **Diminished Breath Sounds on Affected Side**
- **Tachycardia**
- **Flat Neck Veins**

Treatment for Hemothorax

- **ABC's with c-spine control as indicated**
- **Secure Airway assist ventilation if necessary**
- **General Shock Care due to Blood loss**
- **Tube thoracostomy**

Flail Chest



**The breaking of 2
or more ribs in 2
or more places**

S/S of Flail Chest

- **Shortness of Breath**
- **Paradoxical Movement**
- **Bruising/Swelling**
- **Crepitus(Grinding of bone ends on palpation)**

Treatment of Flail Chest

- **ABC's with c-spine control as indicated**
- **High Flow oxygen that may include BVM**
- **Monitor Patient for Pneumothorax**
- **Use Gloved hand as splint till bulky dressing can be put on patient**

Bulky Dressing for splint of Flail Chest



- **Use Trauma bandage and Triangular Bandages to splint ribs.**
- **Can also place a bag of D5W on area and tape down.**

- **oxygen**
- **don't forget to manage pain**
- **Pain management is the key for flail chest**

Types of Muscles

Voluntary

Biceps etc.

Tendons

Involuntary

Operate vital organs

Heart etc.



Soft Tissue Injuries - Sprains

Sprains are injuries due to:

- **Stretching or tearing ligaments or other tissues at a joint.**
- **Caused by a sudden twist or stretch of a joint beyond it's normal motion**



Soft Tissue Injuries - Sprains

The Symptoms of a Sprain are:

- **Pain on movement**
- **Swelling**
- **Tenderness**
- **Discolouration**



Soft Tissue Injuries - Strains

- **A strain is an injury to a muscle or tendon caused by over-exertion.**
- **In severe cases muscles or tendons are torn and the muscle fibres are stretched.**



Soft Tissue Injuries - Strains

The Symptoms of a strain are;

- **Intense pain**
- **Moderate swelling**
- **Painful movement**
- **Difficult movement**
- **Sometimes, discolouration**

Soft Tissue injuries Treatment (RICER)

- **Rest** the injured part.
- **Apply Ice** or cold compress.
 - (15-20mins)
- **Compress** the injury.
- **Elevate** the injured part.
- **Rehabilitate / Recuperation**

***IF IN DOUBT - TREAT AS A
FRACTURE !***

Functions of the Skeleton

- **Support**
- **Movement**
- **Protection**
- **Produce blood cells**



Definition of a Fracture

Definition;

- A broken or cracked bone

CAUSES:

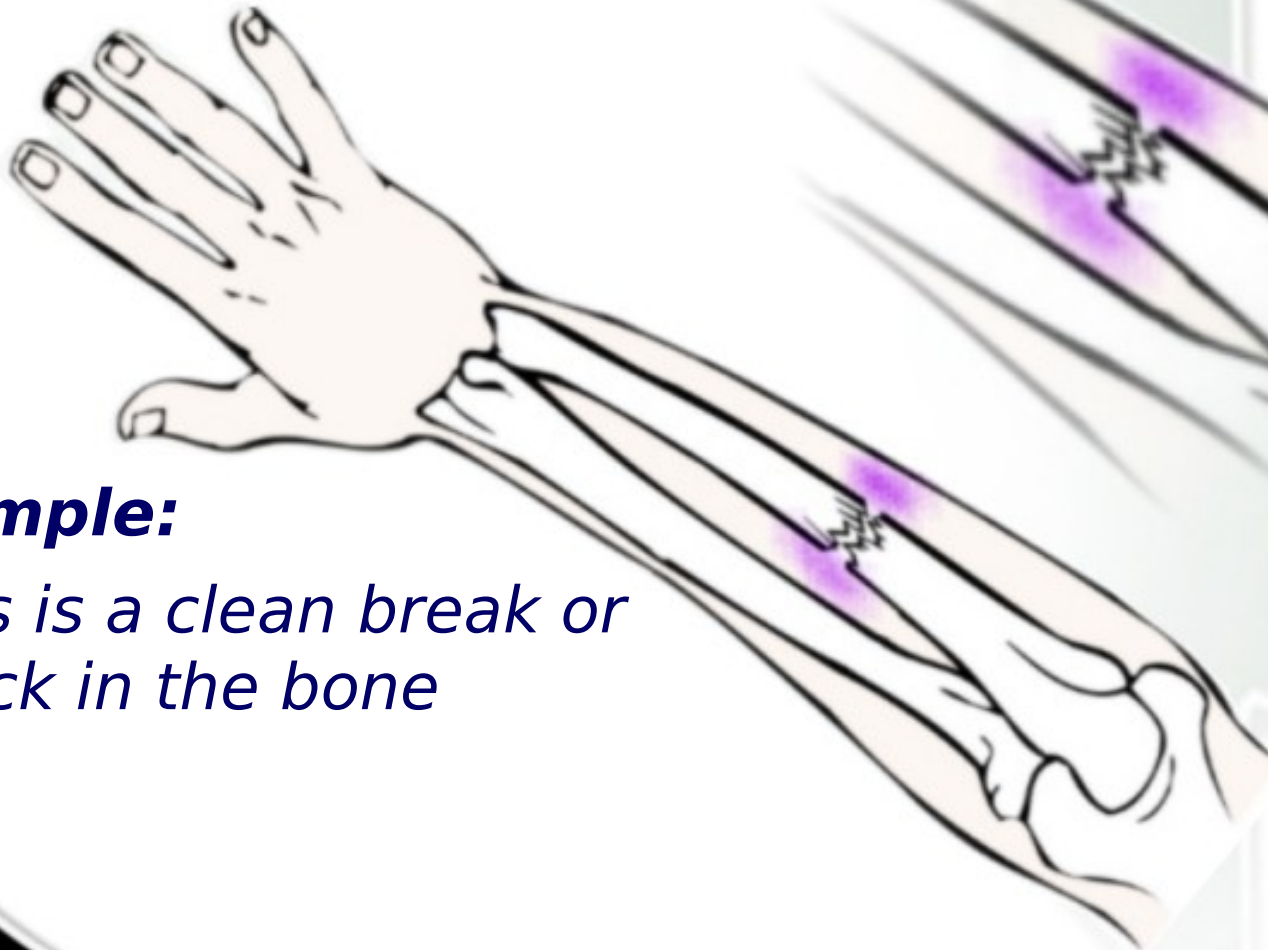
Direct force
Indirect force
Muscular action
Disease

TYPES

Open/Closed
Stable/
Unstable
Greenstick



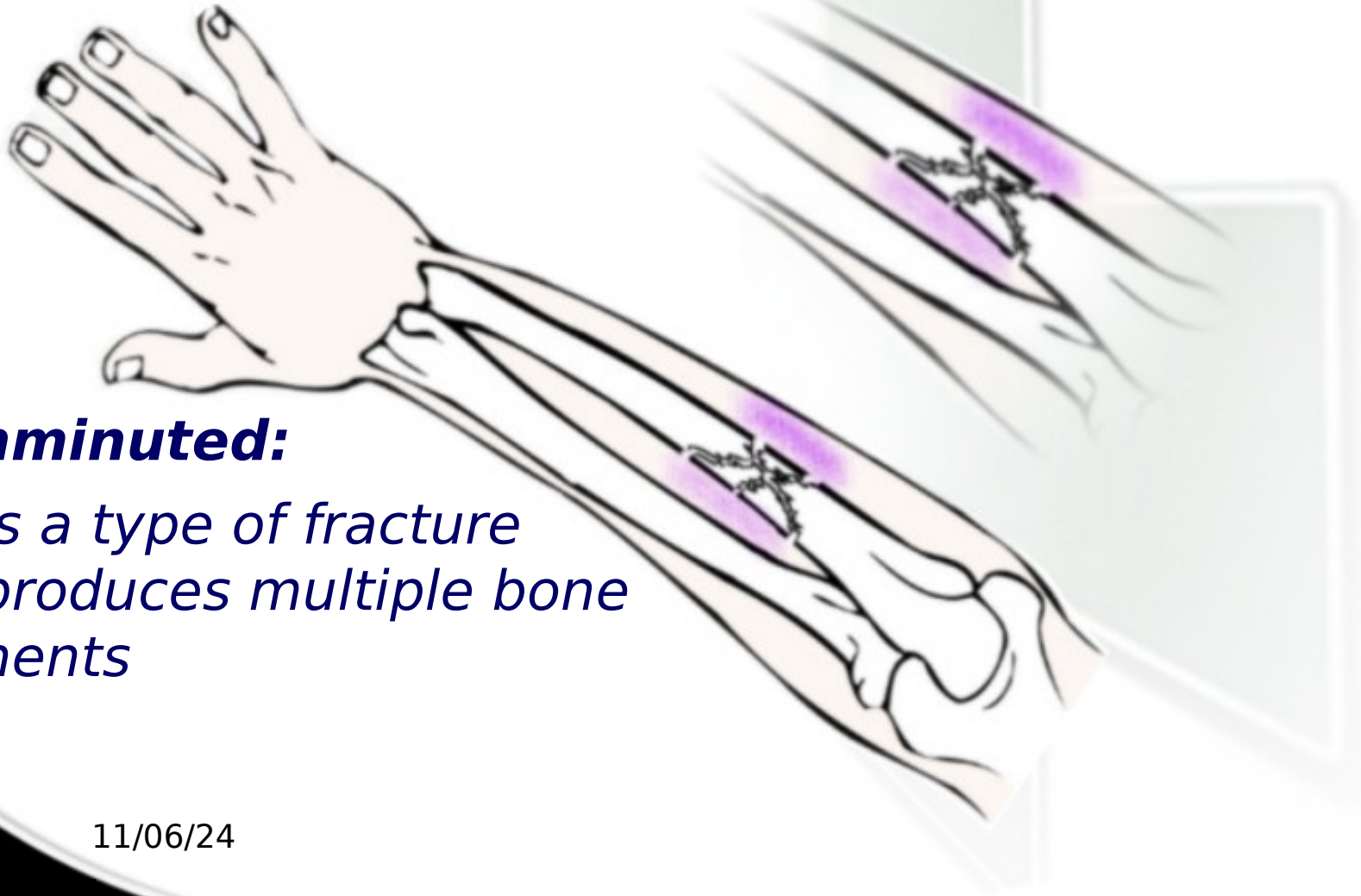
Simple Fracture



Simple:

This is a clean break or crack in the bone

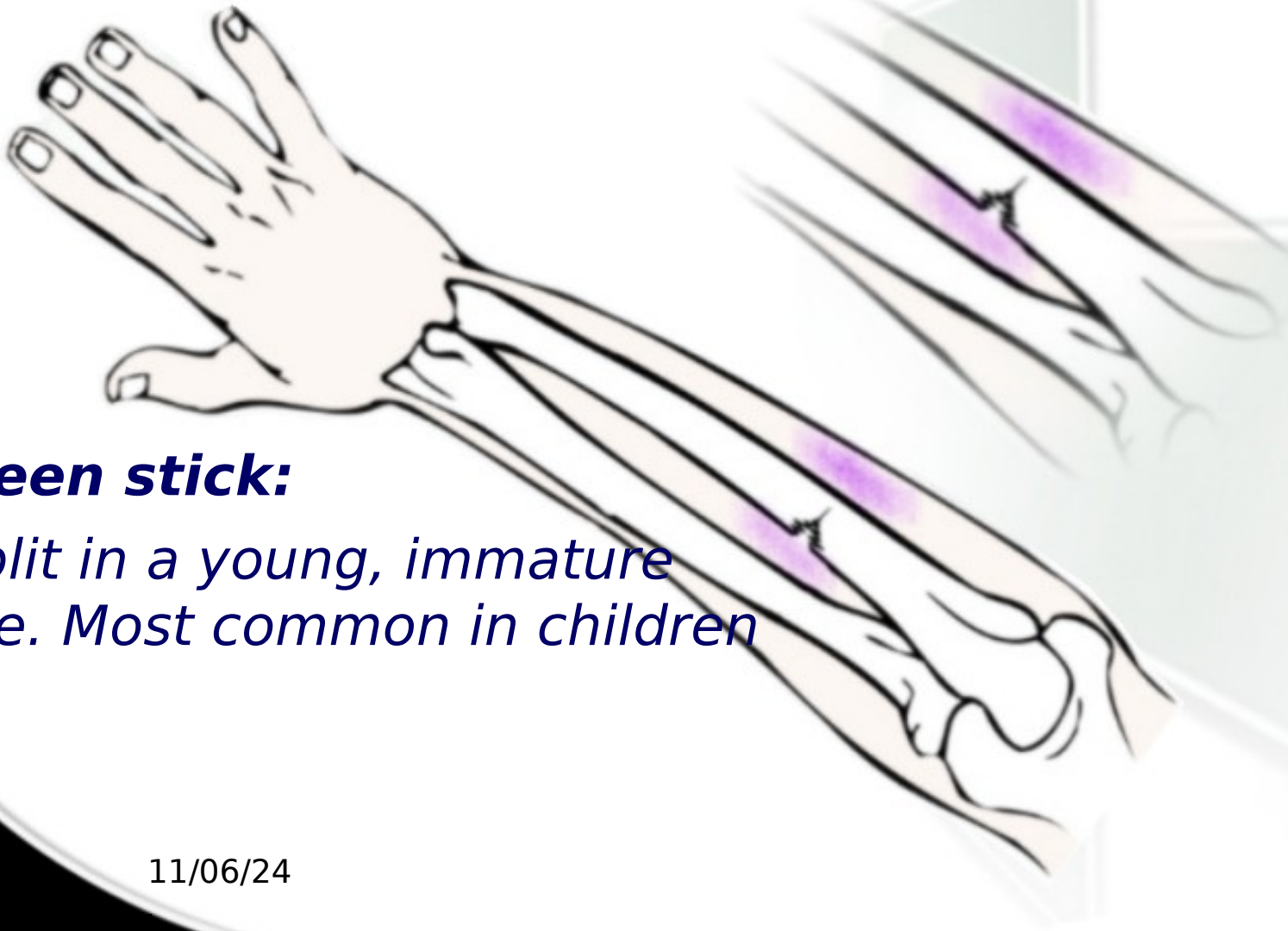
Comminuted Fracture



Comminuted:

This is a type of fracture that produces multiple bone fragments

Green-Stick Fracture



Green stick:

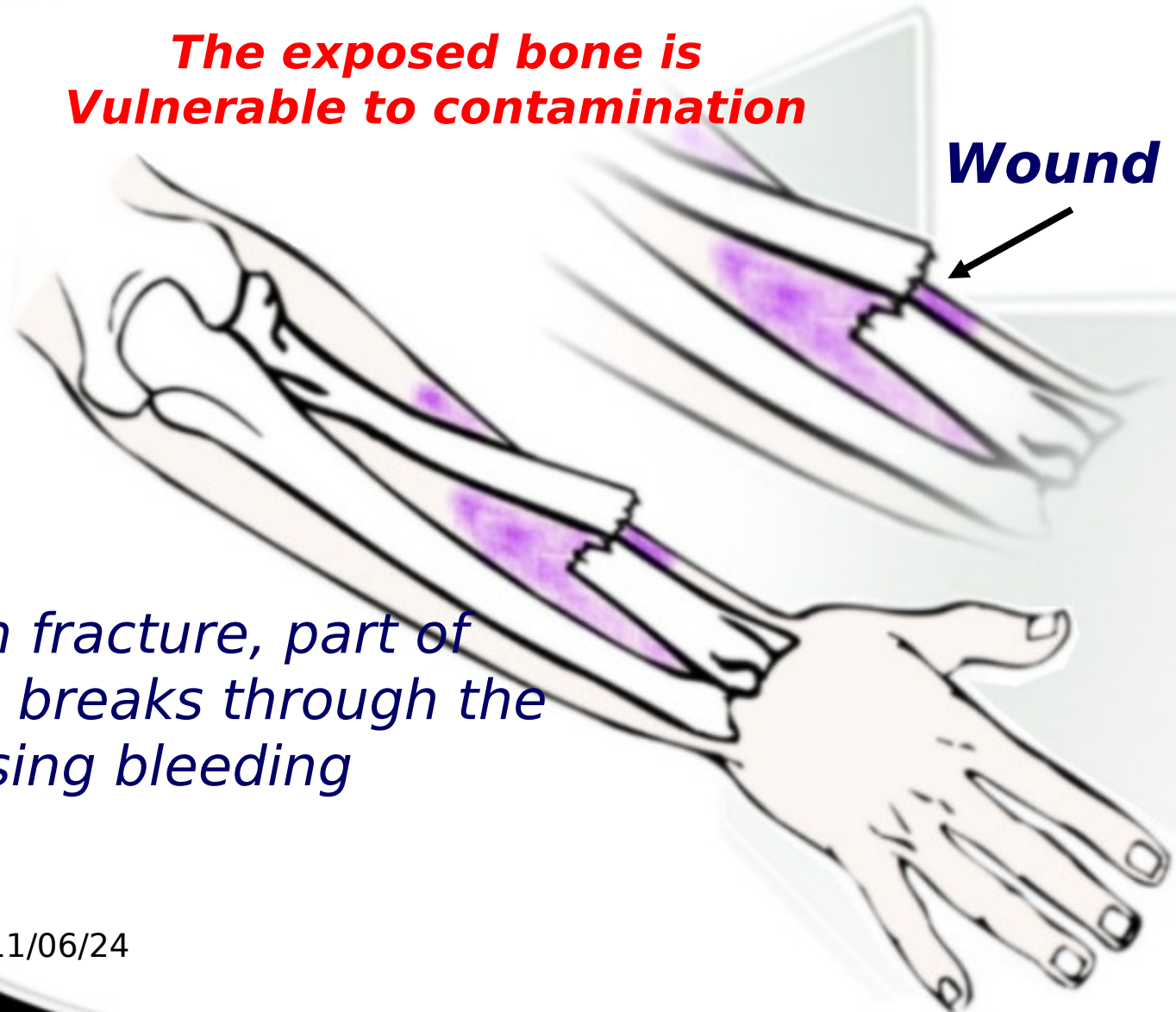
A split in a young, immature bone. Most common in children

Open Fracture

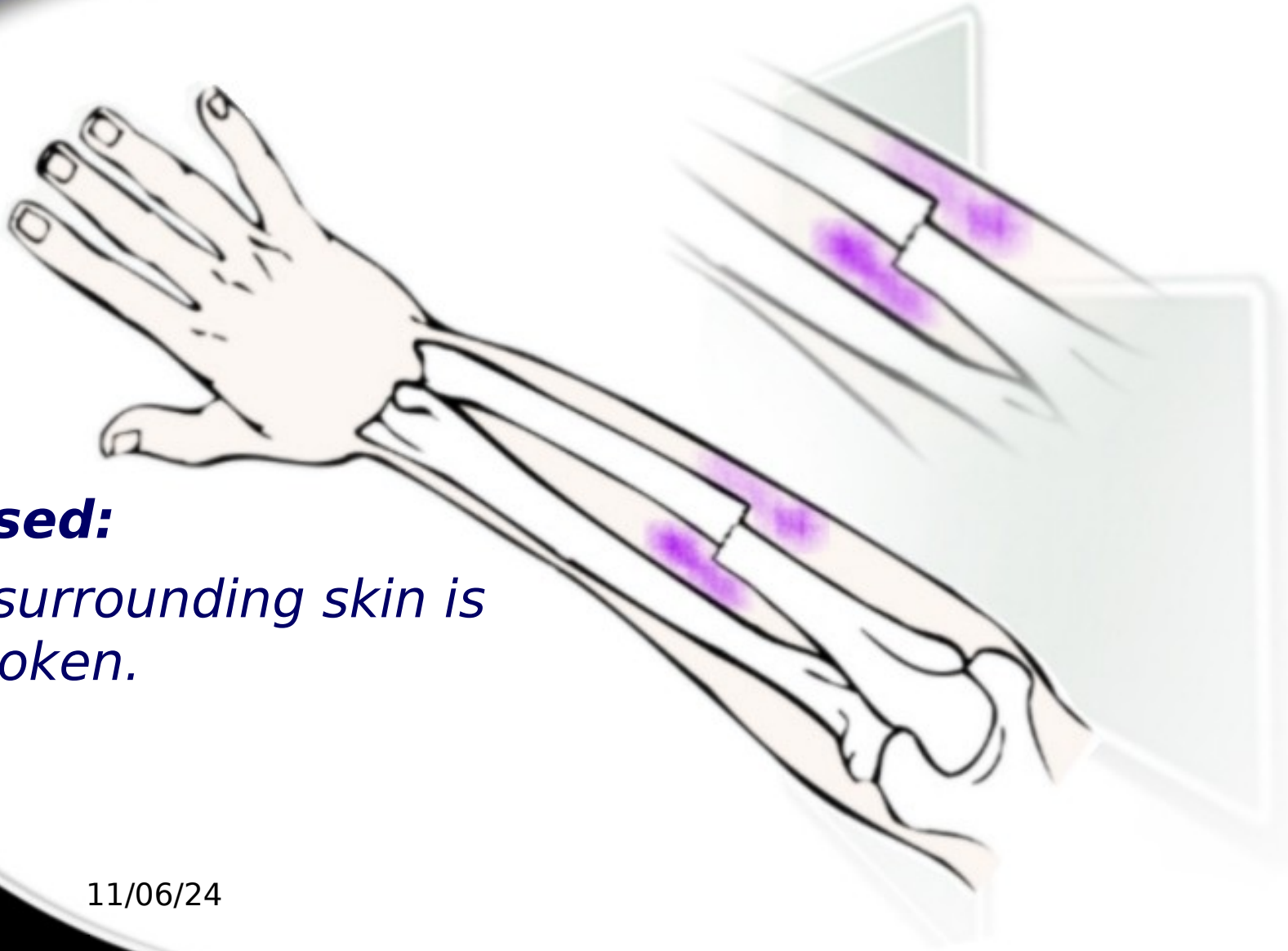
**The exposed bone is
Vulnerable to contamination**

Wound

Open:
*In a open fracture, part of
the bone breaks through the
skin causing bleeding*



Closed Fracture



Closed:

The surrounding skin is unbroken.

Open Fractures

- **Cover wound, apply dressing**
- **Place padding over and around the wound**
- **Secure dressing and padding**
- **Immobilise injured part**
- **999**
- **Treat casualty for shock**
- **N.B. Nothing to eat or drink**



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Closed Fractures / Dislocations

- **Support injured part**
- **Secure injured part**
- **999**
- **Circulation**
 - *(10 minutes)*
- **N.B. Traction in extreme locations**

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Assessment of Injuries

- **History: (Ask the casualty what happened)**
 - *Violent blow or fall*
 - *Snapping sound(sucking wound)*
 - *Sharp pain*
- **Compare:**
 - *One side of the body against another*
- **Visualize:**
 - *Try and imagine what happened*
- **X-ray:**
 - *Injury may not be obvious*



Assessment of injuries

Recognition;

- **Difficulty moving limbs**
- **Pain made worse by movement**
- **Distortion**
- **Coarse grating at bone ends**
- **Shock (Femur, Ribcage, Pelvis)**
- **Shortening, bending or twisting**



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Dislocations

- **Partial or full displacement of bones at a joint**
- **Tears ligaments**
- **Associated fracture**
- **External wrenching force**
- **Violent muscle contraction**
- **Do not attempt to replace joint**



Injuries to the face

- **Maintain airway**
- **Possible spinal injury**
- **Possible head injury**
- **Reduce swelling**
- **Hospital treatment**

The Human Spine

- **Spinal Cord**
 - *Composed of nerve fibres*
- **Intervertebral discs**
 - *Padding or cushioning*
 - *Gristle*



Spinal Injuries

Three things are required;

- **A high index of suspicion.**
- **Acute observation.**
- **Dexterous and gentle handling.**



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Spinal Injury

Your aims are;

- **To prevent further injury**
- **Arrange removal to hospital**



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Treatment of Spinal Injuries

- **Call for an ambulance.**
 - *do not attempt to treat casualty on your own*
- **Support head and neck.**
- **Instruct casualty not to move.**
- **Reassurance.**
- **Do not move casualty unless in extreme danger.**

***IF IN DOUBT
TREAT AS A SPINAL INJURY***

Principles of Lifting

- **Assess the Task - Area - Load**
- **Bend the knees**
- **Broad stable base**
- **Back straight** (Not necessarily vertical)
- **Firm grip with palm of hand**
- **Arms in line with trunk**
- **Weight close to center of gravity**
- **Turn feet in direction of movement**

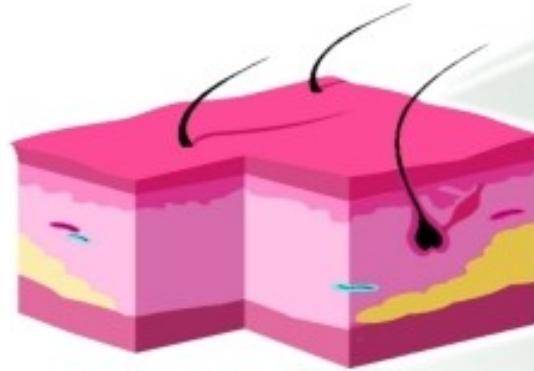
***“LIFT WITH THE
LEGS”***

Types and Causes of Burns

- **Dry Burn**
- **Scald**
- **Electrical Burn**
- **Chemical Burn**
- **Radiation**
- **Friction Burn**
- **Cold Burn**
- ***Fire- Domestic appliances***
- ***Hot liquids - Steam***
- ***Low and high voltage - Lightning***
- ***Industrial & Domestic chemicals***
- ***Sunburn - Exposure to radiation***
- ***Fast moving belts - Machinery***
- ***Bare skin contacting ice etc.***

Burns

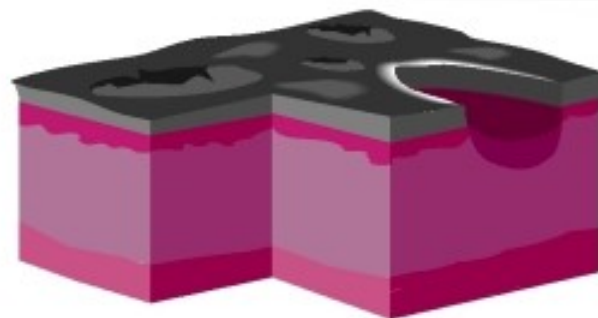
Superficial



Partial Thickness



Full Thickness



Treatment of Minor Burns

Your Aim Is;

- **Halt the burning process**
- **Relieve the swelling**
- **Relieve the pain**
- **Minimise risk of infection**
- **Seek medical advice**



Treatment of Severe Burns

Your Aim Is To Ensure;

- Scene safety
- A, B, C
- Halt the burning process,
- Relieve pain
- Treat for shock
 - *Resuscitate if necessary*
 - *Treat associated injuries*
 - *Minimise the risk of infection*
 - *Arrange urgent removal to hospital*

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Heat Exhaustion

- **Recognition**
 - ***Wet / sweaty appearance, Fatigue / Pale look***
 - ***Headaches with possible cramps***
- **Treatment**
 - ***Remove from offending environment***
 - ***Fan / cool patient***
 - ***Provide cool drink***
 - ***Advise to see doctor or dial 999 if they deteriorate***



Heat Stroke

- **Recognition**
 - *Hot dry red skin*
 - *Rapid Lowered level of consciousness*
 - *Nausea and/or vomiting*
 - *Body temperature above 40°C (104°F)*
- **Treatment**
 - *Remove from offending environment*
 - *Dial 999 for an Ambulance*
 - *Cool patient with cold, wet sheets*
 - *Nothing by mouth*

Hypothermia

General cooling of **Mild Hypothermia** **body**

- **Shivers - Cool body**
- **< 98.6 temperature**

Severe Hypothermia

- **No Shivers**
- **Sluggishness**
- **Lowered level of consciousness**



Hypothermia

- **Treatment**
 - *Remove from offending environment*
 - *Remove wet clothing*
 - *Insulate with blanket or covers*
- **Mild**
 - *Offer hot drink*
- **Severe**
 - *Activate EMS*
 - *Provide source of heat*



Define Diabetes

- **A condition in which the body fails to regulate the concentration of sugar in the blood.**
- **Diabetics are prone to two main problems:**
 - ***Hypoglycemia***
 - ***Hyperglycemia***

Signs and Symptoms

Hypoglycemia - Low blood glucose

Colour	pale
Skin	profuse sweating and cold
Consciousness	irritable, confused or may be unconscious, fits may be present in later stages
Pulse	rapid and weak
Breathing	normal to rapid
Onset	sudden, may be minutes
Treatment	sugar

Signs and Symptoms

Hyperglycemia - high blood glucose

Colour	flushed
Skin	dry
Consciousness	restless, drowsy or lethargic behaviour
Pulse	rapid and full
Breathing	deep and sighing, possible sweet smell - acetone
Onset	gradual, hours to days
Treatment	insulin

Hypoglycaemia - Treatment

Conscious Patient;

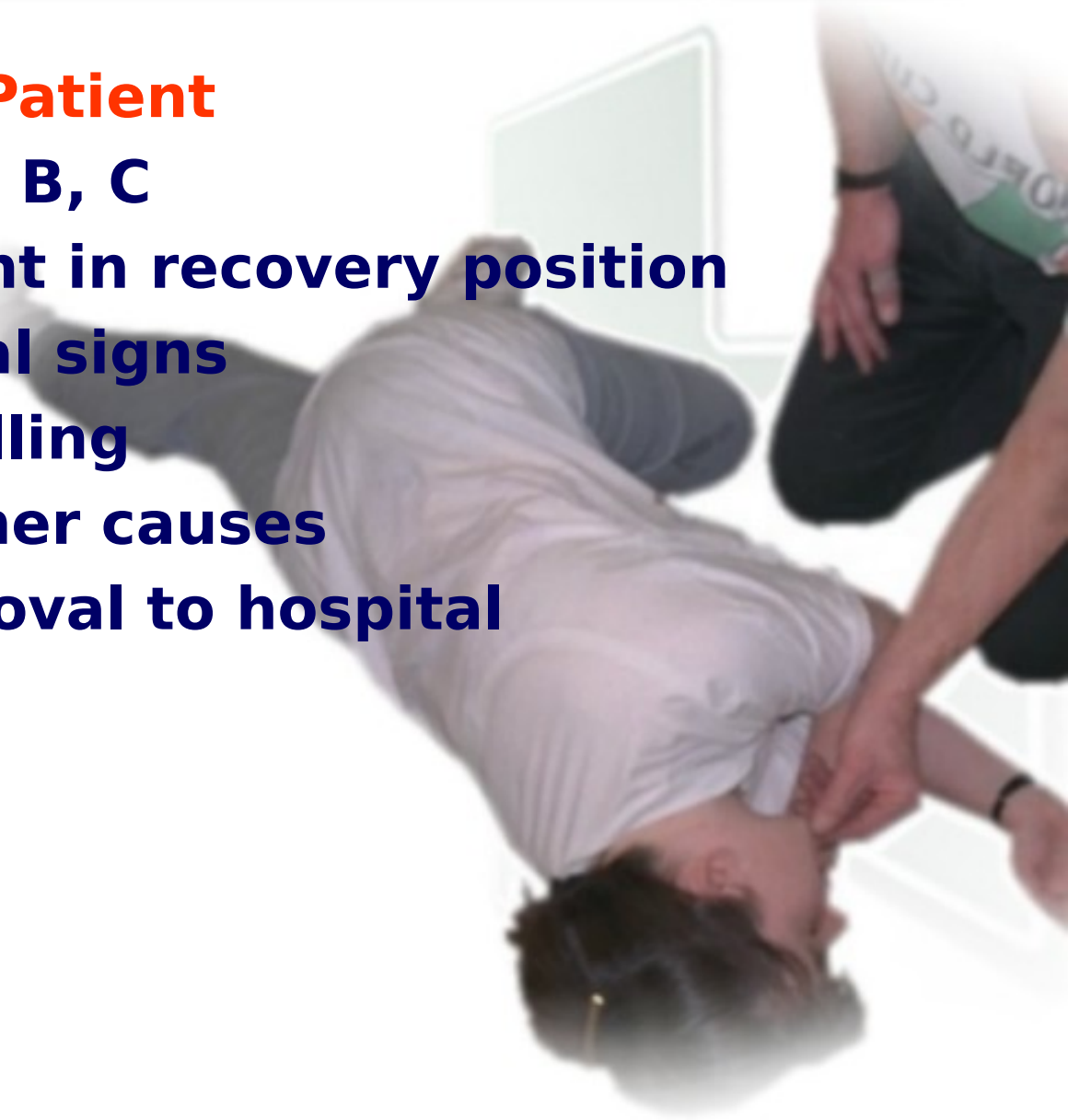
- **Establish A, B, C**
- **Help patient to lie or sit down**
- **Give sugary foods, drinks etc.**
- **Advise to See their Doctor**



Hypoglycaemia - Treatment

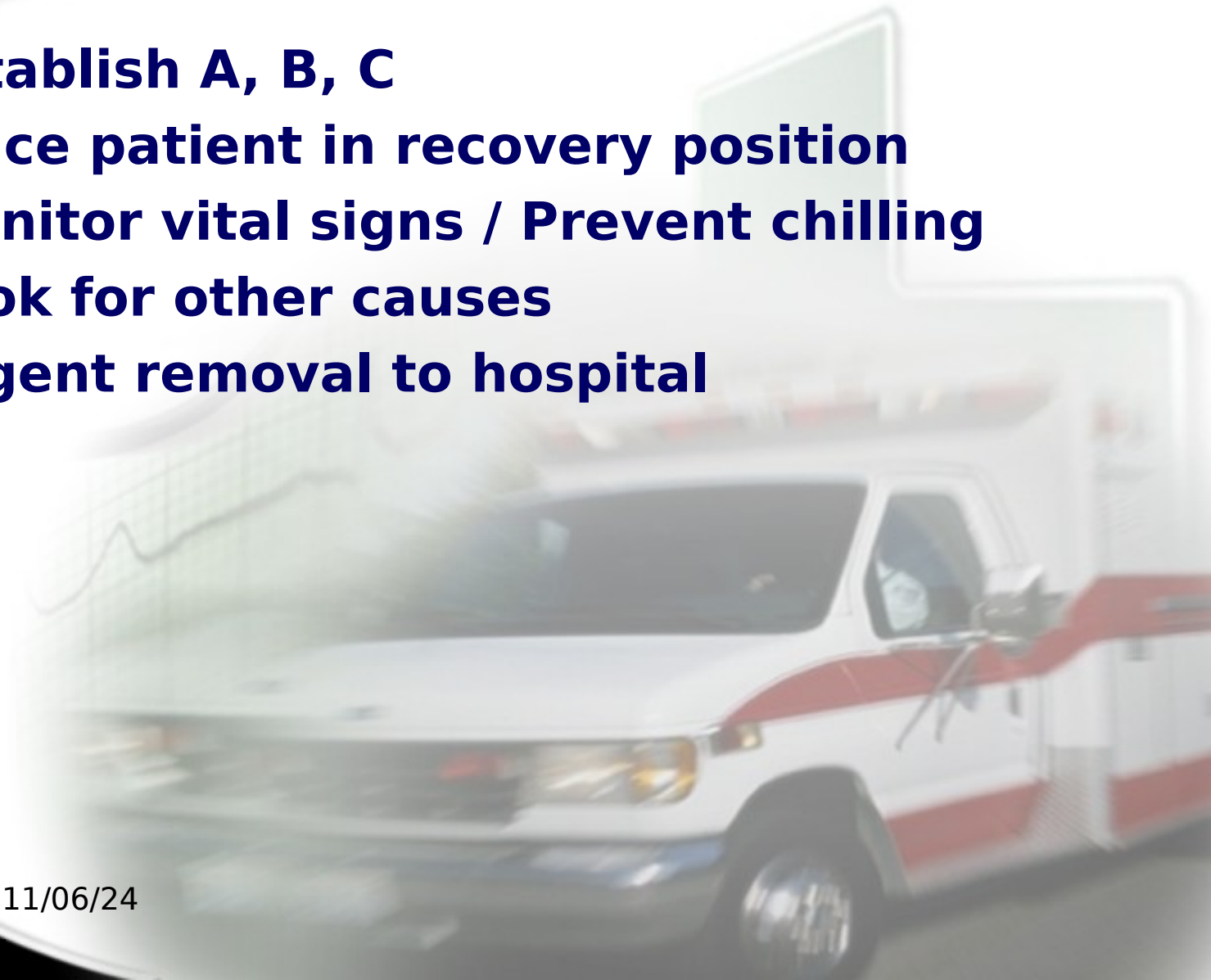
Unconscious Patient

- **Establish A, B, C**
- **Place patient in recovery position**
- **Monitor vital signs**
- **Prevent chilling**
- **Look for other causes**
- **Urgent removal to hospital**



Hyperglycaemia - Treatment

- **Establish A, B, C**
- **Place patient in recovery position**
- **Monitor vital signs / Prevent chilling**
- **Look for other causes**
- **Urgent removal to hospital**



Define Epilepsy

Definition:

- A condition that causes brief disruptions in the normal electrical activity of the brain.

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Forms of Epilepsy

- **Absence Seizures**
 - *A minor form of epilepsy*
 - *Resembles daydreaming.*
- **Seizures**
 - *A major form of epilepsy.*
 - *The patient experiences fits with a period of unconsciousness.*

Treatment for Seizure

- **Ensure a safe environment for the patient**
- **Lower the pt to flat position**
- **Do not resist the pt , rather guide , prevent injury**
- **Place something soft under head of patient to prevent injury**
- **DO NOT try to insert anything in the mouth of the patient**
- **If breathing is noisy & labored, once convulsion is finished , ensure open airway , Position , suction**

RX

- **Unprovoked Seizures**

- ***First Seizure***

- Usually no treatment
 - Treatment can be initiated if risk of recurrence is high or if a second seizure could be devastating

- ***Second Seizure***

- Diagnosis of epilepsy is established and risk of a third Seizure is high

- **Abort seizure**

- **Discharge/admit /transfer**

Rx

- **Provoked Seizures**

- *Treatment directed to the provoking factor*

Treat the causes of Seizure

Hypoxia = Ventilate with 100% O₂

Fever = Lower the temperature, Treat the cause

Metabolic= fix it (hypoglycemia -> give glucose

Abort convulsion

Thank You

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