

CIRCULATION OF BLOOD, HAEMORRHAGE, DRESSING & BANDAGES

PRESENTED BY :

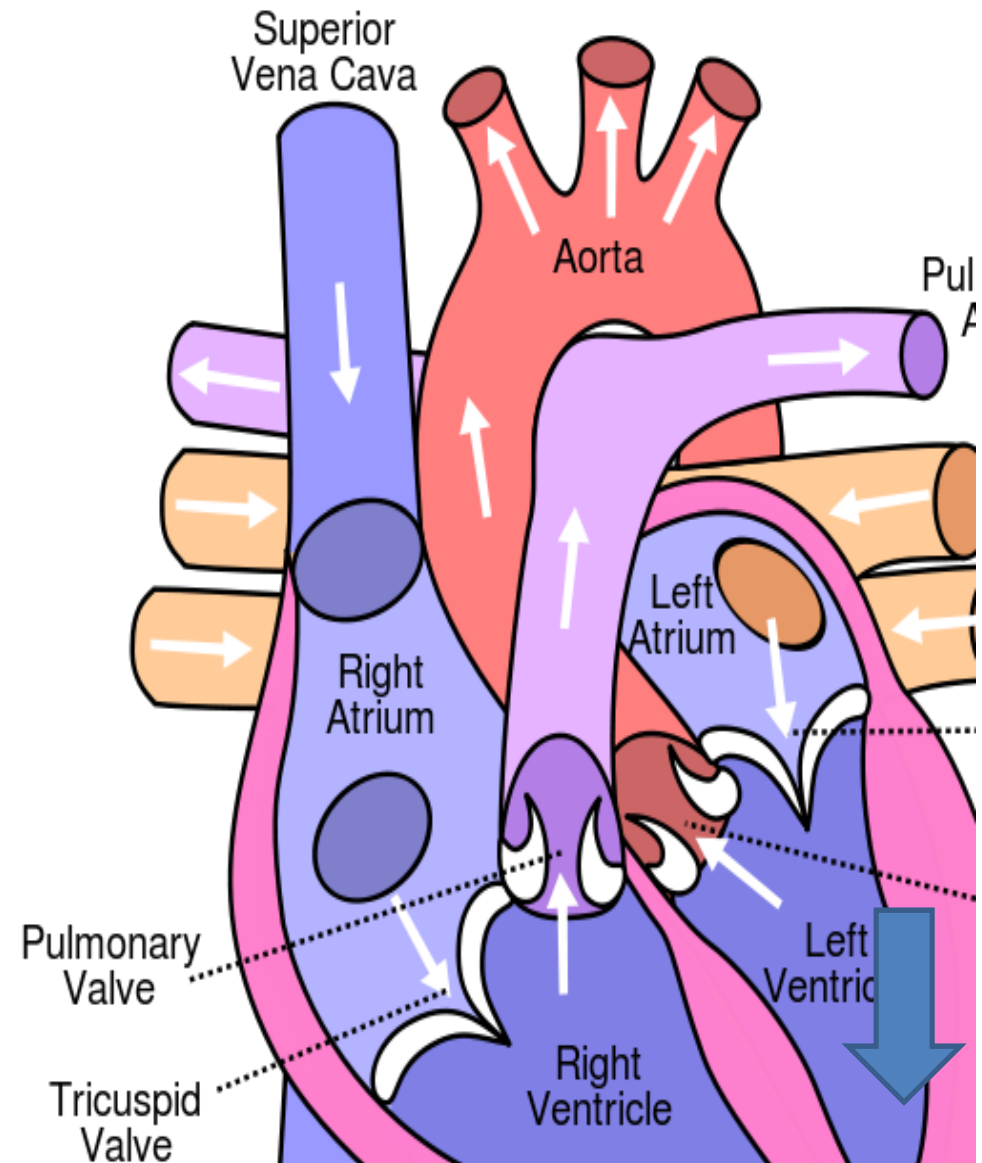
Ranjan kumar



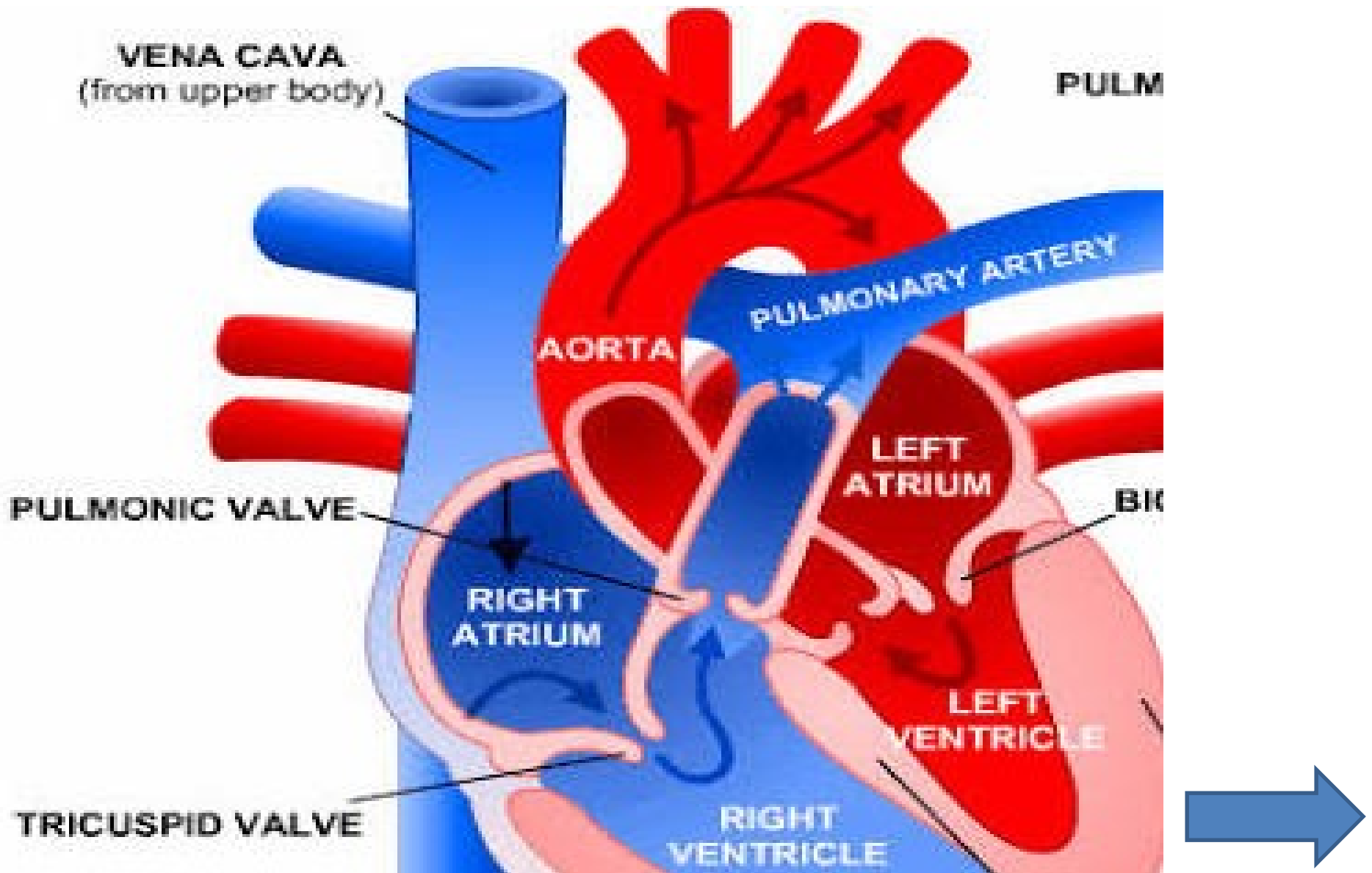
- Parts and function of circulatory system.
- Blood, its components and its function.
- Haemorrhage, its types and pre-hospital treatment.
- Dressing & Bandages

THE HEART

- The heart is a hollow muscular organ.
- The **Right side** of heart receives deoxygenated blood from the body & pumps it to lungs for oxygenation.
- The **left side** of heart receives oxygenated blood from the lungs & pumps it through out the body.

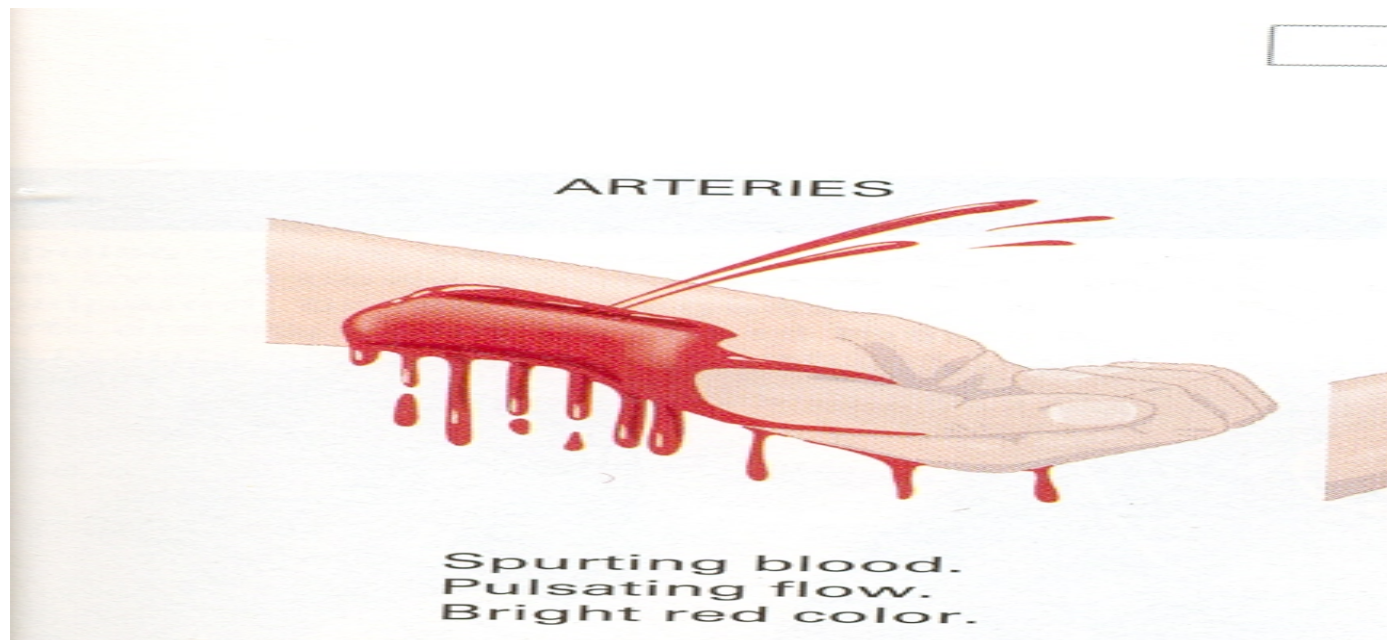


HOW HEART FUNCTIONS



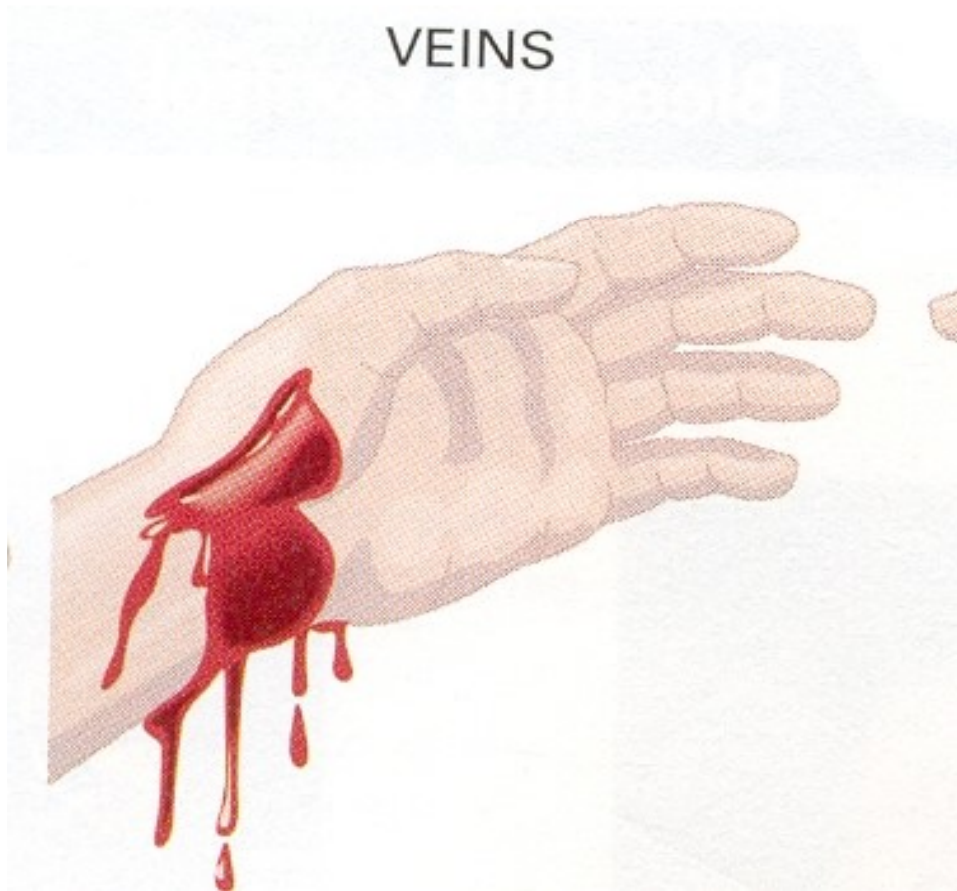
ARTERIES

- The arteries are the blood vessels that transport the blood to the body.
- They are of different diameters ranging from very thick to medium and small. Arterial bleeding is characterized by *bright red* colour.

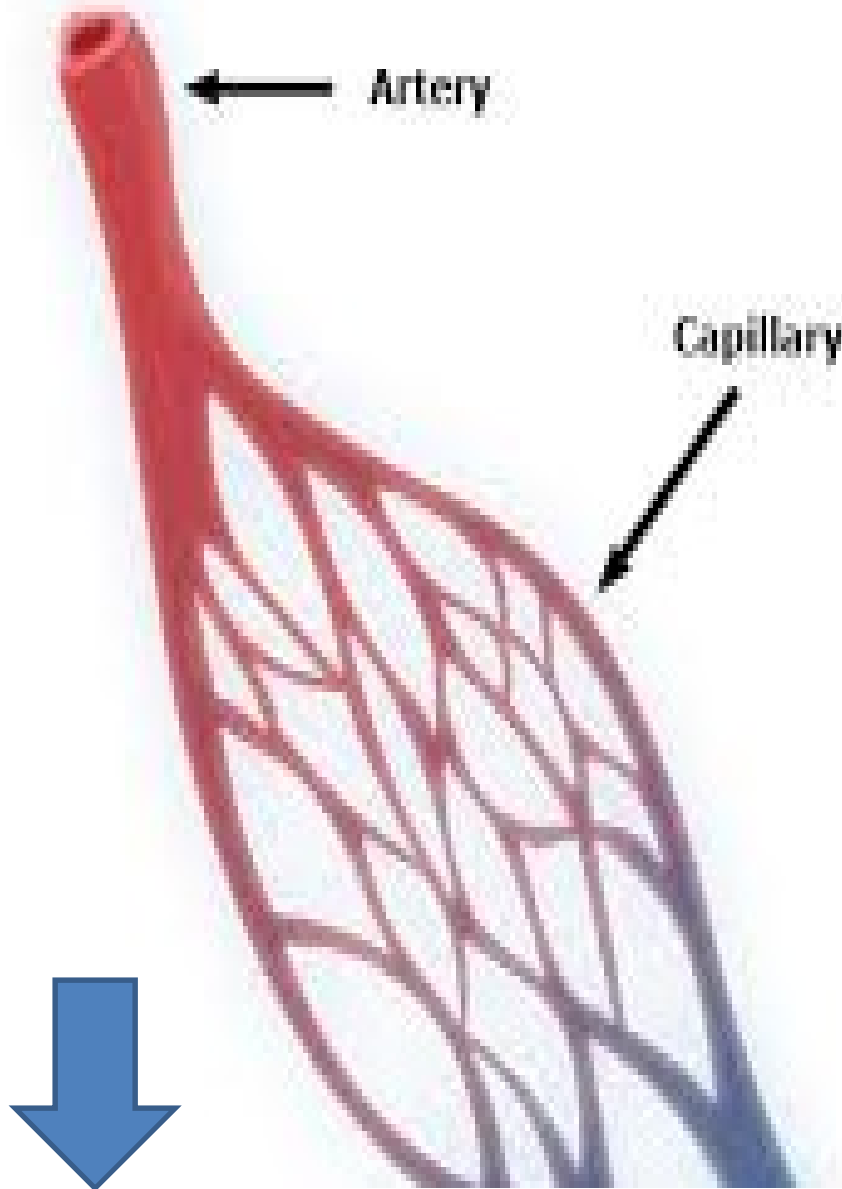


VEINS

- Veins are blood vessels that carry blood back to the heart.
- Veins do not have much pressure as the arteries.
- Venous bleeding is characterized by a *dark red* colour



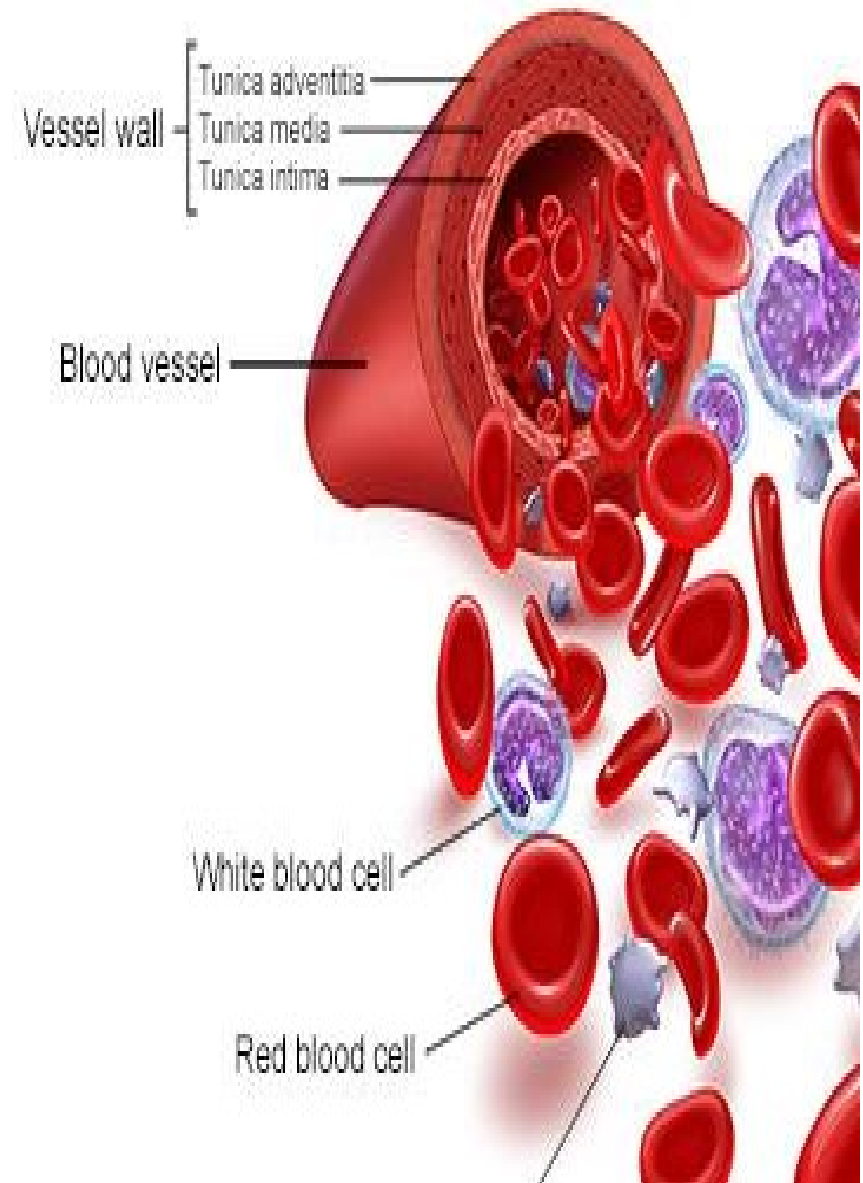
CAPILLARIES



- Each artery is divided into smaller transport vessels until they narrow down into capillaries, the tiny vessels closest to the skin.
- Through their thin walls, the exchange of oxygen and carbon dioxide takes place.
- Other substances are also exchanged between the body's cells and the blood.

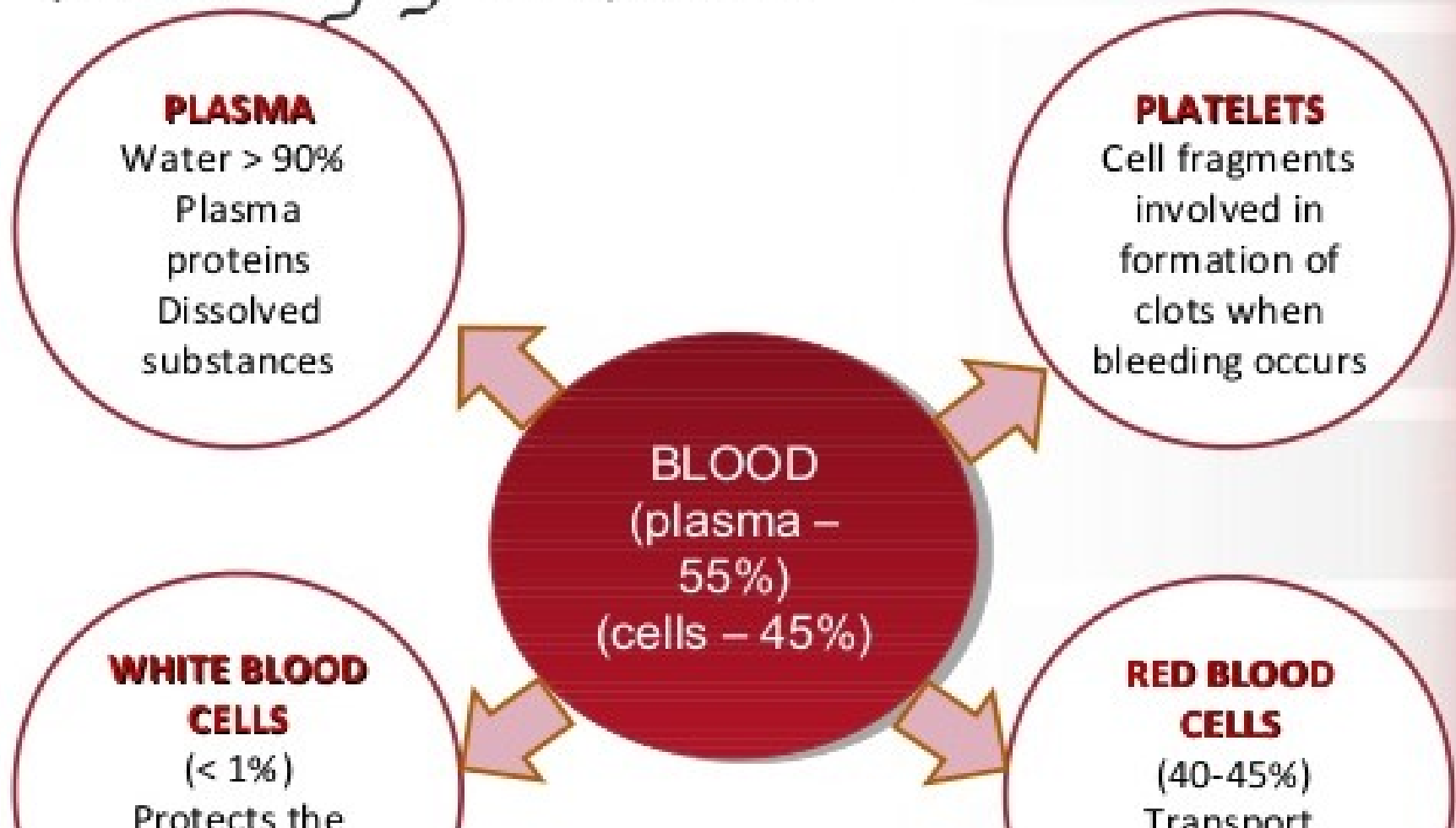
BLOOD

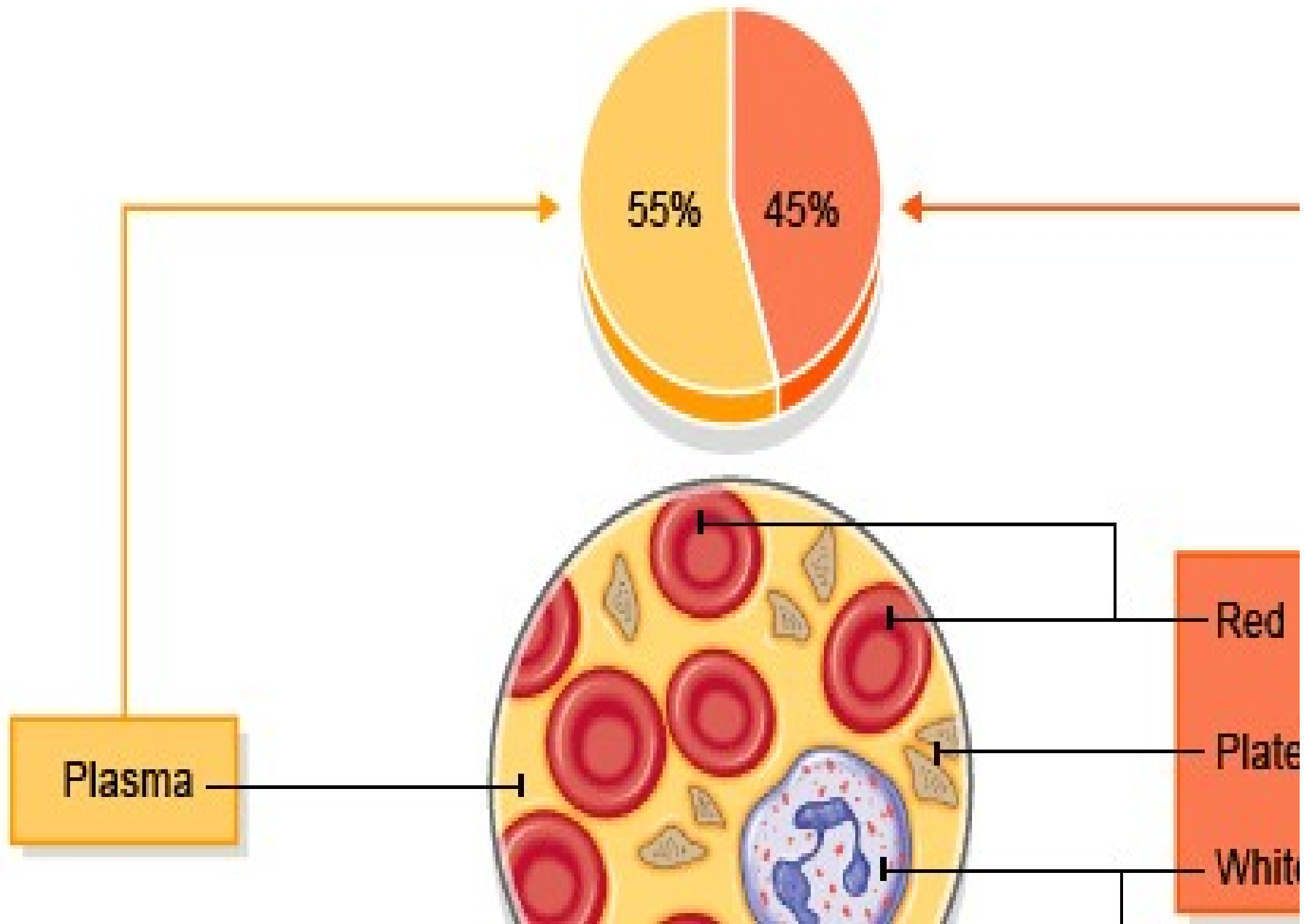
- The solid portion of the blood consists of *white blood cells, red blood cells and platelets*.
- The liquid portion of blood is called *plasma*.
- The normal adult has approximately *five to six* liters of blood.



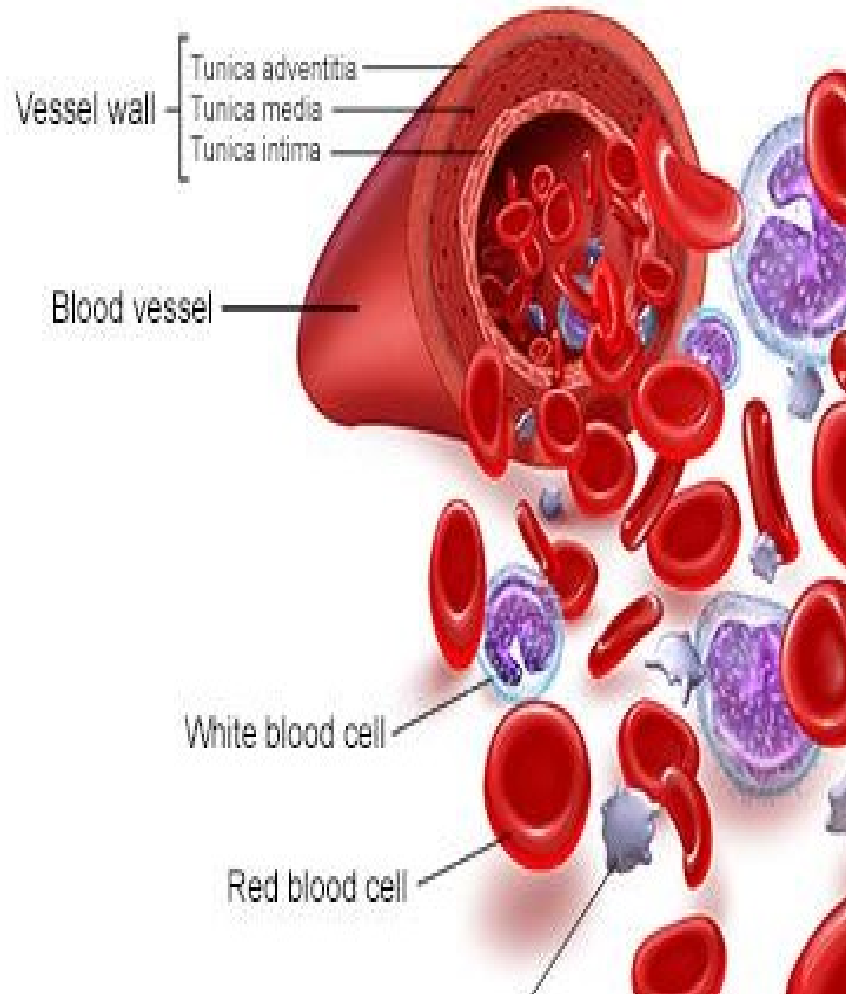
Composition of Blood

Summary of the Blood





FUNCTIONS



- Blood transports oxygen as well as cells that combat infection and eliminate waste products.
- Blood also has the capacity to clot (solidify); this process usually takes 6 to 7 minutes.

FUNCTIONS OF BLOOD

TRANSPORTATION

- Respiration
- Nutrient carrier from GIT
- Transportation of hormones from endocrine glands
- Transports

REGULATION

- Regulates pH
- Adjusts and maintains body temperature
- Maintains water content of cells

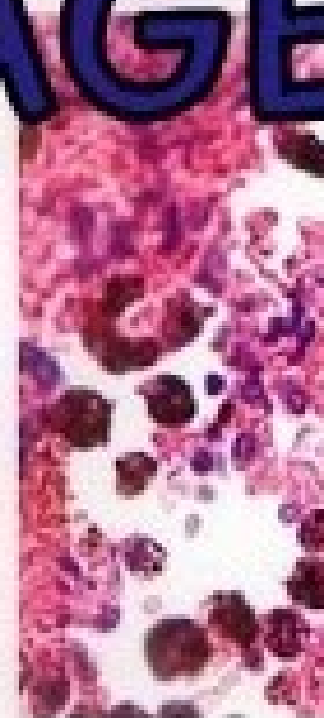
PROTECTION

- WBCs fight against infections by phagocytosis
- Reservoir of substances like water, electrolytes
- Perform

HAEMORRHAGE

TYPES

CAUSES



ous cavities
(cardium)

elling
membranes (0-2cm)
membranes (0-5cm)

tissues following

Haemorrhage

Haemorrhage means escape of blood outside its containing vessel. Acute haemorrhage causes loss of both circulating blood and oxygen.



TYPES OF HAEMORRHAGE

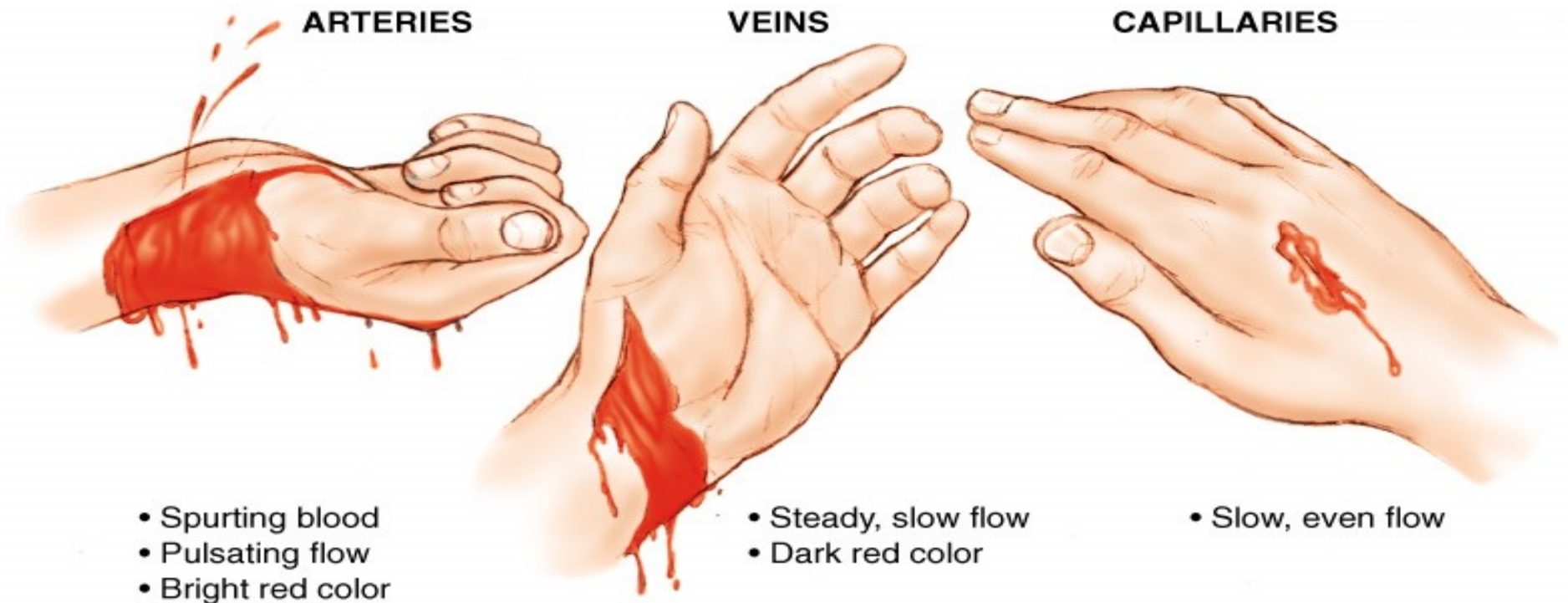
There are two types of haemorrhage.

- External haemorrhage
- Internal haemorrhage

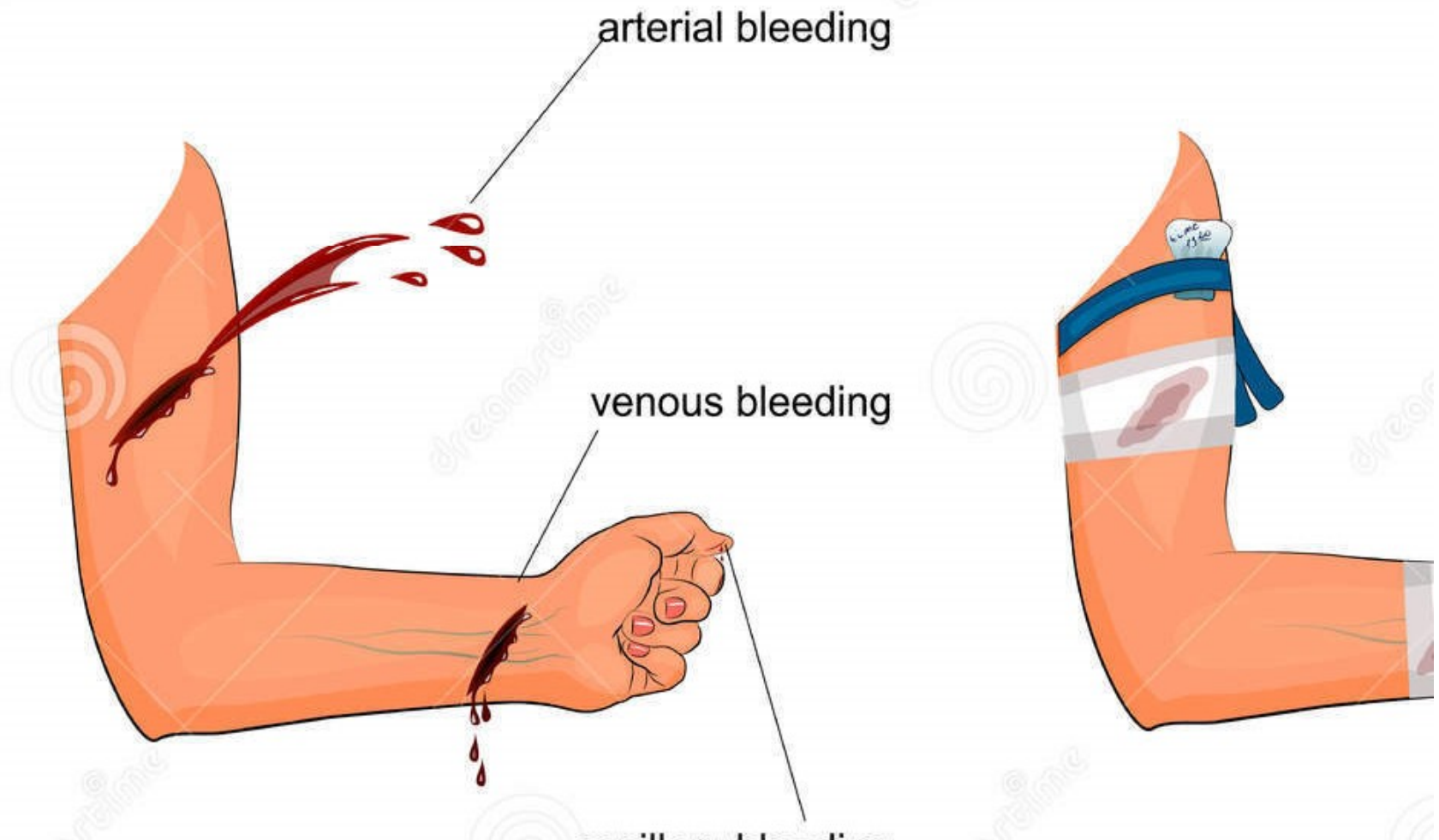
EXTERNAL HAEMORRHAGE TYPES

- With ***external haemorrhage***, the wound and loss of blood are visible.
- **Arterial:** Arterial hemorrhage is bright red and characterized by blood spurts coinciding with the pulse.
- **Venous:** Venous bleeding is steady and dark red.
- **Capillary:** Blood flows smoothly out of the capillaries and is similar in appearance to venous bleeding

EXTERNAL HAEMORRHAGE TYPES



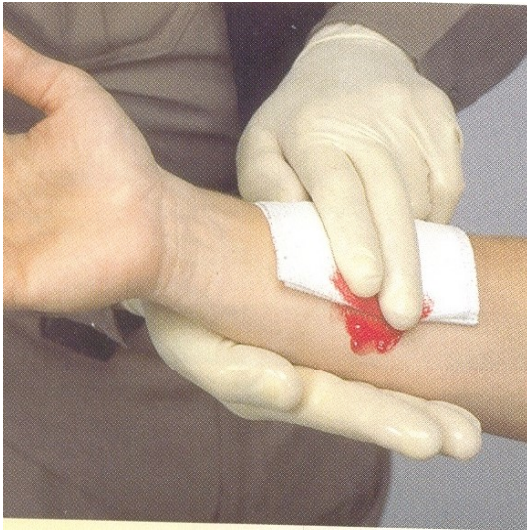
THE TYPES OF BLEEDING



PRE-HOSPITAL TREATMENT FOR EXTERNAL HEMORRHAGE

- **Apply direct pressure.** With a hand on the wound using a bandage or gauze dressing, apply pressure to control bleeding.
- **Elevate extremity.** If the forearm is bleeding, it is not necessary to elevate the whole extremity, only the forearm.
- **Use pressure points.** Use pressure points only when direct pressure fails.

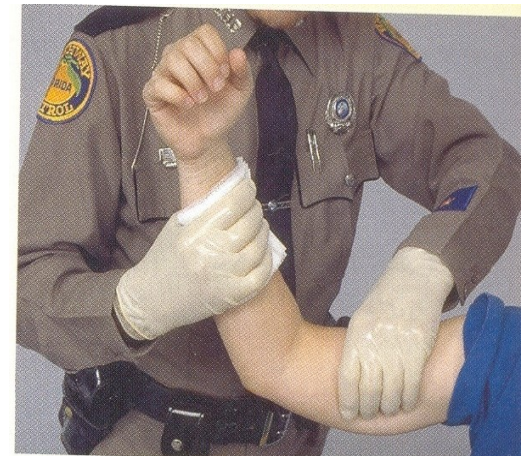
PRE-HOSPITAL TREATMENT FOR EXTERNAL HAEMORRHAGE



Apply direct pressure

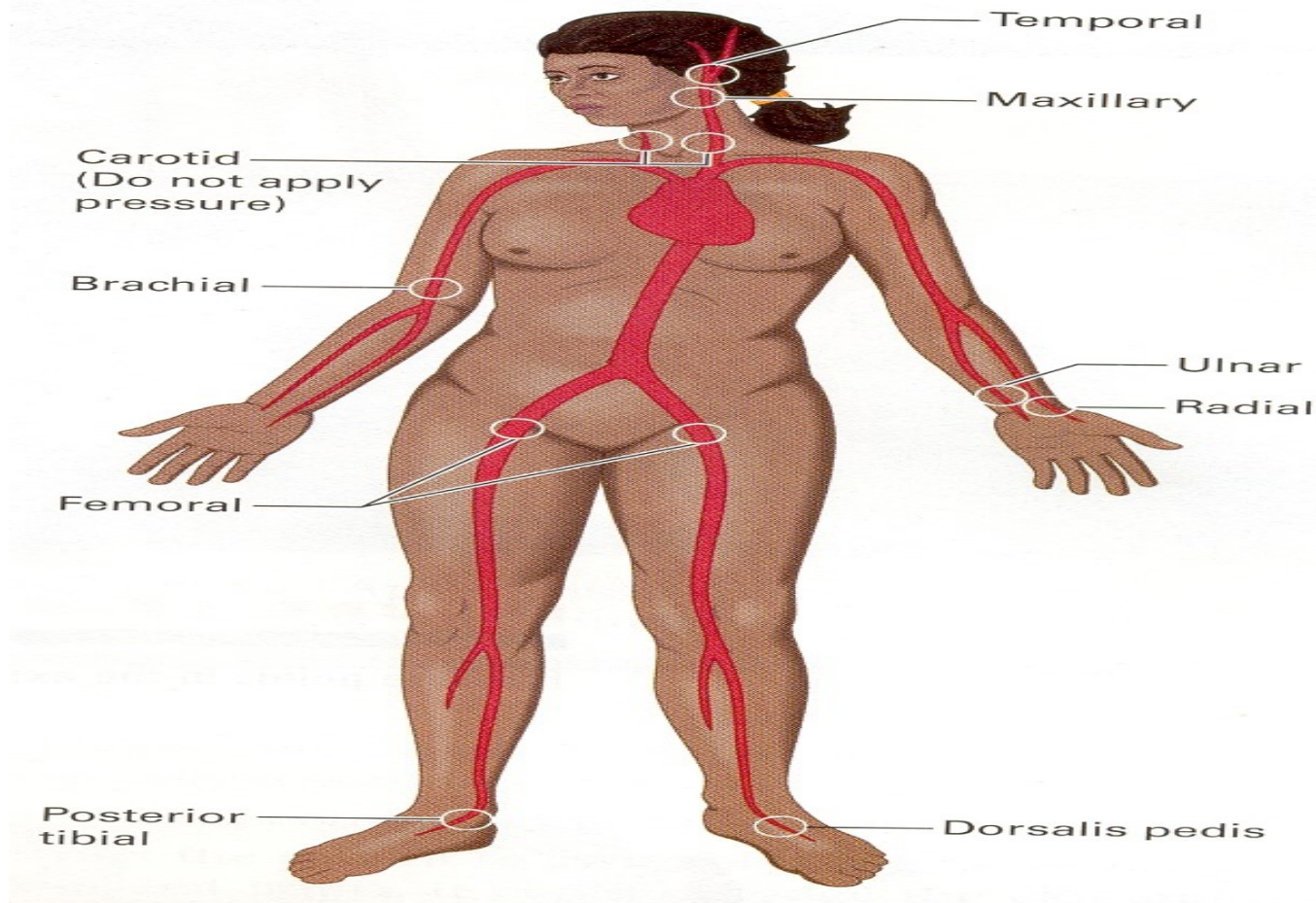


Elevate extremity



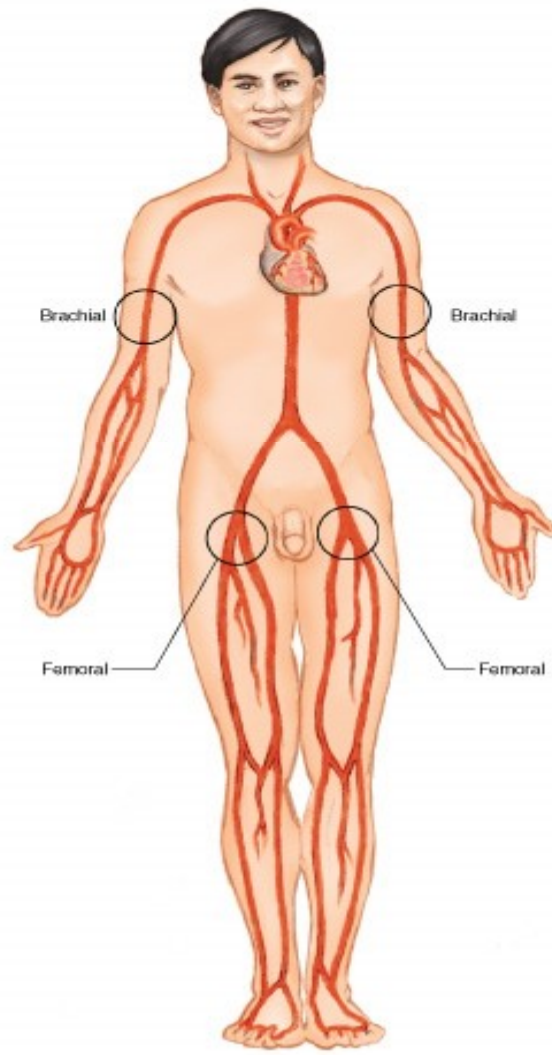
Use pressure points.

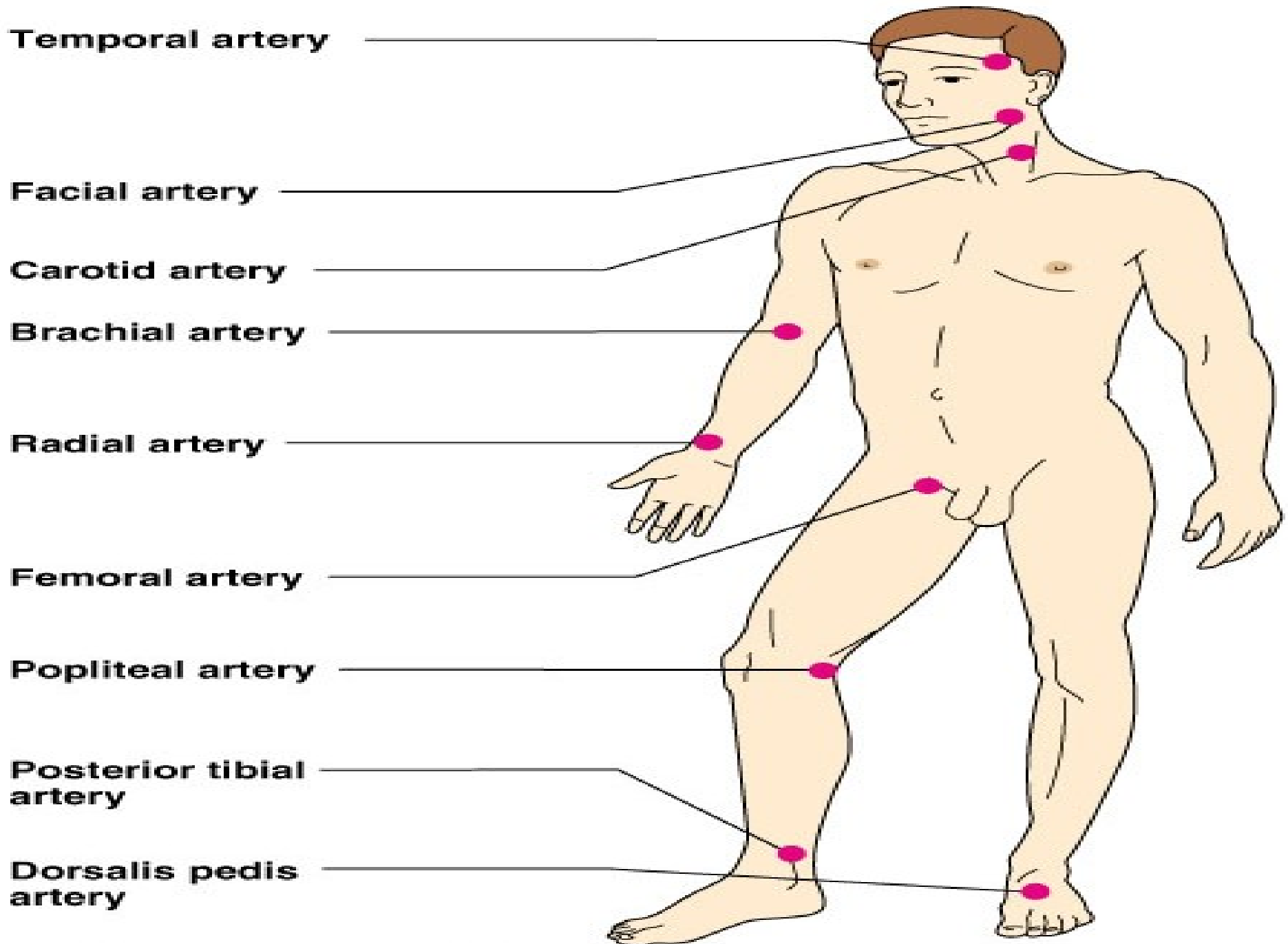
Pulse Location



USE OF PRESSURE POINT

PULSE LOCATION





Temporal artery

Facial artery

Carotid artery

Brachial artery

Radial artery

Femoral artery

Popliteal artery

Posterior tibial artery

Dorsalis pedis artery

PRE-HOSPITAL TREATMENT FOR EXTERNAL HEMORRHAGE

- If it is not possible to make a compression bandage, a pressure point could be used to control severe haemorrhage of an arm or a leg.
 - **Arm:** Press on the brachial artery to control the bleeding.
 - **Thigh:** Press on the femoral artery to control the bleeding from the leg.

USING A TOURNIQUET

- A tourniquet is **only** used in a severe emergency when other means cannot stop the bleeding of an extremity.
- **DANGER:** Using a tourniquet can cause damage to the nerves and blood vessels.
- It can result in the loss of an extremity.



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If the wound continues to bleed, apply pressure to the brachial artery



If the wound is in the leg, apply pressure to the femoral artery





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BP cuffs may be used as a tourniquet if necessary



INTERNAL HAEMORRHAGE

- **Internal hemorrhaging** can range from minor to a life-threatening problem.
- The loss of blood cannot be seen in internal bleeding.
- A closed fracture of the femur can cause a loss of 1-2 liter of blood.

INTERNAL BLEEDING



SIGNS AND SYMPTOMS

- Coughing up bright red blood
- Vomiting dark-coloured blood (the colour of coffee grounds)
- Small or large areas of bruising
- Rigid abdomen

PRE-HOSPITAL TREATMENT FOR INTERNAL HAEMORRHAGE

- Maintain an open airway and provide high-flow oxygen per local protocol.
- Keep the patient warm, but be careful not to overheat him/her.

PRE-HOSPITAL TREATMENT FOR INTERNAL HAEMORRHAGE

- Treat for shock.
- Transport the patient as soon as possible.
- Report the possibility of internal bleeding as soon as more highly trained EMS personnel arrive at the scene

DRESSING

Any material used to cover a wound that helps control bleeding and also aids in the prevention of additional- contamination.



GAUZE PRODUCTS



STERILE GUAGE PAD



OCCLUSIVE DRESSING

Any water-resistant material (plastic or waxed paper) that is applied to a wound to prevent the entry of air and loss of moisture from internal organs.



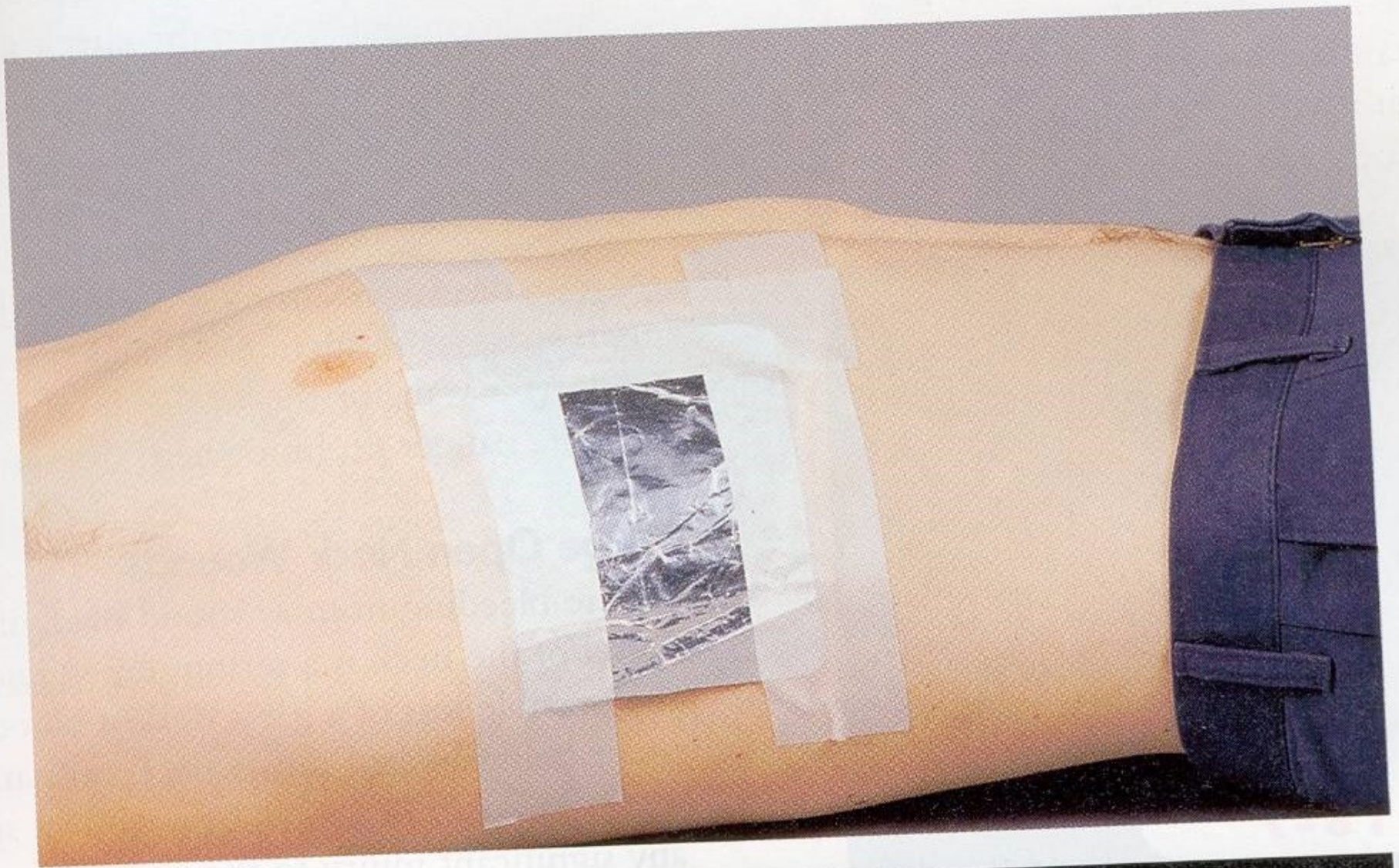


FIGURE 18-6

Occlusive dressing taped on three sides for a chest injury.

BULKY DRESSING

- Multiple stacked dressings made to form single dressing 2-3 cm thick, such as a thick sanitary napkin or any similar material



APPLYING DRESSINGS AND BANDAGES

- Control bleeding
- Apply the dressing using aseptic technique.
- Cover the wounds completely

- Ensure that the dressing and the bandages are firm, flexed and comfortable but not so tight as to affect circulation
- Ensure there are no loose ends that can get caught
- Avoid covering the fingertips



FIGURE 18-18b Cover an area larger than the wound.

Head or Ear bandage



FIGURE 18-19a Head or ear bandage.

Shoulder bandage



FIGURE 18–19b Shoulder bandage.

Elbow bandage



FIGURE 18-19c Elbow bandage.

Knee bandage



FIGURE 18–19d Knee bandage.

(continued)

CONCLUSION SLIDES

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