

**Topic 1.13 part 1**  
**"First aid in case of an accident"**

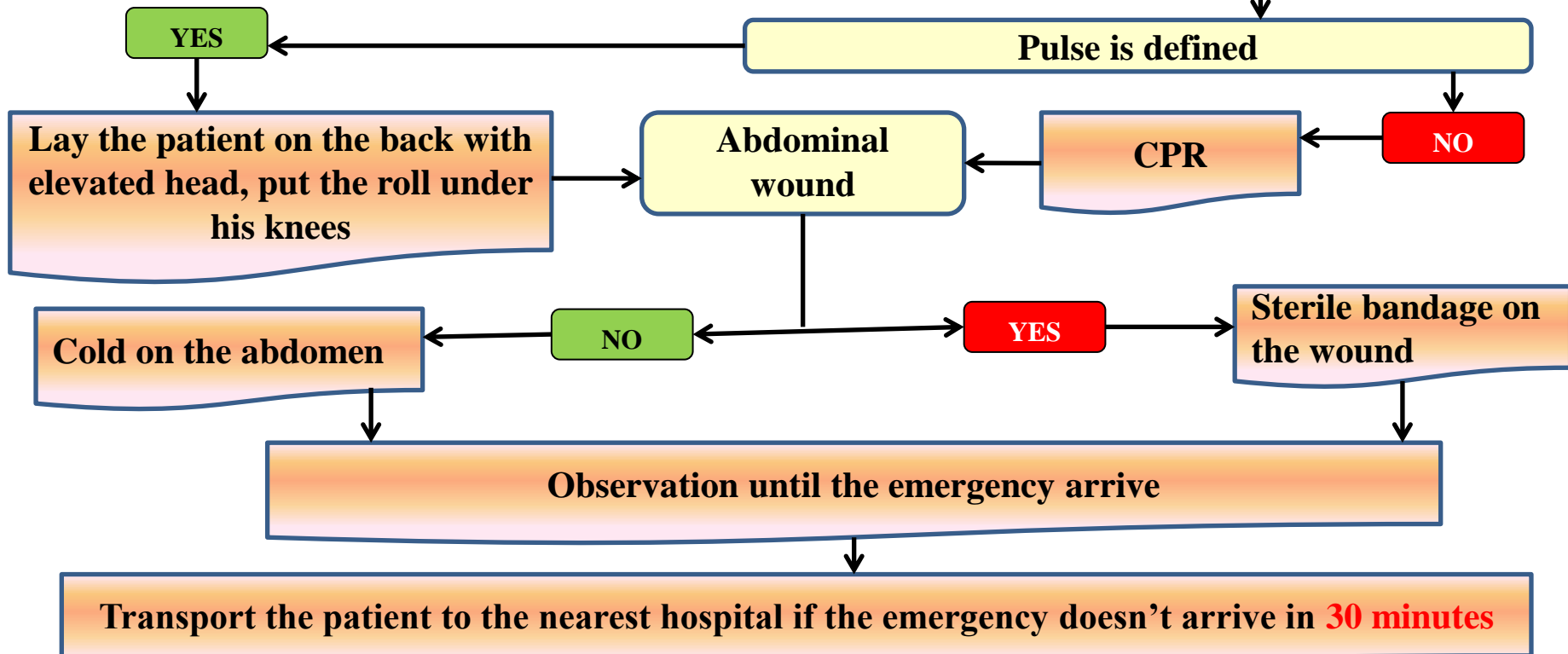
## Abdominal trauma

**Assess these signs:**

- Abdominal pain;
- Abdominal wound;
- Rigidity of the external abdomen;
- Increasing paleness, clammy sweat;
- Forced position: the patient is laying sidelong with his knees up to the abdomen

**2 or more signs → abdomen injury**

**Call the emergency**



**Abdominal trauma is typically also categorized by mechanism of injury:**

**Blunt**

**Penetrating**

**Reliable signs of penetrating abdominal trauma:**

**Dropped organs are visible in the wound;**

**Bile or intestinal contents flows out from the wound.**



**NB!**

**At the first aid step all abdominal traumas are considering as penetrating**

### **Signs of hollow abdominal organs injury:**

- significant sharp “knife-like” pain;
- then this pain becomes blunt and extended;
- vomiting, thirst;
- forced position: the patient is laying sidelong with his knees up to the abdomen – “embryo posture”;
- swollen painful abdomen, hard on palpation;

**Solid organs injuries are dangerous because of the risk of increasing blood loss.**

### **Suspect internal bleeding in abdominal cavity if you see these signs:**

- pale wet skin;
- impairment of consciousness (from excitation to unconsciousness);
- rapid superficial breath;
- rapid weak pulse; pulse is hardly defined because of significant drop in blood pressure.



## First aid in the case of blunt abdominal trauma

**A. The pulse is defined. The patient is conscious. Complains on severe abdominal pain**

**Lay the patient down on the back with elevated head and with the roll under his or her knees.**

**In the case of vomiting – lay the patient sidelong.**

**Cold on the abdomen**



**B. The patient is unconscious**

**Lay the patient on the back with legs elevated.**

**In the case of vomiting – lay the patient sidelong.**

**Cold on the abdomen.**



**Transport the patient on your own only if the emergency doesn't arrive in **30 minutes****

## **First aid in the case of penetrating abdominal trauma**

**Apply sterile bandage on the wound**

**NB!**

**Strictly prohibited to:**

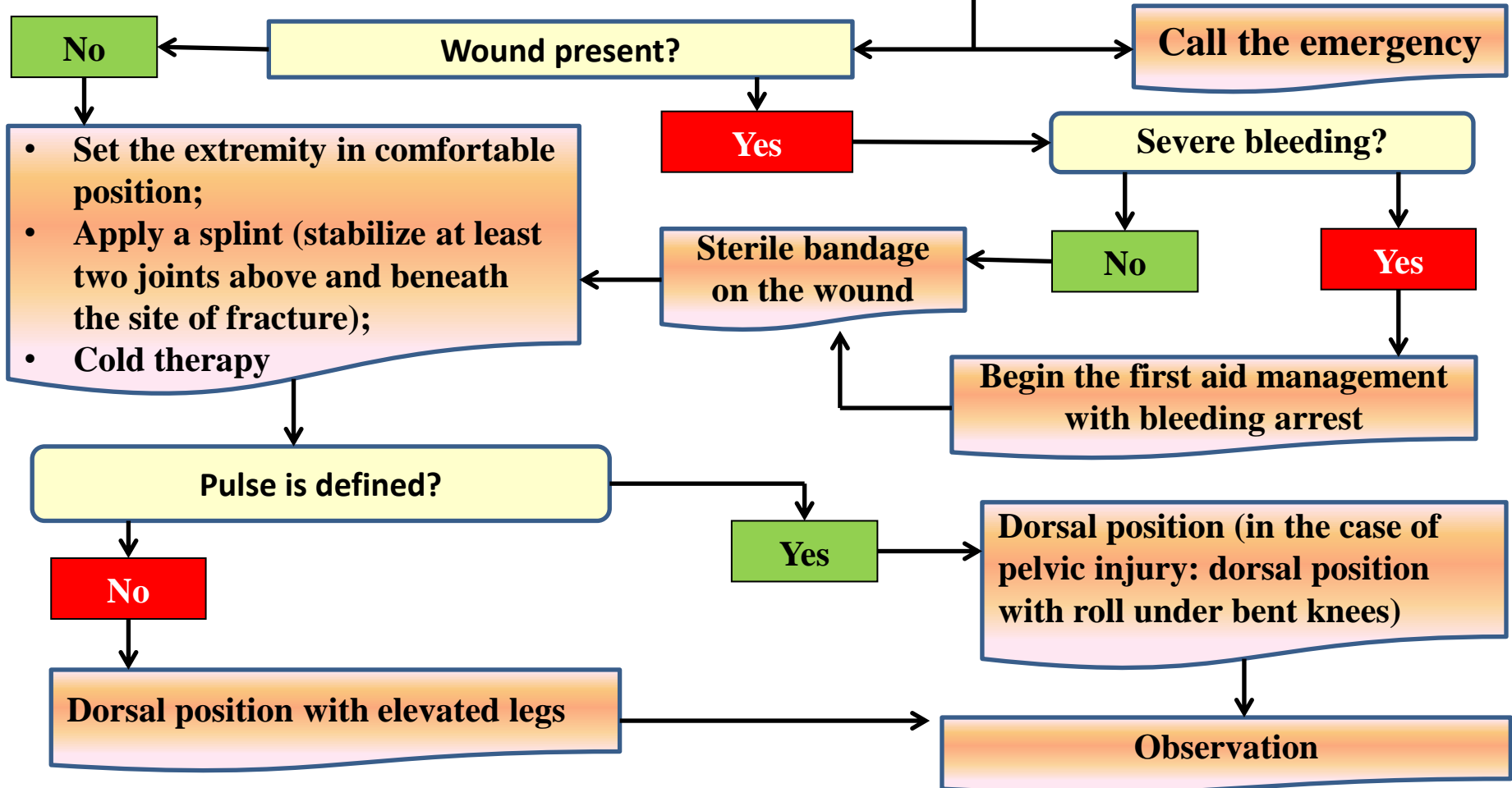
- **water the victim;**
- **reset dropped organs back into abdominal cavity;**
- **remove foreign bodies from the abdominal cavity;**
- **apply OCCLUSIVE bandage on dropped organs;**
- **apply cold on dropped organs.**

# Musculoskeletal injuries

## Assess these signs:

1. Pain in extremities or in pelvis.
2. Loss of function.
3. Visible deformation.
4. Wound with visible bone.
5. Large bruise.

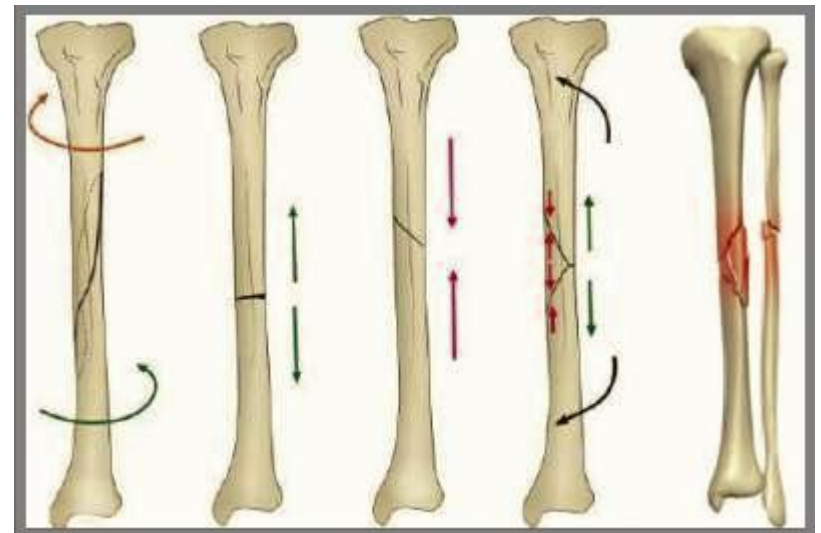
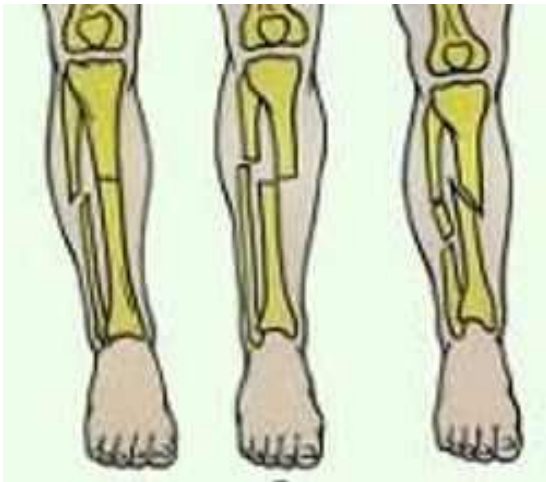
**Couple of these signs  
musculoskeletal injury or fracture**



**Causes of musculoskeletal injuries: falls, car injury, carrying or putting down objects, sporting injuries etc.**

**Signs of closed fracture:**

- **Pain;**
- **Loss of function;**
- **Bruises in damaged area;**
- **Pathologic flexibility of the damaged limb;**
- **Crepitation in damaged area;**
- **Deformation of the extremity;**
- **Length changing of the limb.**





**NB!**

It is prohibited to look purposely for such symptoms as crepitation and pathologic flexibility. You may find them out after gentle examination and careful palpation.

In case of **open fracture** there are some additional signs:

1. Wound in the site of fracture with visible bone fragments;
2. Bleeding.

**NB!**

If there is a wound in the site of fracture, it is better to consider this fracture as open.



**Transport immobilization is a base for the first aid in the case of fractures, soft tissue injuries, vessel's injuries, burns.**

**Transport immobilization is a temporary measure for patient's safety transportation. Transport immobilization is carried out with several types of splints (Cramer's splint, Dieterich's splint, pneumatic splints, vacuum splints, wire splints) or any suitable materials (planks, branches of the tree, metal structures etc.) Also, you may carry out autoimmobilization - tying the injured limb to the body (body splint).**

**Beside immobilization, it is necessary to use analgesia. Contraindication for drug administration is impairment of consciousness and abdomen injury.**



**First aid for open bone fractures includes temporary bleeding control in the first instance. Immobilization is carried out after bleeding arrest and sterile bandage application**

### **First aid in the case of closed fracture:**

- **Call the emergency;**
- **Examine the patient;**
- **Assess the pulse, the breathing, the consciousness;**
- **Set the extremity in the painless position, if it is possible;**
- **Carry out transport immobilization with splints or any makeshift materials;**
- **Cold therapy - apply ice packs to limit swelling and help relieve pain;**
- **Observation (control patient's condition until ambulance's arriving).**

### **First aid in the case of open fracture:**

- **Call the emergency;**
- **Temporary bleeding control;**
- **Sterile bandage on the wound;**
- **Pulse assessment;**
- **Full quick examination to exclude other injuries;**
- **Set the extremity in comfortable and painless position;**
- **If the person feels faint or there are some shock signs - lay the person down with the head slightly lower than the trunk and, if possible, elevate the legs on the height 30-45 sm. (Don't elevate injured leg!);**
- **Transport immobilization;**
- **Cold therapy (apply ice packs to limit swelling and help relieve pain);**
- **Observation (control patient's condition until ambulance's arriving).**

## **Common rules of immobilization**

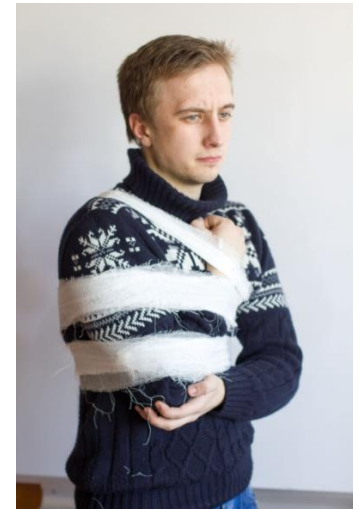
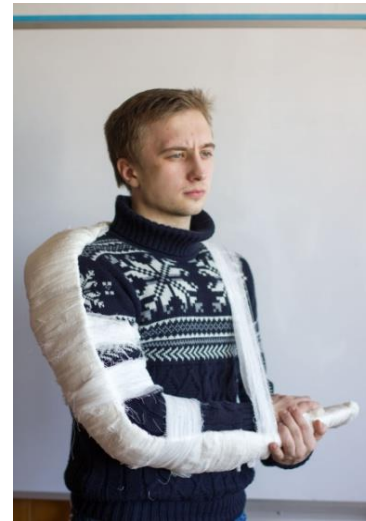
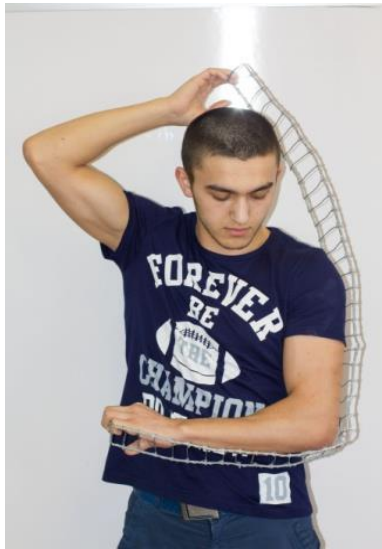
- 1. Stabilization of at least two neighboring joints flanking the area of the damage (above and beneath the site of fracture);**
- 2. In the case of femur fracture, the splint should fix 3 joints: ankle joint, knee joint and hip joint;**
- 3. If it is possible set the extremity in the painless position;**
- 4. Apply the splint above victim's clothes;**
- 5. You need a helper to support the injured limb, during immobilization;**
- 6. The length of the splint is fitted in according to the health extremity;**
- 7. The distal end of the limb should be open and available for pulse control.**

### **NB!**

- In the case of open fractures, fix the limb in primal position;**
- Don't return the bone fragments back to the wound;**
- Don't apply pressure bandage on the wound;**
- Don't apply the bandage above the tourniquet. **Tourniquet should be visible!****

## **A. Fracture of humerus (upper arm), shoulder joint, elbow joint**

**Ladder Cramer's splint is fitted in with health extremity Gauze roll (you may use a piece of any suitable fabric) is put under axillary crease of injured limb. Brachium and forearm are at the right angle to each other. After splinting you should lift the arm with sling or tie to the corpus**



**Transport the patient in dorsal position or in sitting position (it depends on the patient's condition).**



## **B. Fracture of forearm, radiocarpal joint, hand**

**Application of splint begins from upper third of brachium, it takes back surface of the forearm and hand. Forearm is at a right angle. Put the cotton pad under patient's hand to relax muscles of the forearm For better fixing use sling.**

**Transport the patient in dorsal position or in sitting position (it depends on the patient's condition).**



## **C. Fracture of femur. Traumas of hip and knee joints**

**In the case of femur fracture, the splint should fix 3 joints: ankle joint, knee joint and hip joint. Carry out the immobilization with three ladder splints or Dieterich's splint. Dieterich's splint is able to immobilize and outstretch the limb at the same time.**

### **Application of ladder splints:**

- Lower splint is a back one. Limb is laid on the lower splint. The length of the splint is a distance between loin and heel;**
- External splint is laid on the external surface of the limb. The length of the splint is a distance between heel and axillary crease.**
- Internal splint is laid on internal surface of the leg. The length of the splint is a distance between heel and inguinal area.**

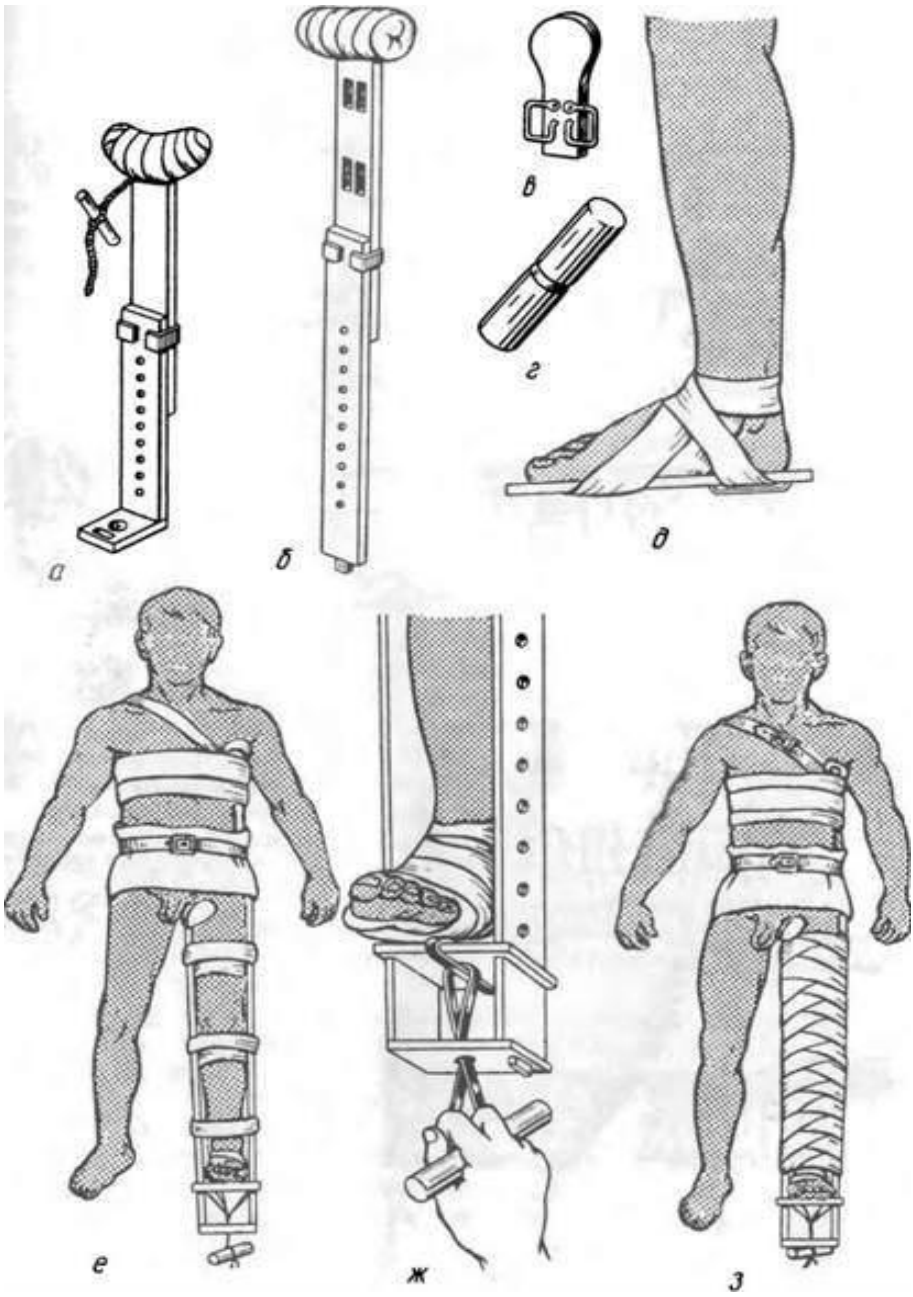
**If the length of initial splint is longer, fold the overage end of the split to the pes. Fix all of three splints in 6 sites. Put soft roll under the axillary crease. You may use only two splints: internal and external.**



**Also you may use plywood splint**







**Dieterichs tire**

## **D. Fracture of shin, foot, ankle joint**

**You need to fix two joints. It is better to apply two splints: back or lower and external. The length of these splints is a distance between the heel and the upper third of the thigh. If there is an excess of ladder splint, fold it to the foot.**

**Transport the patient in dorsal position.**

## **E. Fracture of clavicle and shoulder blade**

**The simplest immobilization is to tie the bent arm to the corpus and fix it with a sling. Transport the patient in sitting position.**

**You can also use bandage Dezo to immobilize injured clavicle or shoulder blade.**



**Dezo's bandage**

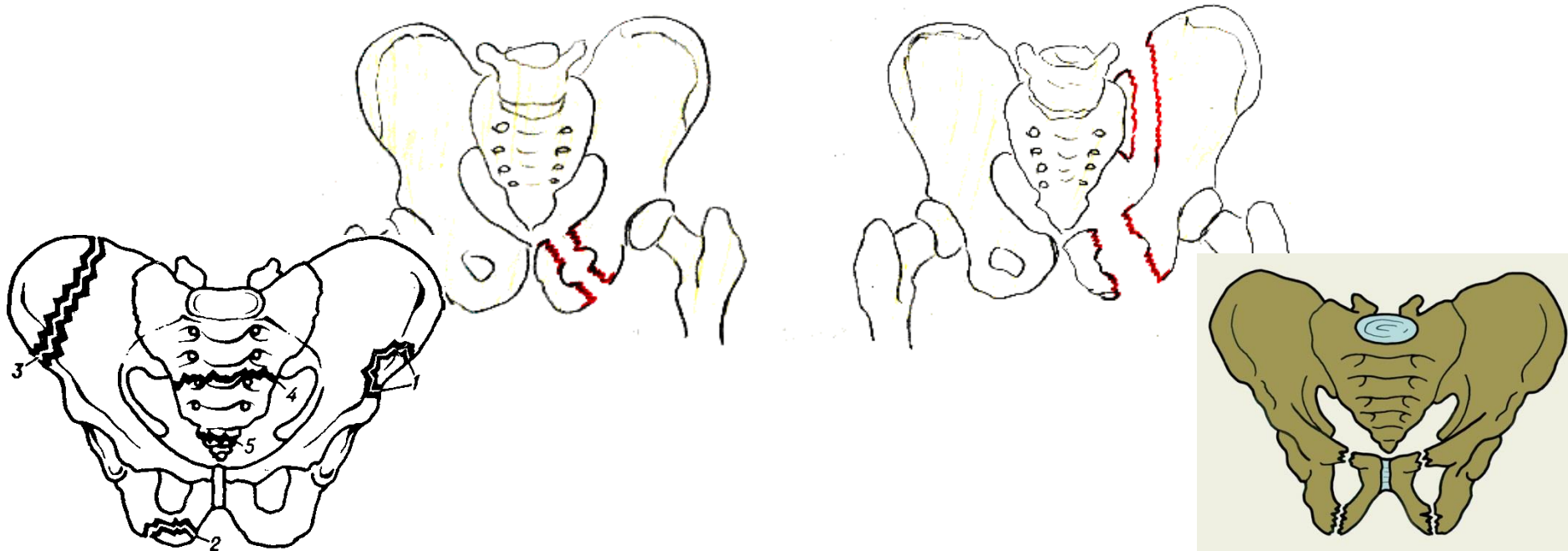


## F. Fracture of the pelvis

Injuries of pelvic bones most commonly occur coincident with severe trauma and severe bleeding with traumatic shock development. Blood loss can obtain 2 l. In the case of injury of internal organs blood loss can obtain 4 l.

### Signs of pelvic fracture:

1. Pain;
2. Pain increases with movement or with palpation of pelvic bones;
3. Bruisers in the site of lower part of abdomen, perineum;
4. Visible pelvis deformation;
5. Signs of shock caused by severe bleeding;
6. Forced patient's position – lateral position or dorsal position with separated knees.



## **First aid:**

- **call the ambulance;**
- **assess the pulse, the breathing, the consciousness;**
- **examine the casualty to exclude other injuries;**
- 
- **If there is no suspicion of cervical trauma, stabilize the cervical spine;**
- **Lay the patient down with roll under bent knees (the height of roll is about 30 cm)  
– “frog position”;**
- **Bandage the pelvis with makeshift materials to reduce displacement of bone fragments;**
- **Observe and control the patient’s condition until the emergency’s arriving;**
- **If pulse is hardly defined, lift the legs on the height 30-45 cm;**
- **Cover the victim with blanket independently of the season;**
- **If it is impossible to call the ambulance, transport the patient with care, softly fixing knee joints and ankle joints**



**NB!**

**It is prohibited to replace the patient without special need or to lift him roughly. Use other rescuer to lift and replace the patient to avoid secondary displacement of bone fragments or further bleeding or internal trauma**

**Thank you for attention**