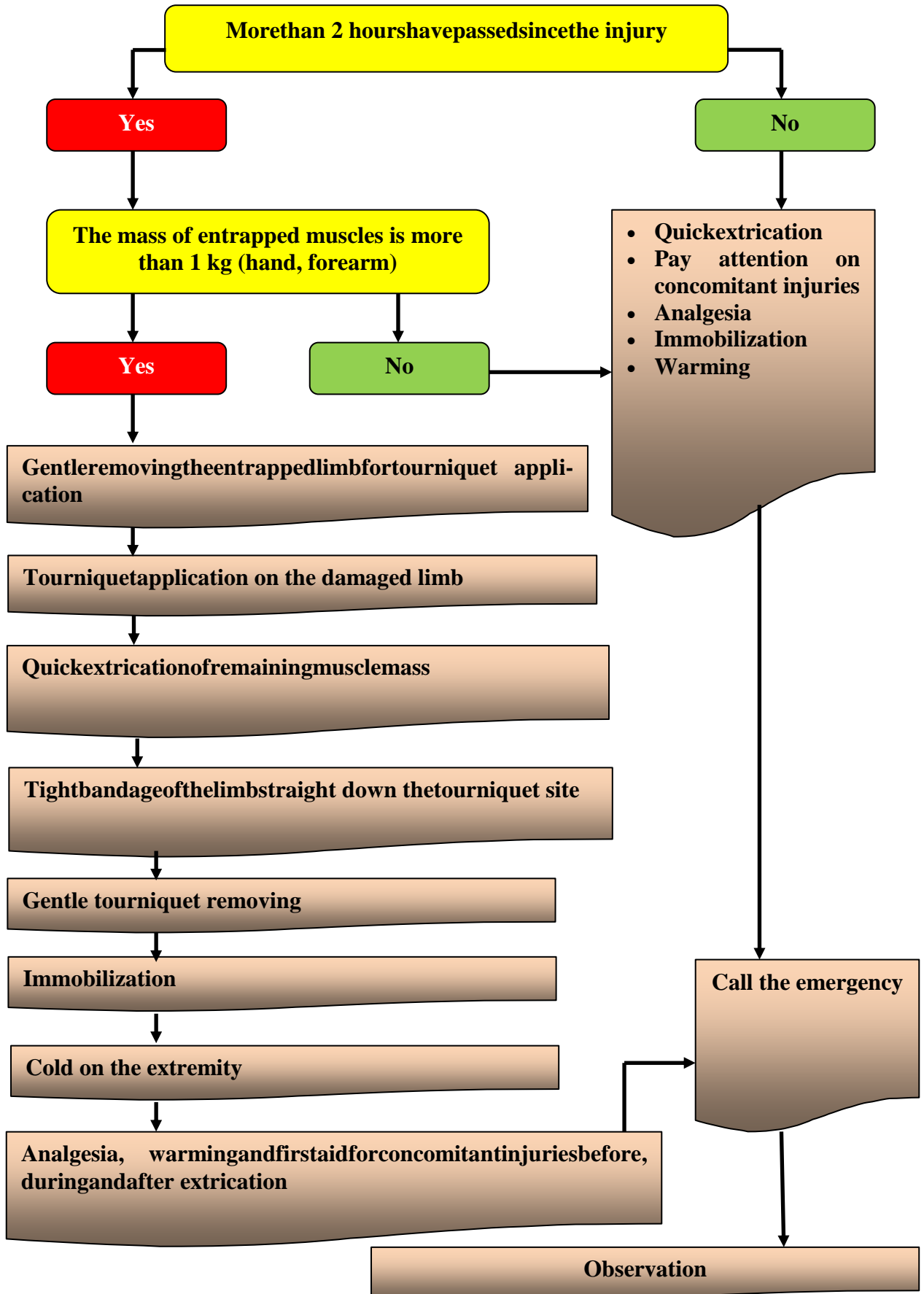


**Topic 1.13 part 2 "First aid in case of an accident"  
1. Crush syndrome**

CJI. 2

Scheme



### CJ. 3

The main point of the first aid arrangements in the case of crush injury is to prevent endotoxin release in large amounts.

Alternation of tourniquet application, extrication, tight bandaging and tourniquet removing helps to prevent it.

Table 1

Objective criteria of severity of crush syndrome.

Severity of crush syndrome	Objective criteria	
	The time of compression (limb trapped)	The volume of compressed tissues
Mild	Under 4 hours	The part of the limb
Severe	More than 4 hours	The whole limb and more

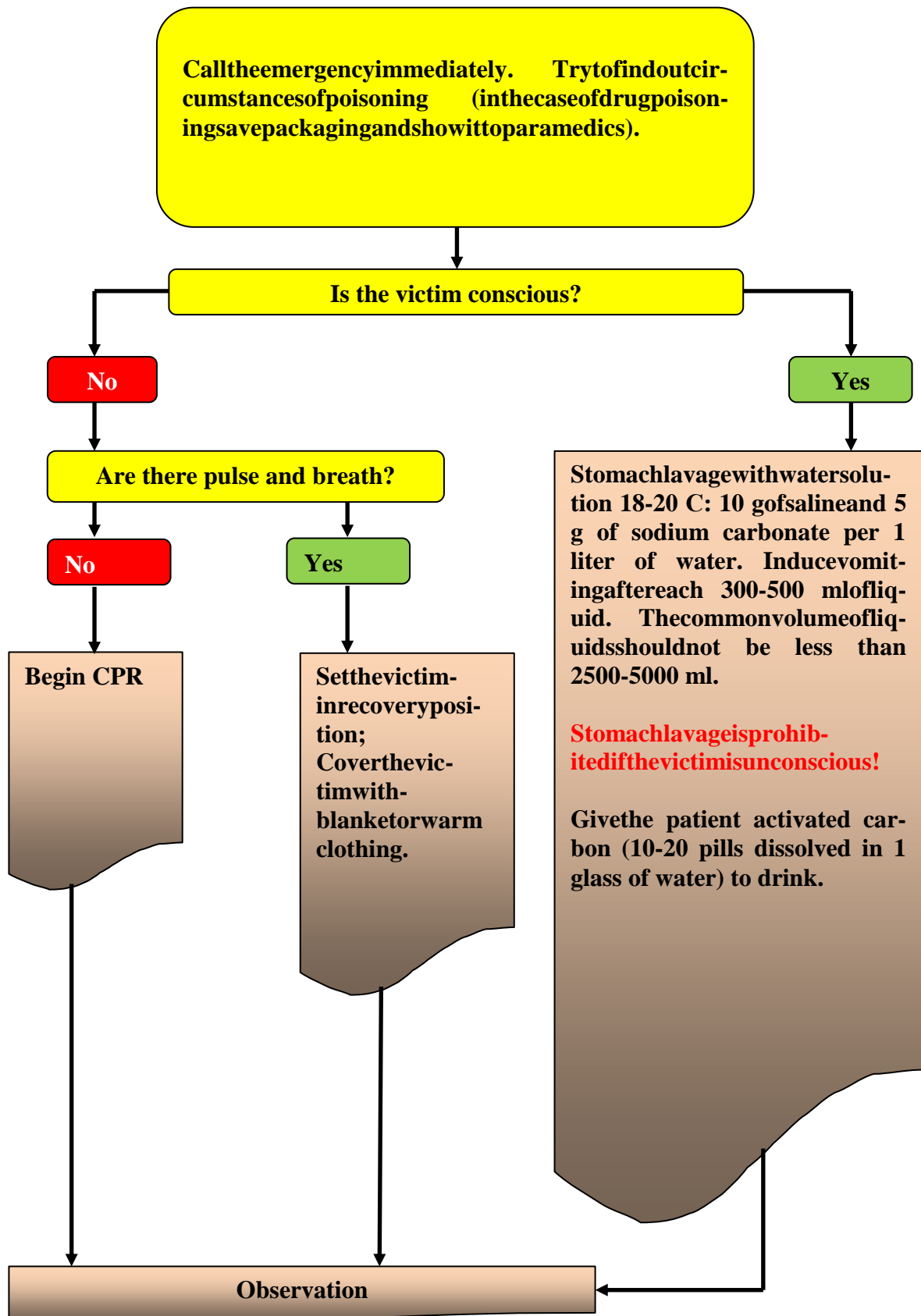
#### The sequence of emergency arrangements.

- Analgesia;
- Tourniquet application;
- Extrication of the extremity;
- Tight bandaging of the entrapped limb;
- Cold, immobilization, tourniquet removing;
- Wound mechanical clearing;
- Aseptic bandage application;
- Bandaging.

Apply the cold (the packet with ice) on the injured part of the limb and carry out transport immobilization.

2. Poisoning

Scheme 2



## CJ. 5

### First aid in the case of poisoning. Main principles:

1. Call the emergency;
2. Termination of further poison delivery into organism:
  - Take the victim to fresh air in the case of inhalation poisoning;
  - Take impregnated clothes off;
  - Activated carbon (not less than 30 g) in the case of enteral poisoning;
3. Elimination of unabsorbed poison:
  - Wash the eyes and the skin in the case of percutaneous entrance of poison;
  - Stomach lavage by inducing vomiting (**if there are no contraindications**);
  - Activated carbon or other sorbents.
4. Detoxication (ethanol as an antidote in the case of methanol poisoning).
5. Common rules of the first aid:
  - Set the victim in appropriate position for transporting;
  - Provide the inflow of fresh air;
  - CPR (if there is such a need);
  - Control all vital functions (conscious, breath, pulse).

#### **NB!**

It is prohibited to induce vomiting:

- When the patient is unconscious;
- In the case of poisoning with concentrated acids, strong caustics, petroleum.

Wash the eyes for at least 15 minutes.

## CJ. 6

### Peculiarities of first aid management depending on the type of poison.

#### A. Poisoning with hydrocarbons (petrol, kerosene, acetylene etc.)

1. Do not smoke near the victim;
2. Do not use sparking devices, eliminate the source of open flame.
3. **DO NOT INDUCE VOMITING.**
4. Set the victim in semi-sitting position, in the case of unconsciousness – recovery-position.
5. Open all windows and doors, provide the inflow of fresh air to the victim;
6. Warm the patient.

#### **NB!**

In the case of poisoning with hydrocarbons it is prohibited to use milk, alcohol for the first aid.

## CJ. 7

### B. Poisoning with carbon monoxide

1. Take the victim from dangerous zone to fresh air.
2. Set the victim in semi-sitting position.
3. Control all vital functions.
4. Be ready to begin CPR.
5. In the case of respiratory arrest – start CPR immediately.

## CJ. 8

### C. Poisoning with alcohol, methanol.

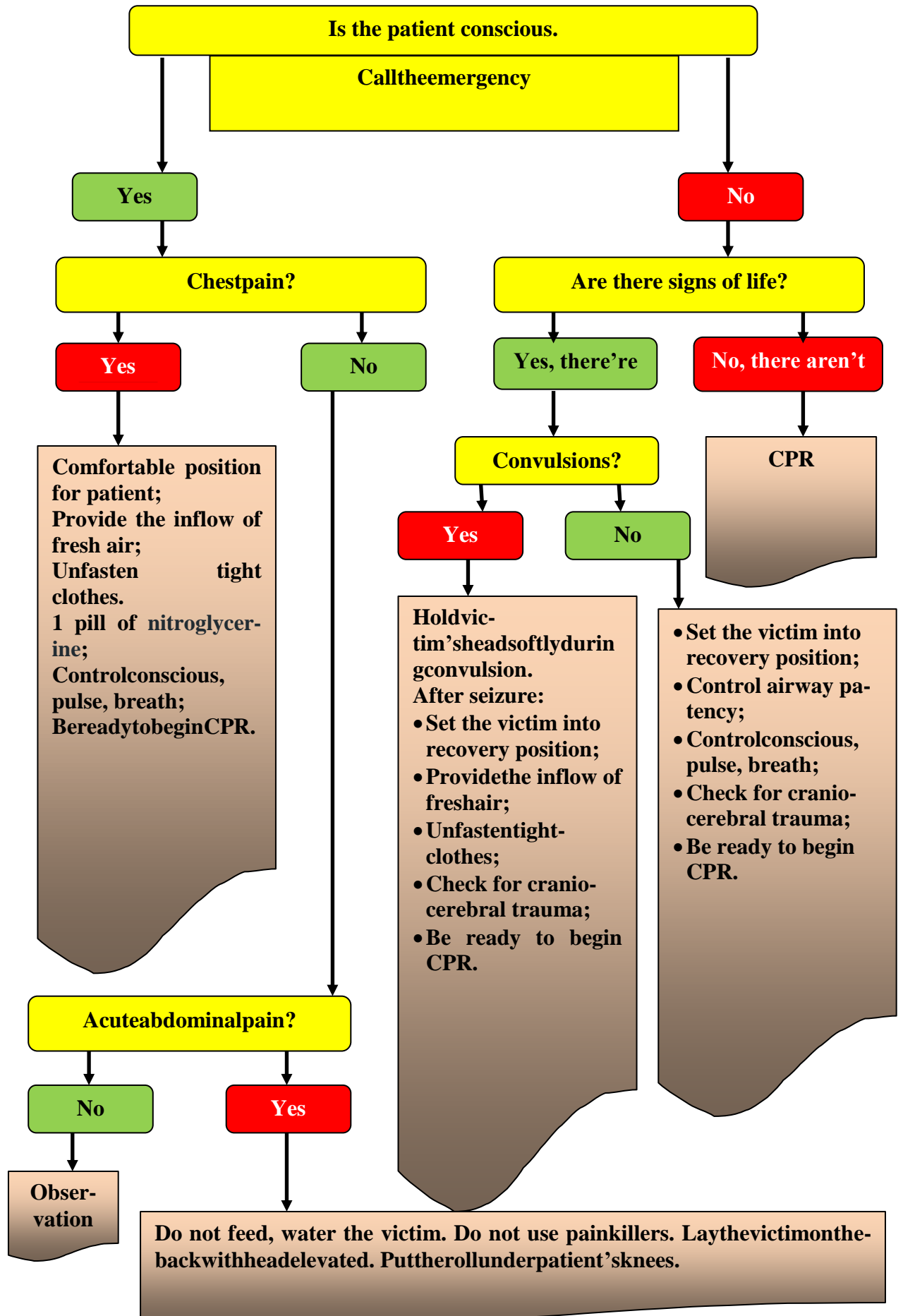
1. Set the victim in recovery position;
2. Clear the oral cavity from vomiting mass;
3. Control breath and pulse;
4. In the case of their absence, begin CPR;
5. Poisoning with methanol:
  - If the victim is conscious: stomach lavage with water, induce vomiting, give the patient an antidote (100 ml of 40% ethanol), observe until the emergency arrive.
  - If the victim is unconscious: call the emergency, set the victim in recovery (stable lateral) position, control pulse and breathing, be ready to begin CPR.

#### **NB!**

Do not use ammonia to regain consciousness in the case of acute poisoning with alcohol. Ammonia causes sharp excitation of CNS and depression of respiratory center; therefore, toxic respiratory edema is possible.

### 3. Acute conditions

Scheme 3



## A. Fainting

Fainting is when someone briefly becomes unresponsive because there is not enough blood flowing to the brain. There are many causes of fainting, including heart problems, neurological problems, acute stress, long-term standing, exhaustion, hunger and etc.

First aid for the fainting:

- Exclude heart arrest;
- In the case there is no pulse and breathing - begin CPR immediately;
- Lay the person down on the ground, face up, and elevate his/her feet 30–45 cm. (pic. 1)
- Tilt the head to open airways;
- Loosen tight clothing;
- Avoid using ammonia.

**NB!**

Call the emergency immediately if:

- The faint is more than one;
- The patient does not regain consciousness quickly (e.g., within 5 minutes);
- The patient is older than 40.

## B. Insult, stroke

During a stroke, time is of the essence. **Call emergency services and get to the hospital immediately.** You have about 3 hours to recognize the stroke and take the patient to the hospital to avoid irreversible consequences.

There are two groups of symptoms of stroke: symptoms from patient's side and signs visible from outside.

## Symptoms of stroke

Patient's complains	Signs visible from outside
Sudden nausea or even vomiting, strong headache, dizziness.	Patient's face may have dropped on 1 side, the person may not be able to smile, or their mouth or eye may have dropped.
Difficulty understanding what others are saying; Problems with balance and co-ordination; Speech may be slurred or garbled.	The patient may not be able to talk at all despite appearing to be awake; He or she may also have problems understanding what you're saying to them.
Sudden loss or blurring of vision.	If you ask the patient to show the tongue, it may have dropped one side like a smile.
Sudden feeling of numbness of 1 part of the body or face.	The patient may not be able to lift both arms and keep them there because of weakness or numbness in 1 arm.
<b>NB!</b> If you find out any of these signs – call the emergency immediately.	<b>NB!</b> If you find out any of these signs – call the emergency immediately.

On examination:

The patient is laying down, sometimes he is unconscious. The patient doesn't understand what you are saying to him. His own speech is slurred or garbled.

Skin covers are purple and wet. Breathing is rapid (sometimes breathing is rare and weak). Pupils are dilated, "floating" eyeballs. Convulsions or involuntary movement of extremities. Facial drop, salivation, nausea, vomiting.



**First aid:**

- Call the emergency;
- Set the patient into the stable lateral (recovery) position with head elevated. (pic. 2);
- Provide airway patency;
- Monitor the pulse, breathing, be ready to begin CPR.

**C. Bronchial asthma. Asthma attack.**

Signs of suffocation:

- Noisy wheezing;
- Intermittent speech;
- Pale sweaty face, bluish lips, fingernails;
- Forced semi-sitting position.

**First aid:**

- Call the emergency;
- Try to calm down the patient;
- Provide the inflow of fresh air;
- Sit the person upright comfortably and loosen tight clothing (pic. 3);
- Warm patient's legs;
- Control patient's consciousness and breathing;
- Set the patient into a stable lateral (recovery) position in the case of unconsciousness;
- Begin CPR in the case of breathing absence.

**NB!**

Remember that people suffering from asthma, usually keep asthma medication, such as an inhaler, assist in using it.



Pic. 1 Pic. 2 Pic. 3

## D. Chest pain

### First aid:

- ✓ Call the ambulance;
- ✓ Set the patient into the comfortable position: sitting position (pic.3) if it is difficult for him to breathe, lay him down or use “antishock” position with legs elevated (pic. 1) if the patient is pale, feels dizziness and weakness;
- ✓ Provide the inflow of fresh air, loosen tight clothing;
- ✓ Don't leave the patient alone, monitor him, control all vital functions;
- ✓ Be ready to begin CPR.

### **NB!**

Get immediate medical help if you think patient is having a heart attack. Ask the patient about having nitroglycerine. Give him 1 pill under the tongue. Give him second one through 5 minutes if pain persists.

## E. Epileptic seizures.

Seizures are the main symptom of epilepsy. Symptoms differ from person to person and according to the type of seizure.

A tonic-clonic seizure, previously known as a "grand mal", is what most people think of as a typical epileptic fit. They happen in two stages – an initial "tonic" stage, shortly followed by a second "clonic" stage:

**Tonic stage** – loss of consciousness, body goes stiff, and patient may fall to the floor;

**Clonic stage** – limbs jerk about, loss control of bladder or bowel, difficult breathing, patient may bite his tongue or the inside of the cheek. Tachycardia, pupillary dilation without response to light, increased sweating.

The seizure normally stops after a few minutes, but some last longer. Afterwards, the patient has a headache or difficulty remembering what happened and feels tired or confused.

Status epilepticus is the name for any seizure that lasts for a long time, or a series of seizures where the person doesn't regain consciousness in between.

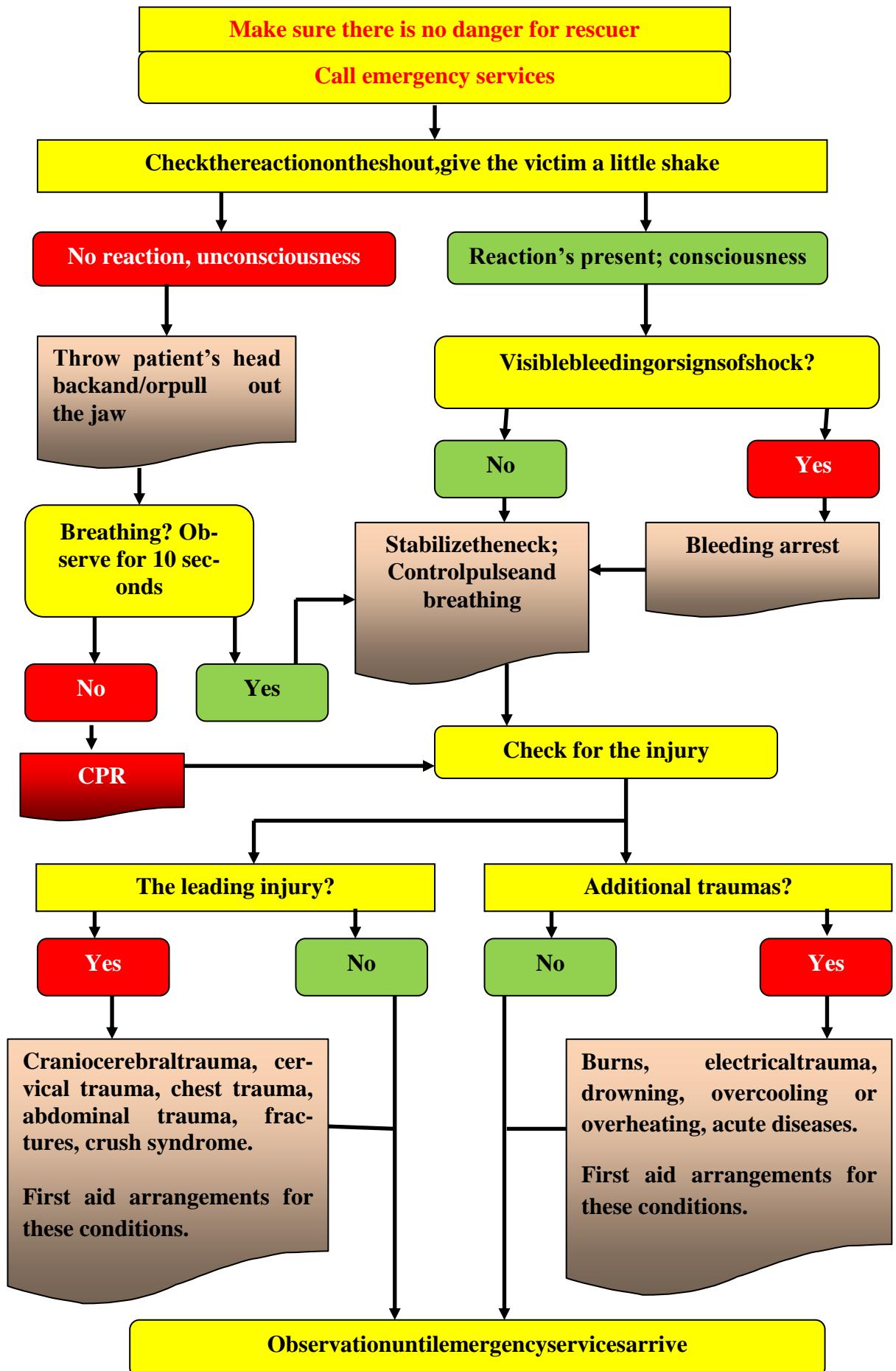
It's a medical emergency and needs to be treated as soon as possible.

**First aid for epileptic seizures:**

- ✓ Call the emergency, **describe the clinical presentation of the seizure;**
- ✓ Turn the patient gently onto one side. This will help him breathe.
- ✓ Clear the area around the person of anything hard or sharp. This can prevent further injury.
- ✓ Put something soft and flat, like a folded jacket, under his or her head.
- ✓ Loosen ties or anything around the neck that may make it hard to breathe.
- ✓ Time the seizure;
- ✓ Do **not** hold the person down or try to stop his or her movements;
- ✓ Do **not** put anything in the person's mouth, this can injure teeth or the jaw;
- ✓ Set the patient into the stable lateral (recovery) position after the seizure.  
(pic. 2).















## 4. First aid for car accident

Scheme 4



### 5. Transport positions

Transport positions in different traumas and conditions

<p>“A”</p>	<p>Asphyxia</p>	<p>Impairment of consciousness</p>			
<p>Recovery (stable lateral) position</p>					
<p>“B”</p>	<p>Breath</p>	<ul style="list-style-type: none"> <li>Breath shortness</li> <li>Chest trauma</li> </ul>			
<p>Position with elevated corpus</p>					
<p>“C”</p>	<p>Core (Heart)</p>	<ul style="list-style-type: none"> <li>Chest pain</li> <li>Pulmonary edema</li> </ul>			
<p>Semi-sitting position</p>					
		<p>Shock</p>			
<p>Antishock position</p>					
<p>“D”</p>	<p>Other</p>	<p>Bone fractures</p>			
<p>Dorsal position</p>					
		<p>Spinal trauma</p>			
<p>Dorsal position with the roll under knees</p>					
		<p>Pelvis trauma</p>			
<p>Dorsal position with elevated head and the roll under knees</p>					

Honorable students!

**After learning this material, you need to pass the test in Google-form. Please fill all gaps properly (name, faculty, number of your group).**