

First-aid Training course

UNIGE – STEPS

17 sept. 2024

F. Renaud, G. Chamayou, A. Garcia, N. Dupont

Version 0.11 2024

Objectives

- At the end of the course, participants :
 - Recognise the characteristics of unconsciousness, stroke, and cardiac arrest
 - Raise the alarm appropriately
 - Apply basic life support measures



Motivation / Ethics

- **Moral motivation**

- A set of rules of conduct considered to be good in an absolute sense or derived from a certain conception of life.



- **Legal grounds**

- Penal code
- Civil Code



Medico-legal implications

Swiss Penal Code: *Art 128: Failure to render assistance*

*Anyone who fails to render assistance to a person whom he has injured or to a **person in imminent danger of death**, when **this could reasonably be required of him under the circumstances**, is punishable.*

The biggest mistake would be not to help!

What to do in urgent situations



Look
Think
Act





ORA* rule



Look

- Assessing the situation
- What happened?
- Who is involved?
- Who is injured?

*Observer Réfléchir Agir



ORA rule

Think

- Danger for rescuers?
- Danger to other people?
- Danger for the injured?





ORA rule

Act



- Protecting yourself from danger
- Protecting and signalling the emergency site
- Alerting emergency services
- Giving first-aid

Personal protection

- Protection against disease transmission:

- ✓ Protective gloves



- ✓ Goggles



- ✓ Insufflation protective mask or possibility of not performing insufflations



Alert

- Health emergencies: **144***
- Internal UNIGE emergency number:
from a landline: **12.22**
or **(00.41)22.379.12.22**

***This call will be recorded as proof of your assistance, releasing you from all civil and penal liability.**

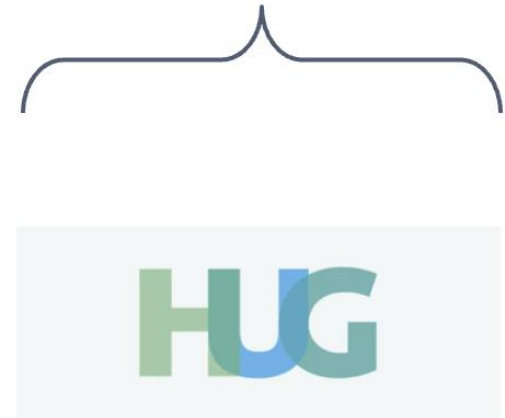
Rescue chain



It's you!

**Medical
professionals**

Hospital



**PROTECTION
ALERT**

**FIRST-AID
PROCEDURES**

**PRE-HOSPITAL
CARE**

**MEDICAL
FOLLOW-UP**



Alarm with support

Alert



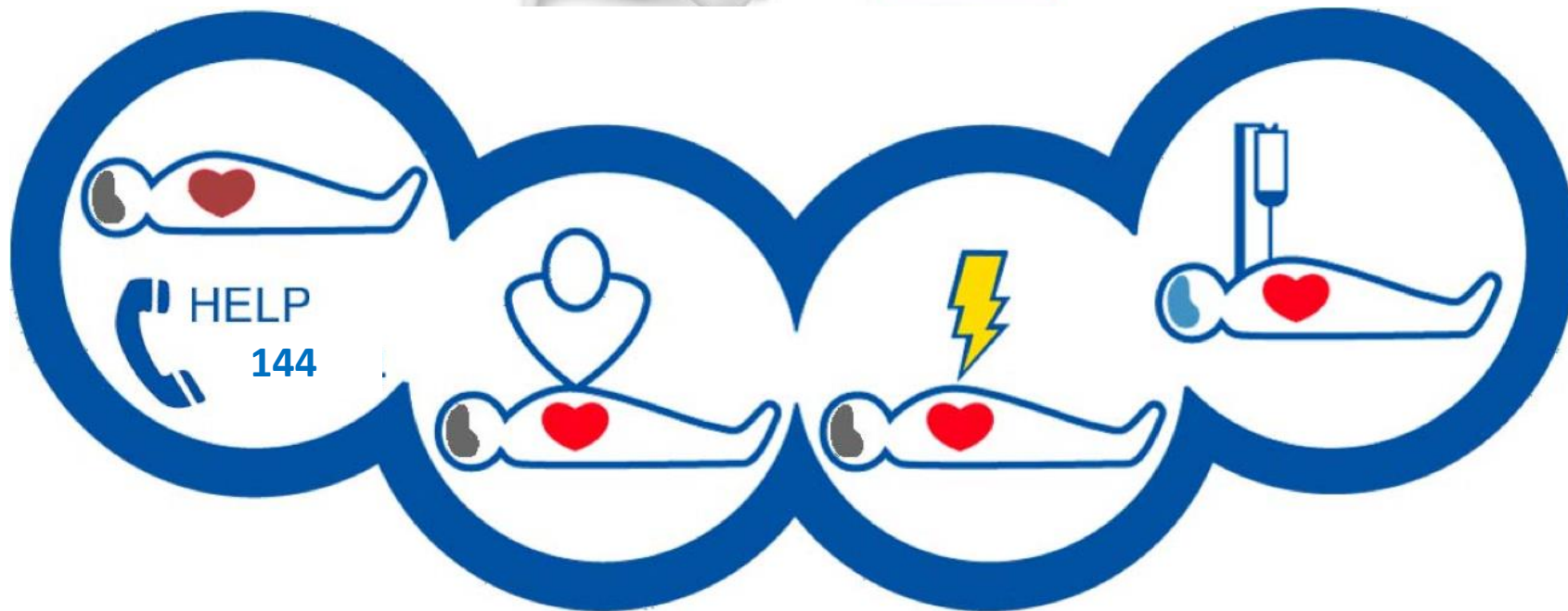
CPR



AED



Pre-hospital care



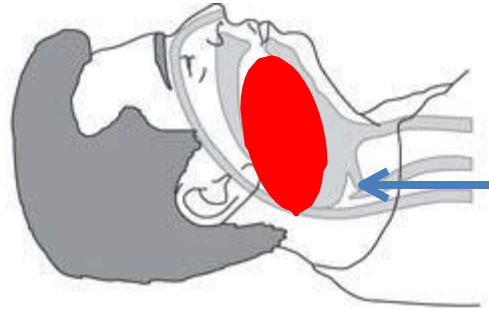
Loss of consciousness



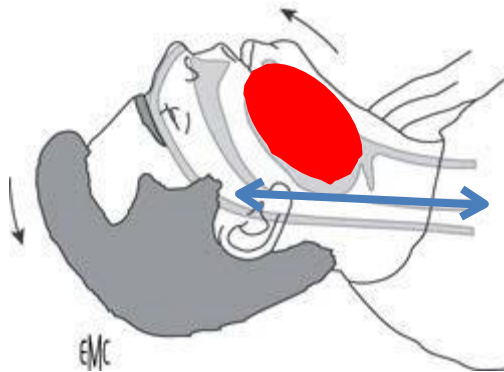
Being able to keep the casualty's airways open and clear to allow liquids to drain from the mouth until the arrival of the emergency services.

Loss of consciousness

Freeing the airways



Neutral position = **danger**



Carefully tilt the head
backwards and lift the chin

Loss of consciousness

Appreciate the mental status

1. Ask simple questions

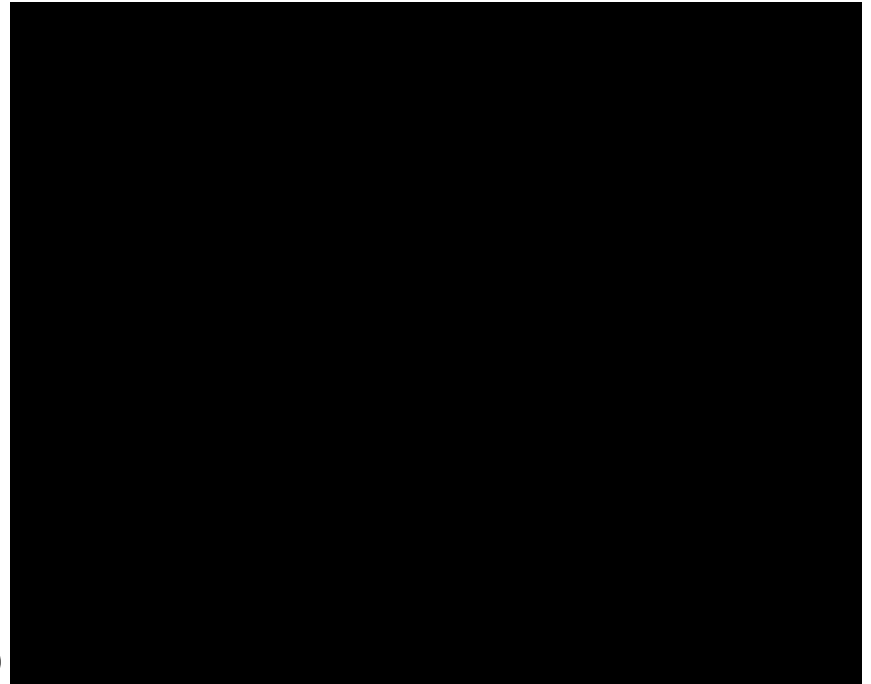
(«do you hear me?»)

2. Give simple orders

(open your eyes, squeeze my hands)

3. Physical stimulation

Anyone who suffered from a consciousness must undergo examination.



Loss of consciousness

Evaluation of breathing: look, listen, and feel method



INDICATION:

keep the chin lifted.

Place your ear and cheek over the person's mouth and nose.

- Look if the chest and abdomen are rising
- Listen for potential sounds of normal or abnormal breathing
- Feel a potential flow of air during expiration

KEY POINTS

The procedure should not take longer than 10 seconds

Loss of consciousness

Recovery position

If breathing is normal

- Casualty in recovery position
 - = Allows any fluid to exit through the mouth
 - = Ensures that the airways are unobstructed
 - = Allows the casualty to be positioned in a stable manner
- Permanently supervise the casualty and check breathing
- Protect from cold / hot



Pregnant woman
always on the left side



Stroke

- **Target organs**
 - Heart
 - Blood vessels
- **Mechanism**
 - Development of fatty plaques on vessel walls
 - Decrease/abolition of blood flow to part of an organ



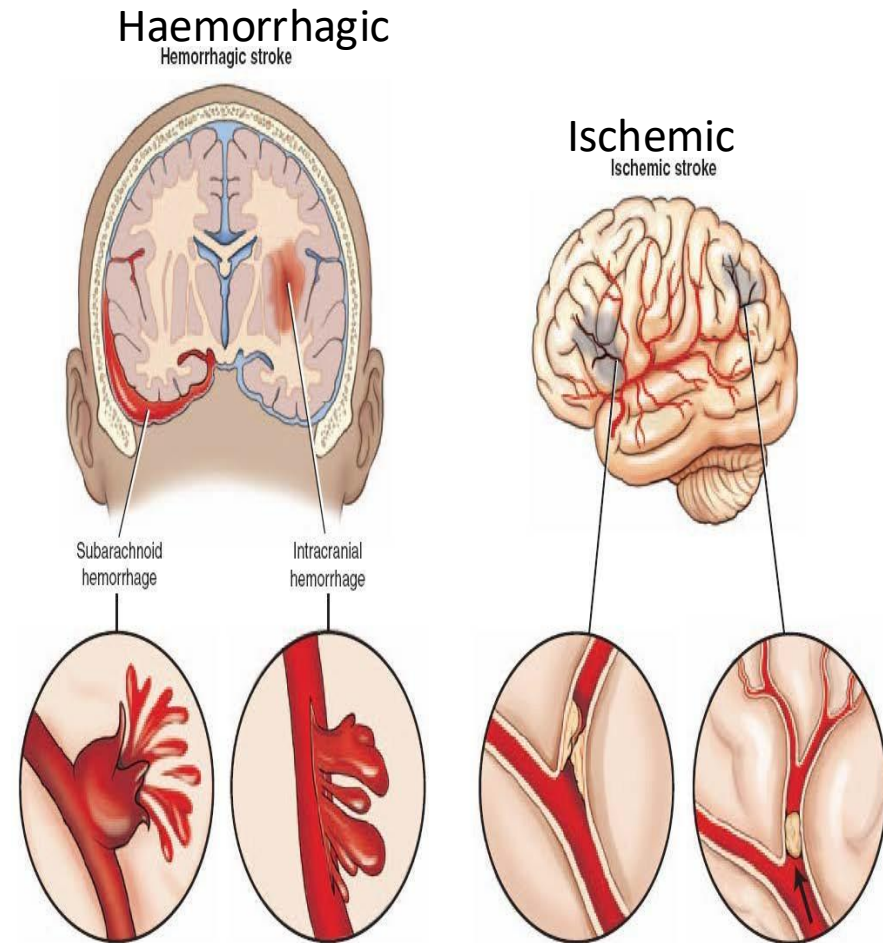
Stroke

Mechanisms

- Cerebral haemorrhage
- or
- Ischaemic: vascular obstruction



Lack of local oxygen



Stroke

- **Symptoms**

- Lateralization
- Speech disorders
- Reduction or abolition of sensitivity and/or motor skills
- Disorientation, apathy, amnesia
- Headache, nausea

Stroke - FAST



Stroke

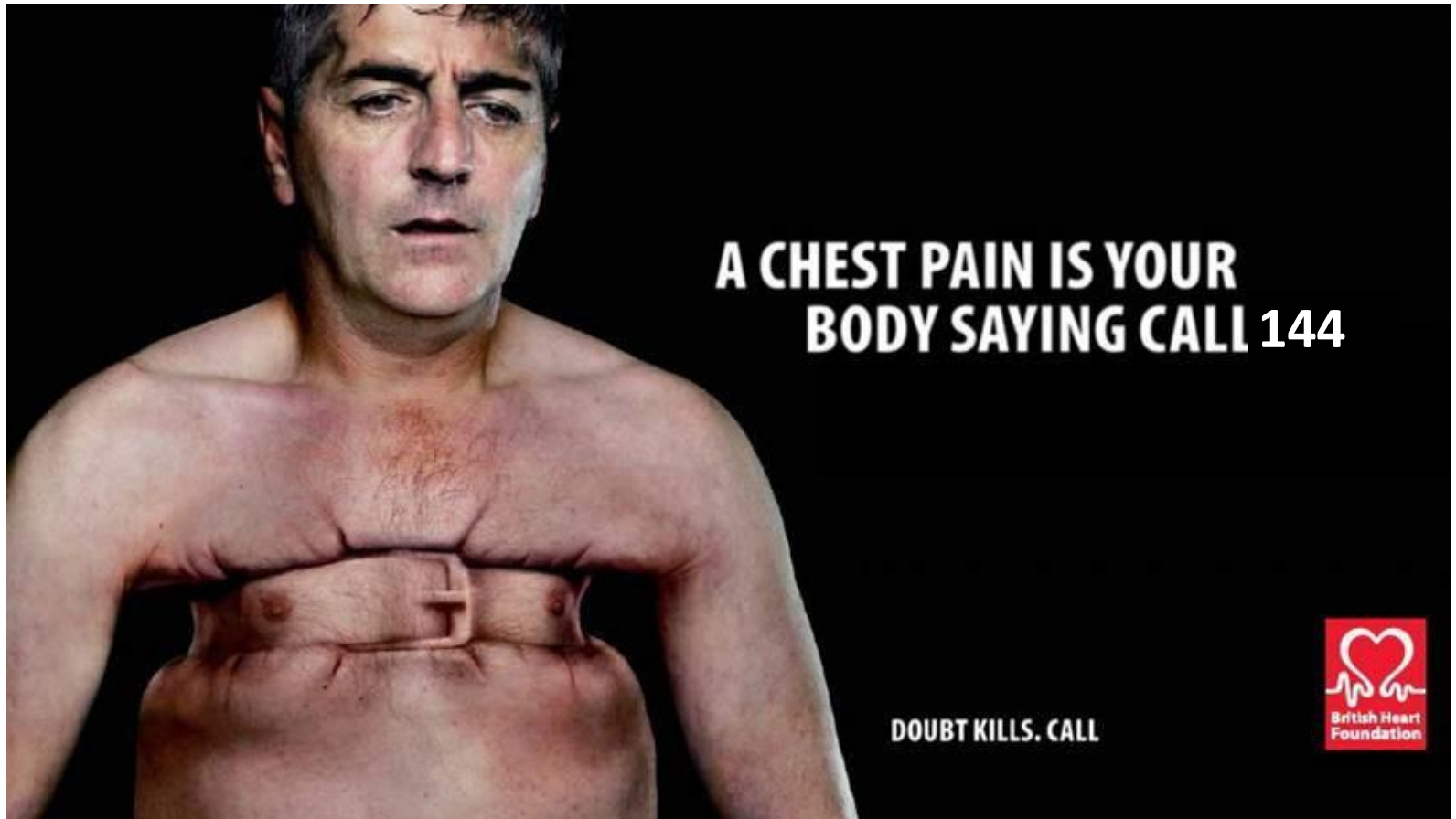
- **First aid**

- Call 144 quickly
- Lay the casualty down, reassure
- Encourage breathing (open shirt and tie)
- Do not make the casualty exert themselves

Time is brain!!!



Myocardial infarction



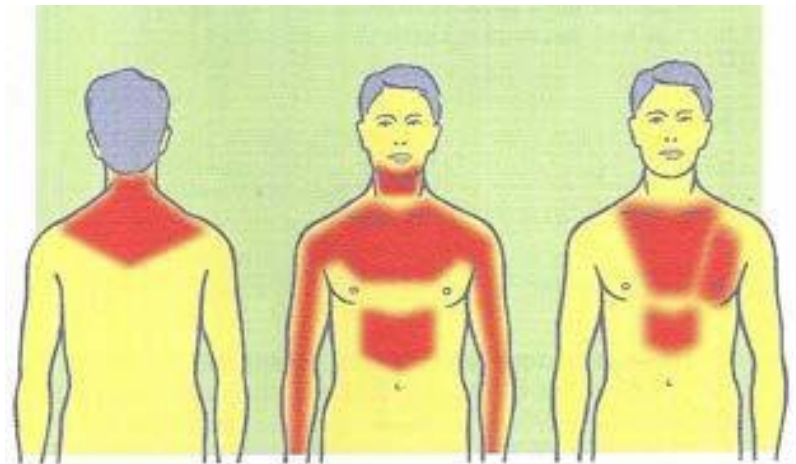
Myocardial infarction

- **Symptoms: man or woman**

- Chest or epigastric pain,
- Oppressive or burning pain
- Pain radiating to the arms, neck, jaw, back and/or abdomen

- **Specific symptoms: woman**

- Shortness of breath or difficulty breathing with or without chest discomfort
- Feeling dizzy, light-headed or faint
- Feeling sick, indigestion, being sick
- Sweating or a cold sweat.



Myocardial infarction

- **First-aid if conscious**
 - Call 144 quickly
 - Sit the person down, reassure
 - Encourage breathing (open shirt and tie)
 - Do not make the casualty exert themselves



Cardiac arrest

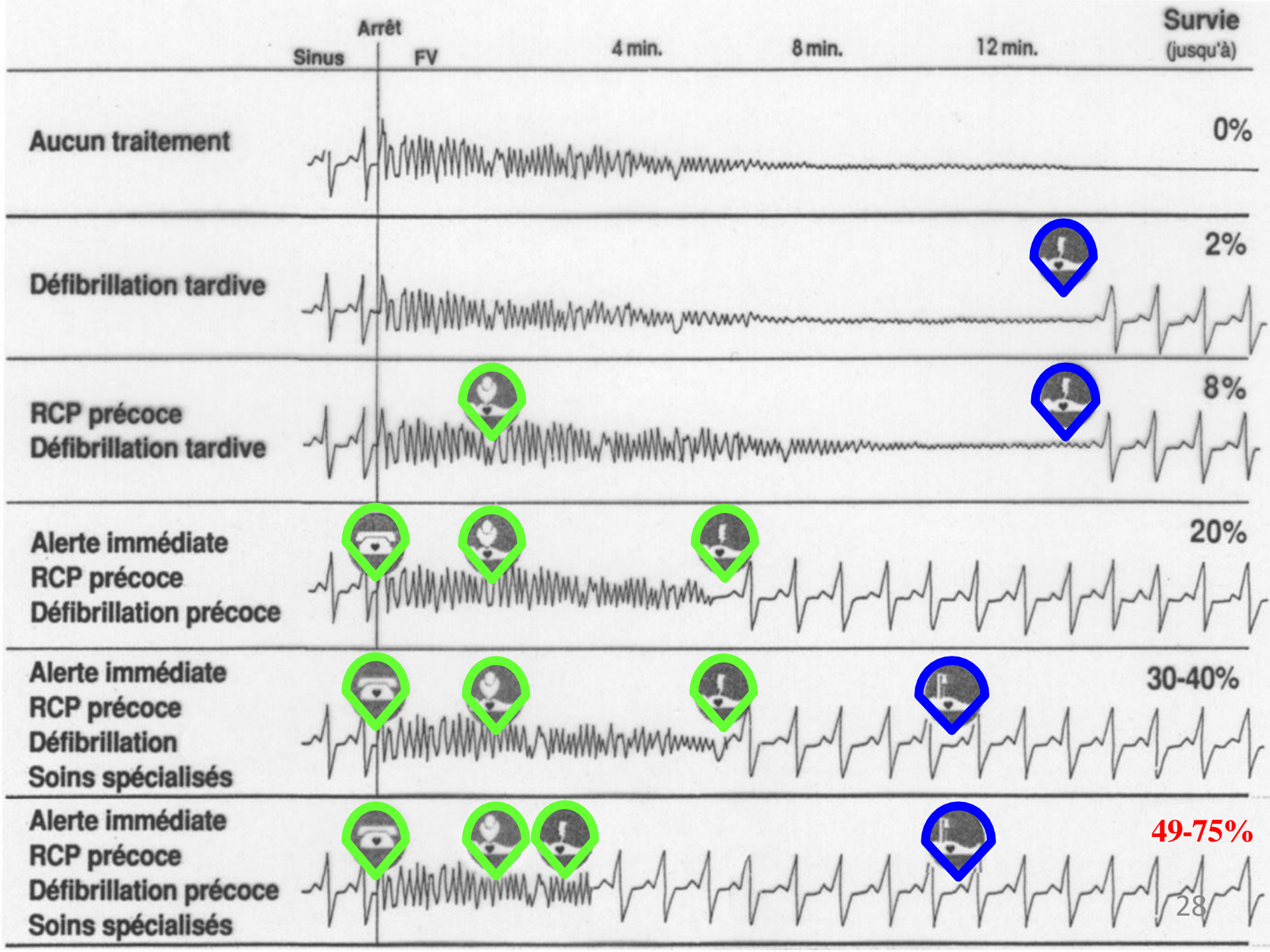
- **Symptoms**
 - Unconsciousness
 - Not breathing



Cardiac arrest

- **First-aid**
 - Call 144 quickly
 - Chest compressions
 - Defibrillation





Cardiac arrest

Cardiopulmonary resuscitation (CPR)

If not breathing:

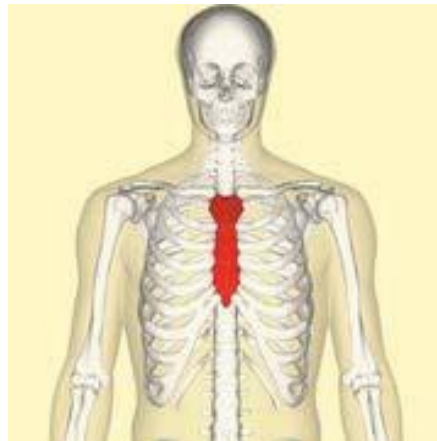
- Place the casualty on a hard surface
- Start chest compressions immediately
- Press hard and fast (100/min.)
- Counting out loud



Cardiac arrest

Adult chest compressions

- Heel of the open hand
- Two arms outstretched
- Middle of the sternum



Cardiac arrest

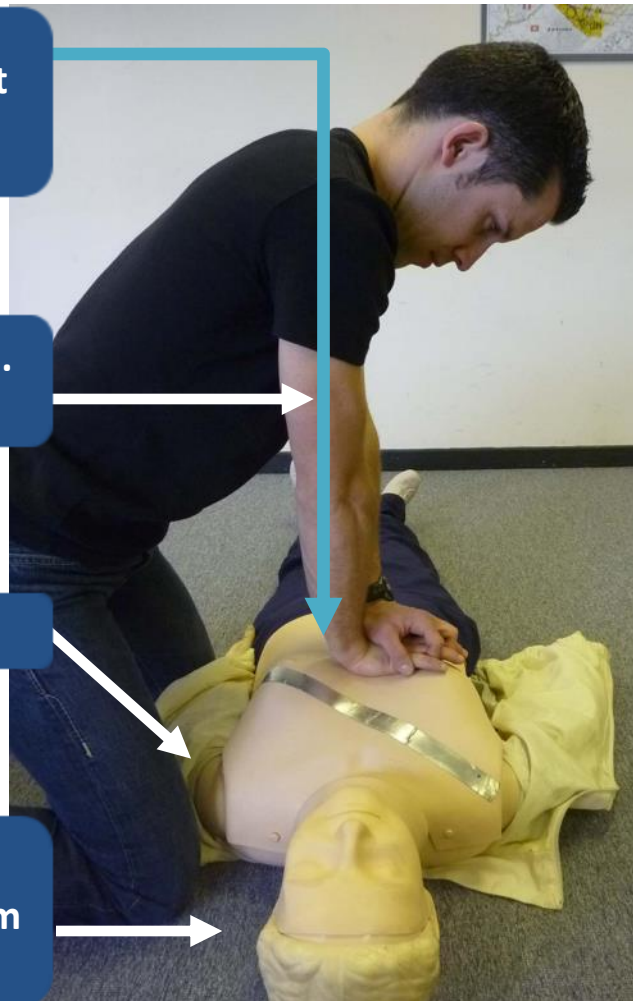
Chest compression

Lean directly over the chest and press down vertically

Arms stretched and vertical.
Elbows locked

Stand beside the casualty

Casualty in horizontal position, preferably on a firm surface



Perform **30 chest compression** pressing about **5-6 cm**.

Give **30 compressions** at a rate of **100-120 per minute**.

Ensure that the compression time is equal to the release time.

Allow the chest to regain its original shape between each compression.

110 BPM
Beats Per Minute

Cardiac arrest

Chest compression

Children



Heel of one hand with
fingers lifted
Compress about 5 cm

Positioning a finger-belt over
a mark made up of the
bottom of the sternum and
the junction of the last ribs

Perform
30 chest compressions
pushing on the thorax for
one third of its thickness.

Babies



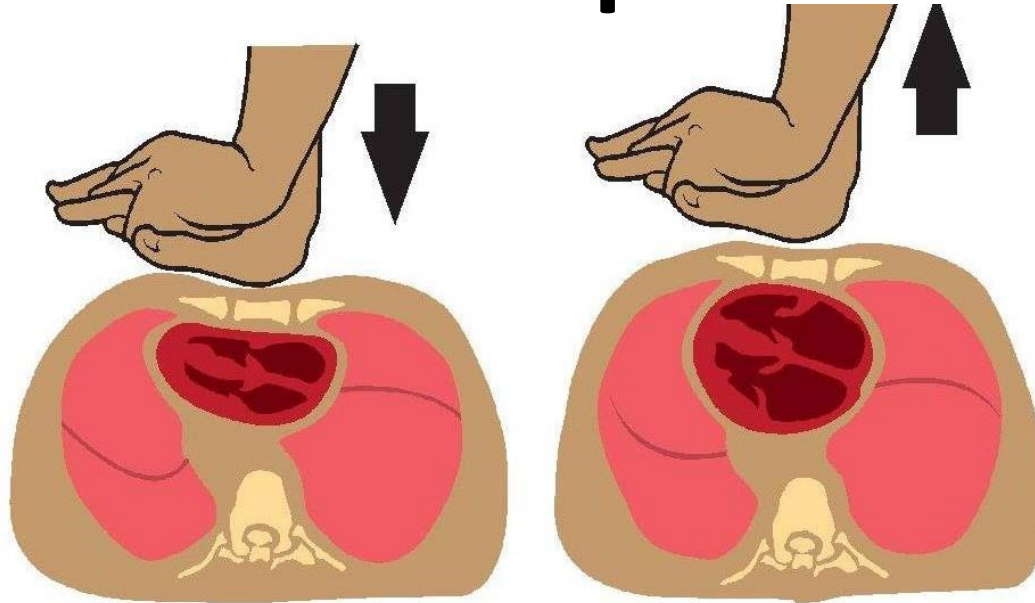
Two fingertips on the
axis of the sternum
Compress about 4 cm

Keep the rate of 100-120 compression per minute.

110 BPM
Beats Per Minute

Cardiac arrest

Chest compressions



**Compression speed/depth =
decompression speed/depth
(complete release)**

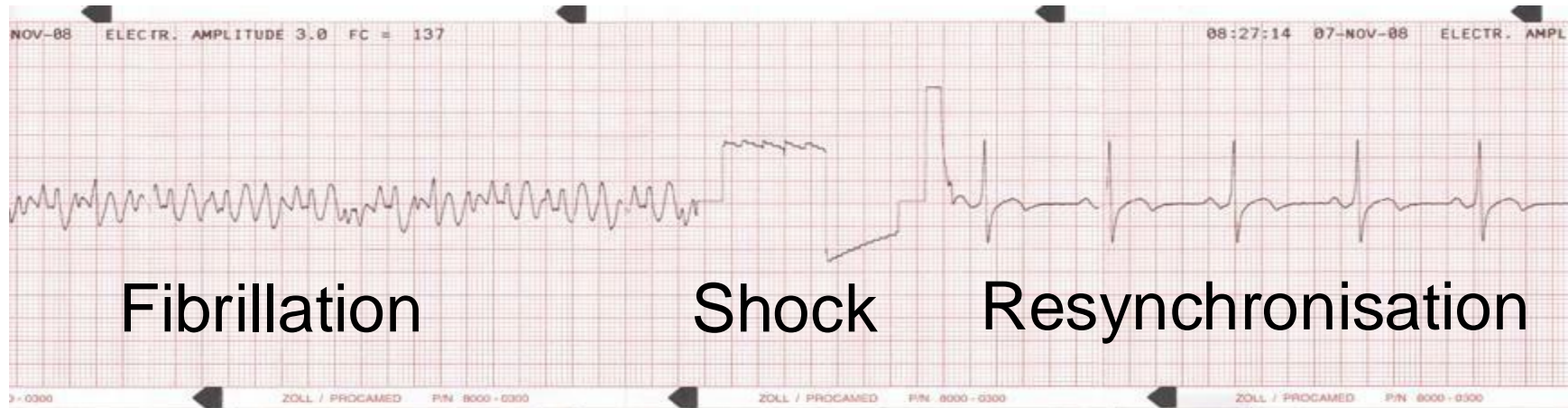
Cardiac arrest

CPR

- **CPR must always be continued until:**
 - the casualty shows signs of spontaneous life
 - emergency services take over
 - the rescuer is exhausted
 - safety is no longer guaranteed
- **CPR must not be started:**
 - in the event of danger to the rescuer
 - in cases of rigor mortis
 - if the head is detached from the trunk

Defibrillator

Ventricular fibrillation



An electric shock = resynchronisation

Resumption of normal contractile activity in the heart

Cardiac arrest Defibrillator

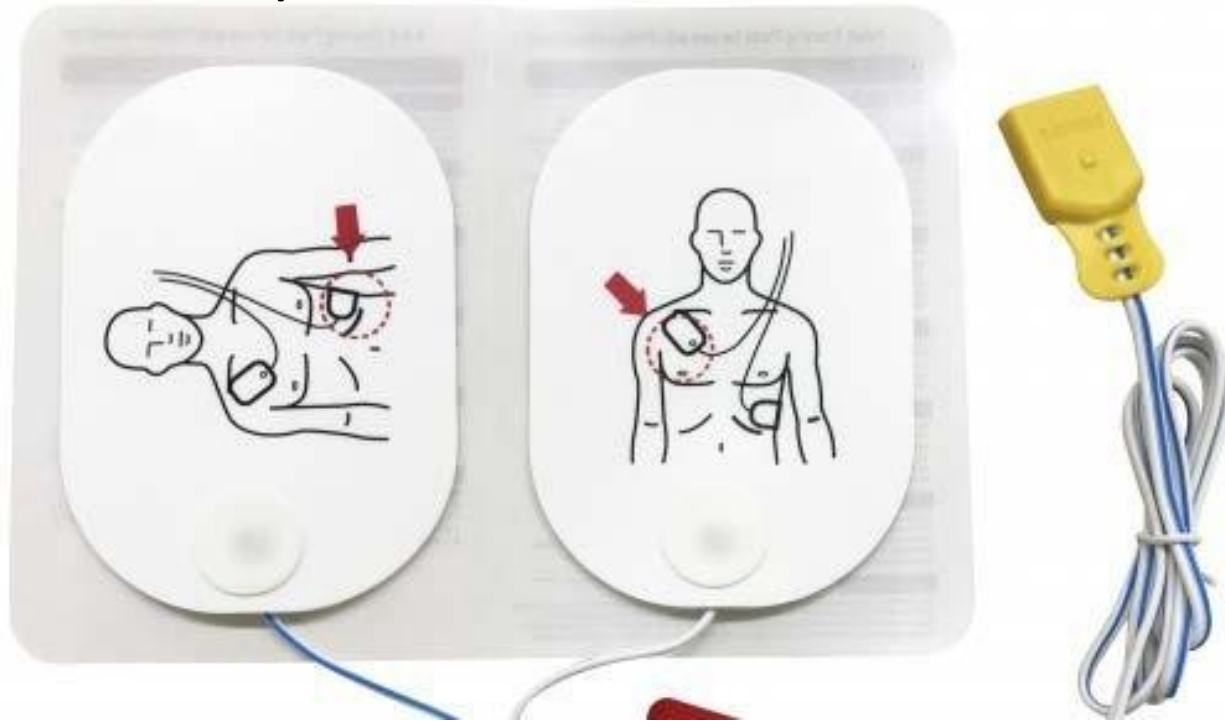
- Switching on the defibrillator
- Listen / Watch
- Follow instructions



If two rescuers, continue CPR while the defibrillator is installed

Cardiac arrest Defibrillator

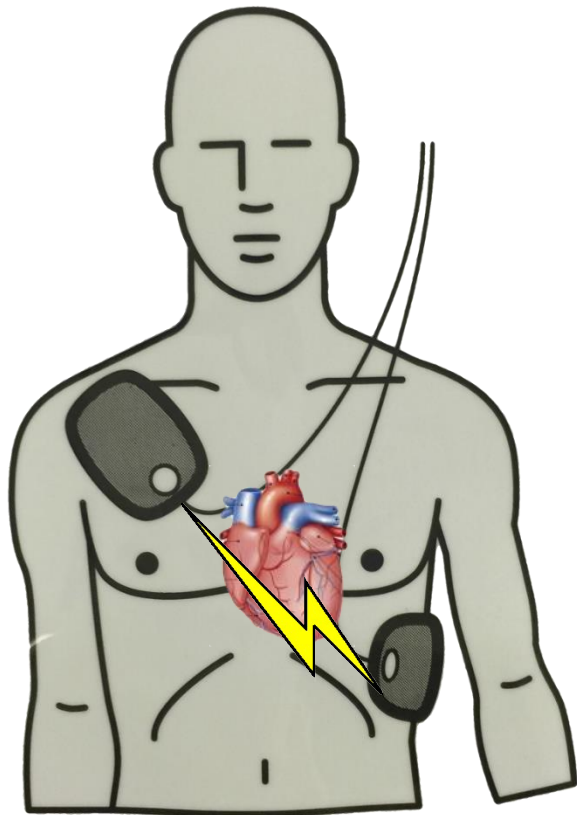
- Pads position



Cardiac arrest

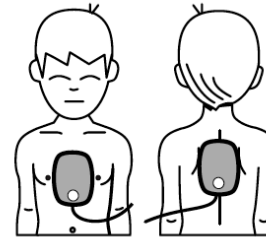
Defibrillator

- Pads position



55+ lbs / 25+ kg

Pads must be placed exactly as shown on the picture on the pads themselves or on the case containing the defibrillator.



The heart must be on the path of the delivered electrical shock.



Never switch the defibrillator off
Never remove the pads

Even if the casualty starts breathing again

Cardiac arrest Defibrillator

- Additional equipment



Cardiac arrest Defibrillator

- Specific cases

- Hairy thorax



Shave the parts needed

- Moist/wet thorax



Dry before applying the electrodes

- Jewellery



Avoid contact with the electrodes

Cardiac arrest Defibrillator

- Specific cases
Pacemaker



Leave at least 2 fingers
between the electrode
and the pacemaker



Cardiac arrest Defibrillator

- Take the time to analyse

**Make sure no-one touches
the casualty during the
analysis!**



Cardiac arrest Defibrillator

If shock recommended:

- Say aloud :

"BEWARE SHOCK"

- Continuous visual inspection
- Deliver the shock



Cardiac arrest

Defibrillator

Immediately after the shock
or if the shock is not
recommended:

- **resume CPR
(compressions +
ventilation)**
- **until the next analysis**



In a nutshell

- If in doubt, do not hesitate to call **144**
- Recovery position for unconscious **and** breathing casualty
- Start CPR as soon as you notice unconsciousness **and** lack of breathing
- Limit interruption of compressions

Have confidence in yourself!