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The ABCDE approach

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Resuscitation Council UK

The ABCDE Approach

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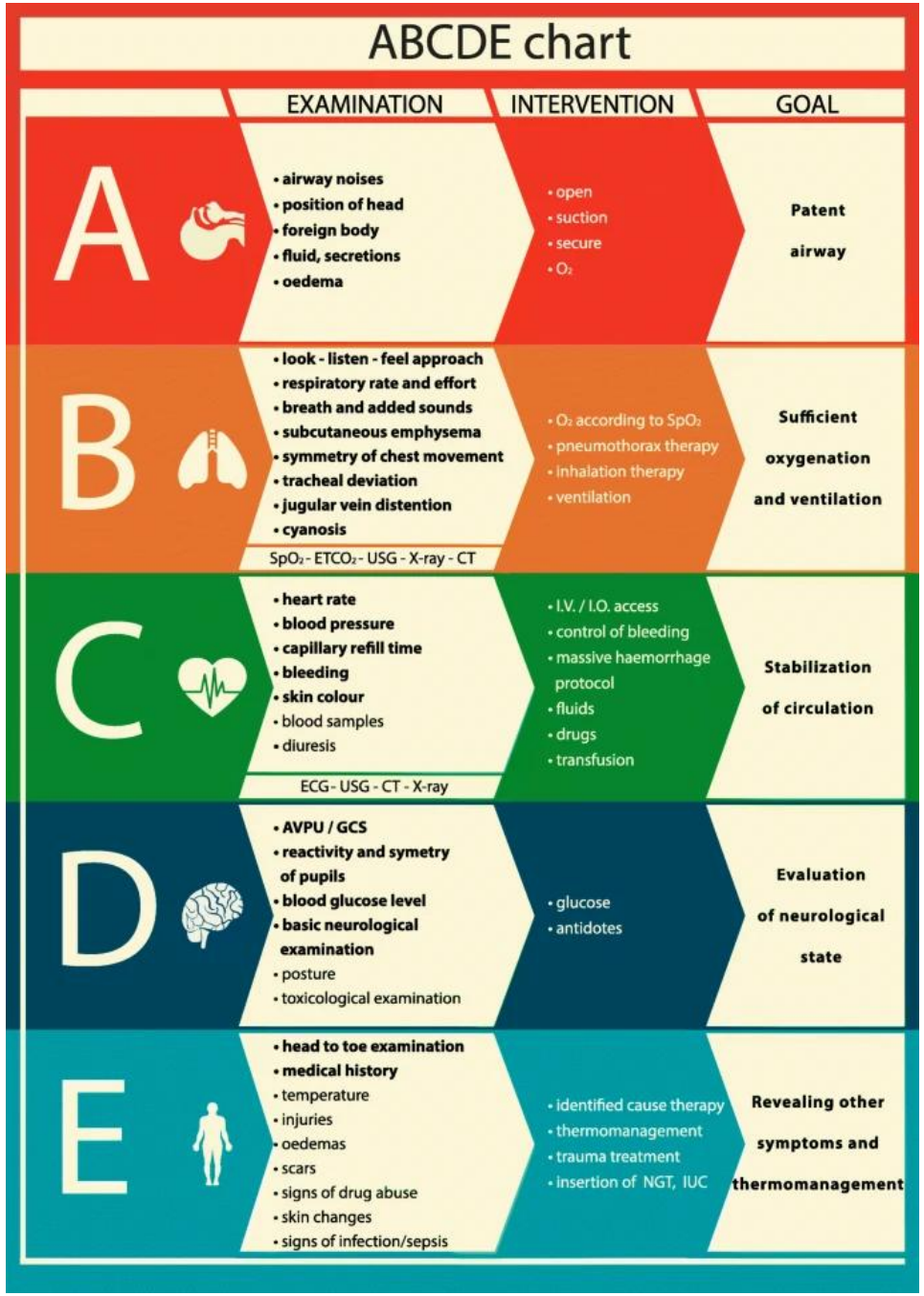
Review

The ABCDE approach in critically ill patients: A scoping review of assessment tools, adherence and reported outcomes

Laura J. Bruinink[a,1,*], *Marjolein Linders*[a,1], *Willem P. de Boode*[b], *Cornelia R.M.G. Fluit*[c], *Marije Hogeveen*[b]

ABCDE approach

- Combined evaluation and management of injured patients.
- Primary Survey: identify and treat immediately life-threatening conditions.



Underlying principles

- Communicate effectively
- Tasks are performed simultaneously by all members of the team
- Treat life-threatening problems before moving to the next part of assessment.
- Assess the effects of treatment

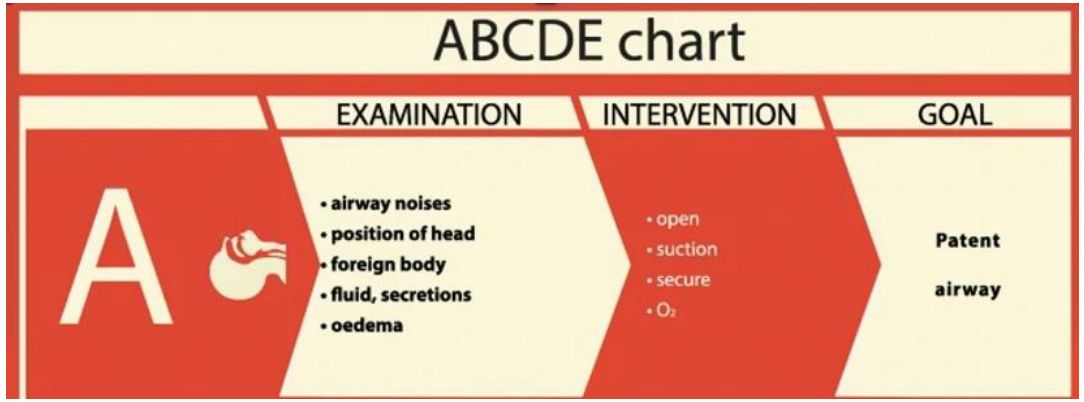
-> The aim: buy time for further treatment and making a diagnosis.

First step

- Always insure personnal safety

- First rapid « Look, Listen and Feel » : should take about 30 s
- Indicate if the patient is critically ill -> need for urgent help.
- If the patient is unconscious, unresponsive, and is not breathing normally start CPR
- If not: Monitor the vital signs early
- Insert an intravenous cannula as soon as possible
- Re assess regularly

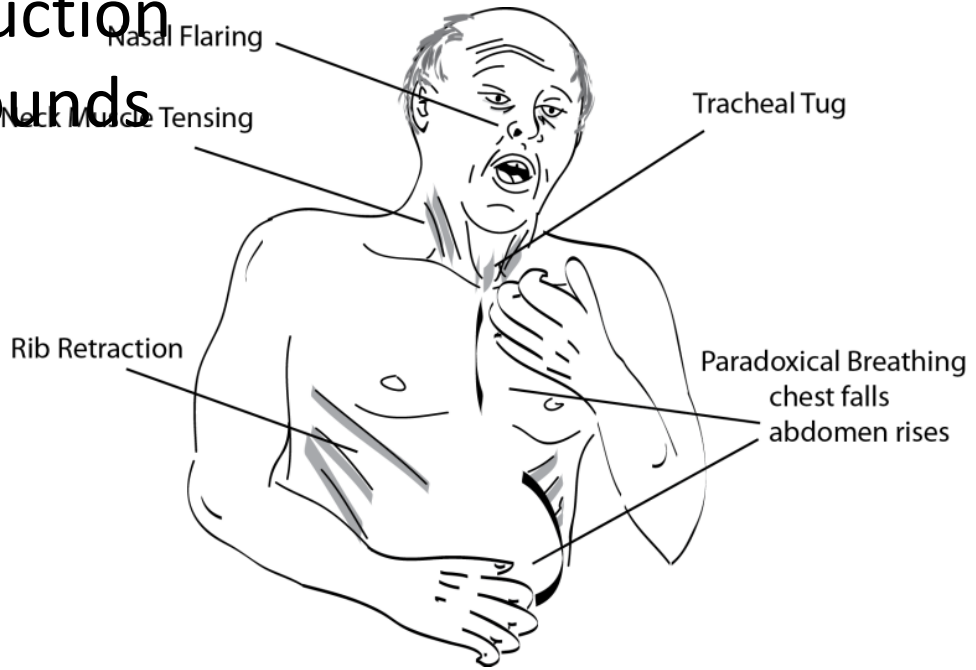
Airway Management= First priority



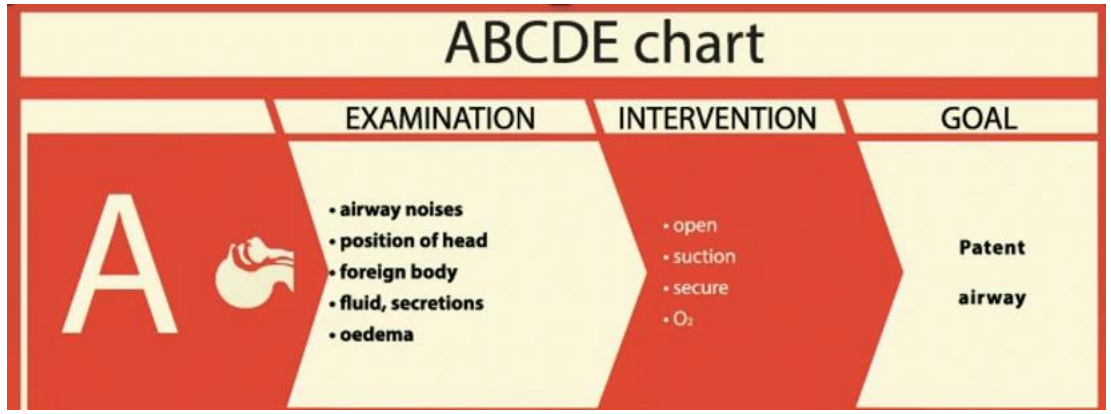
1. Look for sign of airway obstruction

- Paradoxical chest and abdominal movements
  Accessory muscles of respiration
  Central cyanosis: late sign of airway obstruction
- Complete airway obstruction: no breath sounds
- Depressed consciousness

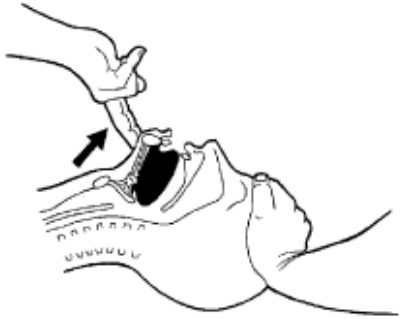
-> leads to airway obstruction.



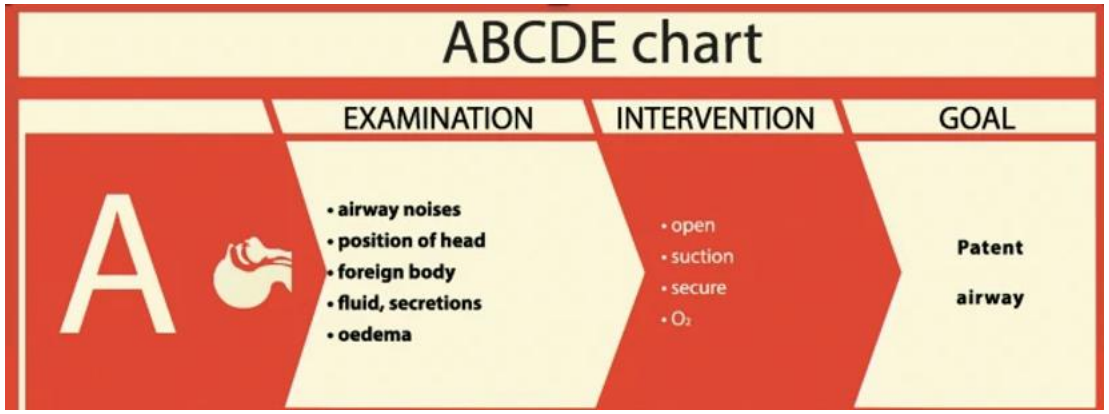
2. Treat Airway obstruction



- Obtain help immediately
- Give oxygen >95%
- Simple methods of airway clearance
  - Opening manœuvres
  - Airways suction,
- Orotracheal intubation
  - if Glasgow coma scale (GCS) ≤ 8
  - if the others methods fail
- Using a rapid sequence induction

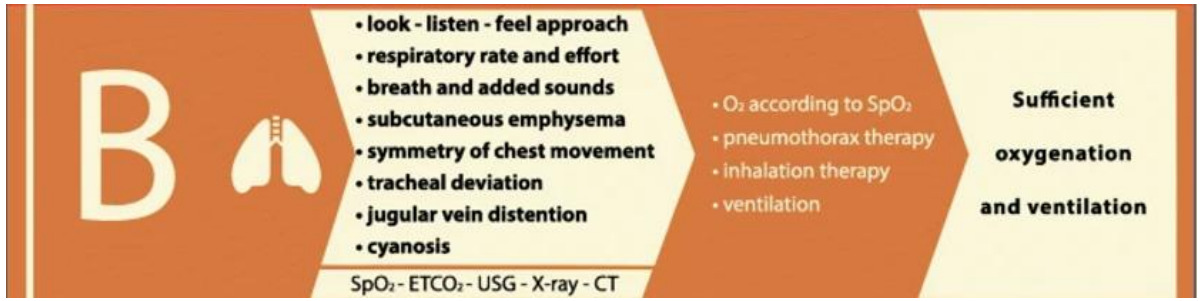


3. Give oxygen at high concentration



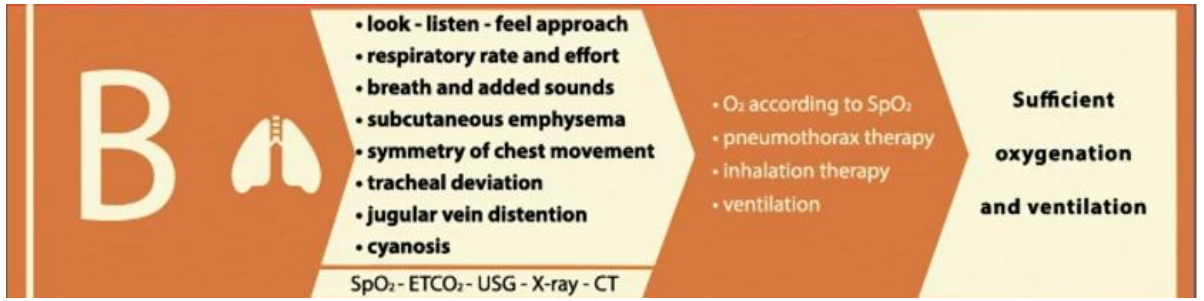
- Using à mask with oxygen reservoir
- Sufficient flow (usually 15l/min)
- If the trachea is intubated: high concentration oxygen with BVM
- Aim to maintain an oxygen saturation of 94 - 98%.
- Patients at risk of hypercapnic respiratory failure: 88–92%.

B: Breathing and Ventilation

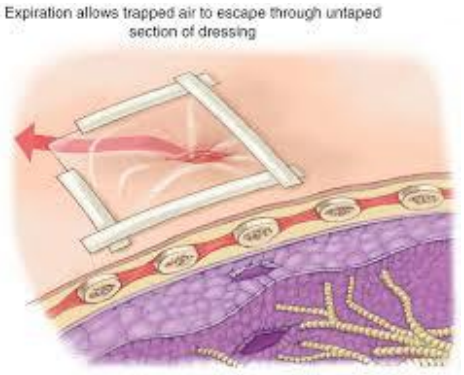


- General signs of respiratory distress
- The normal respiratory rate is 12–20 breath
- Is the chest expansion equal on both side? Is there a chest deformity?
- look for a raised jugular venous pulse
- Record the inspired oxygen concentration (%)
- Listen to the patient's breath sound and auscultate the chest
- Use bag-mask or pocket mask ventilation to improve oxygenation and ventilation

B: Breathing and Ventilation



- The Lethal Six : life-threatening injuries that require immediate evaluation and treatment
  - Airway obstruction
  - Tension pneumothorax
  - Open pneumothorax
  - Massive hemothorax
  - Cardiac tamponade
  - Flail chest



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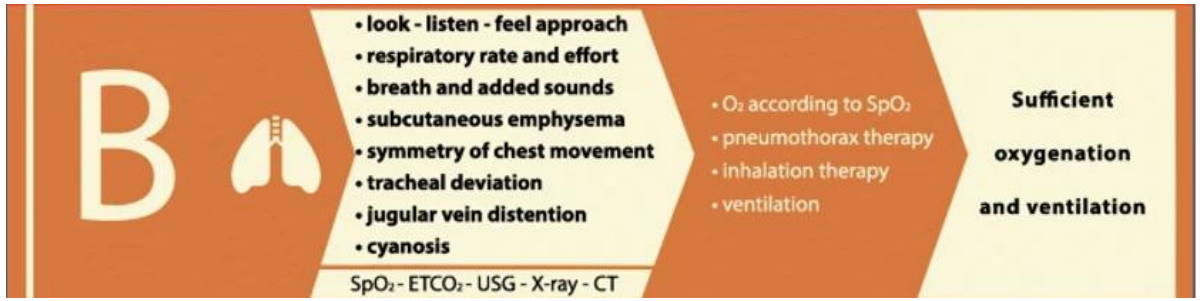
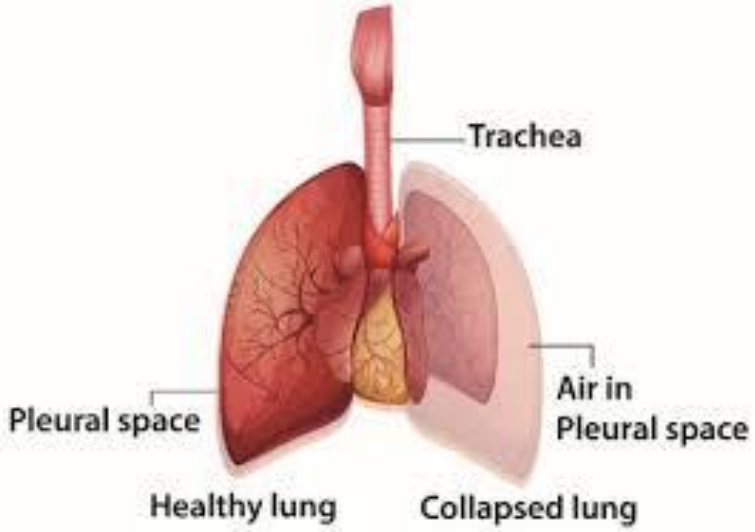
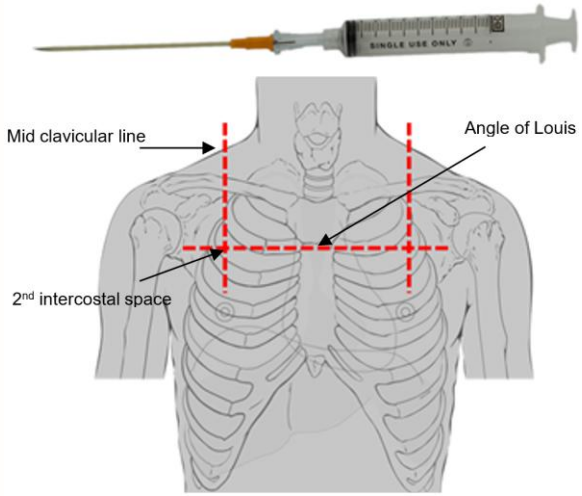
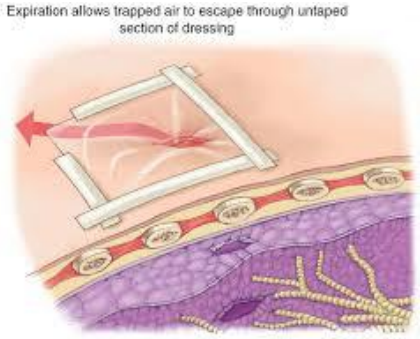


- Tension pneumothorax -> Exsufflation

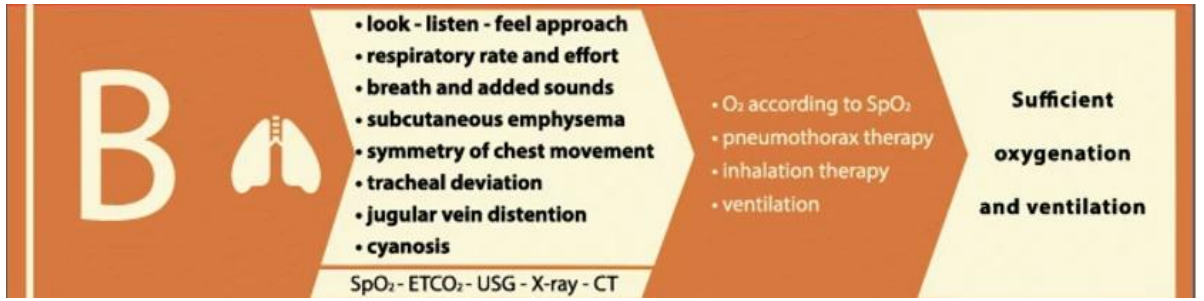




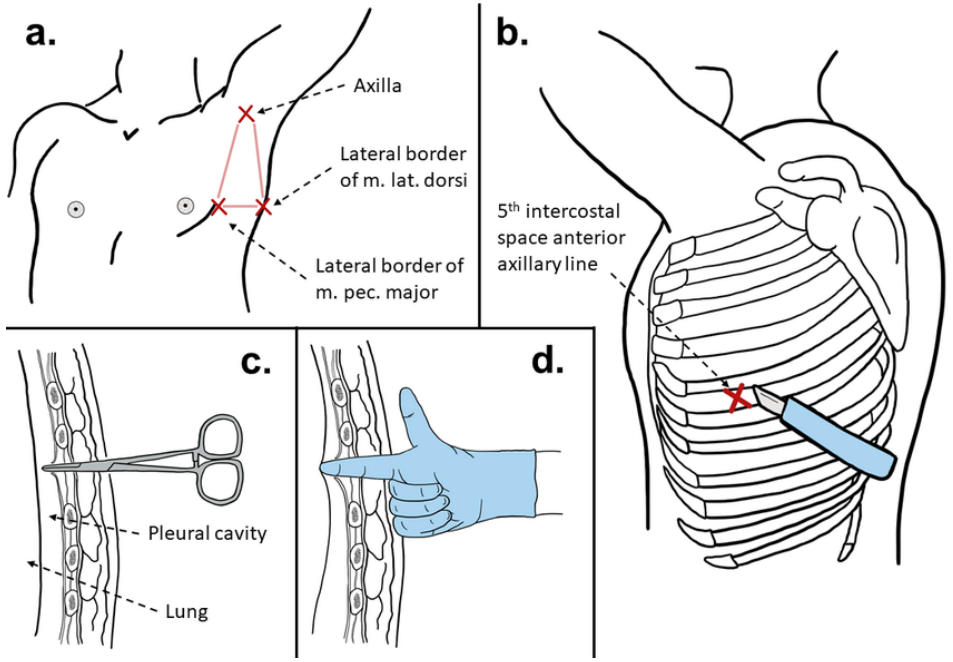


- Open pneumothorax: 3 sided dressing on the blowing wound
- Massive hemothorax: thoracic drainage

B: Breathing and Ventilation



- Massive hemothorax: thoracic drainage



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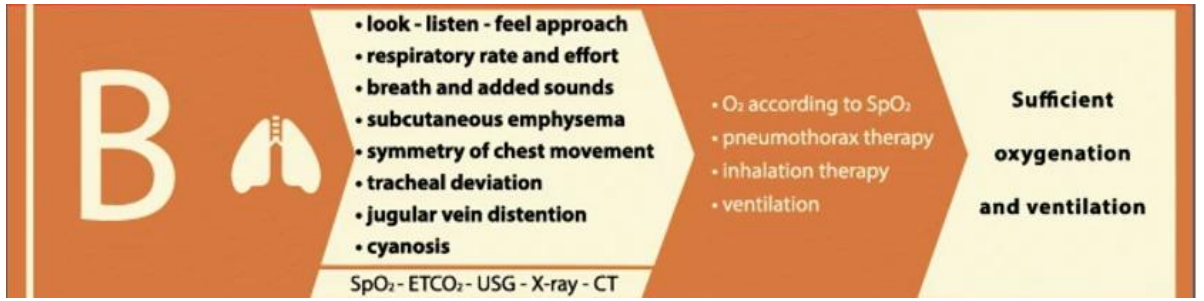
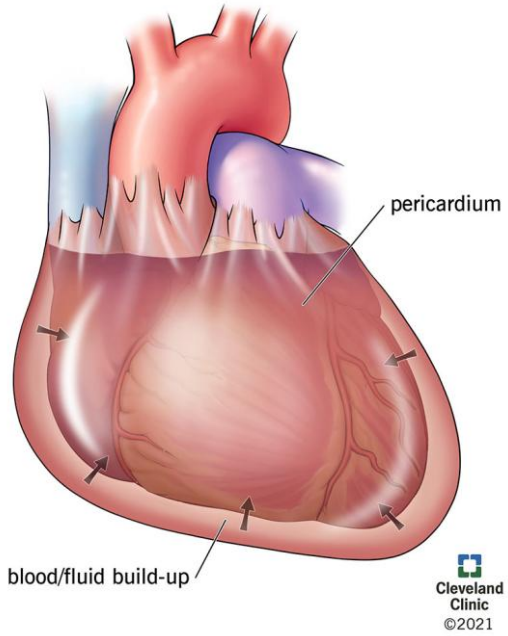
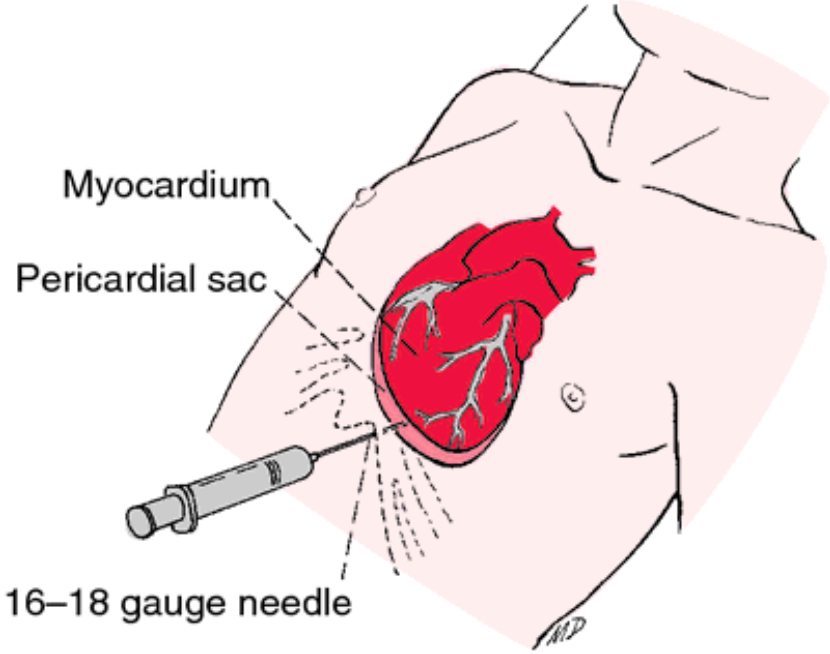


- Cardiac tamponade





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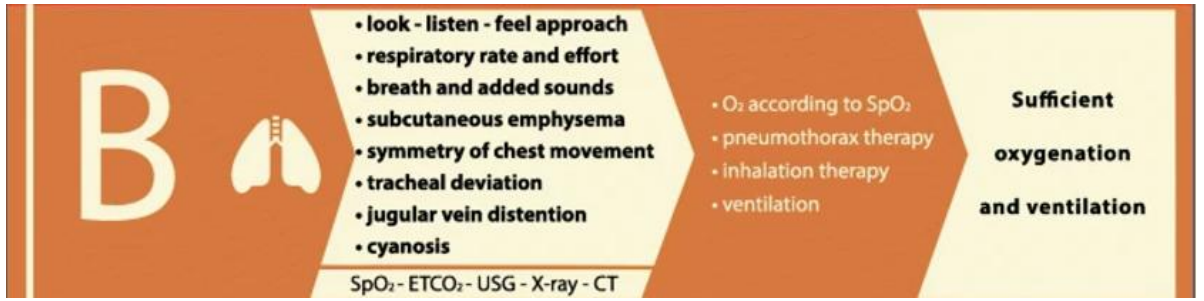
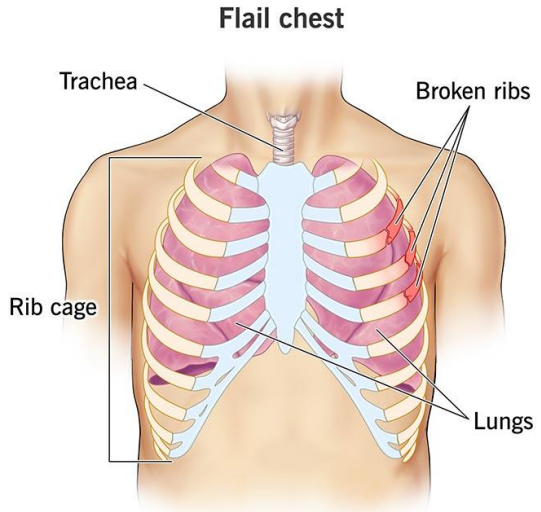


- Flail Chest
  - **Segmental fractures of 3 or more consecutive ribs**
  - Often associated with hemothorax and pneumothorax.
  - The treatment can be nonoperative or operative



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Surgical Rib Fixation of Multiple Rib Fractures and Flail Chest: A Systematic Review and Meta-analysis

Emily Sawyer, MBBS, MSurg [a] · Martin Wullschleger, MBHS, MD, PhD, FRACS [a,b,c] · Nicholas Muller, MBBS [a] · Michael Muller, MBBS, MMedSci, FRACS [a,b,c,d]

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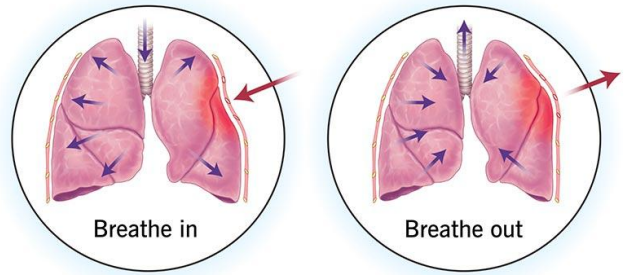
Cochrane Library

Cochrane Database Syst Rev. 2015 Jul 29;2015(7):CD009919. doi: 10.1002/14651858.CD009919.pub2

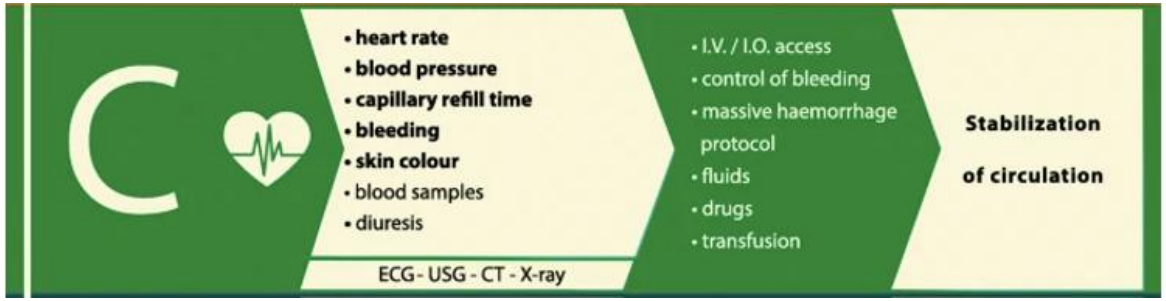
Surgical versus nonsurgical interventions for flail chest

Antonio José Maria Cataneo [1,✉], Daniele C Cataneo [1], Frederico HS de Oliveira [1], Karine A Arruda [1], Reg Paulo Eduardo de Oliveira Carvalho [3]

Editor: Cochrane Injuries Group

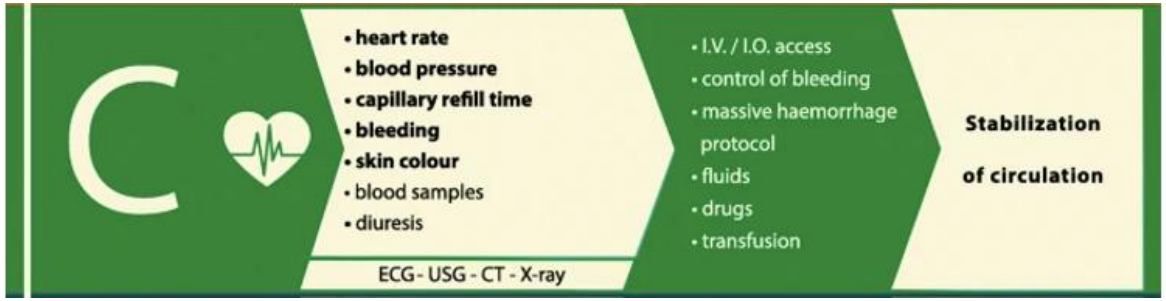


C: CIRCULATION

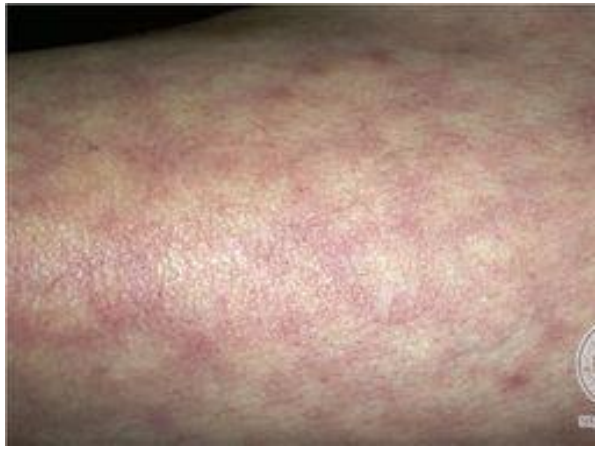


- Look at the colour of the hands and digits
- Are the patient's extremities warm or cold?
- Measure the capillary refill time (CRT), it must be <4sec
- Count patient’s heart rate (assess quality, regularity…)
- Mesure the patient’s blood pressure
  - Radial pulse is felt for blood pressure over 80mmHg
  - Femoral pulse for blood pressure over 40mmg
- Auscultate the heart
- Look for other signs of a poor cardiac output, such as reduced conscious level

C: CIRCULATION



- Signs of hemorragic shocks:
  - capillary refill time > 4sec,
  - molted skin,
  - pulse ↗,
  - blood pressure ↘
- Mesure capillary Hemoglobin



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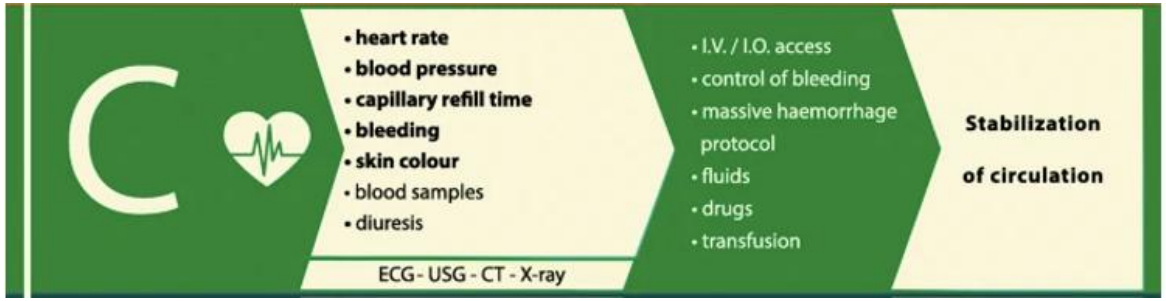
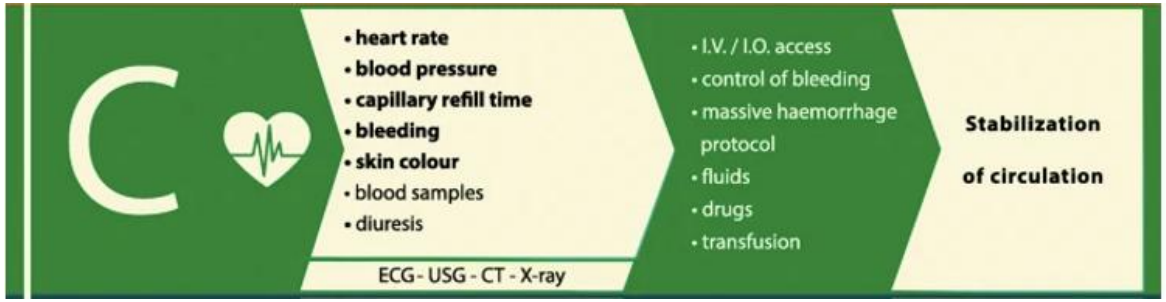


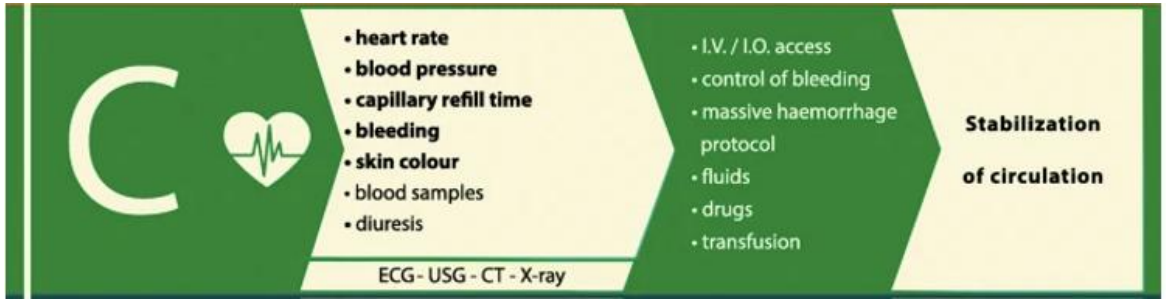
- Look thoroughly for external haemorrhage
- External hemorrhage control:
  - Scalp laceration: suture or staples
  - Limbs: pressure on the bleeding source, tourniquets in uncontrolled bleeding
  - Pelvic stabilisation
- Sonography (FAST) will assist in the diagnosis of hemorrhage

C: CIRCULATION



- Treatment for cardio vascular collapse:
  - Vascular access: 2 peripheral 16G catheters
  - If venous access fails:
    - ➢ Intraossous KT: allows administration of IV fluids, transfusions and drugs and medication.
    - ➢ Femoral central venous catheter

C: CIRCULATION



- Give a bolus of 500 mL of crystalloid solution
- Re-assess the heart rate and BP (every 5 min)
- Systolic BP target:
  - > 90mmHg
  - > 110 mmHg if traumatic brain injury
- If the patient does not improve, repeat the fluid challenge once.

D: DISABILITY

- Complete neurologic function assessment
  - Blood glucose level to exclude hypoglycemia
  - Rapid assessment of the patient's conscious level:
    - GSC scale,
    - coherence / space-time orientation, s
    - ensitivity/motricity of all 4 limbs after removal of shell/shape
  - Examine the pupils (size, equality and reaction to light).
- Check the patient's drug (antagonist?)

Spinal immobilization

Vacuum mattress stretcher

D: DISABILITY

- Action:
  - Lateral position if unconsciousness
  - Immobilized on a spinal board/ vaccuum matress stretcher

Spinal immobilization

Vacuum mattress stretcher

D: DISABILITY

- Cervical spine immobilisation if
  - Neurological symptoms
  - Neck pain
  - Head injury
  - High-speed impact

E: EXPOSURE
HEAD TO TOE EXAMINATION

- Clothes removed to access chest and abdomen for assessment.
- Respect the patient's dignity
- Actively warmed or covered with blankets to minimize heat loss to prevent hypothermia
- Adapted pain management: adapted scale, palliative I, II and III analgesics, reassessment

Underlying principles: asses and treat the patient

1. Complete initial assessment and re-assess regularly.
2. Treat life-threatening problems before moving to the next part of assessment.
3. Assess the effects of treatment.
4. Recognise when you will need extra help -> Call early.
5. Use all members of the team (simultaneous tasks)
6. The aim of the initial treatment is to keep the patient alive, and achieve some clinical improvement.

-> This will buy time for further treatment and making a diagnosis.

Thank you !

ขอบคุณมากครับ

ขอบคุณมากค่ะ

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