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First aid
in case of suspected thoracic trauma

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Learning objectives

- Student learns the division of chest trauma
- Student will learn first aid management for chest injuries
- Student will learn to recognize the symptoms of respiratory distress

Chest injuries

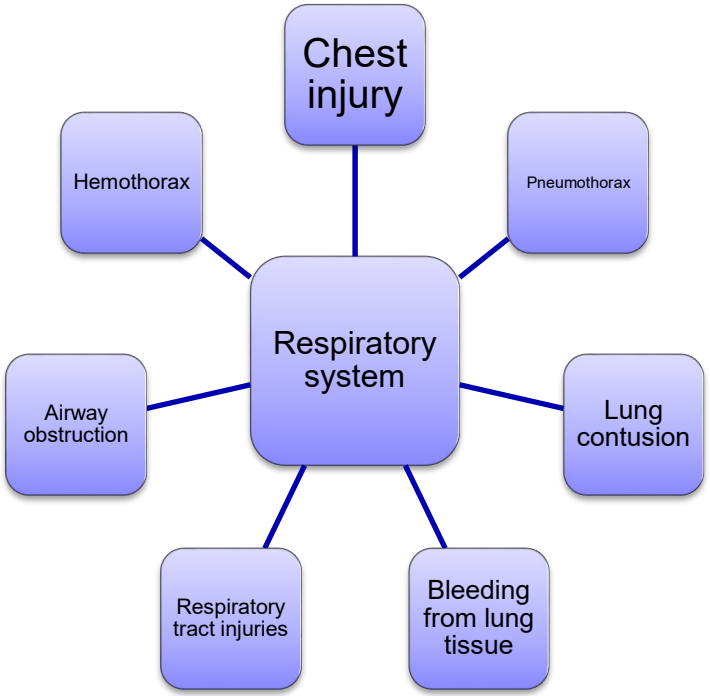
- Trauma is the most common cause of death in patients under 40 years of age

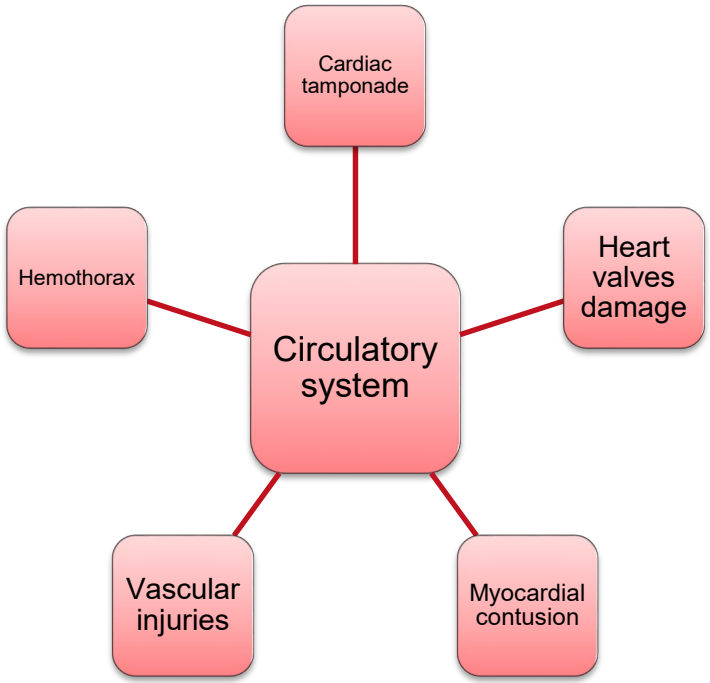
- According to the mechanism of injury, their division is:
  1. Blunt
  2. Penetrating

- Vital organs are stored and protected in the chest, so chest injury has serious, often fatal consequences.

Chest injuries

– can be life-threatening for the possibility of injury:





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Blunt injuries

- Objects exert force on a larger area, causing bruising, abrasions, hemorrhages and lacerations
- They do not have to leave obvious marks on the skin, or they may appear later
- Life-threatening for the frequent possibility of injury to internal organs
- Typical mechanisms: falls, impacts, runs over, crushing…

Penetrating injuries

- Objects penetrate or damage the skin
- More obvious than blunt injuries, their severity depends on the injured organs and the size of the bleeding
- If the foreign body is still in the wound, do not take it out in prehospital care, for a risk of developing unstoppable bleeding
- Typical injury mechanisms: stabbing, cutting, shooting,…

Examination for chest trauma

- Primary examination
  - We follow the SSS ABC protocol
- Secondary examination
  - Comprehensive examination of the chest and organs stored in it
- Many injuries of the chest and thoracic organs are difficult to diagnose in PP conditions, watch for signs of developing shock and respiratory distress, or breathing disorders

Respiratory distress

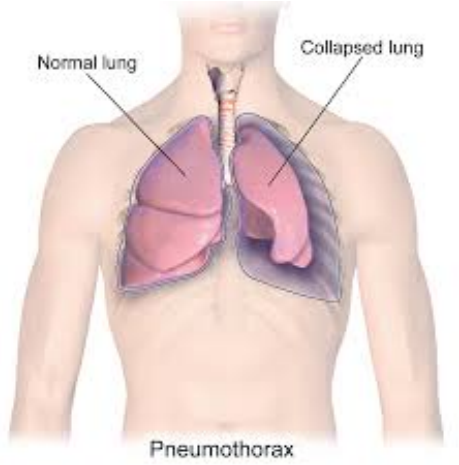
https://www.leichter-atmen.de/assets/images/6/atemnot-5131ac36.jpg

- Very unpleasant shortness of breath, choking, crouching, feeling of lack of air
- Often accompanied by a typical breathing pattern
  - shallow, extremely fast, strenuous breathing with small volumes
- Requiring effort, work, often no other activity can be performed, exhalation often needs to be forced
- One-word communication, if phonation is possible at all
- Auxiliary respiratory muscles, automatically selected sitting position, or forward bend are often involved in breathing.
- You can hear wheezing when inhaling or exhaling - stridor

Pneumothorax

- Air penetration into the pleural cavity

  ie into the space between the lungs and the chest wall



https://media.cdn.lexipol.com/article-images/Blausen_0742_Pneumothorax.png

- Leads to lung collapse on the affected side, causes dyspnoea it is important to monitor the symmetry of breathing movements and listening to breathing

  - **Open** – connection between the atmosphere and the pneumothorax enabling air exchange
  - **Closed** – communication between the atmosphere and pneumothorax is closed most often caused by injury to the lungs or airways by the skeleton or by trauma itself
  - **Tension** – a life-threatening condition in which with each breath the air in the pleural cavity accumulates and oppresses the surrounding organs

!Do not close the wound of an open pneumothorax, there is a risk of causing a tension pneumothorax

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Take-home message

- Chest trauma is often a **life-threatening injury**
- Especially in blunt trauma, the disability **may not be obvious** at first, it is necessary to respond to the manifestations of the **shock**.
- Many interventions can only be performed by a professional or can be solved at hospital, **don’t delay by calling 911/112**
- Apply **the SSS ABC approach** and monitor vital signs

Learning outcomes

- Student can recognize signs of respiratory distress.
- Student will divide the basic types of chest injuries.
- Student can name life-threatening conditions associated with chest injuries.

References

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- MONSIEURS, Koenraad G., Jerry P. NOLAN, Leo L. BOSSAERT, et al. European Resuscitation Council Guidelines for Resuscitation 2015. Resuscitation [online]. 2015, 95, 1-80 [cit. 2020-08-19]. DOI: 10.1016/j.resuscitation.2015.07.038. ISSN 03009572. Dostupné z: https://linkinghub.elsevier.com/retrieve/pii/S0300957215003500

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