

Incidence, morbidity and mortality of thoracic injuries in the trauma pt. (Obj. 1)

<p>1. Which is true regarding pts who sustain thoracic injury?</p> <p>A. Blunt trauma always results in isolated thoracic injury.</p> <p>B. Penetrating injury always results in multisystem injury.</p> <p>C. Thoracic injury w/ assoc. multisystem trauma has a low mortality rate.</p> <p>D. Thoracic injury is found in half the cases in which multi-system trauma occurs.</p>	<p>2. Which is true regarding pts who sustain thoracic injury?</p> <p>A. Approximately ¼ of those pts will die.</p> <p>B. Penetrating trauma always results in high mortality.</p> <p>C. Blunt thoracic injury is not associated with multisystem trauma.</p> <p>D. Thoracic injury is rarely seen in the trauma pt.</p>	<p>3. Which is true regarding the mechanism in which a pt sustains thoracic injury?</p> <p>A. It may result from either blunt or penetrating injury.</p> <p>B. Significant force is needed in order to sustain injury.</p> <p>C. Injury sustained from penetrating trauma always has a low mortality rate.</p> <p>D. Mass & velocity have no impact on injury pattern.</p>
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MOI: Thoracic injuries. (Obj. 2)

<p>4. Which two major forces occur in all blunt traumas?</p> <p>A. Tearing & blast effect</p> <p>B. Shearing & degloving</p> <p>C. Cavitation & herniation</p> <p>D. Deceleration & compression</p>	<p>5. What type of injury is often produced in the aorta as a result of severe deceleration forces to the midline chest?</p> <p>A. Compression of the descending abdominal aorta as it passes through the diaphragm</p> <p>B. Shearing of the thoracic aorta at the ligamentum arteriosum</p> <p>C. Spasm of the aorta creating chest pain similar to an AMI</p> <p>D. Avulsion of the ascending aorta at the aortic valve</p>	<p>6. Which of the following injury is likely to occur as a result of a penetrating stab wound to the left upper chest?</p> <p>A. Cardiac tamponade</p> <p>B. Simple pneumothorax</p> <p>C. Diffuse pulmonary contusions</p> <p>D. Lethal dysrhythmias from blunt cardiac injury</p>
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The "A, B, Cs" of Primary Assessment. (Obj. 3)

<p>7. Which of the following pt. information would be included in the "A=airway" portion of the primary assessment?</p> <p>A. Pulse ox 94%</p> <p>B. Shallow respirations 28</p> <p>C. Skin pale, cool and moist</p> <p>D. Pt. stating, "Please help me."</p>	<p>8. Which of the following information would be included in the "D=disability" portion of the primary assessment?</p> <p>A. GCS 14</p> <p>B. BP 86/50</p> <p>C. RR 28 labored</p> <p>D. Capnography 40</p>	<p>9. Which of the following information would be included in the "D=disability" portion of the primary assessment?</p> <p>A. Blood Glucose 90</p> <p>B. Pulse oximetry 90%</p> <p>C. Shallow respirations</p> <p>D. Paradoxical chest movement</p>
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Life threats identified in primary & secondary trauma assessment. (Obj. 4)

<p>10. Which of these are immediately life-threatening thoracic injuries that must be detected & rapidly treated if found during the B = breathing portion of the primary assessment?</p> <p>A. Pneumothorax, cardiac tamponade, flail chest</p> <p>B. Tension pneumothorax, open pneumothorax, flail chest</p> <p>C. Fractured rib, ruptured diaphragm, tension pneumothorax</p> <p>D. Open pneumothorax, aortic disruption, blunt cardiac contusion</p>	<p>11. What life-threatening injury must be identified and treated during the C= circulation portion of the primary trauma assessment?</p> <p>A. Cardiac tamponade</p> <p>B. Open pneumothorax</p> <p>C. Hemothorax of 50 mL</p> <p>D. Tension pneumothorax</p>	<p>12. What life-threatening <i>pulmonary</i> injury must be identified & addressed during the "B = breathing" portion of the primary assessment, but requires a BP in which to determine the proper course of treatment?</p> <p>A. Flail chest</p> <p>B. Cardiac contusion</p> <p>C. Cardiac tamponade</p> <p>D. Tension pneumothorax</p>
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Thoracic injury / basics of needle decompression. (Obj. 5& 6)

13. What is the approved landmark for a needle pleural decompression in the NWC EMSS?

- A. Under the 1st rib in the midclavicular line
- B. 2nd to 3rd intercostal space in the midclavicular line
- C. 4th to 5th intercostal space in the midclavicular line
- D. 6th to 7th intercostal space in the midaxillary line

14. What equipment is needed when performing a pleural needle decompression?

- A. PPE, 10g, 2 ¼ “ angiocath, alcohol prep & tape
- B. PPE, 10g, 3” angiocath, chlorhexidine prep, syringe & tape
- C. Flutter valve, 10 g angiocath, ETOH prep, syringe & tape
- D. 10g, 3”angiocath, 7 ½ ETT adapter, chlorhexidine prep & tape

15. What is the expected outcome upon insertion of a pleural needle decompression?

- A. Decreased CO
- B. Hypoventilation
- C. Re-expand the collapsed lung
- D. Relieve the tension and pressure

Indications for needle decompression (obj. 5 & 6)

16. An adult male fell from roof. Found conscious & alert but confused, on ground stating, “I can’t breathe.” Noted asymmetric chest expansion with absent breath sounds to L chest. VS: BP 108/50, P 104, R 22, pulse ox 94%. Which of the following should be included in treatment?

- A. Transport to a level one TC
- B. Pleural needle decompression
- C. ITC, assess for decompensation
- D. Cover chest with occlusive dressing

17. An adult male fell from roof. Found conscious & alert but confused, on ground stating, “I can’t breathe.” Noted asymmetric chest expansion with absent breath sounds to L chest. VS: BP 88/50, P 114, R 24, pulse ox 84%. Which of the following should be included in treatment?

- A. Bilateral needle decompression
- B. Transport to closest level one or two TC
- C. ITC, monitor en route for further deterioration
- D. Pleural needle decompression to the affected side

18. An adult male fell from roof. Found conscious but confused, on ground stating, “I can’t breathe.” Noted asymmetric chest expansion with absent BS to L chest. VS: BP 88/50, P 114, R 24, pulse ox 84%. After needle decompression, the pt improves but once again starts to decompensate en route. Which of the following should be included in treatment?

- A. Apply CPAP for internal stabilization
- B. Pull the angiocath and cover opening with an occlusive dressing
- C. Aspirate for blood assuming hemothorax
- D. Perform another needle decompression adjacent to initial site

Assessment leading to a transport decision (Obj. 7)

19. Adult pt is struck by a slow moving vehicle with c/o increased WOB. Upon assessment, pt is awake but confused, with purposeful movement and cooperative with exam. Lungs with decreased BS on L side & present on R. What additional information is needed in order to transport to a L1 TC?

- A. Tracheal deviation
- B. Hypotension
- C. GCS=14
- D. JVD

20. An adult pt is found at work in a factory where he sustained blunt injury to his chest. Which assessment finding would require a L1 TC transport?

- A. Burn to left anterior thigh
- B. Ankle injury with open fracture
- C. Puncture wound to L flank area
- D. Degloving injury to the 4th and 5th digits of hand

21. Adult pt on motorcycle with a helmet involved in a crash. Upon arrival pt is alert with a GCS=14. VS: BP 104/50, P 110, R 20. The pt is able to move all extremities but c/o pain in legs. Which additional finding would require transport to a L1 TC?

- A. Blunt chest injury
- B. Speed before accident was <20 MPH
- C. Deformity to both thighs suspecting fx.
- D. Resp. distress & diminished L upper lobe BS

Pathogenesis of life-threatening thoracic injuries. (Obj. 8)

<p>22. What causes hypotension in the presence of a tension pneumothorax?</p> <p>A. Extra air in the injured alveoli B. Severe bradycardia due to excessive vagal tone C. Vascular hemorrhaging into the collapsed lung segment(s) D. Collapse of the vena cavae & RA causing decreased preload</p>	<p>23. What is the shared mechanism of death in both a tension pneumothorax & a pericardial tamponade?</p> <p>A. Hypovolemia from penetrating chest trauma B. Extracellular fluid into the alveoli causing inadequate gas exchange C. Loss of chest wall and pleural integrity causing decreased in negative intrathoracic pressure D. Mechanical obstruction of blood flow to R heart results in significant ↓ in preload & CO</p>	<p>24. What clinical sign differentiates a tension pneumothorax from a pericardial tamponade?</p> <p>A. Hypotension B. Increased work of breathing C. Dullness noted to percussion D. Absence of breath sounds on affected side</p>
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Rapid intervention for the pt with thoracic injuries. (Obj. 9)

<p>25. An adult has a gunshot wound to the left anterior chest. The patient is conscious but very agitated. Ventilations are labored and a sucking sound is heard from the wound on inspiration. The pt is making ventilatory efforts but breath sounds are absent bilaterally. Skin is cool & moist with cyanosis of the lips & nailbeds. The patient is unable to speak. Which of these is indicated first?</p> <p>A. Start a large bore IV of NS run wide open B. Apply a sterile airtight dressing to the wound C. Intubate and initiate positive pressure ventilations D. Perform bilateral pleural decompressions and transport immediately</p>	<p>26. An adult pt was a bicyclist struck by a slow moving car. Upon EMS arrival that pt is confused about prior events, but otherwise cooperative with exam. Asymmetric chest expansion with decreased BS on same side. VS: BP 108/50, P 110, RR 24 with pulse ox 94%. What treatment is indicated?</p> <p>A. C-PAP for internal stabilization of flail chest B. Level one TC transport based on altered level of consciousness C. Pleural needle decompression to the affected side for tension pneumothorax D. ITC, supportive measures based on symptoms & transport to closest trauma center</p>	<p>27. A conscious & alert elderly female has fallen. She is in obvious respiratory distress with labored ventilations & an SpO₂ of 80% on room air. There is a strong radial pulse, BP 110/50, neck veins are flat, breath sounds are diminished on the left & noted is a segment of the left chest moving in the opposite direction of the rest of the rib cage. Which of these is indicated?</p> <p>A. O₂ 15 L /C-PAP & pain management B. Apply a sandbag or IV bag to the unstable segment C. Stabilize the area using strips of 2" adhesive tape or ace wraps D. Lay the patient on the unaffected side to enable more effective ventilations.</p>
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Failure to properly diagnose thoracic trauma-(differentiating open and tension pneumothorax). (Obj. 10)

<p>28. Which assessment finding warrants needle decompression in a pt with a suspected closed tension pneumothorax?</p> <p>A. Pulse ox 94% B. BP 88/50 C. GCS 14 D. RR 24</p>	<p>29. What assessment finding determines that a pt has sustained a blunt chest injury with a suspected closed tension pneumothorax requiring needle decompression?</p> <p>A. Hypotension B. Flat neck veins C. Muffled heart tones D. Absent BS on the affected side</p>	<p>30. Which assessment finding requires intervention in a pt with a suspected diagnosis of open pneumothorax?</p> <p>A. Minimal bleeding from abrasion treated with hemostatic dressing. B. Decreased WOB after placing an occlusive dressing on wound. C. Persistent hypotension after removing occlusive dressing over injury. D. Thoracic chest wall instability requiring immediate intubation.</p>
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Priority of treatment based on primary & secondary assessment findings of a pt with closed tension pneumothorax. (Obj. 11)

<p>31. What is the initial treatment for a pt that sustained a blunt chest injury who is hypotensive with decreased BS on one side?</p> <p>A. Identify that the pt can talk to you; coach them to have CPAP applied.</p> <p>B. Supportive care & monitor respiratory status en route to LI TC</p> <p>C. IVF bolus to maintain SBP>90 & transport to LI TC</p> <p>D. Pleural needle decompression to affected side</p>	<p>32. According to traumatic arrest protocol, which of the following conditions is cause for bilateral needle decompression?</p> <p>A. When PEA is identified</p> <p>B. After initial defibrillation</p> <p>C. Absence of BS bilaterally</p> <p>D. Upon consideration of high speed MOI</p>	<p>33. What assessment finding must exist to warrant pleural needle decompression in a pt with suspected tension pneumothorax?</p> <p>A. Extreme dyspnea</p> <p>B. Unilateral absence of BS</p> <p>C. Hypotension with SBP < 90</p> <p>D. Subcutaneous emphysema</p>
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Priority of treatment based on primary & secondary assessment findings for a pt with an open pneumothorax (Obj. 12)

<p>34. What is the initial treatment for a pt sustaining an open pneumothorax?</p> <p>A. Pleural needle decompression to affected side</p> <p>B. Identify that the pt can talk to you; coach them to have CPAP applied</p> <p>C. Supportive care & monitor respiratory status en route to LI TC</p> <p>D. Cover with an occlusive dressing & reassess respiratory status</p>	<p>35. A pt sustains an open pneumothorax from penetrating injury & remains in respiratory distress after an occlusive dressing has been removed from wound. What treatment is now indicated?</p> <p>A. Hemostatic dressing into wound</p> <p>B. Pleural needle decompression to affected side</p> <p>C. Place IV catheter into open wound to remove the clot</p> <p>D. Place gloved finger into wound to assess depth</p>	<p>36. A pt sustains an open pneumothorax from penetrating injury & has respiratory distress after an occlusive dressing has been placed over wound. What treatment is now indicated?</p> <p>A. Endotracheal intubation</p> <p>B. CPAP to relieve the respiratory distress</p> <p>C. Lift or remove dressing to release tension</p> <p>D. Needle decompression to unaffected side</p>
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Transport priorities for pts with thoracic injuries. (Obj. 13)

<p>37. An adult has a GSW to the chest from a small caliber weapon. Bleeding is controlled from the wound. The pt is alert but does not remember what happened w/ GCS 14. BP: 110/50, P: 108, RR: 24. Does this pt meet criteria for transport to a Level I trauma center?</p> <p>A. Yes</p> <p>B. No</p>	<p>38. 5M is found collapsed in the yard where older children were playing with bb guns. Upon arrival, dad is doing CPR on child. Assessment reveals equal chest expansion & + BS noted w/ bagging, skin dusky/moist with a spot of blood on t shirt & small wound to chest w/o bubbling noted. ECG: sinus brady w/o pulse. Intubation is completed. Where should this pt be transported per SOP?</p> <p>A. Level I TC</p> <p>B. Closest trauma center; level I or II</p> <p>C. Closest hospital regardless of trauma status</p> <p>D. Complete 20 min of arrest protocol & then request termination from base station.</p>	<p>39. EMS is called for a 10M pedestrian vs. auto. Upon arrival the pt is in the arms of mother; pt is extremely agitated & crying w/ blood coming from R ear. Assessment reveals chest with ≠ chest expansion, BS absent on R side, present on L; a weak & fast thready carotid pulse & no palp BP.</p> <p>A. Take the patient to the Level I TC</p> <p>B. Take the patient to the nearest Level II TC</p> <p>C. Complete a more detailed survey before making a decision about destination</p>
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Assessment & treatment for pts with flail chest. (Obj. 14)

<p>40. In accordance with the EAST trauma guidelines, what injury is most likely associated with blunt trauma resulting in flail chest with an increase in mortality?</p> <p>A. Pulmonary contusion B. Cardiac rupture C. Commotio cordis D. Blunt cardiac injury</p>	<p>41. 90F tripped & fell on throw rug hitting chest on corner of dresser. Pt is now c/o ↑ WOB & pain to R side of chest. BS present bilaterally with paradoxical movement noted to R chest. Which injury is suspected?</p> <p>A. Simple pneumothorax B. Cardiac tamponade C. Commotio cordis D. Flail chest</p>	<p>42. A pt sustained blunt trauma to the chest following a car crash. Which of the following assessment findings would raise suspicion for flail chest?</p> <p>A. Hypocarbia B. Hyperoxia C. Increased tidal volume D. Paradoxical chest movement</p>
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Pathophysiology of life-threatening myocardial injuries including pericardial tamponade, blunt cardiac injury, & myocardial rupture. (Obj. 15)

<p>43. Why is CPAP beneficial for the pt with pulmonary contusions?</p> <p>A. Promotes guarding & hypoventilation B. Decreases SpO₂ caused by hypercarbia C. Improves gas exchange by splinting open alveoli & decreases WOB D. Decreases pain caused from associated rib fractures</p>	<p>44. Why do pulmonary contusions result in hypoxia?</p> <p>A. Blood clots in the alveoli impair perfusion B. Air in the pleural space impairs ventilations C. Pulmonary tissue bruising impairs O₂ diffusion D. Blood in the pleural space impairs lung expansion</p>	<p>45. What chamber of the heart is most vulnerable to developing a blunt cardiac injury?</p> <p>A. RA B. LA C. RV D. LV</p>
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Assessment/Intervention of vascular injuries including injuries to the aorta, vena cavae, & pulmonary arteries/veins. (Obj. 16)

<p>46. Describe the appropriate intervention for a patient with a massive hemothorax from blunt trauma.</p> <p>A. C-PAP B. Titration of IVFs to SBP 90 C. Bilateral pleural needle decompression D. Occlusive dressing over wound with Vaseline gauze</p>	<p>47. What assessment findings are expected for a pt with a hemothorax?</p> <p>A. JVD B. Hypertension C. Paradoxical chest movement D. Dullness over affected chest to percussion</p>	<p>48. What assessment findings are expected for a pt with a hemothorax?</p> <p>A. Hyperresonance with percussion B. Decreased BS on unaffected side C. Decreased EtCO₂ D. Decreased WOB</p>
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Traumatic asphyxia. (Obj. 17)

<p>49. Which of the following assessment findings would lead EMS to suspect traumatic asphyxia?</p> <p>A. Open wound to chest with significant bleeding to area B. Pt alert in resp distress w/ asymmetric chest rise; BS absent to L chest C. Skin pale & dry above the level of injury; moist & flushed below D. Edematous face, epistaxis & subconjunctival hemorrhage from crush injury</p>	<p>50. What is known regarding pts who sustain traumatic asphyxia?</p> <p>A. Often findings are permanent with long term deficits. B. Pts will often present in a state of hyper-excitability requiring versed. C. It is the result of isolated chest trauma without other injury. D. It can be the result of acute compression of the chest causing ↑ intrathoracic pressure</p>	<p>51. Which of the following treatment is recommended for traumatic asphyxia?</p> <p>A. Supportive care; HOB ↑ 30°, & search for additional chest / abdominal injury B. Trial of CPAP with coaching pt before intubation in needed C. Side lying position to promote venous return D. Bilateral needle decompression</p>
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Blunt cardiac injury (Obj. 18)

<p>52. Which assessment finding would cause EMS to have a higher index of suspicion for blunt cardiac injury in a pt with chest trauma?</p> <p>A. Asymmetrical chest expansion B. Chest abrasion & positive seatbelt sign C. Bilateral absent breath sounds to auscultation D. Open wound to lateral chest with bubbling blood</p>	<p>53. Which assessment finding would cause EMS to have a higher index of suspicion for blunt cardiac injury in a pt with chest trauma?</p> <p>A. AMS and bleeding from ear B. Unilateral absence of BS C. C/O chest pain & SOB D. Tracheal deviation</p>	<p>54. Which assessment finding would cause EMS to have a higher index of suspicion for blunt cardiac injury in a pt with chest trauma?</p> <p>A. Bigeminy B. Confusion with GCS 14 C. Paradoxical chest movement D. Tympany to chest percussion</p>
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Commotio cordis. (Obj. 15)

<p>55. What is the mechanism of death for a pt with commotio cordis?</p> <p>A. Severe pulmonary contusions from flail chest B. Penetrating injury to the chest from a stab wound C. Elderly pt with poor compensatory mechanism in cardiac tamponade D. Sudden blow to the chest just before the T-wave causing a ventricular fibrillation</p>	<p>56. Which pt scenario is most likely to result in a diagnosis of commotio cordis?</p> <p>A. Adult with a stab wound to the chest B. Youth sustaining a direct baseball hit to the chest at little league C. Nursing home pt sustaining a fall out bed, sliding onto the floor D. Pt fall from tree approx 20 ft, while cutting a tree branch with a chain saw</p>	<p>57. Which assessment finding is often associated with the pt having a diagnosis of commotio cordis?</p> <p>A. Previous complicated past medical history B. Bilaterally absent breath sounds C. Paradoxical chest rise & fall D. Vfib on cardiac monitor</p>
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Perform trauma assessment for a pt with thoracic trauma & identify life threats consistent with specific mechanism of injury (MOI). (Obj. 20)

<p>58. EMS is called for a high speed MVC in which a rapid deceleration force is sustained. Assessment reveals a pt in severe respiratory distress with stridor, attempting to speak but unable to produce any vocalization. Positive seatbelt sign; subcutaneous emphysema to neck area & hypotension is noted. What injury is suspected?</p> <p>A. Commotio cordis B. Cardiac tamponade C. Acute myocardial infarction D. Tracheobronchial disruption</p>	<p>59. An unrestrained pt in an MVC is complaining of pain when the anterior chest is palpated. You note a 3 inch bruise over the sternum. The chest moves symmetrically, there is no JVD, BS are equal, heart sounds are clear. VS: BP 158/90, P 72 & irregular, R 20. ECG reveals sinus rhythm with uniform PVC's approximately 4-6 per minute. What should a paramedic suspect?</p> <p>A. Stress angina B. Blunt cardiac injury C. Cardiac tamponade D. Acute myocardial infarction</p>	<p>60. A pt of a high speed MVC has a bruise over the sternum and appears pale and anxious. VS: BP R arm 120/80, L arm 110/72; P 120; R 20; SpO₂ 95%. Chest moves symmetrically, breath sounds are clear & equal; abdomen is soft, non-tender to palpation with no bony crepitation; femoral & pedal pulses are diminished. What should a paramedic suspect?</p> <p>A. Pneumothorax B. Blunt cardiac injury C. Thoracic aortic disruption D. Flail chest w/ pulmonary contusion</p>
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