



Trauma Life Support - Advanced (TLS-A) Preparatory Materials

1. Definitive control of the airway is achieved by endotracheal intubation.
2. ABC refers to Airway, Breathing, and Circulation
3. A compromised airway may occur due to blockage of the airway or neck injury.
4. Hypothermia in the Emergency Department (ED) can be treated with crystalloid fluids at 102.2 degrees F and a warmed treatment area.
5. Definitive hemorrhage control refers to possible surgery, stabilizing of the pelvis, and angioembolization.
6. Rates of fluid administration are measured by the length and diameter of the catheter.
7. Oxygenation can best be improved by use of an oxygen reservoir mask with a minimum flow rate of 11L/min.
8. Pulse oximetry is measured at 95% saturation is a strong indicator of adequate peripheral arterial oxygenation.
9. Pulse oximetry is less reliable in patients with CO poisoning, anemia, and hypothermia.
10. Bag-mask ventilation is more effective when administered by two people.
11. The most common cause of shock in trauma patients hemorrhage.
12. The cardiac output system is determined by multiplying the heart rate by the stroke volume.
13. The administration of appropriate fluid resuscitation solution can help reverse a state of shock, prevent progressive cellular damage, and prevent additional swelling.
14. Examples of warmed isotonic electrolyte solution used in initial fluid therapy are lactated Ringer's and normal saline.
15. The 3 for 1 Rule is a guideline that refers to replacing each 1mL of blood loss with 3mL of crystalloid fluid.

16. Gastric dilation is particularly common in children.
17. Vital signs in patients with a rapid response to initial fluid therapy return to normal.
18. Blood preparation for a patient categorized with a transient response is type -specific.
19. Metabolic acidosis can result from continued hemorrhage or lack of tissue perfusion.
20. Tachypnea causes respiratory alkalosis.
21. Patients categorized with minimal or no response to initial fluid resuscitation probably have severe blood loss (>40%), need more blood and fluids, and may need surgical intervention.
22. In the case of severe blood loss, if type-specific blood is unavailable, then type O blood is indicated.
23. The sequence for conducting an abdominal exam is inspection, auscultation, percussion, palpation.
24. Pertinent questions in patient history due to a vehicle crash are speed of the vehicles involved, use of restraints, airbag deployment, and, the type of impact.
25. The need for a resuscitative thoracotomy in the ED should be made with a surgeon.
26. A lethal pulmonary contusion is not sudden and is a common chest injury.
27. Possible signs of a tracheobronchial tree injury are tension pneumothorax (with a mediastinal shift), SubCut emphysema, coughing up blood.
28. Myocardial contusion is diagnosed by inspecting the myocardium.
29. Esophageal rupture is treated by thoracotomy and draining of the pleural space mediastinum.
30. Secondary survey is usually necessary to identify simple pneumothorax, pulmonary contusion, traumatic aortic disruption.

31. Secondary identification of life-threatening thoracic injury involves a thorough physical exam, chest x-rays, ECG, pulse oximetry, and ABG measurements.
32. For a penetrating abdominal trauma the advantage of a CT scan is to diagnose certain pelvic and retroperitoneal injuries.
33. Rapid adjunct studies for diagnosing abdominal hemorrhage are FAST and DPL.
34. Laparotomy is indicated in with fascial penetration with intraperitoneal bleeding or peritonitis.
35. The main organs affected by blunt pelvic and abdominal trauma are the liver, kidneys, and spleen.
36. X-rays that indicate tears in the diaphragm are an elevated hemidiaphragm or a hemothorax.
37. Pancreatic trauma can be determined by a repeated double-contrast CT.
38. Lateral compression fractures occur in 60-70% of pelvic fractures.
39. AP pelvic fractures can be due to falls over 12 feet.
40. The Monro-Kellie Doctrine describes the relationship between intracranial volume and pressure.
41. Normal ICP resting status is 10 mmHg.
42. The Glasgow Coma Scale assesses eye, motor, and verbal responses.
43. A GCS score of 3-8 is a severe brain injury.
44. Signs of a skull fracture may include a CSF leak, ecchymosis, or seventh or eighth nerve dysfunction.
45. Minor brain injury is a GCS score of 13-15.
46. A MTBI includes disorientation, amnesia, and loss of consciousness.
47. Patients with an MTBI require a CT scan if they are over age 65, their GCS score drops below 15, or they have multiple episodes of vomiting.

48. Mannitol in a 20% solution is given to reduce elevated ICP.
49. Spinal cord injuries above T1 result in quadriplegia.
50. Examples of incomplete spinal cord injury are any sensation or voluntary movement including toe-flexion.
51. A patient with possible spine or spinal cord injuries should be immobilized until x-rays are taken.
52. Continuous immobilization of the cervical spine includes the use of backboards, a semi-rigid cervical collar, bolstering materials, tape and straps.
53. Visible signs of a pelvic fracture with potential hemorrhage are bruising and swelling that increases in the perineum or ongoing bruising in the scrotal region.
54. Pelvic hemorrhage and instability can temporarily be controlled with internal traction and external counter pressure.
55. Major arterial injury can be initially managed with direct pressure fluid resuscitation.
56. Crush syndrome can lead to acute renal failure or disseminated intravascular coagulation (DIC).
57. Injuries that may threaten a limb include open wound near joints, traumatic amputation, or vascular injury.
58. Open wounds and fractures should be considered related.
59. Joint injuries are not usually limb threatening, not usually life threatening and not usually revealed by x-ray.
60. Early clinical signs of a thermal airway inhalation injury are burns to the face, neck, or head; carboxyhemoglobin levels over 10%; or hoarseness.
61. A full-thickness burn is a third-degree burn.
62. The Rule of Nines is used to estimate the size and depth of burns.
63. Burns that cover either the front or back of the trunk represent an 18% body surface burn.

64. Partial-thickness burns appear wet and blistered.
65. Patients with HbCO levels between 40%-60% have carbon monoxide (CO) poisoning.
66. CO exposed patients should get 100% oxygen flow through a non rebreather mask because the CO affinity for hemoglobin is 240 times greater than that of oxygen and has a half-life of 4 hours when the patient is breathing only room air.
67. A reliable measurement of circulating blood volume in patients with burns is hourly urine output.
68. The general urinary output goal per hour in adult burn patients is 0.5 to 1.0 mL per kg of body weight.
69. The fluid resuscitation guidelines for burn victims is 2-4 mL Ringer's lactate solution within the first 24 hours of injury.
70. Fluid resuscitation requirements depend on age, body weight, and patient response.
71. Normal urinary output in infants measures 2mL per kilogram of body weight per hour.
72. During a pediatric needle and tube thoracotomy procedure small test tubes and a tunneling technique should be used.
73. The preferred route of venous access in children is a peripheral percutaneous route.
74. Compared to the adult brain the pediatric brain is anatomically different.
75. The GCS score for pediatric head trauma has a modified verbal component.
76. Children are at greater risk of impact seizures, secondary brain injury, and hypothermia.
77. Brain injury in children is worse in children under age 3 and better than in adults.
78. Delay in restoration of normal pediatric blood volume worsens initial injury and increases the chances of secondary brain injury.

79. SCIWORA stands for Spinal Cord Injury without Radiographic Abnormalities.
80. Examples of differences in pediatric spinal anatomy include flat facet joints, that normal growth can appear as a fracture in an x-ray, and more flexible joints.
81. Geriatric trauma patients experience more cervical spine injuries and more frequent subdural hematomas.
82. Osteoarthritis can cause canal stenosis.
83. Hypothermia in geriatric patients may be caused by sepsis or endocrine disease.
84. Dramatic changes to the skin in elderly patients can cause hypothermia, delays in wound healing, and infection.
85. Elderly patients experience fractures most commonly in the long bones, wrist and hip.
86. Treatment of elderly patients should include attention to nutrition, drug interactions, chronic diseases.
87. The uterus is intra-pelvic until about the 12th week of gestation.
88. By the 36th week, fundal height reaches the costal margin.
89. Second trimester abdominal trauma can cause amniotic fluid embolism and disseminated intravascular coagulation.
90. During pregnancy the bowels becomes positioned cephalad into the upper abdomen.
91. In the third trimester, maternal pelvic trauma increases the risk of fetal skull fracture and abruptio placentae.
92. Changes in blood volume and composition during pregnancy are increased blood volume, WBC, and decreased blood pressure.
93. By late pregnancy hypo-capnia is common.
94. Peri-mortem cesarean section is not usually successful.

95. The placenta receives 20% of maternal cardiac output.
96. Criteria that indicate inter-hospital transfer are head or spinal cord trauma, pulmonary contusion, and severe burns.
97. Co-morbidity factors that may require inter-hospital transfer are age, insulin-dependent diabetes, and immune-suppression.
98. Factors to consider in an inter-hospital transfer are time between injury and definitive care and the level of care and resources available at the local hospital.
99. Documents that go with the patient during transfer are the treatment record and any labs and films.
100. Transfer to a verified trauma center should not be delayed to obtain lengthy diagnostic studies, give a tetanus shot, or to dress wounds.

