Abdominal trauma consists of blunt and penetrating trauma. Only one third of abdominal stab wounds penetrate the peritoneum, and only 50% of these require surgical intervention. 85% of abdominal wall gunshot wounds penetrate the peritoneum, and 95% of these require a surgical procedure for correction.

**Penetrating abdominal trauma:**
- Most commonly injured organs with stab wounds are small intestine, liver, and colon.
- Only one third of abdominal stab wounds penetrate the peritoneum, and only 50% of these require surgical intervention.
- 85% of abdominal wall gunshot wounds penetrate the peritoneum, and 95% of these require a surgical procedure for correction.

**Blunt abdominal trauma:**
- Spleen and liver are the most commonly injured organs; small and large intestines are the next most commonly injured.

**FAST (Focused Assessment with Sonography for Trauma):**
- Used to identify free fluid in the peritoneal cavity.
- FAST has a sensitivity of 70-95%.
- Involves directing ultrasound probe in four regions:
  - The subxiphoid location to determine whether there is fluid in the pericardial space and to make a rough assessment of contractility and filling state.
  - The right upper quadrant.
  - The splenorenal recess.
  - The pelvis.
- Problems with FAST:
  - Operator dependent.
  - False negative rate in children is high.
  - Technically more difficult with obesity and sc empysema.

**Definition of DPL (Directed Peritoneal Lavage):**
- Has an accuracy of 98% for detection of haemoperitoneum but does not determine source.
- Generally performed in patients too unstable for CT.
- Involves performing a minilaparotomy with placement of a lavage catheter into the peritoneal cavity directed towards the pelvis.
- The return of gross blood is a positive result.
- If DPL is grossly negative then 1L of warmed saline is instilled into the abdominal cavity and then drained back into the intravenous fluid bag by gravity.
- Effluent lavage is sent to the laboratory for analysis.
- Laboratory criteria for a positive DPL in blunt trauma are:
  - >100,000 RBCs/mm3.
  - >500 WBCs/mm3.
  - Presence of food particles.
  - Presence of bile.
  - Presence of bacteria.
  - Problems with DPL:
    - Operator dependent.
    - False negative rate in children is high.
    - Technically more difficult with obesity and sc empysema.

**Clinical Initial Assessment of Greater than 10 ml Frank Blood:**
- Egress of lavage fluid via chest tube or urinary catheter.
- Bile or vegetable material in lavage fluid.

**Criteria for Positive DPL:**
- 30% of patients with lumbar Chance fracture have associated bowel or mesenteric injuries.
- Criteria for positive DPL:
  - >100,000 RBCs/mm3.
  - >500 WBCs/mm3.
  - Presence of food particles.
  - Presence of bile.
  - Presence of bacteria.
  - Problems with DPL:
    - Operator dependent.
    - False negative rate in children is high.
    - Technically more difficult with obesity and sc empysema.

**Initial Assessment:**
- Imaging and laboratory studies.
- CT abdomen/pelvis.

**Resuscitation & Comprehensive Assessment:**
- Blunt injury.
- Penetrating injury.

**Secondary Survey of Abdominal Trauma:**
- Inspection.
- Palpation.
- Auscultation.

**Resuscitation Phase:**
- Fluids are required to sustain intravascular volume, tissue and organ perfusion and urine output.
- Administer blood for hypovolaemia that is unresponsive to crystalloid boluses.
- End points are normal vital signs, absence of blood loss, adequate urine output and no evidence of end organ dysfunction; blood lactate and base deficit on an ABG may be helpful in patients who are severely injured.

**Criteria for Postive DPL:**
- >100,000 RBCs/mm3.
- >500 WBCs/mm3.
- Presence of food particles.
- Presence of bile.
- Presence of bacteria.

**Further Reading:**
- Resuscitation & Comprehensive Assessment.
- Secondary Survey of Abdominal Trauma.