Assessment of the Trauma Patient
Table 13-1  Secondary Assessment—Trauma Patient

<table>
<thead>
<tr>
<th>NO SIGNIFICANT MECHANISM OF INJURY</th>
<th>SIGNIFICANT MECHANISM OF INJURY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AFTER SCENE SIZE-UP AND PRIMARY ASSESSMENT:</strong></td>
<td><strong>AFTER SCENE SIZE-UP AND PRIMARY ASSESSMENT:</strong></td>
</tr>
<tr>
<td>1. Determine the chief complaint and elicit information about how the patient was injured (history of the present illness).</td>
<td>1. Determine the chief complaint and rapidly elicit information about how the patient was injured (history of the present illness).</td>
</tr>
<tr>
<td>3. Assess baseline vital signs.</td>
<td>3. Consider requesting advanced life support personnel.</td>
</tr>
<tr>
<td>4. Obtain a past medical history.</td>
<td>4. Perform rapid trauma assessment.</td>
</tr>
<tr>
<td>5. Assess baseline vital signs.</td>
<td>6. Obtain a past medical history.</td>
</tr>
</tbody>
</table>
Figure 13-1  Taking the past medical history. © Mark C. Ide
Scan 13-1  Applying a Cervical Collar  STIFNECK®SELECT™ © Laerdal Medical Corporation
Scan 13-1 (continued)  Applying a Cervical Collar  Philadelphia Cervical Collar™ Patriot Adult and Pediatric.
© Philadelphia Collar Corporation
Scan 13-1 (continued)  Applying a Cervical Collar  WIZLOC Cervical Collar. © Ferno Corporation
Scan 13-1 (continued) Applying a Cervical Collar  NEC-LOC™ rigid extrication collar, opened. Rigid cervical collars are applied to protect the cervical spine. DO NOT apply a soft collar.
Scan 13-1 (continued)  Applying a Cervical Collar  SIZING A CERVICAL COLLAR  (1) Measure the patient's neck.
Scan 13-1 (continued)  Applying a Cervical Collar  

SIZING A CERVICAL COLLAR  

(2) Measure the collar. The chin piece should not lift the patient's chin and hyperextend the neck. Make sure the collar is not too small or tight, which would make the collar act as a constricting band.
Scan 13-1 (continued) Applying a Cervical Collar

APPLYING AN ADJUSTABLE COLLAR TO A SEATED PATIENT

(1) Stabilize the head and neck from the rear.
Scan 13-1 (continued)  Applying a Cervical Collar  APPLYING AN ADJUSTABLE COLLAR TO A SEATED PATIENT  (2) Properly angle the collar for placement.
Scan 13-1 (continued) Applying a Cervical Collar  

APPLYING AN ADJUSTABLE COLLAR TO A SEATED PATIENT  
(3) Position the collar.
Scan 13-1 (continued) Applying a Cervical Collar

APPLYING AN ADJUSTABLE COLLAR TO A SEATED PATIENT

(4) Begin to secure the collar.
Scan 13-1 (continued) Applying a Cervical Collar

APPLYING AN ADJUSTABLE COLLAR TO A SEATED PATIENT

(5) Complete securing the collar.
Scan 13-1 (continued) Applying a Cervical Collar  APPLYING AN ADJUSTABLE COLLAR TO A SEATED PATIENT  (6) Maintain manual stabilization of the head and neck.
Scan 13-1 (continued)  Applying a Cervical Collar  APPLYING AN ADJUSTABLE COLLAR TO A SUPINE PATIENT
(1) Kneel at the patient’s head and stabilize the head and neck.
Scan 13-1 (continued)  Applying a Cervical Collar  APPLYING AN ADJUSTABLE COLLAR TO A SUPINE PATIENT

(2) Set the collar in place.
Scanning 13-1 (continued) Applying a Cervical Collar

APPLYING AN ADJUSTABLE COLLAR TO A SUPINE PATIENT

(3) Secure the collar.
Scan 13-1 (continued) Applying a Cervical Collar

(4) Continue to manually stabilize the head and neck.
Table 13-2  Field Triage: Significant Mechanisms of Injury

<table>
<thead>
<tr>
<th>GUIDELINES FOR FIELD TRIAGE OF INJURED PATIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport to a trauma center if any of the following are identified:</td>
</tr>
<tr>
<td>• Falls</td>
</tr>
<tr>
<td>• Adults: fall &gt;20 feet (one story = 10 feet)</td>
</tr>
<tr>
<td>• Children aged &lt;15 years: fall &gt;10 feet or two to three times child’s height</td>
</tr>
<tr>
<td>• High-risk auto crash</td>
</tr>
<tr>
<td>• Intrusion: &gt;12 inches to the occupant site or &gt;18 inches to any site</td>
</tr>
<tr>
<td>• Ejection (partial or complete) from automobile</td>
</tr>
<tr>
<td>• Death in same passenger compartment</td>
</tr>
<tr>
<td>• Vehicle telemetry data consistent with high risk of injury</td>
</tr>
<tr>
<td>• Auto versus pedestrian/bicyclist thrown, run over, or with significant (&gt;20 mph) impact; or</td>
</tr>
<tr>
<td>• Motorcycle crash &gt;20 mph.</td>
</tr>
</tbody>
</table>
Scan 13-2  Physical Examination of the Trauma Patient  HISTORY OF THE PRESENT ILLNESS
Rapidly determine what happened to the patient to cause injury.
Scan 13-2 (continued)  Physical Examination of the Trauma Patient  RAPID TRAUMA ASSESSMENT
HEAD: Check for WOUNDS, TENDERNESS, AND DEFORMITIES plus crepitation.
FACE: Check for WOUNDS, TENDERNESS, AND DEFORMITIES.
Scan 13-2 (continued)  Physical Examination of the Trauma Patient  

**EARS:** Check for WOUNDS, TENDERNESS, AND DEFORMITIES plus drainage of blood or clear fluid.
Scan 13-2 (continued)  **Physical Examination of the Trauma Patient**  

**RAPID TRAUMA ASSESSMENT**

**EYES:** Check for WOUNDS, TENDERNESS, AND DEFORMITIES plus discoloration, unequal pupils, foreign bodies, and blood in the anterior chamber.
Scan 13-2 (continued)  Physical Examination of the Trauma Patient  RAPID TRAUMA ASSESSMENT

NOSE: Check for WOUNDS, TENDERNESS, AND DEFORMITIES plus drainage of blood or clear fluid.
RAPID TRAUMA ASSESSMENT

MOUTH: Check for WOUNDS, TENDERNESS, AND DEFORMITIES plus loose or broken teeth, objects that could cause obstruction, swelling or laceration of the tongue, unusual breath odor, or discoloration.
NECK: Check for WOUNDS, TENDERNESS, AND DEFORMITIES plus jugular vein distention and crepitation.
APPLICATION OF COLLAR: Once the neck has been examined, apply the cervical collar.
Scan 13-2 (continued)  Physical Examination of the Trauma Patient  

RAPID TRAUMA ASSESSMENT

CHEST: Inspect and palpate for WOUNDS, TENDERNESS, AND DEFORMITIES plus crepitation and paradoxical motion.
Scan 13-2 (continued)  Physical Examination of the Trauma Patient

CHEST: Auscultate for BREATH SOUNDS (presence, absence, and equality).
RAPID TRAUMA ASSESSMENT

ABDOMEN: Check for WOUNDS, TENDERNESS, AND DEFORMITIES plus firm, soft, and distended areas.
Scan 13-2 (continued)  Physical Examination of the Trauma Patient  

RAPID TRAUMA ASSESSMENT

PELVIS: Check for WOUNDS, TENDERNESS, AND DEFORMITIES using gentle compression for tenderness or motion.
Scan 13-2 (continued) Physical Examination of the Trauma Patient

RAPID TRAUMA ASSESSMENT

UPPER EXTREMITIES: Check for WOUNDS, TENDERNESS, AND DEFORMITIES.
RAPID TRAUMA ASSESSMENT

UPPER EXTREMITIES: Check for CIRCULATION, SENSATION, AND MOTOR FUNCTION.
RAPID TRAUMA ASSESSMENT

LOWER EXTREMITIES: Check for WOUNDS, TENDERNESS, AND DEFORMITIES.
RAPID TRAUMA ASSESSMENT

LOWER EXTREMITIES: Check for CIRCULATION, SENSATION, AND MOTOR FUNCTION.
Scan 13-2 (continued)  Physical Examination of the Trauma Patient  

**RAPID TRAUMA ASSESSMENT**

**POSTERIOR:** Check for WOUNDS, TENDERNESS, AND DEFORMITIES. (To examine posterior, roll patient using spinal precautions.)
Figure 13-2  An air bag can prevent injuries. However, once deployed, it can also conceal important information about the patient's mechanism of injury. When you see a deployed air bag, remember to “lift and look.”
Table 13-3  Significant Injuries and Signs of Significant Injuries

<table>
<thead>
<tr>
<th>Significant Injuries and Signs of Significant Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unresponsive or altered mental status</td>
</tr>
<tr>
<td>Penetrating wound of the head, neck, chest, or abdomen (e.g., stab and gunshot wounds)</td>
</tr>
<tr>
<td>Airway that is not patent</td>
</tr>
<tr>
<td>Respiratory compromise</td>
</tr>
<tr>
<td>Pallor, tachycardia, and other signs of shock</td>
</tr>
</tbody>
</table>
**Table 13-4  Physical Exam/Trauma Assessment**

<table>
<thead>
<tr>
<th>BODY PART</th>
<th>WOUNDS, TENDERNESS, AND DEFORMITIES</th>
<th>PLUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>Wounds, tenderness, and deformities</td>
<td>Crepitation</td>
</tr>
<tr>
<td>Neck</td>
<td>Wounds, tenderness, and deformities</td>
<td>Jugular vein distention, crepitation</td>
</tr>
<tr>
<td>Chest</td>
<td>Wounds, tenderness, and deformities</td>
<td>Paradoxical motion, crepitation, breath sounds (present, absent, equal)</td>
</tr>
<tr>
<td>Abdomen</td>
<td>Wounds, tenderness, and deformities</td>
<td>Firmness, softness, distention</td>
</tr>
<tr>
<td>Pelvis</td>
<td>Wounds, tenderness, and deformities</td>
<td>Pain, tenderness, motion</td>
</tr>
<tr>
<td>Extremities</td>
<td>Wounds, tenderness, and deformities</td>
<td>Distal circulation, sensation, motor function</td>
</tr>
<tr>
<td>Posterior</td>
<td>Wounds, tenderness, and deformities</td>
<td></td>
</tr>
</tbody>
</table>
Figure 13-3  Cerebrospinal fluid draining from the ear of a trauma patient. © Edward T. Dickinson, MD
Figure 13-4  Blood in the anterior chamber of the eye is a sign that the eye has sustained considerable force. © Edward T. Dickinson, MD
Figure 13-4 (continued)  Blood in the anterior chamber of the eye is a sign that the eye has sustained considerable force. © Edward T. Dickinson, MD
Figure 13-5a  (A) Battle’s sign and other signs of brain injury.
Figure 13-5b  A patient with Battle’s sign. © Edward T. Dickinson, MD
Figure 13-5c  CT scan of that same patient. © Edward T. Dickinson, MD
Figure 13-6  Jugular vein distention. © Edward T. Dickinson, MD
Figure 13-7  Paradoxical motion.
Scan 13-3  Assessing Breath Sounds  Listen at the mid-clavicular line.
Scan 13-3 (continued)  Assessing Breath Sounds  Listen at the mid-axillary line.
Scan 13-3 (continued)  Assessing Breath Sounds  Listen at the mid-clavicular and the mid-axillary lines on both sides of the chest. Is air entry present? Absent? Equal on both sides?
Scan 13-3 (continued)  Assessing Breath Sounds  Listen at the mid-clavicular and the mid-axillary lines on both sides of the chest. Is air entry present? Absent? Equal on both sides?
Scan 13-4 Assessing Distal Function  (1) Assess distal circulation in the upper extremities by feeling for radial pulses.
Scan 13-4 (continued)  Assessing Distal Function  (2) Assess distal motor function by checking the patient's ability to move both hands.
Scan 13-4 (continued)  Assessing Distal Function  (3) Assess strength in the hands by asking the patient to squeeze your fingers.
Scan 13-4 (continued)  Assessing Distal Function  (4) Assess distal sensation to the upper extremities by asking the patient, “Which finger am I touching?” (Be sure the patient cannot see which finger.)
Scan 13-4 (continued)   Assessing Distal Function   If the patient is unresponsive, check distal sensation in the upper extremities by pinching the back of the hand. Watch and listen for a response.
Scan 13-4 (continued)  Assessing Distal Function  (5) Check distal circulation in the lower extremities by feeling the posterior tibial pulse just behind the medial malleolus of the ankle, or . . .
Scan 13-4 (continued)  Assessing Distal Function  . . . feel the dorsalis pedis pulse at the top of the foot.
Scan 13-4 (continued)  Assessing Distal Function  (6) Assess distal motor function by checking the patient's ability to move his feet.
Scan 13-4 (continued)  Assessing Distal Function  (7) Assess strength in the feet and legs by asking the patient to push against your hands.
Scan 13-4 (continued)  Assessing Distal Function  (8) Assess distal sensation in the lower extremities by asking the patient, “Which toe am I touching?” (Be sure the patient cannot see which toe.)
Scan 13-4 (continued)  Assessing Distal Function  If the patient is unresponsive, check distal sensation in the lower extremities by pinching the top of the foot. Watch and listen for a response.
### Table 13-5  Detailed Physical Exam in the Sequence of Assessment Priorities

1. Scene size-up.
2. Primary assessment and critical interventions for immediately life-threatening problems.
3. History of the present illness, rapid physical exam, vital signs, plus interventions as needed.
4. Repeat primary assessment for immediately life-threatening problems. Provide critical interventions as needed.
5. Detailed physical exam (time and critical-care needs permitting).
6. Reassessment for life-threatening problems, plus reassessment of vital signs. Provide critical interventions as needed.