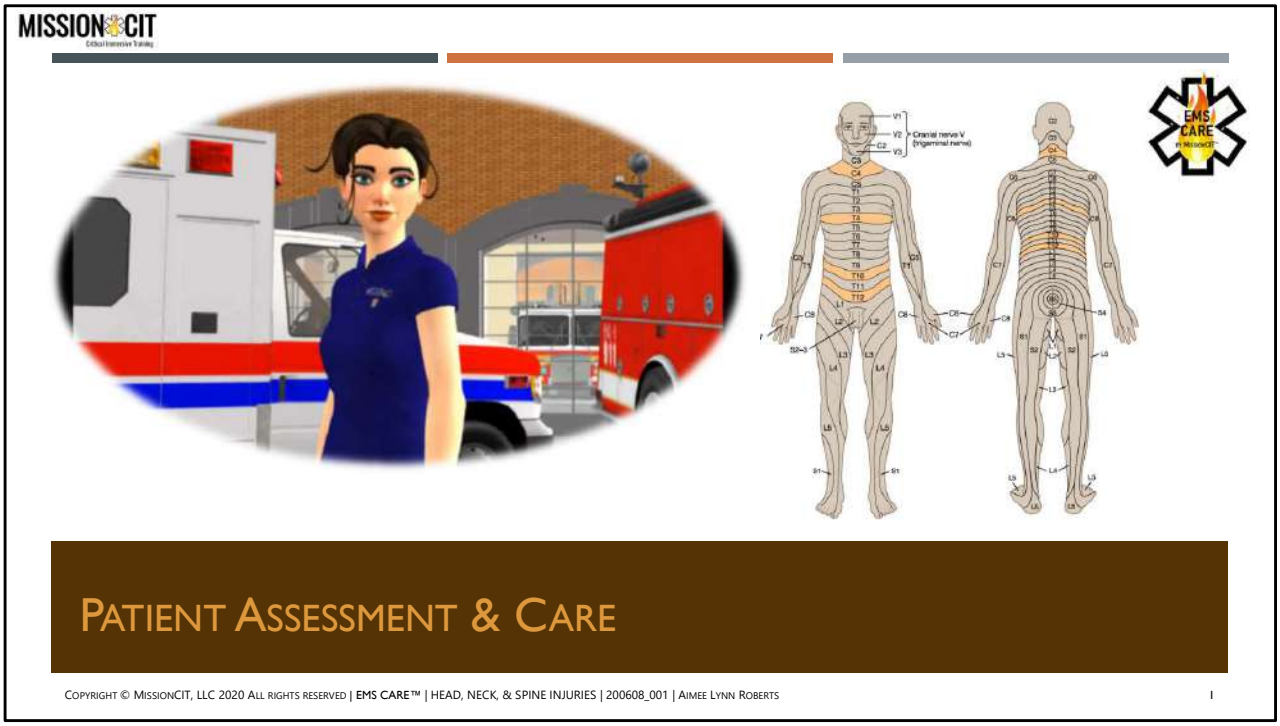
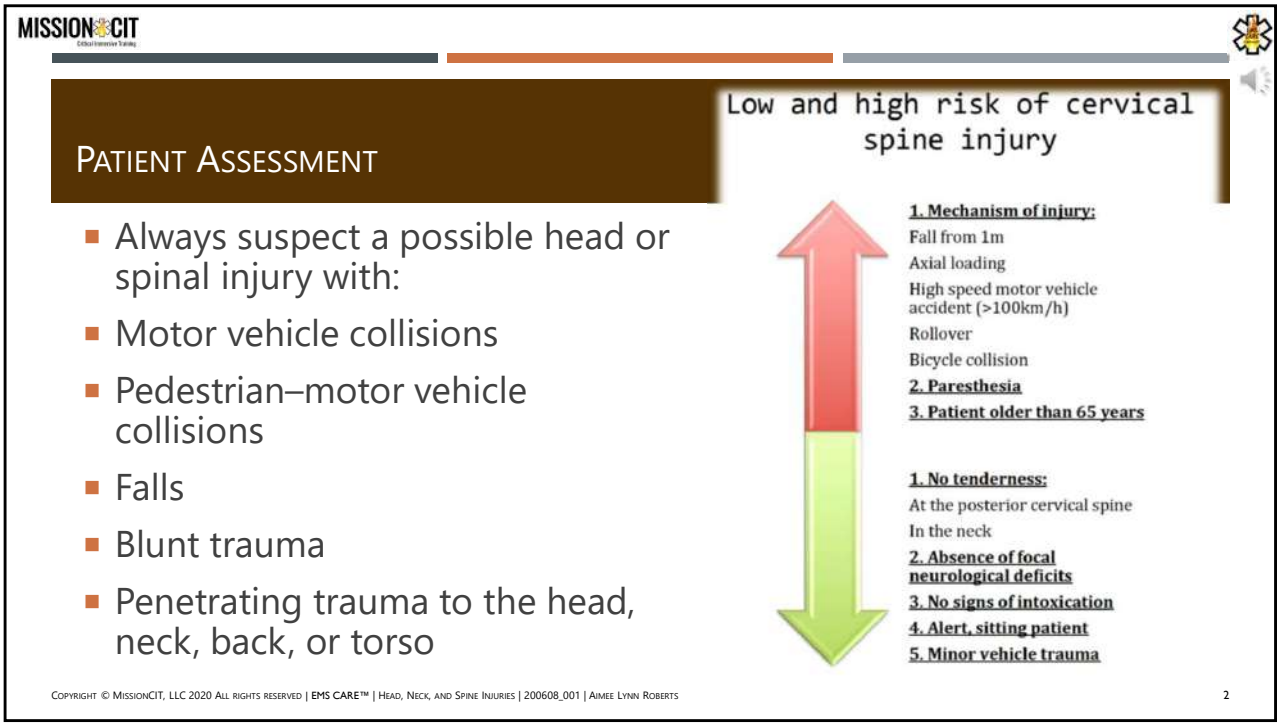


Hello again – it's good to be back with you. We are now going to explore the emergency care for patients with Head Neck and Spine Injuries.

Part A of this lesson reviews scene size-up, primary assessment, and neurologic examinations including a review of the Glasgow Coma Scale. In part B, we will discuss Secondary Assessments along with specific care for Head and Spinal Injuries.

And if you like to read as you listen, you can click on the link below for the text of my narration.

Good Studying.



So as a refresher, continuing from chapter 3 - always suspect a possible head or spinal injury any time you encounter one of the following MOIs:

1. Motor vehicle collisions; including motorcycles, snowmobiles, and all-terrain vehicles.

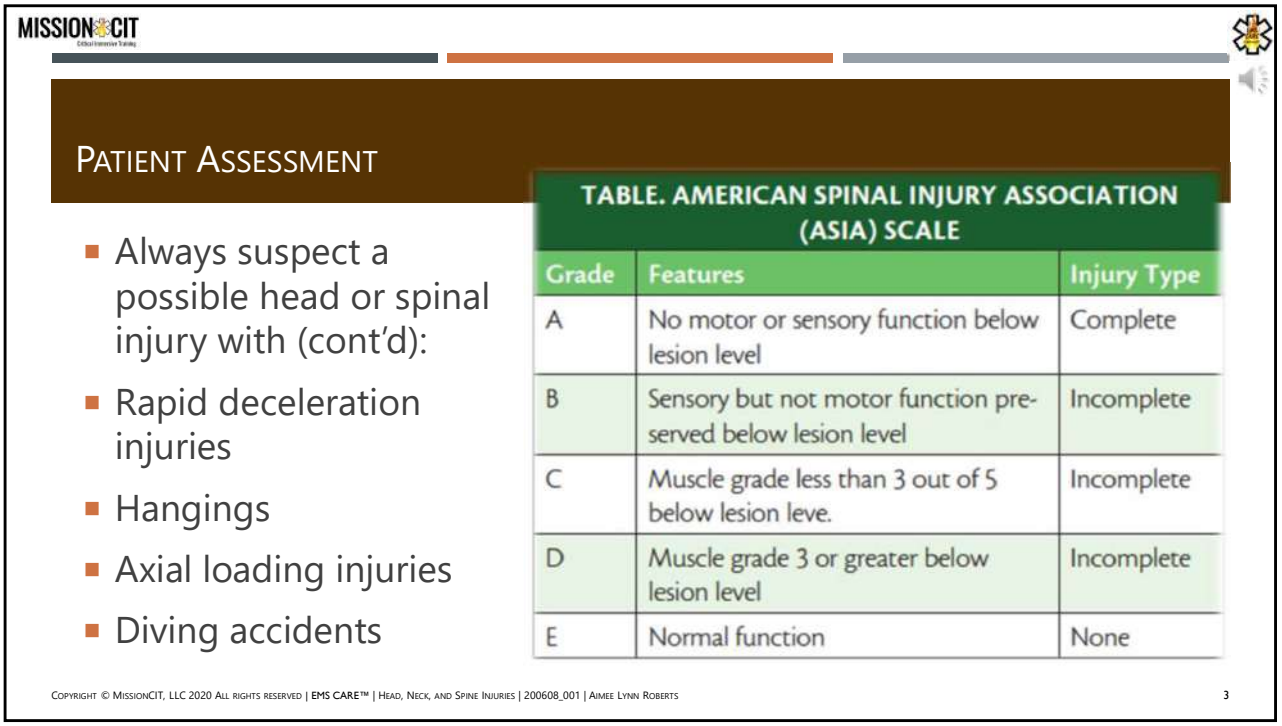
2. Pedestrian–motor vehicle collisions.

3. Falls greater than 20 feet for an adult; and greater than 10 feet for pediatric patients.

4. Blunt trauma.

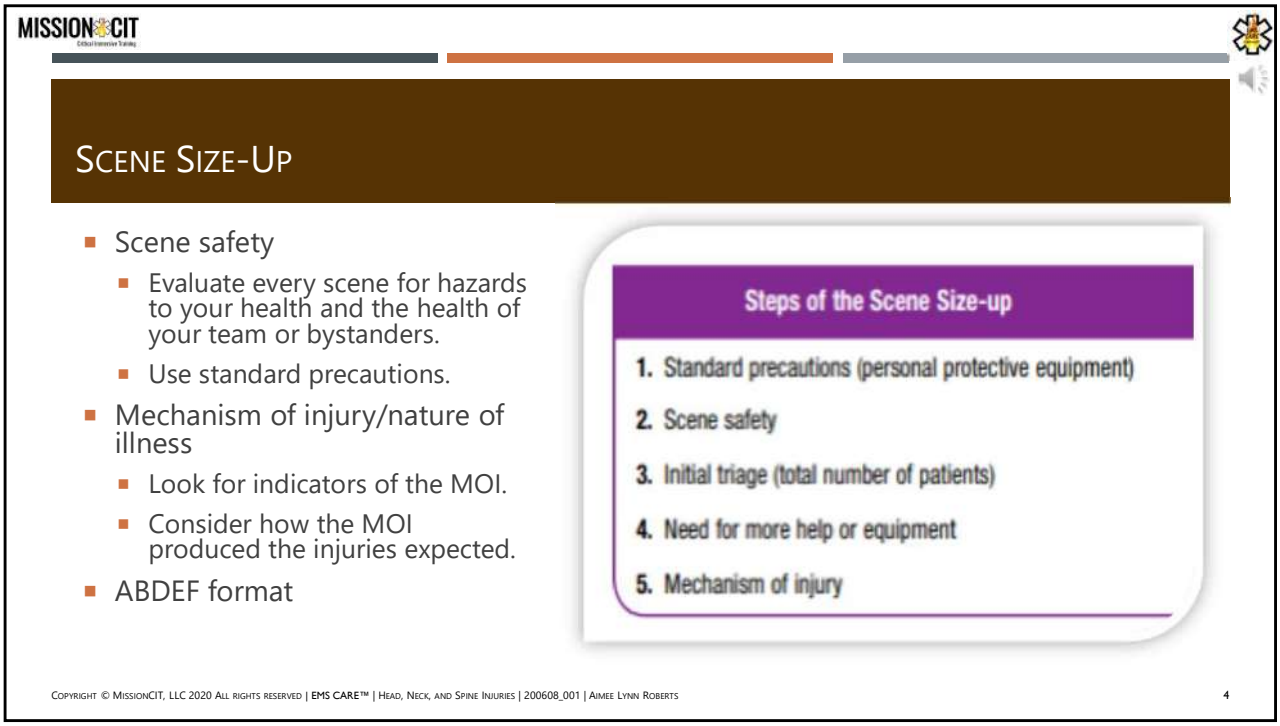
5. Penetrating trauma to the head, neck, back,

or torso.



So, continuing our review, you should also suspect a possible head or spinal injury with these 4 additional MOIs.

1. Rapid deceleration injuries.
2. Hangings.
3. Axial loading injuries: injuries where load is applied along the vertical or longitudinal axis of the spine, for example falling from a height and landing on the feet in an upright position, and
4. Diving accidents.



And here is a review of scene size-up with specifics for Head and spine injuries.

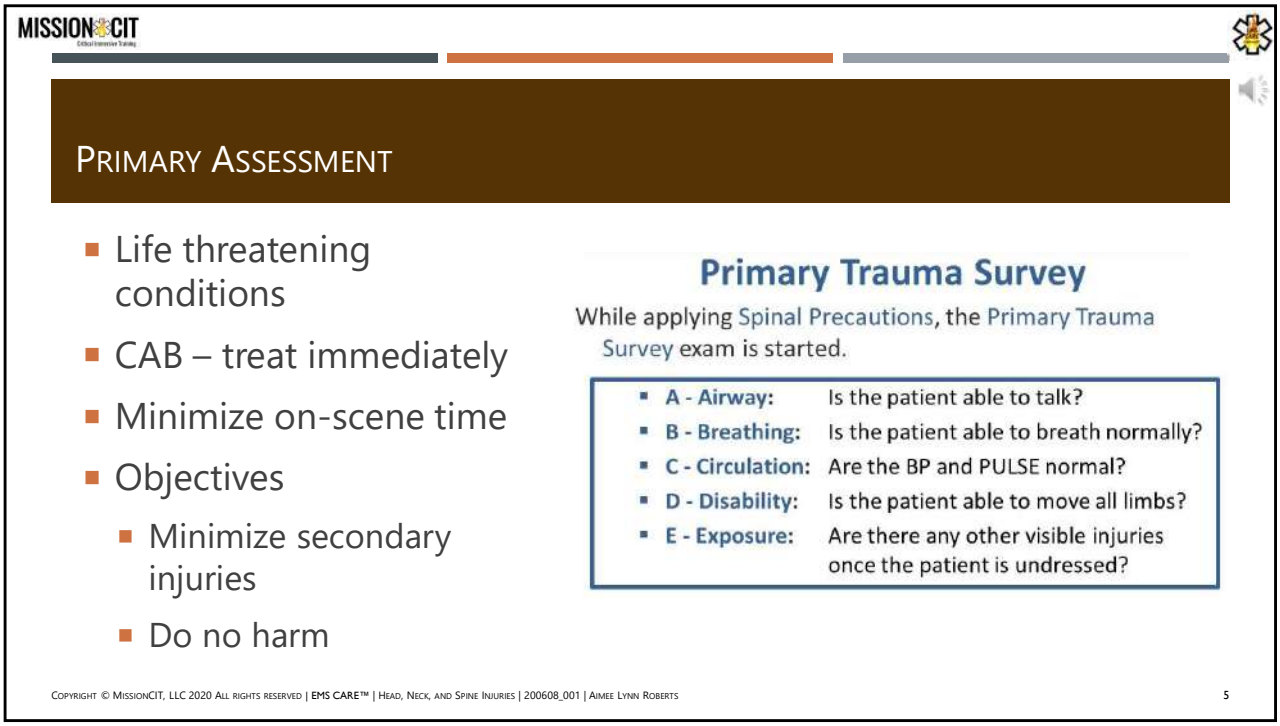
Always first is scene safety. As many times when dealing with head and spine injuries, you will be in some sort of accident situation, evaluate every scene for hazards to your health and the health of your team or bystanders. Be prepared with appropriate standard precautions per your local protocols before you approach the patient in a motor vehicle crash.

And then be sure to identify Mechanism of injury or the nature of apparent illness. Look for indicators of the

MOI and Consider how the expected injuries may have resulted.

The approach to scene size-up and initial communications can be organized using the familiar ABCDEF format.

- A - Anticipate victims and injuries.
- B - Breathing: Is this possibly a toxic environment?
- C – Cars and crowds.
- D - Disability: What further threatens victims and rescuers?
- E – Electricity.
- F – Fuel and fire.



So, be sure to do the following in your primary assessment.

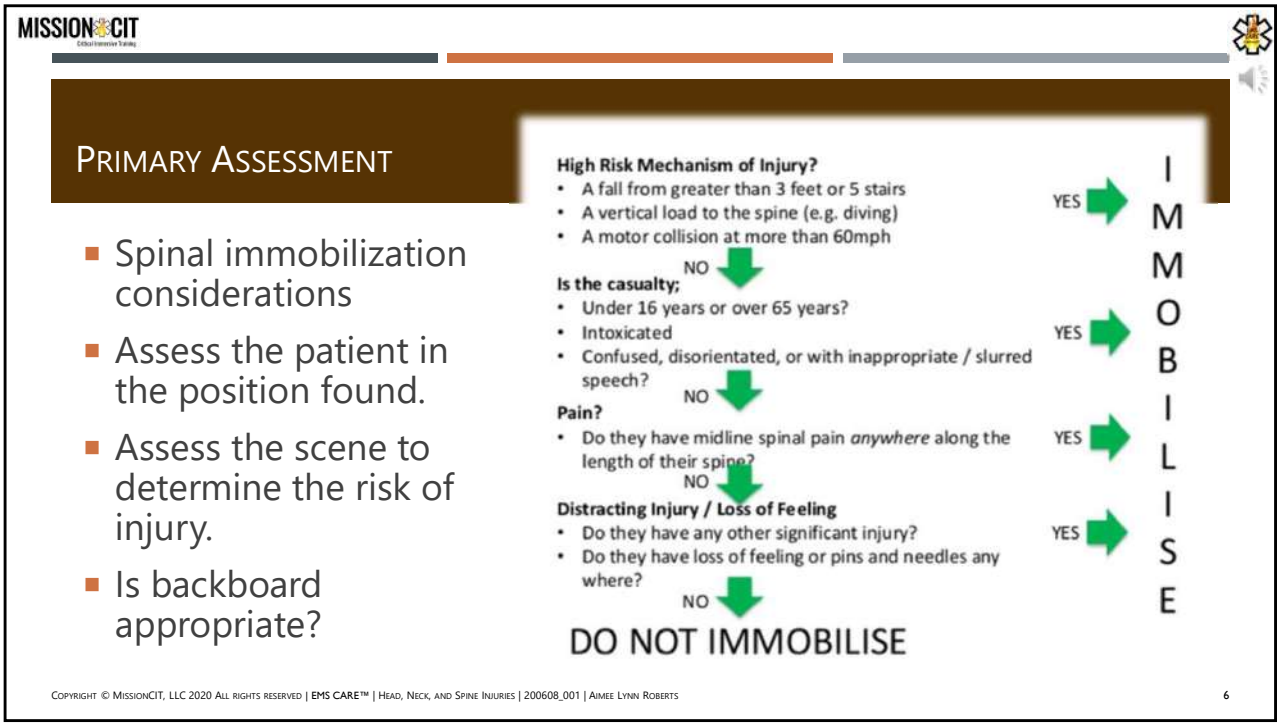
First, focus on identifying and managing urgent concerns.

- Look for threats to circulation, airway, or breathing, that are considered life threatening, and must be treated immediately.
- Focus on reduction of on-scene time and recognition of a critical patient, to increase the patient's chances for survival, or reduce the amount of irreversible

damage.

The rapid physical examination of the unresponsive medical patient is similar to the assessment of a trauma patient with a significant mechanism of injury. You will rapidly assess the patient's head, neck, chest, abdomen, pelvis, extremities and exterior.

Your primary patient care goals for these patients is first, to minimize secondary damage to the spine, for patients who may have an unstable spinal injury. And second, to minimize patient morbidity, from any unnecessary use of immobilization devices



Now, focusing on Spinal immobilization considerations.

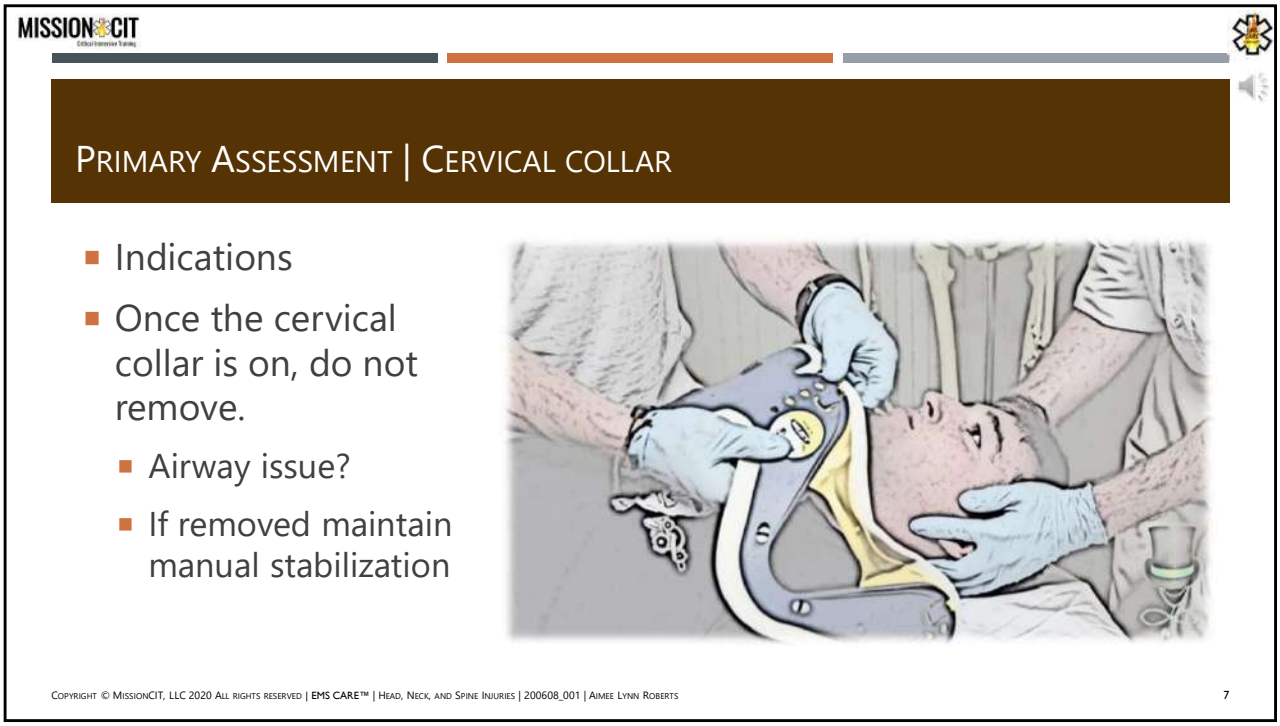
First, when assessing a patient, be aware that any unnecessary movement of the patient can cause additional injury.

Then, assess the scene to determine the risk of injury. While forming a general impression of your patient based on the level of consciousness and the chief complaint.

Next, if the patient is absolutely clear in their thinking, and does not have any neurologic deficits, spinal pain or

tenderness, evidence of intoxication, or other illnesses or injuries that may mask a spinal injury, you may consider not placing the patient in spinal restriction.

In addition, do not transport patients on rigid long boards, unless the clinical situation warrants long board use. An example of this may be facilitating the immobilization of multiple extremity injuries. Or an unstable patient where removal of a board will delay transport. In these situations, long boards should ideally be padded or have a vacuum mattress applied to minimize secondary injury.



If indicated, apply a cervical collar as soon as you have assessed the ABCs, and provided necessary treatments.

Place the patient in a cervical collar if there are any of the following:

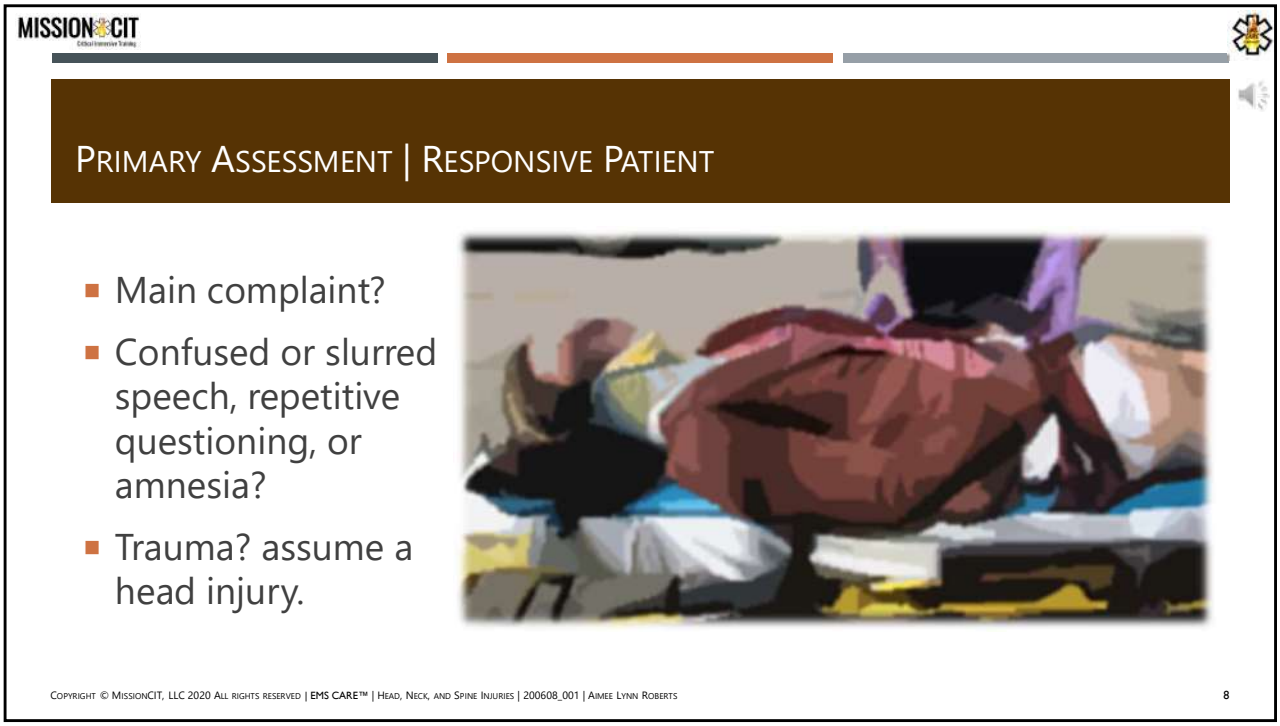
- The patient complains of midline neck or spine pain,
- Any midline neck or spinal tenderness with palpation,
- Any abnormal mental status (including extreme agitation),
- Focal or neurologic deficit,
- Any evidence of alcohol or drug intoxication,

- Another severe or painful distracting injury is present,
- Torticollis or a stiff neck in children, and
- A communication barrier that prevents accurate assessment.

Once the cervical collar is on, do not remove it unless it causes a problem with maintaining the airway. If the device needs to be removed, maintain manual stabilization of the cervical spine, until it can be replaced.

Ambulatory patients may be safely immobilized on a gurney with cervical collar and straps. And will not generally require a spine board.

Note that the use of a cervical collar is contraindicated for patients with penetrating injury to the neck.



When assessing for signs and symptoms of a head or spine injury, begin by asking the responsive patient the following questions:

What happened?

Where does it hurt?

Does your neck or back hurt?

Can you move your hands and feet?

Did you hit your head?

If you encounter confused or slurred speech, repetitive

questioning, or amnesia in responsive patients, these are good indications of a head injury.

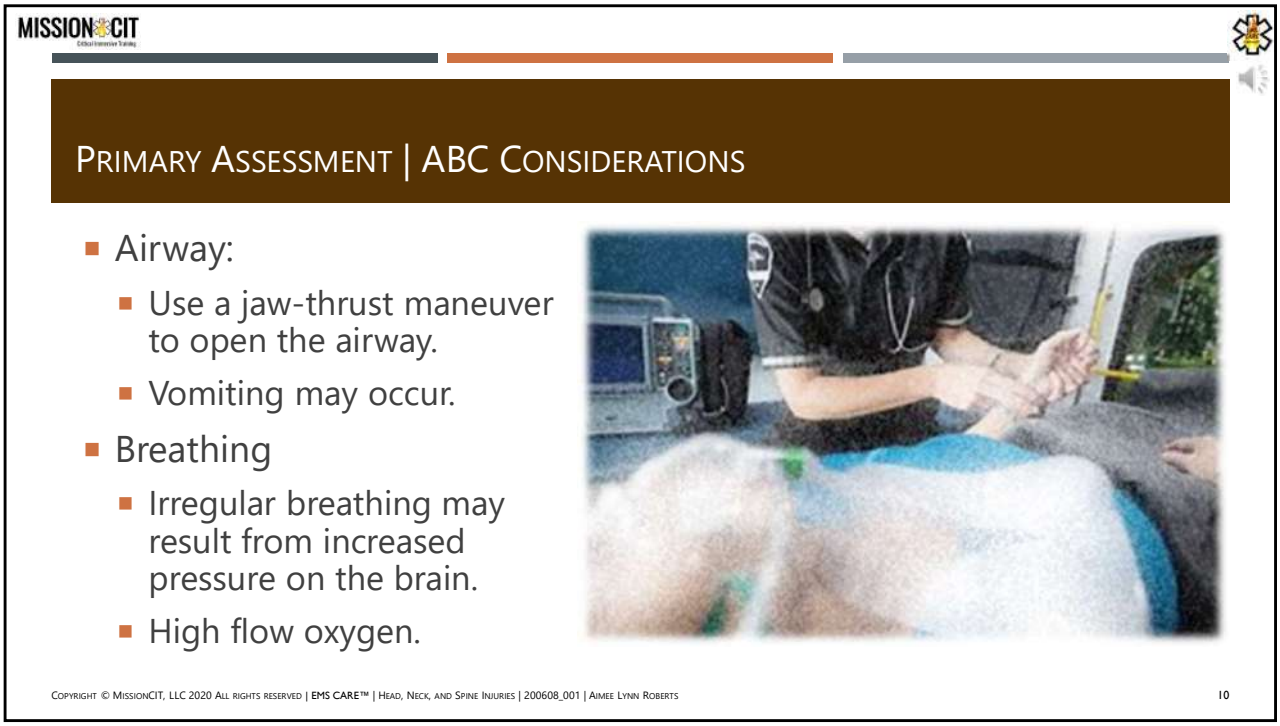
When in a trauma setting, assume your patient has a head injury until your assessment proves otherwise.

Remember that decreased blood glucose levels, can mimic these symptoms.



Unresponsive trauma patients should be assumed to have a spinal injury.

Patients with a decreased level of responsiveness based upon the AVPU scale should be considered to have a spinal injury as their chief complaint.



So, in the case of a suspected spinal injury, first:

Assess the patient's airway - Is the patient's airway open? If the patient is unresponsive, stabilize the head and neck, and use the jaw-thrust maneuver to ensure an open airway. If you do not suspect a spine injury, use the head tilt, chin lift maneuver. Note that Vomiting may occur in the patient with a head injury. An oropharyngeal or nasopharyngeal airway may assist in maintaining the airway; proper B L S maneuvers have been shown to adequately protect the patient's airway.

Next, Assess the patients breathing - Is the patient

breathing adequately? With the airway open, place your ear over the patient's nose and mouth and watch for chest movement, note symmetry, or lack of symmetry in chest movement. Listen and feel for the presence of exhaled air. Listen to the quality of the breath sounds. Irregular breathing, such as Cheyne-Stokes respirations, may result from increased pressure on the brain, because of bleeding or swelling in the cranium.

Prehospital administration of high-flow oxygen is indicated for patients with head and spinal injuries.

Finally, pulse oximeter values should not fall below 90% and ideally should be 95% or higher.

Primary Assessment | Circulation

- Check carotid (neck) artery
- Rapid or weak pulse?
- Skin Color & Temperature
- Assess for signs and symptoms of shock
- Control bleeding.
- Hypoperfusion can lead to significant brain damage or death.



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So, continuing in the case of suspected spinal injuries, next assess the patient's circulation. Does the patient have an adequate pulse? Is there serious bleeding. Did the patient lose a large quantity of blood prior to your arrival?

If the patient is not breathing check the pulse at the carotid.

If the patient is breathing you can check the carotid or the radial artery.

If you document the presence of a carotid pulse but if

the radial pulse is absent, this may represent a shock situation. A rapid or weak pulse may also represent a shock situation.

Note that the elderly often have an irregular pulse. This is rarely life threatening. However, the speed of the pulse, both too fast and too slow can be life threatening.

Understanding that any uncontrolled bleeding may become life threatening, you are first concerned with the total amount of blood lost, not just the speed of the bleeding. Note that a single episode of hypoperfusion can lead to significant brain damage and even death.

The assessment of circulation also includes checking skin signs - color, temperature, and moisture. Abnormal findings such as pale cool, moist skin could be indicative of shock.

Finally, control the bleeding as conditions indicate.



Consider the following as indications for the rapid transportation of patients with head trauma:

- Patients with impaired airways, open head wounds, or abnormal vital signs, or patients who do not respond to painful stimuli, may need to be rapidly extracted from a motor vehicle and transported.

For these patients,

- Ensuring a patent airway and providing high-flow oxygen is paramount.
- There may be vomiting and seizures, so suction

should be readily available.

- A head trauma patient may deteriorate rapidly and require aeromedical transport.
- In supine patients, the head should be elevated 30 degrees, if possible, to help reduce intracranial pressure.
- Remember to maintain the stabilization of the spine.

And also consider:

- The use of lights and sirens may increase the patient's level of distress.
- Patients who are conscious and aware of the inability to move their limbs may need emotional support.

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History Taking

- Life threatening issues have been resolved
- Obtain a medical history
- Injury-specific signs and symptoms
- SAMPLE
- If the patient is not responsive, attempt to obtain the history from other sources.



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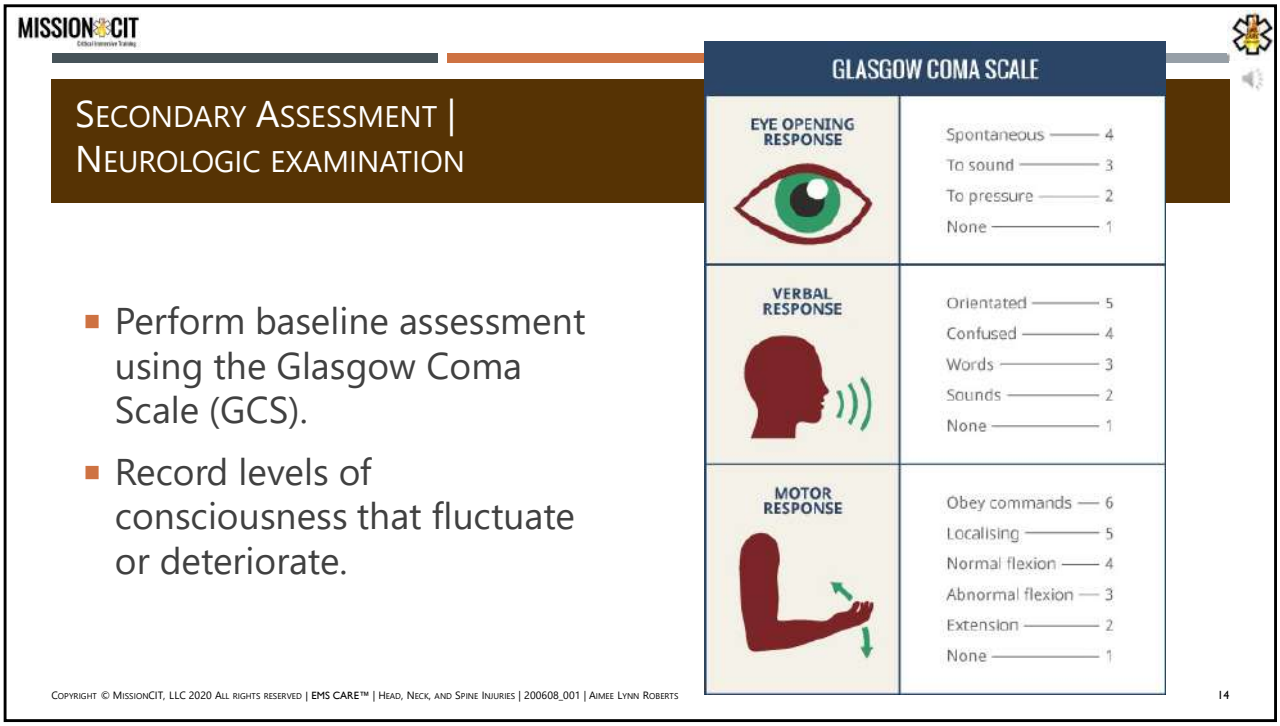
A focused history and physical exam should be performed after the initial assessment. It is assumed that the life-threatening problems have been found and corrected. If you have a patient with a life-threatening problem that requires intervention you may not get to this component.

A patient history includes any information relating to the current complaint or condition, as well as past medical problems that could be related. Utilize bystanders or family when needed

An often used acronym to obtain a patient's history is

SAMPLE.

- S - for Signs and symptoms.
- A – Allergies.
- M – Medications.
- P - Pertinent past medical history.
- L - Last oral intake. and
- E - Events leading to the illness or injury.

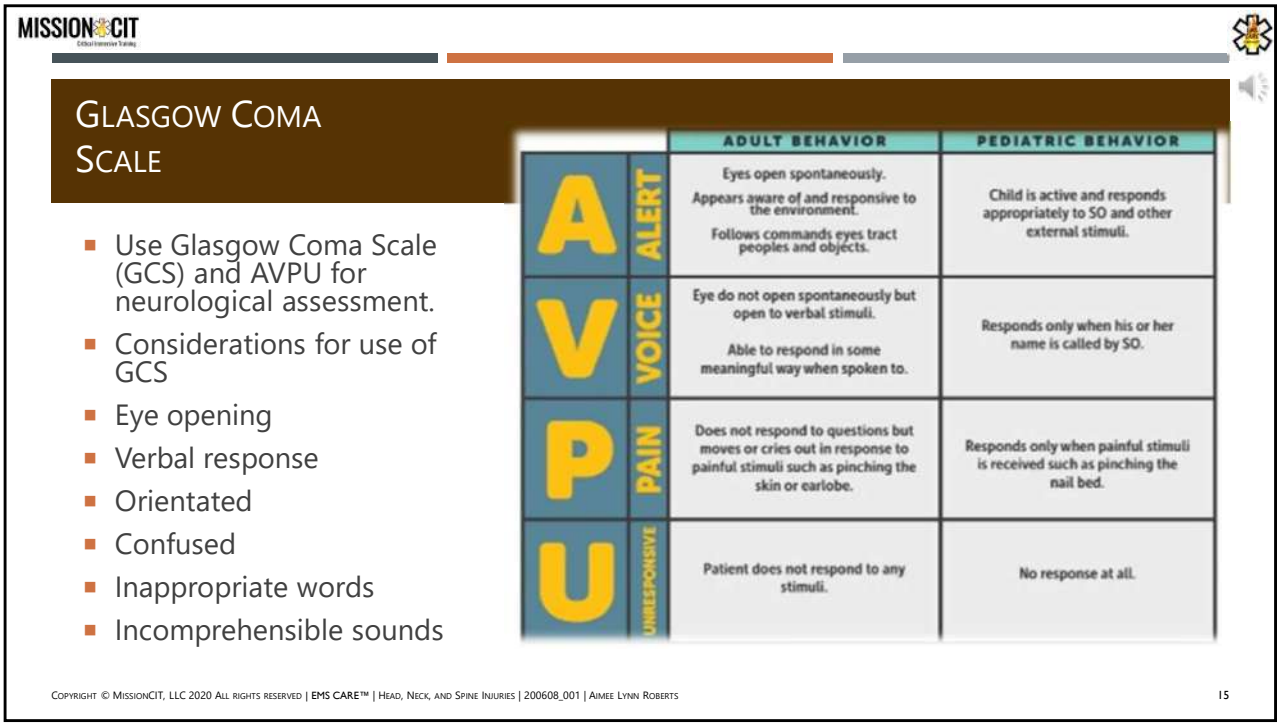


If the patient is conscious, during, and after the history taking, you can begin a neurologic examination using the Glasgow Coma Scale and A V P U. The Glasgow Coma Scale, can identify changes to consciousness in traumatic brain injury patients. It analyzes patients on three different criteria:

1. Eye Opening
2. Motor Response, and
3. Verbal Response

The chart indicates the relative scoring. It is important to document your findings as this will be compared to

subsequent scores at the hospital.



Constant reassessment of the brain-injured patient is essential. Mental status can deteriorate rapidly, and primary treatments such as airway management may become necessary. A V P U is another neurological assessment tool. Follow your local protocol as to the usage of the Glasgow Coma Scale or A V P U or both.

So, this completes Part A of this lesson. I will be back shortly with Part B.

Good Studying