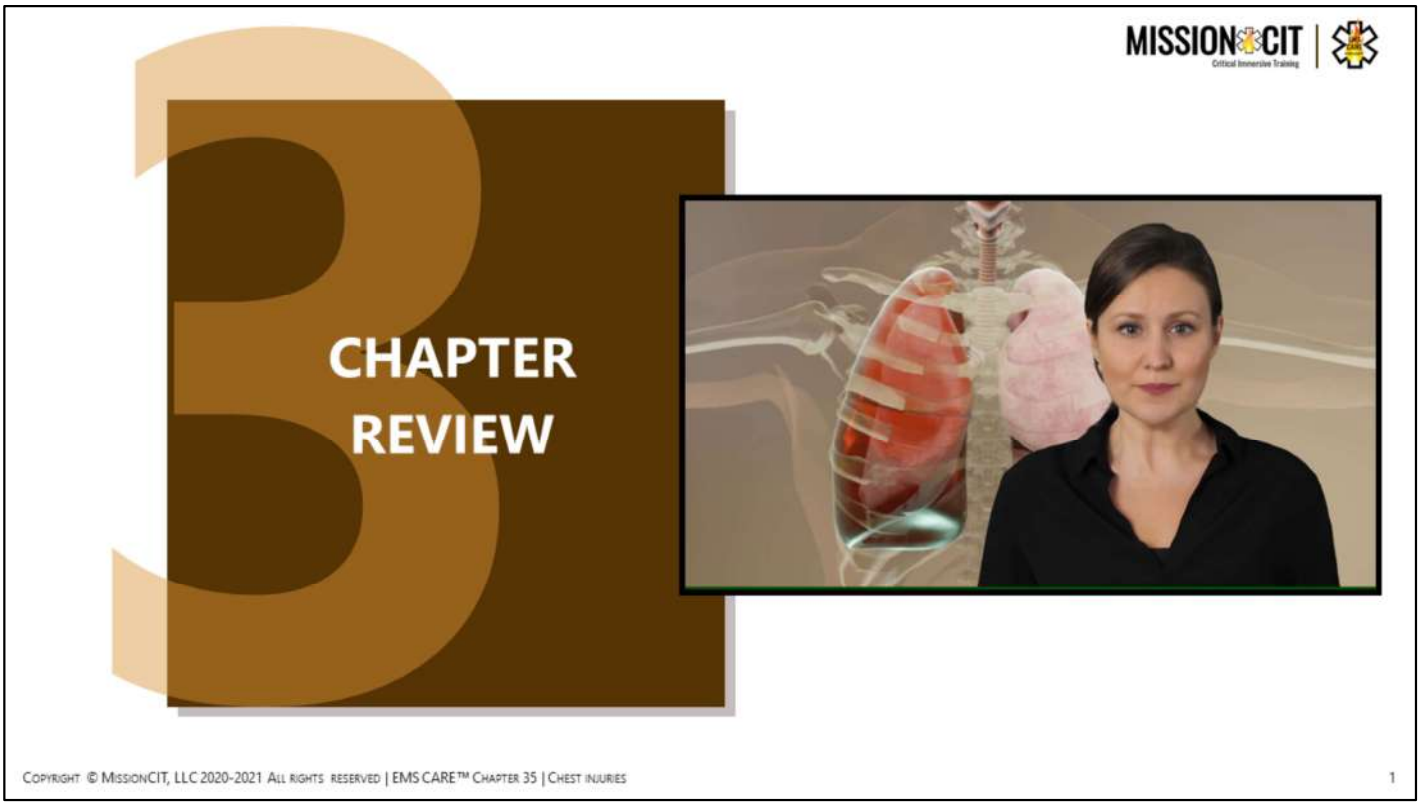
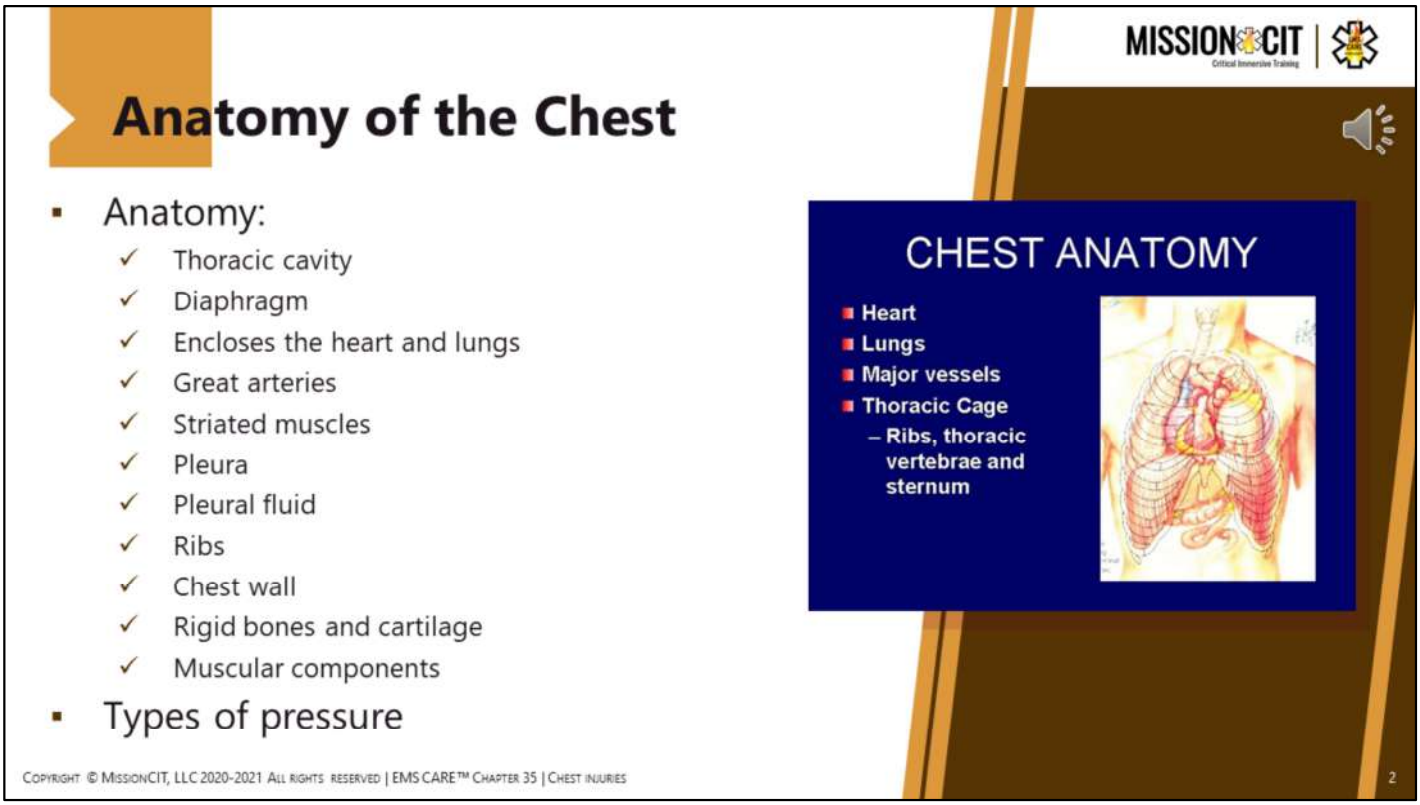


Thank you Justin. It's time to review the chapter before you move on to the quiz. Good studying.

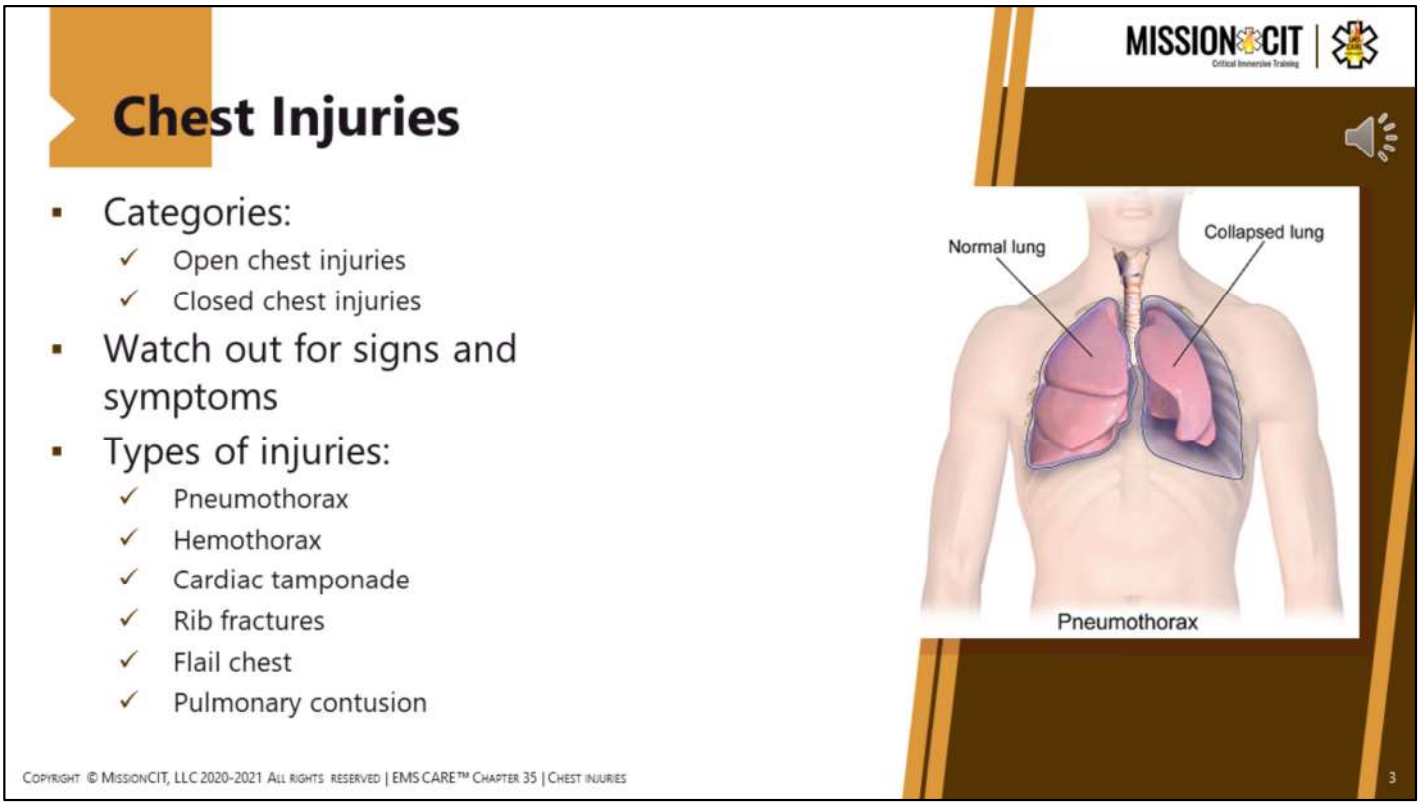


In the first lesson, we mentioned the anatomy and physiology of the chest. The chest or thoracic region spans the area inferior to the neck and superior to the abdomen. It is enclosed by the ribs, the vertebral column, and the sternum, or breastbone, and is separated from the abdominal cavity by the diaphragm. It contains the lungs, the middle and lower airways, the tracheobronchial tree, the heart, the vessels transporting blood between the heart and the lungs. These vital organs are well protected by a cage of bones. Although the thoracic skeleton consists of rigid bones and cartilage, its interconnection with the muscular components forms a dynamic structure that can expand during inspiration.

Pulmonary ventilation involves three different pressures:

- Atmospheric pressure
- Interalveolar or intrapulmonary pressure
- Intrapleural pressure

In the event of chest injuries, there will be changes in ventilation. As an EMT you will need to monitor respirations. The minute ventilation or volume rate gives an idea of the possibility of chest injuries.



In the next lesson, we looked at the different chest injuries:

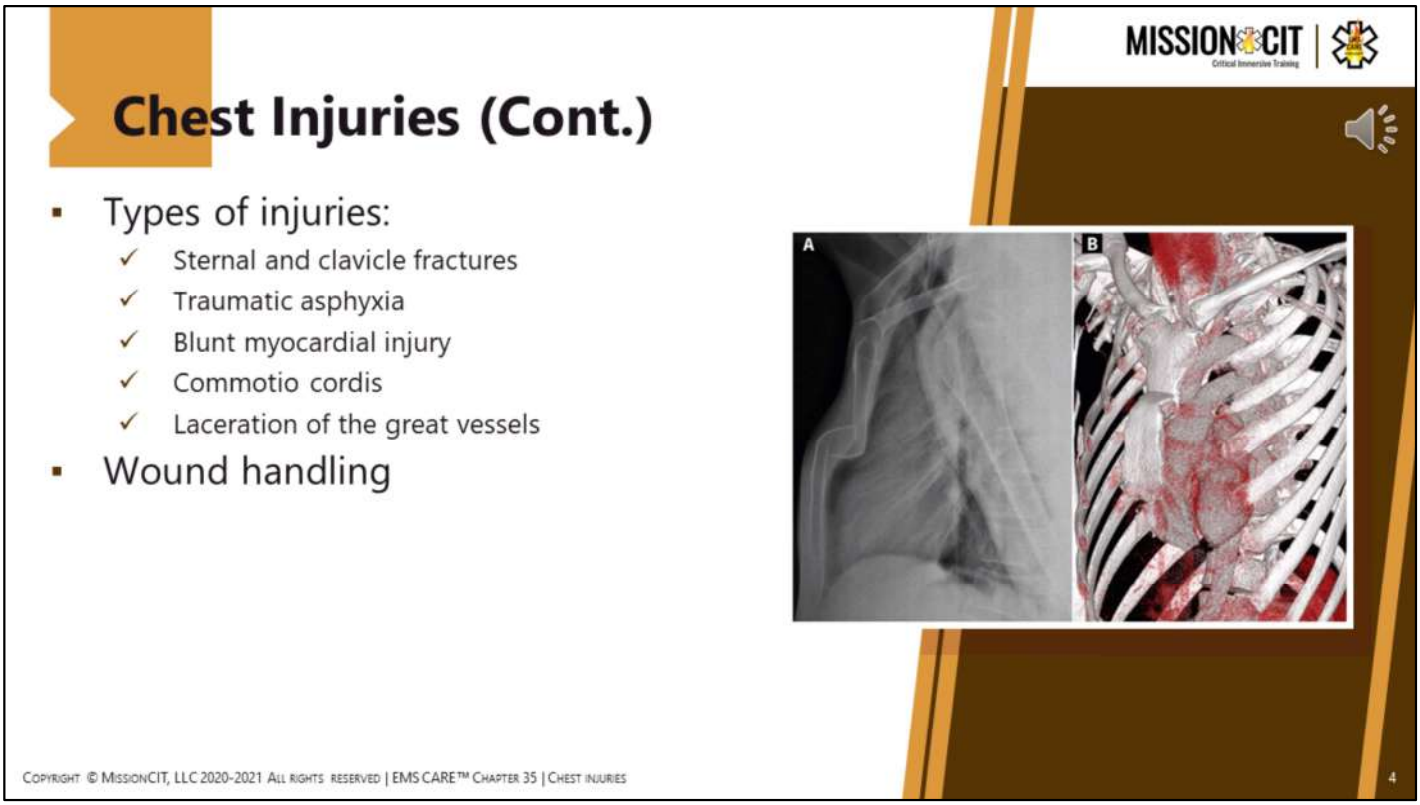
- Chest injuries can be divided into two categories, namely, open and closed chest injuries. In an open chest injury, an object penetrates the chest wall itself. These open chest injuries can include, a sucking chest wound, a flail segment, an impaled object or penetrating injury.
- In a closed chest injury, the skin is not broken, and the injury is often caused by blunt trauma. These injuries can get exacerbated by rib fractures.
- Watch out for signs and symptoms related to these injuries.

Here is a short recap of injuries we discussed:

- Pneumothorax or a collapsed lung is a condition where there is an accumulation of air in the pleural space. You may hear abnormal or diminished breath sounds. Depending on the nature and severity of the injury, pneumothorax can be categorized into simple and tension.
- Hemothorax is similar to pneumothorax, except that blood accumulates in the pleural space due to bleeding in the rib cage, lung, or blood vessel.
- If there's both blood and air in the pleural space, it's called hemopneumothorax.
- In cardiac tamponade, the protective membrane called the pericardium that surrounds

the heart gets filled with blood or fluid. You can provide ventilation, and rapidly transport the patient.

- Rib fractures can quickly lead to pneumothorax, hemothorax, or pneumohemothorax. In this case, give supplemental oxygen and gently transport the patient.
- A flail chest is a condition where a segment of the chest wall is detached from the rest of the thoracic cage. In this situation too, transport the patient.
- Pulmonary contusion, also known as bruised lung, is caused due to blunt trauma. Here you can provide oxygen and positive pressure ventilation and transport the patient to the nearest healthcare facility.



Continuing with types of chest injuries:

- Sternal fractures often occur in motor vehicle collisions. Clavicle fractures, on the other hand, are a break in the collar bone located near the shoulders. Here, suspect upper rib fractures in medial clavicle fractures, and watch out for the development of conditions like pneumothorax.
- Traumatic asphyxia is a sudden and severe compression of the chest caused by pulmonary contusion and possibly an underlying injury to the heart. In such situations, provide ventilatory support with oxygen, transport the patient, and monitor the vital signs.
- Blunt myocardial injury is the bruising of the heart muscle that may cause reduce the heart's ability to pump blood. Monitor the pulse and blood pressure of the patient, provide oxygen if needed, and transport immediately.
- Commotio Cordis is caused by a sudden direct blow to the chest during a critical part of the heartbeat.
- Great vessel injuries include trauma to the vena cava, pulmonary artery, pulmonary veins, and the aorta, and all of these can result in rapidly fatal hemorrhage.

If you notice any open injuries, seal the wound and apply an occlusive dressing, according to your local protocols.

That’s it! We’ve come to the end of the chapter review. Now, proceed to the quiz.