Chest Trauma
Written by: Paul M. Deutsch, Ph.D., CRC, CCM, CLCP, FIALCP

Chest injuries may result in pulmonary impairments, ranging from minor to serious cardiorespiratory problems. Damage to the chest wall, airways, diaphragm, and lungs can result in respiratory failure. However, full uncomplicated recovery from acute injury seldom results in permanent vocational handicaps.

Pulmonary function as a primary disability in personal injury litigation is usually the result of trauma rather than a long-term disease process (such as occupational disease). The result of trauma can be a broad range of minor to serious cardiorespiratory impairments. A minor fall can result in painful but not disabling rib fractures while more severe trauma incurred in an automobile accident can result in crushing lung impairments that can become fatal. Up to 25 percent of traffic accident fatalities in the United States are secondary to chest trauma and as much as an additional 50 percent may be a major factor resulting in death (see Handbook of Medical Surgical Nursing, Surgeries Following Rear-End Automobile Collisions, and Management of Thoracic Injuries). In addition to automobile accidents and falls, trauma to the chest may result from gunshot wounds, knife wounds, blunt trauma or blows to the chest and crushing injuries to the chest wall. The most serious of chest traumas will result in respiratory failure secondary to damage involving the chest wall airways, diaphragm and lungs. The speed with which the patient reaches medical treatment will often dictate whether or not the patient will live and the degree to which permanent impairment will result.

In the case of rib fractures, the primary concern with respect to pulmonary function is whether or not there is any underlying bruising or contusion to the lungs. Rib fractures can also result in lacerations of the pleura, pneumothorax, hemothorax, or hemopneumothorax. These injuries are characterized by substantial pain, which may be exacerbated by breathing, movement and coughing. Diminished ventilation and potentially, collapse of the lung may result. The primary treatment objective is relief of pain with subsequent treatment dependent in large part on the severity and type of complications which accompany the rib fractures. In instances where no significant complications result, vocational implications will usually be none to
minimal.

Surgical intervention is frequently needed to treat the complications of blunt trauma to the chest. Some information on surgical intervention costs and average hospitalization times is provided in Chart 1 (provided in a later reading assignment – The Assessment of Damages), but it must be recognized that a broad range of procedures (from very minor to quite extensive) may be necessary, and more detailed information must be obtained from the treating medical doctors and/or appropriate independent medical consultants on a per case basis. Hospitalizations for pulmonary surgery is often extended because of complications associated with medical management. This is particularly true where surgery is undertaken in patients who have a prolonged history of chronic obstructive pulmonary disease or other types of chronic upper respiratory impairment.

Generally, with respect to chest trauma, even very severe injuries will result in a complete recovery with no significant vocational handicaps. Again, this generalized statement must be viewed with caution and each case judged on an individual basis.

**Pulmonary Contusions**

Blunt trauma to the chest may also result in pulmonary contusion. Contusion may result directly from blunt trauma or may result from a rapid compression and subsequent decompression of the chest wall (steering wheel trauma during automobile accident). Although medical intervention is necessary regardless of the severity of the injury, the degree to which vocational implications result depends on whether it is a mild, moderate or severe contusion. In the case of severe contusion to the lung, persistent implications can result and, in fact, the injury may lead to death despite medical intervention. In severe pulmonary contusion, characteristic symptoms include rapid respiration, tachycardia, cyanosis, agitation, combativeness, and a continuous and productive cough. The cough is characterized by the production of frothy and bloody mucus.

Regardless of the etiology of chest trauma resulting in pulmonary impairment, vocational implications will only result if permanent
limitation in pulmonary function occurs. It is thus important to obtain from the physician more detailed information on whether or not the trauma has resulted in functional limitations in vocational tasks, exposure to environmental influences, avocational tasks or activities of daily living. It is particularly important in such instances to complete an interview with the treating physician with an emphasis on discussing the physical limitations.

**Shock Lung**

Another complication of trauma is shock, and a side complication of severe shock may be shock lung. It is thus not necessary to have chest trauma for shock lung to appear. The condition is generally characterized by labored or difficult breathing, including hyperventilation. There may also be a characteristic increase in blood pressure, anxiety and tachypnea (very rapid respiration). Immediate medical intervention is necessary if more severe complications are to be avoided.

**References**

- Handbook of Medical Surgical Nursing, Surgeries Following Rear-End Automobile Collisions, and Management of Thoracic Injuries.