

What muscles are involved in respiration during severe exertion? How is that different from respiration at rest?

The accessory muscles of respiration aid in times of pulmonary stress, such as during exercise. They include the external intercostal muscles (which are between each rib), the sternocleidomastoid muscle (which pulls against the head), the scalene muscles (which pull the ribs up against the collarbone) and the rectus abdominus and internal intercostal muscles (which pull the ribs down, aiding respiration). At rest, breathing can be performed without these.

What is pneumothorax? Describe the events that occur in the chest after a gunshot wound that creates a hole in the chest wall.

Pneumothorax is air in the chest. It can be caused by a hole in the chest wall or the wall of the lung, and it enters the inside space where there is a vacuum. After loss of this vacuum (after a gunshot wound), the lung collapses, partially or completely, and gas exchange does not take place on that side, leading to labored breathing. Treatment includes inserting a tube into the chest, sucking the air out and sealing the hole.