

# Emphysema

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Emphysema Emphysema Question One Emphysema is one of the obstructive diseases of the lungs in which the tissues around the alveoli, which support the physical structure and function of the lungs, are damaged. This results in impeded airflow and air getting trapped, exhibited by shortness of breath. Since the damage to the alveoli causes a large decrease of the surface area used for gaseous exchange, rate of exchange of oxygen and carbon dioxide is thus slowed down, and there is a buildup of carbon dioxide levels and shortage of oxygen in the blood (Loscalzo et al, 2008).

#### Question Two

When cigarette smoke is inhaled into the lungs, harmful toxins are trapped in the alveoli, leading to localized inflammatory response. The chemicals released in the response disintegrate the alveolar septum, hence deforming the mechanical architecture of the lungs and increasing the cavities between the alveoli. With the reduction of alveoli surface area, there is reduced ventilation of the surrounding parenchyma (Webb & Higgins, 2005). The thoracic cage expands and diaphragm contracts to compensate the reduced surface area. With increased alveoli breakdown, the body cannot maintain enough oxygen in the blood. Vasoconstricting then takes place, with a risk of leading to hypertension, which strains the right side of the heart that pumps deoxygenated blood to the lungs (Webb & Higgins, 2005).

#### Question Three

The patient is likely to experience shortness of breath at times. It may be more frequent, including even when he is at rest, depending on the extent of damage to the lungs. An examination will reveal an expansion of the chest's diameter. His skin will also tend to discolor to a purplish-blue hue (Loscalzo et al, 2008).

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#### Question Four

Pneumothorax may be caused by the spontaneous rupture of alveoli, which is a prevalent condition in emphysema. It occurs when there is constant loss of air from the lung, which then flows into the pleural space without an escape way. It results in the accumulation of air in the space between the lungs and the chest (Loscalzo et al, 2008).

#### Question Five

Pneumothorax can hasten respiratory failure in the absence of enough lung reserve to balance the shrunken lung or its segment. Severe pulmonary vascular occlusion results in ventilation-perfusion disparity and respiratory failure due to inadequate blood flow into the still functioning alveoli. With massive pulmonary artery embolism, pressure increases on the right side of the heart, causing cardiac dysfunction and hindering the heart from circulating adequate volumes of blood (W. H. O., 2009).

#### Question Six

Care must be taken not to give too much oxygen. Because the patient already has high levels of carbon dioxide in the blood, he depends on oxygen to control how fast he breathes. However, giving too much oxygen will slow down the breathing as its level increases, which in turn reduces the exuding of carbon dioxide. The carbon dioxide eventually rises to toxic levels.

#### Question Seven

Deep vein thrombosis can be caused by prolonged periods of immobility. That is the forming of blood clots in the leg's veins, which may find their way to the lungs and causing chest pains and shortness of breath. Use of anticoagulants administered intravenously for five days then replacing with oral medication, Coumadin, eases the condition. Total physical inactivity also

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leads to inadequate ventilation. Correct positioning by extending the neck and raising the chin off the chest reduces the risk of poor ventilation. Another complication is muscle weakness, which can be avoided by supporting the thighs and arms spread away from the chest with the patient lying on the back facing up. The diaphragm can thus move easily facilitating deep breathing and coughing effectively (Webb & Higgins, 2005).

#### Question Eight

During normal breathing, air enters the alveoli through the bronchi. The alveoli then absorb and transfer oxygen to the blood. However, with the occurrence of emphysema, the septal rupture reduces the surface area of the alveoli used for absorption and transfer of air (Webb & Higgins, 2005). The mechanical support destroyed by the rupture causes the lung elastic recoil to further enlarge the cavities created, while reducing the expansion of the parenchyma. Expiration then depends on abdominal muscle and thoracic cage action instead of the lung's recoil action. Decreased ventilation impairs the ability to give out carbon dioxide and intake of oxygen. Hyperventilation can no longer compensate for the continued damage of the alveoli, and some vessels are thus constricted. As a result, the right side of the heart tasked with pumping deoxygenated blood is under increased pressure. The heart's muscles thicken to enable it pump more blood. Because blood flow is also impeded, fluid backs up in the lungs, liver and lower parts of the body. The heart then continues failing under pressure as it becomes larger (Webb & Higgins, 2005).

#### Question Nine

First, the patient must quit smoking for any respiratory therapy to be effective. Then, by use of an oxygen concentrator, oxygen is drawn from the <https://assignbuster.com/emphysema/>

air, concentrated then stored. It is simply plugged into electricity within the home, and he can move around the room. No extra bottles are required (Loscalzo et al, 2008).

#### Question Ten

The patient might not receive adequate nutrition at home because it might require a dedicated caregiver, who might not always be available. In his condition, it becomes difficult to shop, prepare and eat the correct foods on his own.

#### Question Eleven

Employing a permanent caregiver or use of a family member to nurse him will be helpful. If this is not possible, hospice care is helpful because they offer professional assistance.

#### References

- Loscalzo, J., Fauci, A., Braunwald, E., Dennis, L., Kasper, H., Stephen, L., Longo, D. (2008). *Harrisons principles of internal medicine* (17th ed.). New York: McGraw-Hill Professional
- Webb, W. R., & Higgins, C. B. (2005). *Thoracic imaging*. Lippincott: Williams & Wilkins.
- W. H. O. (2009). Retrieved from [http://www.who.int/healthinfo/global\\_burden\\_disease/estimates\\_country/en/index.html](http://www.who.int/healthinfo/global_burden_disease/estimates_country/en/index.html)