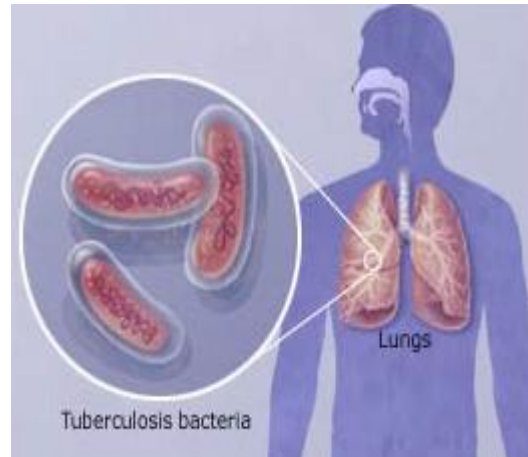


Lung Diseases

Tuberculosis

Causes:

- Caused by bacteria
- Immune system cells build a wall around this bacteria in the lungs
- Forming small, hard lumps called *tubercles*
- Infected tissue in the tubercles and the gas exchange surface is damaged
- The dormant bacteria that remains can become active by the immune system becoming suppressed, which could be caused by old age, stress or HIV.



Effects:

- Gas exchange surface is damaged, reducing the tidal volume so less air is inhaled with each breath
- The bacteria could spread to other organs in the body
- Coughing up blood, mucus, chest pain, shortness of breath & fatigue are all symptoms.

Emphysema

Causes:

- Heavy smoking, particles in smoke stimulate white blood cells, releasing protein digesting enzymes
- Causing inflammation, attracting phagocytes
- Which break down *elastin*, which helps with recoil of the alveoli.

Effects:

- Reduction in surface area, so the rate of gaseous exchange decreases
- Alveoli can't recoil to expel air properly
- Shortness of breath & wheezing, increased ventilation rate.

