

# PLEURAL EFFUSION

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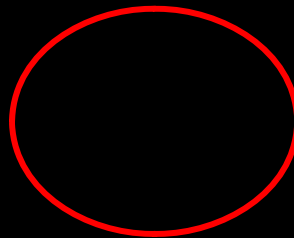
# Anatomy of the pleura

**Surrounding lungs is a  
very thin space called**

**pleural space**

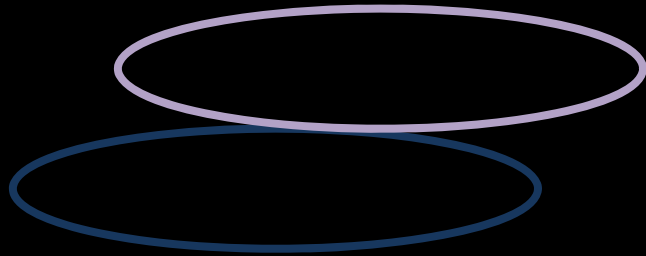


**Thin semi-permeable mb,  
filled with a small  
amount of fluid**



# **ANATOMY OF THE PLEURA**

**Bronchial a.**  
**Vagus & sympathetic trunk**  
**Mediastinal node**  
**No sensory innervation**



**Intercostal & internal mammary a.**  
**Intercostal & phrenic n.**  
**Lymph connection**

**\*tiny amount of fluid between 2 layers of pleura**  
**-lubricating oil between lungs & chest wall**

# Starling's equation

$$Q_v = K_f (P_c - P_{is}) - (\pi_{pl} - \pi_{is})$$

$Q_v$  = rate of fluid movement/unit surface area of a capillary

$K_f$  = capillary filtration coefficient

$P_c$  = capillary hydrostatic pressure

$P_{is}$  = hydrostatic pressure in the interstitial space  
(~ intrapleural pressure)

$\pi_{pl}$  = plasma oncotic pressure

$\pi_{is}$  = oncotic pressure in the interstitial space  
(~ oncotic pressure of the pleural liquid)