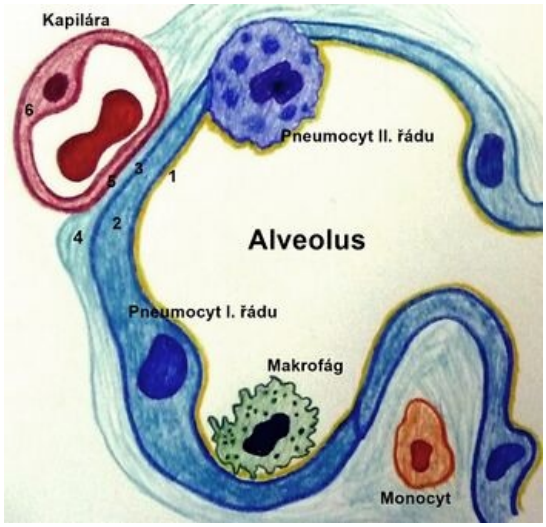
# Alveolo-Capillary Membrane

The exchange of respiratory gases takes place through the **alveolo-capillary membrane (hemo-respiratory barrier)**. It is a thin layer (0.6–2 μm) that is part of the pulmonary alveoli. The total size of the alveolo-capillary membrane is **60–160 $m^2$**[1].



Alveolo-capillary membrane

## Layers alveolocapillary membranes

In the thinnest places, the membrane consists of the following **6 layers** :

1. A layer of fluid containing a surfactant on the inner surface of the alveoli
2. Alveolar epithelium - bodies of first order pneumocytes
3. Basal membrane of the epithelium
4. Interstitium between the basement membrane of the epithelium and the endothelium (a very thin tissue space that contains collagen and elastin fibers)
5. Basal membrane of the endothelium
6. Capillary endothelium

For respiration to be effective, the **diffusion path** must be **as short as possible**. Therefore, sites that are functionally important (sites that do not contain second-order pneumocytes, no cell nuclei, interstitial ligament) have a thickness of **0,6 μm**[2]. If we also measure the interalveolar septa, the mean thickness is 2 μm.

### References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