

Air Quality and Respiratory Health in Every Day Life

 Hengityслиitto

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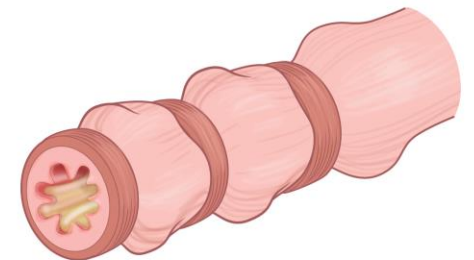
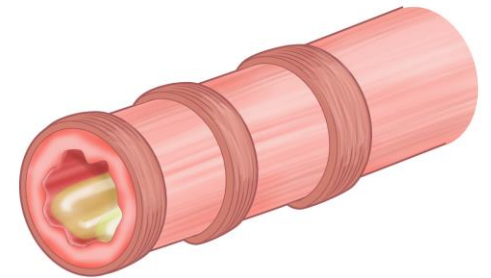
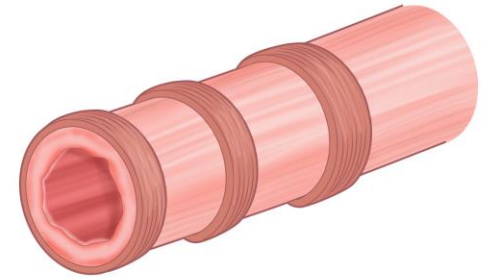
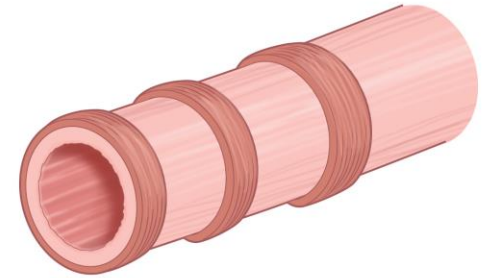
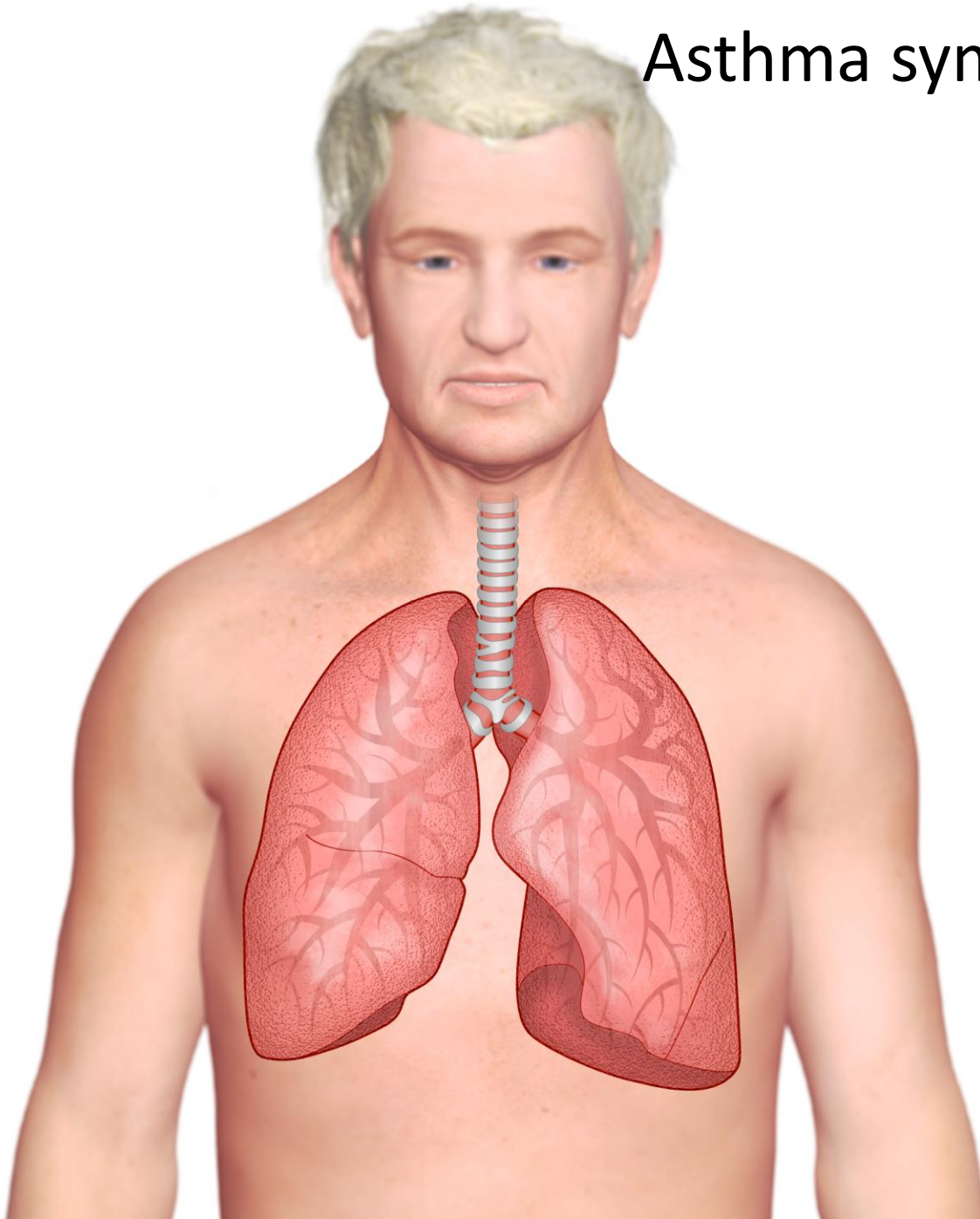
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We breathe

- every fourth second
- 22 000 times/24 hours
- one breath contain 25 million pollutant

Finland: One million people with respiratory problems

Asthma symptoms



| | |
|---------------------------------|--|
| <p>TRACHEA, BROCHI</p> | <p>Irritation of mucous membranes, local inflammation, changes in mucous compounds, immigration of inflammatory and immune defence cells</p> <p>Impairment of ciliar activity, impairment of epithelial clearance, e.g. of upward transport of particles, bacteria, etc.</p> <p>Constriction of bronchia through muscular spasm and swelling of mucosa</p> |
| <p>PULMONARY ALVEOLI</p> | <p>Impairment of ability of immune cells to ingest and dissolve foreign material and debris</p> <p>Local inflammation, change in permeability of cell membranes</p> <p>Transfer of inflammatory proteins and of ultrafine particles in the pulmonary tissue and the circulation</p> |
| <p>CIRCULATION</p> | <p>Inflammation in endothelia of blood vessels, enhanced formation of plaques, coagulation, thrombosis</p> |

Penetration depth of pollutants in the respiratory tract

Nose, throat: Particles < 30 μm

Trachea, bronchi, bronchioli: Particles < 10 μm
SO₂, NO₂, ozone

Pulmonary alveoli: Particles < 2-3 μm
NO₂, ozone

Pulmonary tissue, circulation: Ultrafine particles < 0,1 μm

The Street Dust

The Inversion Phenomenon

2013/Finland
estimated 1600
premature death

What is the impact of poor air quality on people with lung conditions?

Short term high air pollution levels can:

Worsen symptoms such as coughing, wheezing and shortness of breath

Increase the number of hospital visits for lung conditions

Increase risk of dying from lung conditions

What is the impact of poor air quality on people with lung conditions?

At-risk patient should:

Check the local air quality online or sign up to a pollution alert services

Avoid exercising outdoors when pollution levels are high

Come back and see your doctor if symptoms persist or worsen

Is breathing clean air important?

Paris
5,8
months



Bucharest
22,1
months



London
2,5
months



Barcelona
13,7
months



Dublin
0,4
months