

## ADT-COPD

Airspace Dimension Test for improved diagnosis of chronic obstructive pulmonary disease



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**Partner countries:**     
Sweden Israel Italy

COPD is one of the world's most common diseases. The disease entails chronic bronchitis and emphysema, affecting both the bronchi and lung tissue. In emphysema, the size of the air sacs in the periphery of the lungs increases, impairing the uptake of oxygen. The diagnosis of COPD is usually made after performing a simple spirometric breathing test. Spirometry, however, is not adequately sensitive for the detection of emphysema, which in many cases may be the first manifestation of COPD. The aim of ADT-COPD is to evaluate the Airspace Dimension Test (ADT), a novel technique for the diagnosis of emphysema. This test is based on the measurement of the retention of inhaled particles in the nanometer range. Nanoparticles are deposited in the lungs by diffusion and their retention is, therefore, sensitive to air sac size increases.

This project includes the further development of an instrument for ADT (work package 1; WP1), determination of the sensitivity and specificity of a diagnostic test for emphysema (WP2) and the development of theoretical modelling of the behaviour of nanoparticles in the human lung (WP3).

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