

**ESTIMATED RELATIVE RISK OF LUNG OBSTRUCTION IN RELATION TO PM<sub>10</sub> CONCENTRATION CHANGES, BASED ON PULMONARY FUNCTION TESTS RESULTS**

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Epidemiological studies show that long-term exposure to air pollution may increase the relative risk of obstructive lung diseases such as COPD or asthma. The risk of increased obstruction is higher among residents living in close proximity to high traffic routes where there are high concentrations of particulate matter (including PM<sub>10</sub>).

Presented study consists of two parts: the measurements of concentrations of selected air pollutants (PM in particular) and pulmonary function tests of selected groups of people. The study was conducted between 2008 and 2012 in Warsaw (Poland), in seven locations with typical urban canyon characteristics and roads with high traffic volume. Simultaneously the control group was examined, which consisted of inhabitants of two regions of Poland with high ambient air quality (the concentrations of air pollutants were statistically significant ( $p < 0.05$ ) lower in comparison to mean concentrations in city). The incidence of the disease was determined according to GOLD guidelines.

In the study only non-smoking people, unaffected by the key factor of lung obstruction, were taken into account. The analysis presents different exposure time on which the RR (relative risk) diagnosis was made. Obtained results confirm, that the increase of PM<sub>10</sub> concentration by 10  $\mu\text{g}/\text{m}^3$  causes an increase of relative risk of lung obstruction with 1.27, 1.24 and 1.19 according to GOLD.