

# RELATIONSHIP BETWEEN BLOOD LEAD LEVELS AND PULMONARY FUNCTION

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**Background and Aims:** Lead is an environmental and public health hazard of global proportions. In case of lead, respiratory intake is a major route of exposure. But there are few studies on the relation between respiratory health and blood lead level. This study was performed to examine the influence of lead on the pulmonary function of local residents.

**Methods:** For this study, 800 local residents (353 men, 447 women) near an industrial complex were surveyed from July to August in 2008. All of the subjects completed the interview questionnaire and performed PFT (pulmonary function test) and blood lead tests.

**Results:** The mean blood lead level was  $1.32 \pm 0.5 \mu\text{g/dl}$ . The blood lead levels of men were higher than that of women. The results of %FVC, %FEV<sub>1</sub>, FEV<sub>1</sub>/FVC% in PFT were  $94.9 \pm 13.1$ ,  $93.7 \pm 13.0$ ,  $84.3 \pm 8.5$ . Smoking, Income and traffic intensity was environmental factors of pulmonary function. There was a significantly negative correlation between PFT results and blood lead levels. For children under the age of nine, the pulmonary function significantly decreased as the blood lead levels rose, despite adjusting the factors age, sex, height, weight, smoking, and traffic intensity.

**Conclusions:** This study suggests that pulmonary function may be related to blood lead level, especially for children under nine years of age. This means that exposure to lead might decrease the function of respiratory system. Further study will be needed to identify more association between blood lead levels and pulmonary function.

## References:

Bagci C et al. Blood lead levels of battery and exhaust workers and their pulmonary function tests. *Int J Clin Pract.* 2004;58:p.568-572.