USING DISABILITY ADJUSTED LIFE-YEARS (DALY) TO ASSESS THE IMPACT OF TRAFFIC-RELATED AIR POLLUTION ON HUMAN HEALTH

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Traffic-related air pollutants have negative impact on human health and has been recognized as one of the main stressors that causes mortality and morbidity in urban areas. Research data confirms that citizens living in the vicinity of main roads are strongly exposed to high concentrations of numerous air pollutants.

Measurements of traffic parameters such as density, velocity and structure were completed for selected street canyons cross-sections. In addition the results of General Traffic Measurements were used to describe the number of cars crossing the border of the city. Vehicles emissions of PM_{10} were calculated for the whole city area and changes of the PM_{10} concentration was modeled to present the exposure of this pollutant that could be attributable to traffic.

The principles of the Environmental Burden of Disease (EBD) were used. The assessment of the impact of traffic-related air pollutants on human health was made. Results, presented in DALY (Disability Adjusted Life-Years) were based on the outcomes of the study conducted in 2008-2012 in Warsaw – one the most congested agglomeration in Europe – and included the health damage effect of the exposure to high concentrations of air pollutants. DALY calculations were performed in accordance to the methodologies used in renowned international scientific research on EBD.