

TRANSPORTATION, AIR POLLUTION AND PHYSICAL ACTIVITIES (TAPAS), A 6-CITY INTEGRATED HEALTH RISK ASSESSMENT PROGRAM OF ACTIVE TRAVEL POLICIES: THE BARCELONA CASE STUDY

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Background and Aims: Within the TAPAS research program, quantitative assessments are developed for six case study cities in Europe, linking determinants of active travel to potential co-benefits and co-risks of modal shifts from motorized to non-motorized modes of travel. We describe here the Barcelona case study.

Methods: We identified local sources of information from government agencies describing active travel and environmental conditions. We aimed at selecting policies of local and international interest, with quantifiable or demonstrated effectiveness. We reviewed local and regional governmental policy documents; met individually with agency representatives, elected officials, and others; and organized a local stakeholder workshop. We are also conducting experimental work generating new data to help fill research gaps in current framework.

Results: Barcelona, capital of the Catalan region of Spain, has 1.6 million inhabitants. Only 60% of Catalans reach recommended levels of physical activity, 20% are entirely sedentary. With a low 2% of trips made cycling, Barcelona and its mild Mediterranean climate (average 17.3 degrees Celsius, 74 day of rain) has high potential to increase cycling. Within the city, 45% of trips are made on foot, 30% by public transport, 10% by car. Due to the greatest car density in Europe (6.1 cars/km²), Barcelona is highly polluted, with, on average: 40µg/m³ PM10, 19µg/m³ PM2.5, and 50µg/m³ NO₂ concentrations in 2009. Each year 1500 pedestrians are injured, 100 seriously and 15 die. Cyclists account for 300 injuries and about 2 deaths per year. Relevant policies we are considering for assessment include 1) Bike sharing system (Bicing), 2) bike lane network; 3) intermodality; 4) traffic calming. We have piloted successfully the experimental study of commuter exposure-health relationships and the survey of active travel determinants.

Conclusion: Barcelona is an interesting case for assessing potentials to increase physical activity while addressing challenging environmental conditions to mitigate risks.

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