



Seminar Invitation

Traffic related exposure assessments-some recent studies in Barcelona

Mark J Nieuwenhuijsen PhD,
Center for Research in Environmental Epidemiology (CREAL), Barcelona, SPAIN

March 26, 2012 at 15:00
Grand Water Research Institute auditorium

Barcelona has one of the highest levels of traffic related air pollution in Europe. In recent years a number of studies have been conducted to measure and model the ambient and personal air pollution levels in Barcelona as part of a series of studies (ESCAPE, ARIBA and CAVA). The ESCAPE study used a standardized land use regression modelling approach to model the levels of PM₁₀, PM_{2.5}, soot, NO₂ and NO_x and showed that a large part of the variability in the air pollution levels could be explained by a few land use variables. The results were used to model the levels throughout Barcelona. In the ARIBA study personal, indoor and outdoor levels of PM_{2.5}, its elemental composition, soot, NO₂/NO_x were measured in over 50 pregnant women. It generally showed that personal levels were higher than indoor and outdoor levels. The correlation between personal, indoor and outdoor levels and between pollutants varied. Furthermore some important determinants were assessed. The CAVA study used new smartphone technology for exposure assessment by using information on positioning and the motion sensor. Information from this was combined with air pollution maps and showed that although travelling only made up a small proportion of time in people's day, it account for a much larger proportion of the air pollution levels they inhaled because of the higher levels of air pollutants in the travelling environment and physical activity levels.

Dr Mark J Nieuwenhuijsen is an expert in environmental exposure assessment, epidemiology, and health risk/impact assessment. He has been involved in numerous studies in Europe and the United States. He has experience and expertise in areas of respiratory disease, cancer and reproductive health, and exposure measurement and modelling of indoor and outdoor air pollution, pesticides, UV exposure, occupational allergens, chlorination by-products in drinking water and heavy metals.