

# NOISE AND HEALTH. A METHODOLOGY WORKSHOP

Friday 21st November 2008  
Restricted to 20 participants

## BACKGROUND AND OBJECTIVE

Girona is the main town of the cardiovascular studies REGICOR (PI: Jaume Marrugat, IMIM Barcelona) with two cohorts recruited in 1995 and 2000 respectively. Those cohorts are currently re-invited for follow-up. An ongoing FIS grant of the Spanish Ministry of Health (PI Nino Kuenzli) investigates the association of traffic-related air pollution with the thickness of the artery wall (intima-media distance), an early marker of atherosclerosis. The intima-media thickness is currently measured for the first time among the participants of REGICOR 1995 and 2000 (REGICOR-AIR). In air pollution research, traffic-related noise may be a confounding co-determinant of cardiovascular ailments, thus, REGICOR-AIR is interested in knowing people's exposure to noise to control for this factor and possibly investigate its chronic effects on some cardiovascular outcomes.

The Spanish network CIBERESP funded a pilot study about noise measurement, to be discussed at a small workshop (PI: Nino Kuenzli). The currently running project initiated a collaboration with the University of Girona (Prof. Josep Arnaus's group). The group is experienced in state-of-the-art noise measurements and modelling, and already developed noise maps for the city of Girona. The pilot project measures indoor and outdoor noise (day/night) at some 15 + Girona residences selected to maximize the range of outdoor NO<sub>2</sub> concentrations. Noise measurements will be compared with noise estimates assigned to these locations from the existing noise maps and the portion of outdoor noise penetrating the homes will also be assessed.

The objective of the informal workshop is to discuss first results of this pilot, and to share the experience of other international experts familiar with health research at the interface of noise and air pollution epidemiology. A range of questions may be discussed such as the following ones:

1. What modelled noise values may be of main interest for chronic effect epidemiology? (day/night; source specific; physical metrics and time integration etc)
2. In particular: relevance of noise events versus average levels?
3. Are modelled ambient noise levels sufficient proxies of noise exposure? What are the determinants of indoor noise exposure (of outdoor origin)?
4. Do we need additional measurements to understand exposure, in particular night time exposure? Should weekends be taken into account?
5. Needs and experience with noise validation studies for chronic health effect research.
6. Are questionnaires about sleeping room location and ventilation habits relevant/sufficient markers of night-time exposure to noise? Standard questionnaire tools? Experience with such questionnaires? What about ear plugs?
7. What are the best cardiovascular health outcomes for research on chronic cardiovascular effects of noise? Do we need repeated measurements for those?

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## SCHEDULE – DISCUSSION TOPICS

Chairperson: *Nino Künzli*

[Introductory Presentation: CREAL members can join any of these presentations \(9:30-11:00\)](#)

TIME	Topic
9:30 - 9:50 am	Overview of REGICOR-AIR and how noise comes into play. <i>Nino Kuenzli.</i>
9:50 - 10:00 am	Discussion
10:00 - 10:20 am	Cardiovascular effects of noise – the HYENA study and beyond. <i>Lars Jarup.</i>
10:20 - 10:30 am	Discussion
10:30 - 10:50 am	Noise and health research approaches and findings at Karolinska. <i>Göran Pershagen.</i>
10:50 - 11:00 am	Discussion
11:00 - 11:30 am	COFFEE BREAK

## NOISE MEASUREMENTS: OBJECTIVES, APPROACHS, EXPERIENCE AND NEEDS.

WORKSHOP (11:30-16:00): [RESTRICTED TO REGISTERED PARTICIPANTS](#)

TIME	Topic
11:30 - 11:50 am	Mapping noise in Girona: Present methods/measurements, models, and results. <i>Alex Deltell.</i>
11:50 - 12:00 am	Discussion
12:00 - 12:20 am	Epidemiology and noise mapping: the Dutch experience. <i>Wim Swart, RIVM.</i>
12:20 - 12:40 am	GIS-applications in noise exposure assessments for epidemiological studies. <i>Charlotta Eriksson.</i>
12:40 - 13:00 am	Noise exposure at home in Girona. Indoor/outdoor noise procedence. <i>Alex Deltell.</i>
13:00 - 13:30 am	Discussion
13:30 - 14:40 am	LUNCH BUFFETT ON THE TERRACE (if weather permits)
14:40 - 15:40 am	Concrete steps to be taken in Girona, questionnaire tools, Discussion (specific questions)

**The Workshop will finish at 16:00 h.**

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