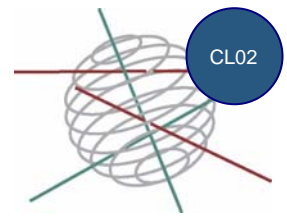


PM²-TEN



Particles, Mobility, Physical Activity, Morbidity and the Environment Network

Cluster of the research projects : Parhealth & Shapes

DURATION OF THE PROJECT
15/12/2007- 14/12/2009

BUDGET
99.402 €

KEYWORDS

Modal Shift, urban geography, cycling, air pollution, fine particulate matter, cardio-pulmonary disease, meteorology

CONTEXT

PM2-TEN is a cluster project to promote the collaboration between researchers in the domains of health, air pollution and traffic. Researchers tend to look at the impact of air pollution either from a human point of view on the one hand or focused on modelling the physical phenomena on the other hand. Because of this policy makers are faced with an overwhelming quantity of results. But they have problems to assess the importance in their own area of competence. PM2-TEN wants to contribute to a solution for this problem. Two well planned meetings will be organised between experts with different approaches and policy makers with different points of view.

PROJECT DESCRIPTION

Objectives

PM2-TEN has two main objectives:

- A. To promote the dialog between research groups which investigate the relation between environment and health from a human or physical point of view.
- B. To promote the dialog between researchers and policy makers. This should result in a set of recommendations which take into account the inherent uncertainties of scientific analysis.

This is translated to the following more specific objectives:

1. Discuss the short term effects of particulate matter (mass as well as physical and chemical properties) and ozone in two sensible segments of the population (children and elderly);
2. Investigate the component specific toxicity (chemical and physical) of particulate matter together with meteorological data on the importance for air quality modelling. Interpretation of the results for environmental impact studies and importance for policy makers taking into account the uncertainties;
3. Discuss the relation between the behaviour of certain groups and the risks related to inhalation pollutants, exposure to noise, traffic accidents, physical inactivity, sleep disturbance and their interactions;
4. The realization of a common experiment by both groups of researchers;

5. Common publications which put previously obtained results in a new perspective;
6. Try to propose efficient measures which contribute to a safer and healthier environment and lead to lower expenses for public health on the long term (although the knowledge is incomplete);
7. Anticipate international trends and possibly participate in European research programs;

Methodology

Within this cluster project time will be reserved to bring partners from different but related research projects into contact with each other. It concerns a selection of projects, both within as outside SPSP I&II and both national and international related to environment, health and transport.

We propose two methods:

1. The organisation of two workshops in which researchers will have the opportunity to present the preliminary results of their research to national and international colleagues. This peer review will result in a synergy which will be beneficial for their own research as well as their colleagues'. In the first workshop the focus lies on the scientific aspects. The second will be about the relevance for the policy. Policy makers will be invited and researchers will have to present their message in a completely different way.
2. The researchers of the PARHEALTH and SHAPES project will perform a common experiment (see below).

INTERACTION BETWEEN THE PARTNERS

The partners in the PARHEALTH project perform fundamental scientific research on one of the three risks which are the pillars of the SHAPES project. PARHEALTH will provide new information from about causal factors and specific components. SHAPES will translate this input in policy measures.

Therefore SHAPES looks for research groups outside SPSP II which investigate the other risk factors studied in SHAPES (accident risk, physical inactivity and noise nuisance).



PM²-TEN

Particles, Mobility, Physical Activity, Morbidity and the Environment Network

Since some time, scientific research has also been performed at High Schools. The results of a study of the Catholic High School of the Kempen related to the factors influencing health, physical activity and the accident risks of lorry drivers bring a good complementarity to the different work packages of SHAPES project. Within PODO II programme, the link with expertise which was built around noise has also been explored. U-Gent have now extended the methods then developed to the effects on health. In addition, we are looking abroad for contacts with both policy makers (e.g. WHO) and experts, to increase the chances to introduce SHAPES, PARHEALTH and Mobilee as a project in the European 7th framework

EXPECTED RESULTS AND/OR PRODUCTS

A. During the simultaneous measurements of air quality, effort and respiration (planned in SHAPES - phase 2), also the risk for thromboses formation will be determined. A Group of 25 persons will cycle a tour with certain exposure characteristics (slope, air quality, effort,...). A blood sample of 2ml will be drawn. The difference between a situation with high exposure and a control situation will be

investigated. In this way the acute effect on coagulation can be assessed with limited means.

B. Two workshops will be organised, one in Flanders (Leuven) and one probably in the Walloon region. The coordinators will invite participants and speakers after a peer-review of their presentations.

C. the coordinators take care of a intermediate report and a final synthesis which:

- describes and analyses the results of the common experiment.
- Explains the relation between the contribution of the different speakers on the workshops.
- Shows the relevance of the obtained results for SHAPES and PARHEALTH, respectively
- A proposal to set up a European research proposal or network within the domain of SHAPES and PARHEALTH.

The final result of this project is a set of recommendations to policy makers. The aim of these recommendations is to contribute in a sustainable way to a better air quality and public health. These recommendations will take into account the physical capacities of different population groups and objective air quality parameters in different Belgian regions.

PARTNERS/ACTIVITIES

VITO (Integrale Milieu Studies) is the coördinator of PM2-TEN.

KUL and **VITO** are responsible for the reports.

VITO and **KULeuven** organise the first workshop. The emphasis in this workshop lies on the presentation of the results of the ongoing studies within Science for Sustainable Development - SSD (SHAPES and PARHEALTH) and outside.

VITO and **UCL/VUB** organise the second workshop. Here the emphasis lies on the translation of the results into policy measures.

VITO, **VUB** and **KULeuven** are responsible for the experiment. The PFA-100 analyser of the KUL will be used to determine the blood coagulation with a 2ml sample taken immediately before and after exposure to higher levels of PM10. In this way the acute risk for thromboses formation can be determined ex-vivo by the cyclists.

CONTACT INFORMATION

Coördinateur

Prof. Luc Int Panis

Vlaamse Instelling voor Technologisch Onderzoek, Integrale Milieu Studies (IMS)

Boeretang 200

B 2400, Mol

Tel. +32 (0)14 33 58 87

Fax. +32 (0)14 32 11 85

luc.intpanis@vito.be

Promoteurs

Prof. dr. Romain Meeusen

Vrije Universiteit Brussel

(VUB)

Faculty of Physical Education and Physical Therapy

dept. Human Physiology & Sports Medicine

Pleinlaan 2

B1050 Etterbeek

Tel. +32 (0)2 62 92 732

Fax. +32 (0)2 62 92 876

romain.meeusen@vub.ac.be

Prof. dr Benoit Nemery

& Prof. dr Tim Nawrot

Katholieke Universiteit Leuven (KULeuven)

Eenheid voor Longtoxicologie

Herestraat 49, bus 706

B-3000 Leuven.

Tel. +32 (0)16 34.71.18

Fax. + 32 (0)16 34 71 24

Tim.Nawrot@med.kuleuven.be

Ben.Nemery@med.kuleuven.be

