Final Report Summary - ESCAPE (European study of cohorts for air pollution effects)

The 'European study of cohorts for air pollution effects' (ESCAPE) project investigates the health effects of long-term exposure to air pollution in Europe.

The objectives are:

1. To develop a flexible methodology for assessment of long-term population exposure to air pollution focused primarily on fine particles, particle composition, and nitrogen oxides.
2. To apply the exposure assessment methodology on existing cohort studies of mortality and chronic disease in Europe that have been selected based on their potential to quantify relationships between long-term exposure and health response precisely.
3. Specifically, to investigate exposure-response relationships and thresholds for:
   (1) adverse perinatal health outcomes, and development of diseases such as asthma in children;
   (2) respiratory disease endpoints in adults;
   (3) cardiovascular disease endpoints in adults;
   (4) all-cause and cause-specific mortality, and cancer incidence.
4. To develop a database for quantitative estimates of the health impacts of long-term exposure to air pollution for all of these health endpoints for the European population.

Description of the work and results since the beginning of the project

The ESCAPE project is organised as a set of seven, interlinked work packages (WPs).

WP1 - Coordination
During the first 18 project months a plenary meeting has been organised and a study manual has been developed. The coordinating centre has participated in all work package activities, and has prepared the current progress report.

WP2 - Exposure assessment
This WP develops tools for air pollution exposure assessment, and provides these to the health outcome WPs. Both measurements and modelling will be used to estimate air pollution exposure for the individual home addresses of study participants. In addition, noise exposure will be assessed in selected cohort studies.

During the first 18 project months an exposure measurement and exposure modelling protocol have been developed and air pollution measurements of particulate matter and nitrogen oxides have started in 20 of the 37 monitoring areas. Monitoring in
the remaining areas has started or will start in early 2010.

WP 3-6: Health outcomes

These WPs will use the estimated exposure to study the association between air pollution and health outcomes using already ongoing cohort studies. The association between four health outcome groups will be studied:

1. adverse perinatal health outcomes, and development of diseases such as asthma in children;
2. respiratory disease endpoints in adults;
3. cardiovascular disease endpoints in adults;
4. all-cause and cause-specific mortality, and cancer incidence.

During the first 18 project months the health outcome WPs have developed a study protocol describing the included studies and procedures regarding the to be conducted epidemiological analyses (milestones at 18 months).

WP 7 - Impact and dissemination

During the first 18 project months the ESCAPE website has been developed http://www.escapeproject.eu. A dissemination strategy is under development, which will be further discussed and approved during the next plenary meeting (June 2010).

Other aims of this WP are to discuss and report policy relevant conclusions from the ESCAPE project and to provide materials for patient groups that will inform them about risks of air pollution to their health.

Expected final results and their potential impact and use

The ESCAPE project will significantly increase knowledge on the health effects of air pollution exposure and will develop a database for quantitative estimates of the health impacts of air pollution for the four health outcome groups. This will create a basis for refined European assessments of the health impact of exposure to air pollution. The output of ESCAPE can be used to support policies developed in the 'European Environment and Health Action Plan 2004-2010', the 'Thematic Strategy on Air Pollution' and the 'Thematic strategy on the Urban Environment'.

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Subjects

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