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Air pollution and Health: use of existing European cohorts

Proposal: take advantage of the available cohort studies

Why?

- **Diverse spectrum of geographic, demographic, dietary, and cultural regions for millions of subjects**
- **Large air pollution exposure gradient on which to base an assessment of exposure response**
- **Extensive covariate information at the individual level, including diet, smoking status, job title, and educational attainment**
 - **Availability of registry based cancer incidence data, including histological subtypes of lung cancer**
 - **Biomarker data provide an opportunity to conduct whole genome scans and examine genetic susceptibility to the adverse health effects of long term exposure to air pollution**

Air Pollution Exposures in Europe

Exposure assessment has considerably improved in recent years

PM10 data is widely available across Europe at over 1,200 sites

Data on traffic density, an indicator of air pollution exposure, is available within urban centres in Europe

Noise data (a good indicator of traffic density and hence traffic related air pollution) is also available in Europe

PM10 and O3 data are available from the recently completed APHENA study for 25 large European cities

Air Pollution Exposures in Europe

PM2.5 exposure assessment

PM2.5 exposure is being assessed in different European areas through independent projects:

- (a) a methodological study, aiming at the validation of estimates is the continuation of the Atmosphere project;**
- (b) PM2.5 assessment is also performed at IASA on the basis of data from monitoring stations in a large number of European towns.**

The exploitation of existing cohorts can allow the application of the most advanced methods of exposure assessment to several million subjects already recruited, with extensive information on covariates and biomarker measurement, and follow-up of 10 or 20 years

It can answer some open questions, such as the effect of PM_{2.5} and help design more accurate new studies