



## Particulate Matter: Properties Related to Health Effects

### WG2. Health related issues of particles

**Chairs:** Raimo O. Salonen, National Public Health Institute (KTL), Kuopio, Finland  
Wolfgang Kreyling, GSF - National Research Center for Environment and Health,  
Neuherberg / Munich, Germany

#### Objectives:

- 1) To review European heterogeneities in epidemiological and toxicological health outcomes associated with ambient air particulate matter
  - regional differences in health outcomes (i.e., southern vs. northern, eastern vs. western countries, multicentre studies)
  - seasonal differences in health outcomes (i.e., variations in a given location over the seasons of the year)
  - heterogeneities in health outcomes related to specific sources (traffic, industries, residential heating etc.)
- 2) To give inputs to WG1 and WG3 on health aspects

#### Workplan outline:

Our first task is to reveal European heterogeneities in health outcomes on the basis of recently published studies and to consider how they are related to the observed differences in particulate matter characteristics. In these considerations, we take into account the regional differences in the prevalence and control of local emission sources (e.g., diesel cars, small-scale wood combustion, industries, energy plants) as well as the impact of trans-national transport of aerosols. In addition, the impact of typical meteorological phenomena in different regions and seasons needs to be considered.

The second task is to draw conclusions on the review results and to assess the role of human exposure to ambient air particulate matter in the observed heterogeneities in health outcomes. In this phase, we utilise results from the two other working groups (WG1 and WG3) of the Action.

The third task is to give recommendations for human health risk assessment and management (e.g., suggestions for regulations) as well as for future European multicentre studies (i.e., identifying research gaps and needs). This will include recommendations for ambient air PM parameters to be measured as well as analytical concepts elaborated by WG1 and WG3 of the Action.

In each of the three tasks, the work is divided into three parts according to the nature of existing databases:

- epidemiological studies
- toxicological studies
- human exposure assessment studies