

SAPALDIA 2

Swiss Cohort Study on Air Pollution and Lung Diseases in Adults

Methods, Participation and Air Pollution Development

AIRNET
A Thematic Network on
Air Pollution and Health

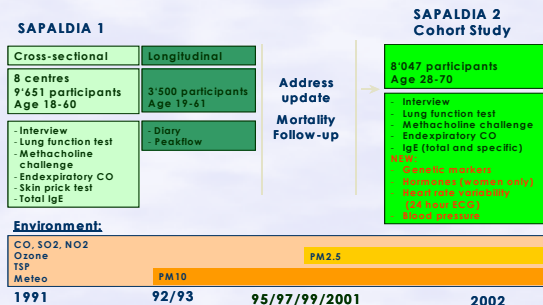


Network for Environmental Risk
Assessment and Management

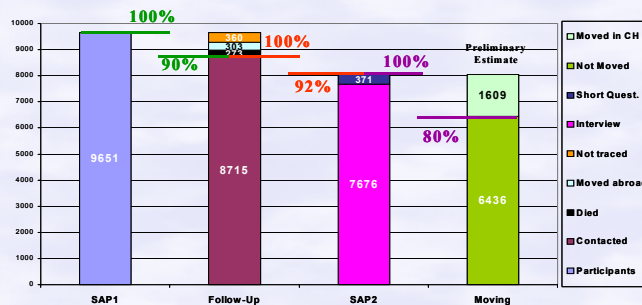
Major Aims of SAPALDIA 2

- ◆ To investigate the long term health effects (pulmonary, cardiovascular) of ambient air pollution
- ◆ To assess the 11-year course of respiratory and atopic symptoms and diseases
- ◆ To assess cardiovascular parameters (heart rate variability) in a subsample of participants age >50
- ◆ To assess individual long-term outdoor and indoor exposures
- ◆ To investigate associations between individual, long-term air pollution exposure estimates and i) decline of pulmonary function; ii) course of respiratory and atopic diseases/status and iii) heart rate variability

Study Design

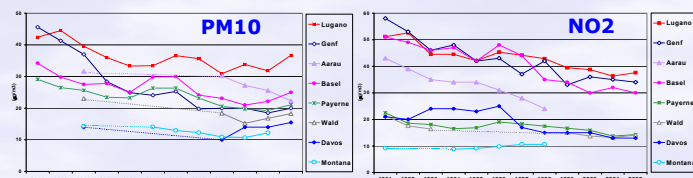


Participation and Moving Patterns



Air Pollution Exposure Assessment

11-Year Course of Air Pollutants



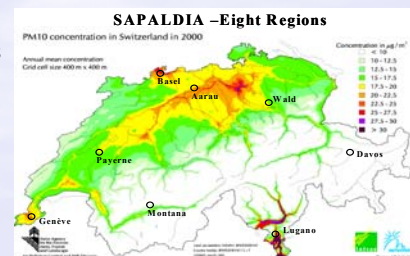
Traffic-Related Exposures: Black Smoke



- ◆ On PM10 and PM2.5-Filters
- ◆ 11 Monitoring stations (1-3 per region)
- ◆ Annual averages 2000-2002

Individual Exposure Assignment

- ◆ Annual GIS-Maps 1991-2002 for NO₂ and PM₁₀
- ◆ Based on emissions (household, traffic, off-road, industry)
- ◆ Gauss' dispersion models
- ◆ Validation with measured data
- ◆ Linkage with geo-coded addresses 1991-2002
- ◆ Calculation of individual 11-year AP-exposures



Conclusions

Moving and Participation Patterns

- ◆ Relatively stable study population
 - ✓ 90% could be contacted again
 - ✓ 20% moved within Switzerland
- ◆ High participation rate
 - ✓ 92% of those contacted and 83% of original cohort participated again

Individual Exposure Assignment

- ◆ Individual long term exposure estimates possible
 - ✓ Taking into account individual moving histories and course of air pollution levels 1991-2002
- ◆ Estimates for traffic exposures possible
 - ✓ Black Smoke and NO₂

→ Valid study basis for detecting long-term health effects of low-level air pollution and of traffic exposures

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Bayer-Oglesby L¹, Ackermann-Lieblich U¹, Downs S¹, Kuna-Dibbert B¹, Probst N, Felber Dietrich D¹, Staedele-Kessler P¹, Schindler C¹, Leuenberger P³ and SAPALDIA Team

¹Institute of Social and Preventive Medicine, University of Basel,
²Cantonal Cancer Registry Zurich, Dep. Pathology, University Hospital Zürich,
³CHUV, Division de Pneumologie, Lausanne. SWITZERLAND

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