

**European Network on New Sensing Technologies for Air Pollution  
Control and Environmental Sustainability - *EuNetAir*  
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**INTERNATIONAL WG1-WG4 MEETING on**

***New Sensing Technologies and Methods for Air-Pollution Monitoring***

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**POSTER SESSION**

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**USING THE NASAL AIR SAMPLER TO COMPARE GRASS  
POLLEN DOSE WITH MONITORING STATION DATA**



AARHUS  
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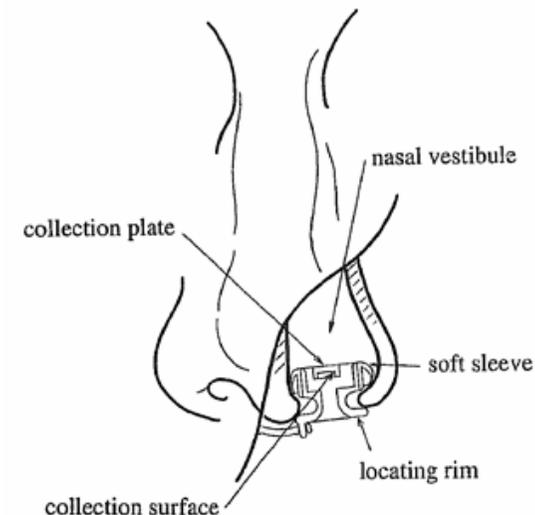
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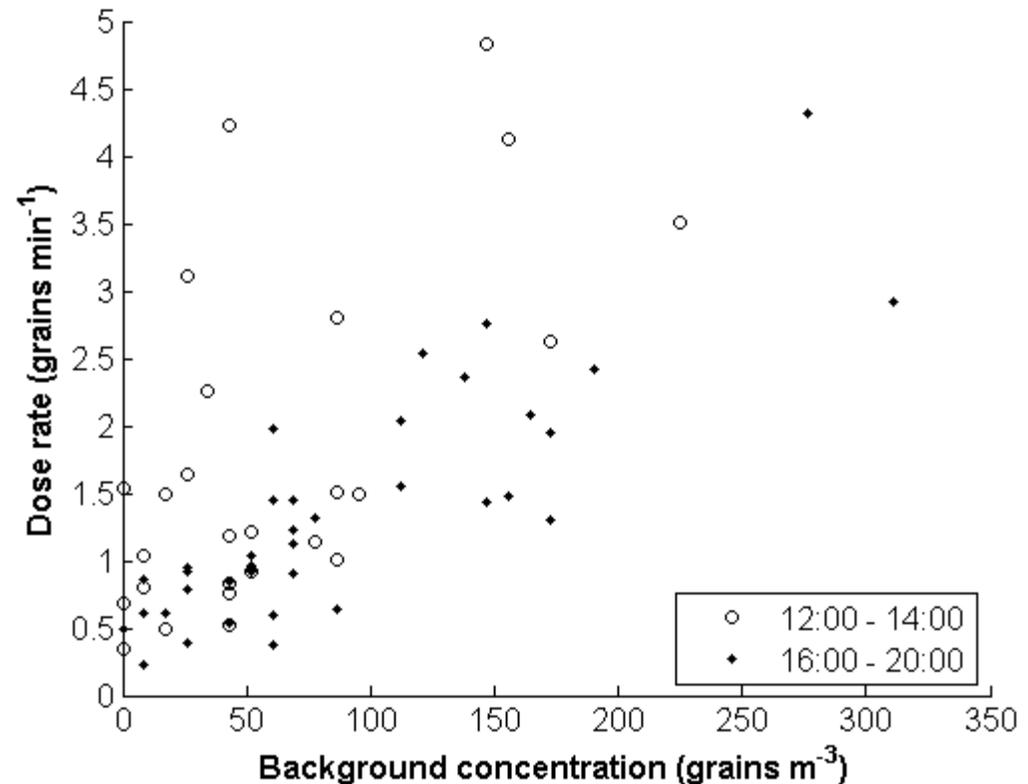
# Scientific Context and Objectives

- The relationship between monitoring station and exposure data is not well understood for pollen grains, and the relationship between exposure and dose is complex.
- The Nasal Air Sampler (NAS) is small impaction device worn in the nose.
  - Developed in Australia around the year 2000.
  - Gives measure of pollen grain 'dose'.
- NAS used to investigate the relationship between dose and monitoring station data.



# RESULTS

- Grass pollen dose data collected in Aarhus, Denmark by 2 individuals as they traversed the same route (25-30 minutes).
- Scatter mainly occurred between 12:00-14:00, probably due to local grasses flowering at that time.
- Between 12:00–14:00,  $r_s=0.52$ ; between 16:00–20:00,  $r_s=0.81$ .
- For the period 16:00-20:00, dose rates were  $0.018 \times$  background concentrations. Such factors do not currently exist for pollen.



# CONCLUSIONS and Future Activities

- Where local emissions are not a factor, background grass pollen concentration data are a good qualitative proxy for inhaled dose, and dose can thus be estimated from monitoring station data using the conversion factor determined during this study.
- Similar experiments are planned for pollen allergen.

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