



UFIREG Project and Team

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**TECHNISCHE
UNIVERSITÄT
DRESDEN**



**CENTRAL
EUROPE**
COOPERATING FOR SUCCESS.



EUROPEAN UNION
EUROPEAN REGIONAL
DEVELOPMENT FUND

I

UFP rarely included in
routine
measurements

No limit value
for UFP

Little number of
epidemiological studies



Bild: fotalia/anatolii

Insufficient
epidemiological
evidence

II

I: UFP rarely included in routine measurements

- Measurement technique too expensive, not suitable for routine measurements
- UFIPOLNET (**U**ltra **F**ine Particle Size Distribution in Air **P**ollution Monitoring **N**etworks, 2004-2008) project developed a new instrument for UFP measurements designed for monitoring networks
- There is a need to demonstrate that UFP could be measured routinely at network monitoring sites

II: Insufficient epidemiological evidence on health effects of UFP

- Specific properties and acting mechanisms of UFP (< 100 nanometres)
→ effects might be independent from those of larger particles
- Suggestive, but not consistent epidemiological evidence on association between exposure to UFP and mortality and morbidity (respiratory and cardiovascular diseases)

I: UFP rarely included in routine measurements

Motivation:

- To demonstrate the applicability of the UFP measurements at network monitoring stations and to provide reliable and comparable data on UFP exposure for epidemiological analyses

II: Insufficient epidemiological evidence

Motivation:

- To increase the knowledge base on health effects of ultrafine particles and other air pollutants
- By conducting a multicentre study, using the same monitoring and health outcome evaluation approaches across several cities in Central Europe

Ultrafine Particles – an evidence based contribution to the development of **regional** and European environmental and health policy (UFIREG)

Objective

Measurement of ultrafine particles in five Central European cities and analysis of their short-term effects on (cause-specific) mortality and morbidity

Duration

01.07.2011 – 31.12.2014

Implementation

CENTRAL EUROPE Programme, co-financed by the ERDF



EUROPEAN UNION
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DEVELOPMENT FUND

Germany

- Technische Universität Dresden (Dresden) (Lead Partner)
- Saxon State Office for Environment, Agriculture and Geology (Dresden)
- Helmholtz-Zentrum München – German Research Center for Environmental Health (Munich)



LANDESAMT FÜR UMWELT,
LANDWIRTSCHAFT
UND GEOLOGIE



HelmholtzZentrum münchen
German Research Center for Environmental Health

Czech Republic

- Institute of Experimental Medicine, Academy of Sciences of the Czech Republic (Prague)
- Czech Hydrometeorological Institute (Prague)



**Institute
of Experimental
Medicine AS CR, v.v.i.**
EU Centre of Excellence

Slovenia

- The National Laboratory of Health, Environment and Food (Maribor)

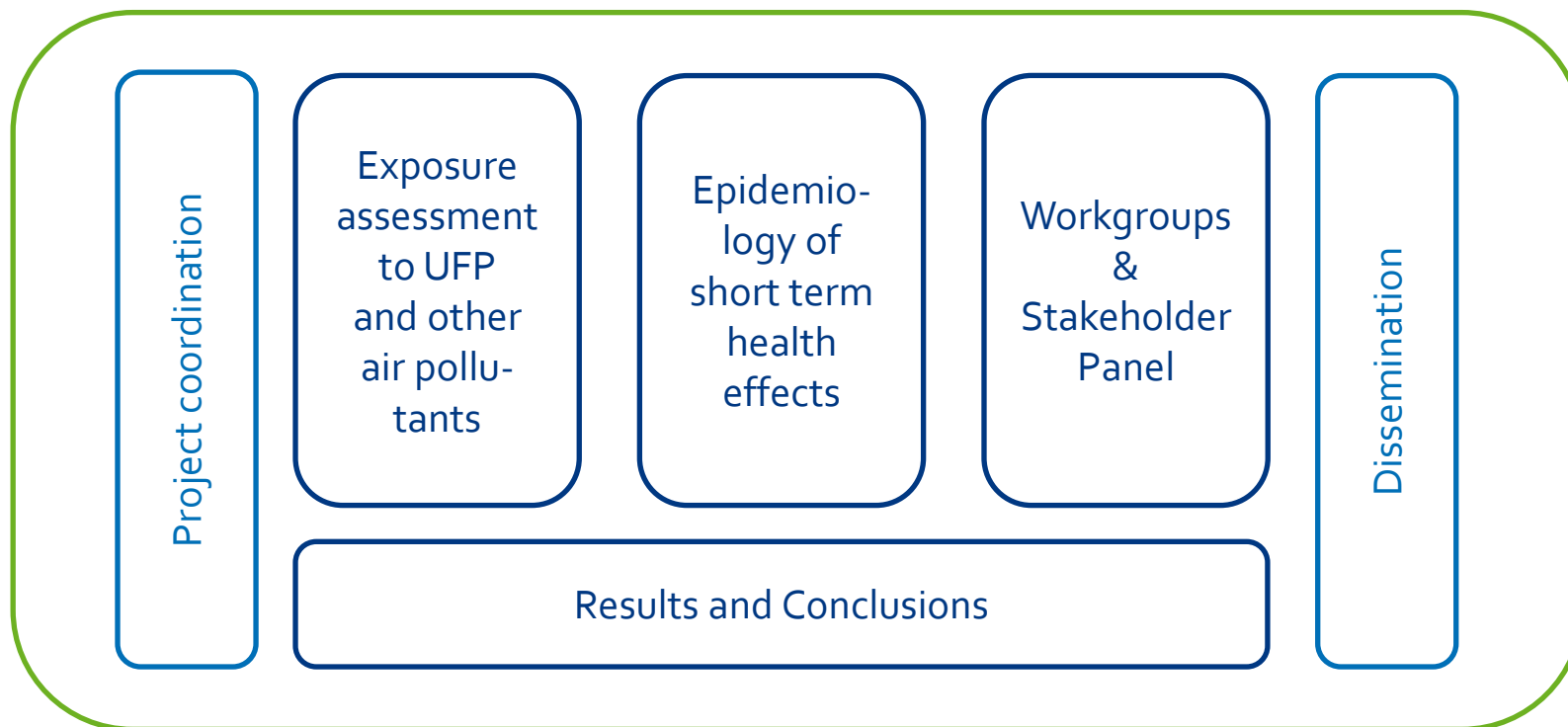


**NACIONALNI LABORATORIJ ZA
ZDRAVJE, OKOLJE IN HRANO**

Ukraine

- L.I. Medved's Research Center of Preventive Toxicology, Food and Chemical Safety, Ministry of Health, Ukraine (state enterprise) (Chernivtsi)





→ www.ufireg-central.eu

Exposure assessment – UFIREG measurements



Fotos: S. Bastian, M. Pitz, B. Mykhalchuk, M. Gobec

Matevž Gobec

National Laboratory of Health, Environment and Food, Maribor

Bogdan Mykhalchuk

L.I. Medved's Research Center of Preventive Toxicology, Food and Chemical Safety, Ministry of Health, Ukraine
(state enterprise), Chernivtsi

Daily counts of (cause-specific) deaths and hospital admissions
(official statistics)

Primary outcomes

- **Deaths due to natural causes**
- **Deaths and hospital admissions due to cardiovascular diseases**
- **Deaths and hospital admissions due to respiratory diseases**

Stefanie Lanzinger

Helmholtz-Zentrum München – German Research
Center for Environmental Health, Munich

Anna Pastorková

Institute of Experimental Medicine, Academy of Sciences
of the Czech Republic, Prague

Access to the health data through the Research Data Centres of the Federal Statistical Office + Statistical Offices of the Länder

1. Request for working as a guest scientist at the research data centers
 2. Analysis of mortality and hospital admission data only at the respective research data centers
- Delayed data availability (Data from 2013 available as of Spring/Summer 2015)
- Analysis of health data more time consuming

Mortality and Hospital Admissions data 2012 - 2013

➤ Institute of Health Information and Statistics of the Czech Republic

- *Prague residents who died in Prague (age =>1 year)*
reduction from 24 561 to 19 605 of natural mortality
- *Prague residents hospitalized in Prague (age =>1 year)*
(unscheduled admissions)
reduction from 82 006 to 28 616 hospital admissions

Sociodemographic data

- Institute of Health Information and Statistics of the Czech Republic
- Czech Statistical Office