



## Mapping Exposure-Induced Immune Effects: Connecting the Exposome and the Immunome

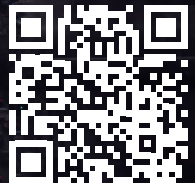


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## THE EXIMIOUS PROJECT

Depending on our lifestyle, diet, work and social environments, we all experience a different and complex set of exposures throughout our lifetime. The combination of these is defined as the exposome.

EXIMIOUS is a European research project and cohort study that aims to develop a new way of assessing the human exposome, to better understand the factors that lead to exposure-related immune effects at different stages of people's lives.

### The exposome

Your experienced exposures

Environment

Pollution

Social sphere

Diet

Lifestyle

Occupation

### The immunome

Your immune system

Antibodies

Cells

Tissue

Proteins

DNA & RNA

### The genome

Your genetic material

By unravelling the connections between our immune system (the immunome), our genetic material (the genome) and the environment, EXIMIOUS will help put in place the right preventive actions and policies to safeguard the individual, group and population well-being.

**What is a cohort study?** A study that focuses on a group of people who share a defining characteristic, typically those who experienced a common event in a selected period, such as birth, and takes for example blood samples from this group of people at different points in time.

## ...AND ITS COHORTS

The EXIMIOUS cohorts are what bring the project to life, across Europe.

Identifying current and past exposures in individuals without an identified immune related disease (general population and birth cohorts, occupational cohorts) and in people who suffer from exposure-related immune-mediated diseases, will enable the EXIMIOUS researchers to build a better understanding of how the exposome and immunome are related and the extent to which they can affect one another.



### GENERAL POPULATION & BIRTH COHORTS

- **The LifeLines Cohort Study – The Netherlands**  
A three-generation study during which participants are followed for 10 years.
- **ENVIRonAGE birth cohort - Belgium**  
1688 mother-child pairs in Belgium, studied to investigate the influence of environmental exposures during pregnancy and early life on child health.
- **DOC\*X cohort - Denmark**  
A register-based occupational cohort including >6 million workers (1976-2017).
- **DOC\*X generation - Denmark**  
All employed women who were pregnant during the time-span of the DOC\*X cohort, merged with register information of their children.



### OCCUPATIONAL COHORTS

- **Waste workers - Denmark**  
Biowaste recycling plant workers, waste collectors, waste water workers and sewer workers.
- **Park workers - Spain**  
Workers from the Urban Pest Control and Surveillance Service in Spain, who work with avian and fungal antigens, experiencing a broad range of exposures.
- **Workers exposed to mineral dust and organic solvents - Romania**  
Miners, workers in painting and shoe industries and metallurgical plant workers.



### DISEASE COHORTS

- **Systemic Sclerosis (SS) - Belgium**  
Population-based case control study of adult patients with newly diagnosed SS.
- **Systemic Lupus Erythematosus (SLE) - Belgium**  
Population-based case control study of adult patients with newly diagnosed SLE.
- **Rheumatoid Arthritis (RA) - Belgium**  
Population-based case control study of adult patients with newly diagnosed RA.
- **Sarcoidosis - Belgium**  
Population-based case control study of adult patients with Sarcoidosis.
- **Hypersensitivity Pneumonitis (HP) - Spain**  
Population-based case control study of adult patients with newly diagnosed HP.

To know more about how you can participate in our study write to be [info@eximious-h2020.eu](mailto:info@eximious-h2020.eu)

## EXIMIOUS brings together 15 partners from 7 European countries:

- Katholieke Universiteit Leuven
- Universiteit Hasselt
- Folkehelseinstituttet
- Det Nationale Forskningscenter For Arbejdsmiljø
- Belgian Center For Occupational Hygiene
- Interuniversitair Micro-Electronica Centrum
- Université Catholique De Louvain
- The Babraham Institute
- The Queen's University Of Belfast
- Region Hovedstaden
- Biogenity IVS
- Fundacio Hospital Universitari
- Vall D'hebron - Institut De Recerca
- Aarhus Universitet
- Universitatea De Medicina, Farmacie,
- Stiinte Si Tehnologie Din Targu Mures
- accelompment Schweiz AG



### KEY FACTS:

EXIMIOUS is a five year Research and Innovation Action funded by the European Union's Horizon 2020 programme.

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Project budget: 10.8 million Euro

Duration: 01.01.2020 – 31.12.2024

# EXIMI<sup>+</sup>US

MEMBER OF THE



European Human **Exposome NETWORK**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 874707.

