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ORAL COMMUNICATIONS III

CHARACTERIZATION OF MICROBIOLOGICAL CONTAMINATION IN PORTUGUESE ELEMENTARY SCHOOLS

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HORIZON EUROPE

Identification of body burdens resulting from multipollutant (real-life scenario) indoor exposures and associated health effects, with specific focus on vulnerable population groups and sensitive life stages.

InChildHealth addresses the call HORIZON-HLTH-2021-ENVHLTH-02-02: Indoor air quality and health

InChildHealth

Bolsa de Investigação: Ref.ª: IPL/2022/InChildhealth/BI/12M

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- 90 % of children time is spent in indoor environment[1]
- Most school-age children's exposure occurs in schools, at home[2], in sports halls, and in commuting




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- IAQ is an important determinant of human health, especially for children[3]

Impact the school occupants 'health and well-being[4]

Impact learning conditions[4]

More efficiency, more sustainability (at all levels)[4]

Good IAQ, optimal ventilation, healthy buildings, healthy environment[4]

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PROJECT GOALS

- Characterization of air quality in children's environments
- Identification of emission sources and influencing factors affecting children´s exposure
- Estimation about associated health effects resulting from exposures

- Development of novel technologies to improve indoor environmental quality to reduce health effects
- Engaging school children, educational experts, and policymakers in the scientific process.
- Preparation of quality standards and guidelines regarding IAQ

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INCHILDHEALTH PROPOSAL

Indoor environments to be assessed:

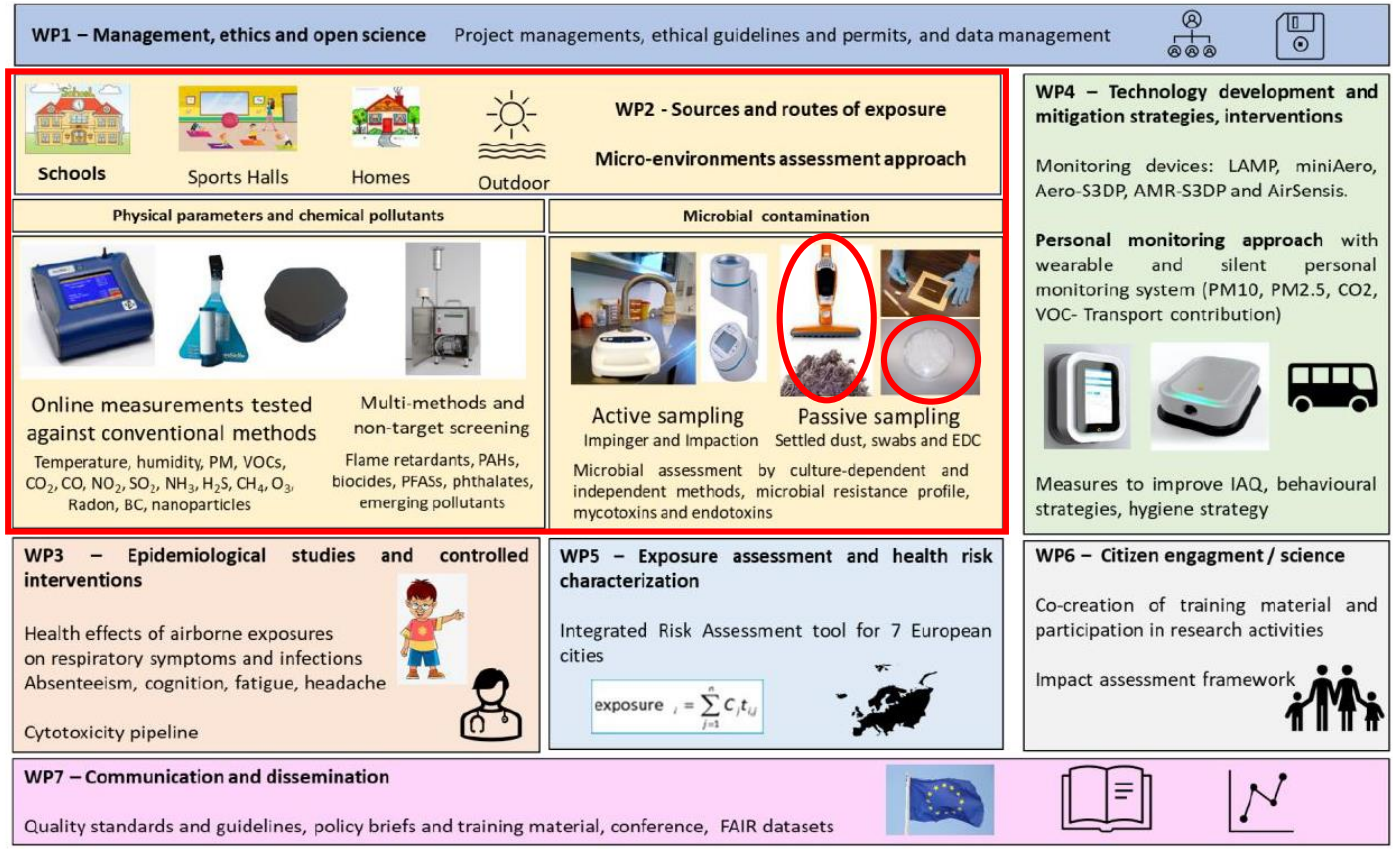
- 5 elementary schools (1 classroom, 1 outdoor, 1 sports/hall)
- 5 houses

Sampling methods:

- Settled dust (composite sample)
- EDC

Assays:

- Fungi qPCR
- Metabarcoding of bacteria and fungi
- Detection of mycotoxins and endotoxins



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CHARACTERIZATION OF MICROBIOLOGICAL CONTAMINATION IN PORTUGUESE ELEMENTARY SCHOOLS - PROPOSAL

Indoor environments to be assessed:

- 6 elementary schools (1 classroom, 1 cantine, 1 library, 1 sports/hall, locker rooms, 1 outdoor)
- 5 Houses

Sampling methods:

- Air sampling (MAS, Andersen, Coriolis)
- Settled dust (composite sample)
- EDC (including on T-shirts)
- Swabs
- Mops

Assays:

- Culture based-methods (Fungi and bacteria)
- Azole resistance screening
- *Aspergillus* section *Fumigati* sequencing and mutations detection
- Mucorales order resistance screening and sequencing
- MRSA
- Fungi qPCR
- Metabarcoding of bacteria and fungi
- Detection of mycotoxins and endotoxins
- Cytotoxicity (A549 lung)

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Methodology for Exposure assessment

Elementary Schools

Active Sampling

Air sampling:

- MAS
- Andersen
- Coriolis

Passive Sampling

- Settled dust
- EDC
- Swabs
- Mops

- Culture-based methods (fungi and bacteria)
- Microbial Resistance screening
- Toxigenic fungi detection through qPCR
- Detection of mycotoxins and endotoxins
- Cytotoxicity assessment

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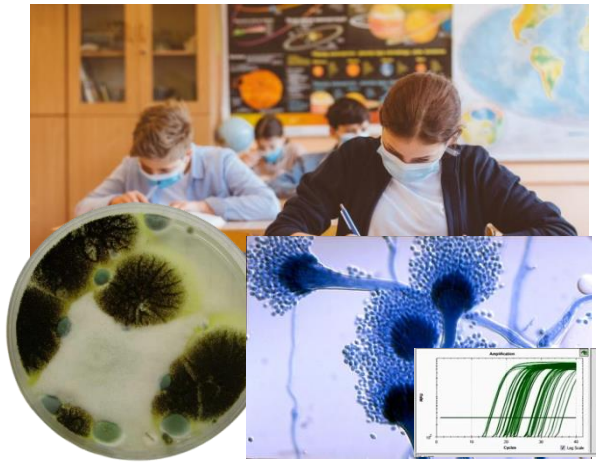
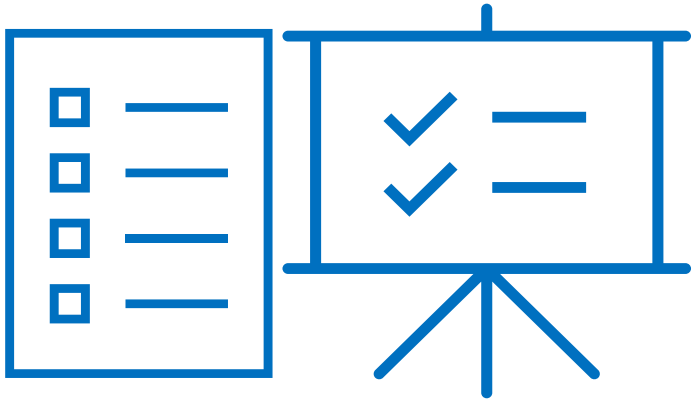
OUTCOMES





Characterization of microbial exposure in schools indoors

Guidance material for exposure assessors in IAQ assessments

Health promotion and disease prevention in the school community and beyond

Awareness of the decision-makers

Guidelines and policy briefs for EU policies and recommendations

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ENVIRONMENTAL HEALTH TEAM

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