



Clinical WorkPackages

4.1 & 4.2

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Environment & Health



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Aims



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- Document the health quality, perceptions and needs in European schools



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- Document the health quality, perceptions and needs in European schools
- Validate the environmental measurements



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- Document the health quality, perceptions and needs in European schools
- Validate the environmental measurements
- Provide data for risk assessment



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- Document the health quality, perceptions and needs in European schools
- Validate the environmental measurements
- Provide data for risk assessment
- Provide new insights on risks/mechanisms



Tools

- Questionnaires

- Objective measurements



Tools

- Questionnaires
 - ▶ Parents

- Objective measurements



Tools

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 - ▶ Parents
 - ▶ Pupils (>9 yr)

- Objective measurements



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- Objective measurements
 - ▶ Pupils



Question domains

- ISAAC core



Question domains

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- Symptoms related to the environment



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- ISAAC core
- Symptoms related to the environment
- Exposures/family



Question domains

- ISAAC core
- Symptoms related to the environment
- Exposures/family
- Values/Perceptions/Awareness/Practices



Why do we need clinical tests?



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- Validate questionnaires





Why do we need clinical tests?

- Validate questionnaires
- Effects undetected by questionnaires





Why do we need clinical tests?

- Validate questionnaires
- Effects undetected by questionnaires
- Investigate mechanisms



Clinical tests

- Spirometry
- Peak Flow
- Acoustic rhinometry
- Break-up time/Tear film stability
- Skin tests
- Exhaled NO
- Exhaled CO
- Nasal lavage
- Exhaled breath condensate
- Crevicular fluid
- Performance tests



Spirometry



Spirometry

- Expertise widely available



Spirometry

- Expertise widely available
- Relatively unexpensive





Spirometry

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- Relatively unexpensive
- Not much responsive to irritants



Spirometry

- Expertise widely available
- Relatively unexpensive
- Not much responsive to irritants
- Useful for validating the questionnaire



Peak Flow over a few days

- Easy



Peak Flow over a few days

- Easy
- Relatively Unexpensive



Peak Flow over a few days

- Easy
- Relatively Unexpensive
- Requires cooperation



Peak Flow over a few days

- Easy
- Relatively Unexpensive
- Requires cooperation
- Can be more sensitive for asthma than spirometry



Tear film stability

- Break-up time
 - ▶ Very simple, unexpensive
 - ▶ Relatively insensitive





Tear film stability

- Break-up time
 - ▶ Very simple, unexpensive
 - ▶ Relatively insensitive
- Tearscope
 - ▶ Simple, but more expensive
 - ▶ More sensitive to irritants





Tear film stability

- Break-up time
 - ▶ Very simple, unexpensive
 - ▶ Relatively insensitive
- Tearscope
 - ▶ Simple, but more expensive
 - ▶ More sensitive to irritants
 - ▶ Apparatus currently unavailable



Allergic skin tests

- Widely available
- Not much expensive
- Panel of allergens difficult to standardize
- Not much responsive to irritants
- Knowing the prevalence of allergy can be important
- Can create problems to some ethical committees



Exhaled Nitric Oxide (eNO)

- Relatively simple and available
- Relatively expensive
- Sensitive but increased in asthmatics



Exhaled Carbon Monoxide (eCO)

- Simple, not expensive
- Not much sensitive to irritants
- Increases in inflammation
- Identifies smokers





Nasal lavage, NAL

- Simple, unexpensive
- Requires a centrifuge and ice
- Sensitive to pollutants
- Measurements (albumin, LSM, ILs) are expensive



Exhaled Breath Condensate

- Simple, relatively unexpensive (cold metal pipe)
- Requires a freezer (more cumbersome than NAL)
- Less documented than nasal lavage
- Measurements are expensive





Crevicular fluid

- Simple, relatively inexpensive noninvasive alternative to blood sample
- Undocumented
- Measurements are expensive





Performance tests

- Somewhat cumbersome to perform
- Some are proprietary
- Sensitive to context

WHAT IS DESIRABLE vs. WHAT IS FEASIBLE



sinphonie
Schools Indoor Pollution and Health: Observatory Network in Europe

We are a large group

WHAT IS DESIRABLE vs. WHAT IS FEASIBLE



sinfonie
Schools Indoor Pollution and Health: Observatory Network in Europe

We are a large group

One size doesn't fit all



2/3 levels



2/3 levels

- 1 All groups: Questionnaires and spirometry





2/3 levels

- 1 All groups: Questionnaires and spirometry
- 2 Large set: Break-up time, nasal lavage, eNO





2/3 levels

- 1 All groups: Questionnaires and spirometry
- 2 Large set: Break-up time, nasal lavage, eNO
- 3 Smaller group(s): extended testings





Questions?