

How is an intake calculation made?

A presentation from an Occupational and Environmental Medicine Clinic perspective

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Who sends questions/cases for us?

Private individuals

Private and public service companies

Manufacturing companies

State institutions in both municipal and district levels

What types of questions do we get.



Literature review.



Help to think through what to measure.



Interpret data/ results.



Health-based Risk Assessment.



Helping with risk communication.

Understanding Environmental Health Risk

- Definition: Environmental health risk refers to the potential adverse effects on human health resulting from exposure to environmental hazards.
- Emphasis on the need for accurate exposure assessment and intake models to quantify and manage these risks.

Key Components of Exposure models



Source Identification: Identifying and characterizing pollutant sources.



Pathways Analysis: Understanding the routes through which contaminants move in the environment.



Receptor Assessment: Evaluating the impact on human populations (and ecosystems if they indirectly affect human health).

Steps in Building an Exposure/Intake Model



Define Scope and Objectives:

Specify the environmental hazards of interest.

Set clear goals for risk assessment.



Data Collection and Analysis:

Field data: Location, concentration, source, physical, chemical and geological properties of the area in question.

Literature review and toxicological data on the hazard in question.

- Chemical and physical properties.
- Toxicological data.
- Background levels.

Steps in Building an Exposure/Intake Model (Contd.)

Choose/Create an appropriate exposure model

- Naturvårdsverket
- USA EPA
- United Nations - UNEP
- Literature

Integrate exposure factors relevant to the specific environmental context.



Parameterization and Calibration:

- Evaluate model parameters based on data. Do the parameters fit? Do the results make sense?

- Calibrate and validate the model for accuracy.

Challenges in Environmental Health Risk Assessment

Common challenges in modeling

- Data
- Knowledge gaps within the literature
- Model boundaries and uncertainties

Toxicological information

- Number of chemicals
- Chemicals mixtures → Cocktail effect

Address the need for model control in the field and having a contingency plan when necessary.



Risk Communication

- Strategies for effective communication of risk assessment results to policymakers and the public.



Questions

