**Draft programme: Weight of Evidence and Systematic Review Methodology in Health Risk Assessment of Chemicals**
February 12-16, 2024
Lectures and group assignments are online using Zoom.
IMM Institute of Environmental Medicine, Karolinska Institutet.
Course leaders: Johanna Zilliacus, Annika Hanberg, Anna Beronius

| Monday Feb 12 | Tuesday Feb 13 | Wednesday Feb 14 | Thursday Feb 15 | Friday Feb 16 |
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| 9.00-9.30<br>Welcome and introduction to the course (JZ, AH, AB) | 9.00-9.15<br>Wrap-up from previous day | 9.00-9.15<br>Wrap-up from previous day | 9.00-9.15<br>Wrap-up from previous day | 9.00-9.15<br>Wrap-up from previous day |
| 9.30-10.30<br>Introduction of participants | 9.15-10.00<br>Group assignment 1 continued | 9.15-10.00<br>Group assignment 2 continued | 9.15-10.00<br>Group assignment 3 continued | 9.15-10.30<br>Group assignment 4 continued |
| 10.30-10.45<br>Break | 10.00-10.15<br>Break | 10.00-10.15<br>Break | 10.00-10.15<br>Break | 10.30-10.45<br>Break |
| 10.45-11.30<br>Introduction of participants, group discussions | 10.15-11.15<br>Presentation and discussion of group assignment 1 | 10.15-11.15<br>Presentation and discussion of group assignment 2 | 10.15-11.15<br>Presentation and discussion of group assignment 3 | 10.45-11.45<br>Presentation and discussion of group assignment 4 |
| 11.30-12.30<br>Lunch | 11.15-11.30<br>Break | 11.15-11.30<br>Break | 11.15-11.30<br>Break | 11.45-12.00<br>End of course |
| 12.30-13.15<br>Lecture 1: Introduction to weight of evidence and systematic review methodology in health risk assessment of chemicals (AH) | 11.30-12.15<br>Lecture 3: Systematic literature search (JZ) | 11.30-12.15<br>Lecture 5: Assessing relevance and reliability (AB) | 11.30-12.15<br>Lecture 7: Uncertainty analysis (US) | 12.00-13.00<br>Lunch |
| 13.15-13.30<br>Break | 12.15-13.15<br>Lunch | 12.15-13.15<br>Lunch | 12.15-13.15<br>Lunch | 13.00-17.00<br>Take home exam handed in at 17.00 |
| 13.30-14.15<br>Lecture 2: Identification of risk assessment questions (AH) | 13.15-14.00<br>Lecture 4: Grouping evidence into lines of evidence and extraction of data (JZ) | 13.15-14.00<br>Lecture 6: Integrating evidence (AB) | 13.15-13.45<br>Lecture 8: AI tools in systematic review methodology (CK) | |
| 14.15-14.30<br>Break | 14.00-14.15<br>Break | 14.00-14.15<br>Break | 13.45-14.00<br>Break | |
| 14.30-15.15<br>Introduction to group assignment 1: Defining the assessment question<br>Individual learning | 14.15-15.00<br>Introduction to group assignment 2: Literature search<br>Individual learning | 14.15-15.00<br>Introduction to group assignment 3: Assessment of relevance and reliability<br>Individual learning | 14.00-14.30<br>Lecture 9: Weight of evidence and systematic review methodology-example from | |

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| | | | an authority (EFSA to be confirmed) | |
| 15.15-16.45<br>Group assignment 1 | 15.00-16.45<br>Group assignment 2 | 15.00-16.45<br>Group assignment 3 | 14.30-14.45<br>Break | |
| 16.45-17.00<br>Reflection on today's learning | 16.45-17.00<br>Reflection on today's learning | 16.45-17.00<br>Reflection on today's learning | 14.45-15.15<br>Lecture 10: Weight of evidence and systematic review methodology-example (AB) | |
| | | | 15.15-15.30<br>Break | |
| | | | 15.30-15.45<br>Introduction to group assignment 4: Use of weight of evidence and systematic review methodology in chemical risk assessments | |
| | | | 15.45-16.45<br>Group assignment 4 | |
| | | | 16.45-17.00<br>Reflection on today's learning | |

Teachers:
AB – Anna Beronius, IMM, KI
AH – Annika Hanberg, IMM, KI
CK – Carsten Kneuer, German Federal Institute for Risk Assessment, Germany
EFSA to be confirmed
JZ – Johanna Zilliacus, IMM, KI
US – Ullrika Sahlin,  Lund University, Sweden

## Course information

**Purpose of the course:**
The purpose of the course is to build knowledge and understanding in how to apply weight of evidence and systematic review methodology in assessing health risks of chemicals.

**Learning outcomes:**
At the end of the course the participant should be able to:
- define specific questions to be addressed in a health risk assessment of chemicals
- apply and discuss methods to assemble, weigh and integrate scientific evidence in health risk assessment of chemicals
- reflect on the need for and importance of systematic approaches in health risk assessment of chemicals

**Content of the course:**
Health risk assessment of chemicals is the scientific method to assess the risk to humans of exposure to different types of chemical substances, such as environmental pollutants, pharmaceuticals, chemicals in cosmetics or other everyday products, pesticides, food additives and other substances in food. The health risk assessment is based on a specified question that is answered by analysis of different type of data from in vivo, in vitro, in silico and epidemiological studies. The course will address methodology for weight of evidence assessment and systematic review and specifically how to, in a systematic manner, plan the assessment, identify data, assess the relevance and reliability of the data and integrate the data to be able to answer the assessment question. The course will cover the following: identification of a risk assessment question, systematic literature searches, organizing the data into lines of evidence, assessment of the relevance of the data, assessment of reliability of the data and integration of the data in a weight of evidence approach.

**Content of teaching and learning activities:**
Welcome and introduction to the course
- Introducing course directors
- Presenting Karolinska Institutet and Institute of Environmental Medicine
- Presenting course (learning outcomes, programme and exam)
- Explaining practical aspects of on-line course, including Zoom and Canvas

Introduction of participants
- Participants introduce themselves using 1-2 PowerPoint slide provided in advance
- Participants get to know each other in group discussions

Lectures
- Lectures on the different topics by teachers from Karolinska Institutet and other organisations

Group assignments
- Work on group assignment in small groups

Reflection on today's learning

- Individual reflection on What was the most important I learnt today? Are there any open/unclear issues from today?

Wrap-up from previous day

- Discussion based on reflections of learning and open/unclear issues

Presentation and discussion of group assignments

- Each group presents their group assignments
- Other groups ask questions and discuss

Take home exam

- Short answer questions on factual knowledge
- Reflection question on the need for and importance of systematic approaches in health risk assessment of chemicals