

COURSE CURRICULUM

Lesson 1: How to Start a Systematic Review

The first lesson will discuss the early stages of building a systematic review, including answers to the following questions:

- What are the differences between a literature review, a systematic review and a meta-analysis?
- How do I know if my systematic review idea is feasible?
- What is a PICO question?
- What are the steps to create a search strategy?
- Where do I search for studies?
- How do I find research ideas?
- Examples and exercises

Lesson 2: Inclusion and Exclusion

The second lesson will go over how to formulate your inclusion and exclusion criteria before you begin sorting through your studies.

The lesson will help answer the following questions:

- What is the definition of inclusion and exclusion criteria?
- How do I create a study selection criterion?
- What are common selection criteria?
- Where do I start to generate my search?
- How do I screen my studies?
- Examples and exercises

Lesson 3: Variable Selection

The third lesson will cover how to choose your variables for data abstraction.

The following points will be discussed:

- Common variables that are used in all studies
- Methods to create your variable list, including different sources
- Examples and exercises in which you will build a variable list for studies

Lesson 4: Data Collection

This lesson will go over effective methods for data collection and what type of data can be collected.

The following points will be discussed:

- Consistency in data collected, including mean + standard deviation vs. frequency + percent
- How to keep your data clean
- Steps in making your life easier for data analysis
- Methodically collecting data to streamline analysis
- Examples and exercises in which you will extract data from studies

Lesson 5: Conducting Analysis

This is the meat of your systematic review; this will define the value of your systematic review/meta-analysis. The purpose of this lesson is to explain how to easily analyze your data.

The following points will be discussed:

- The differences in odds ratio and mean difference
- How to clean up your data to export into a statistical software
- Different statistical programs you can use for analysis
- Examples and exercises on how to perform meta-analysis using statistical programs with categorical and continuous variables

Lesson 6: Assessing Risk of Bias

Importantly, each study included in a meta-analysis may have a different study design than another. Therefore, authors may want to evaluate each study's risk of bias so that the pooled results may be interpreted with caution.

The following points are discussed:

- Effectively utilize the Newcastle-Ottawa Scale to assess risk of bias for observational studies
- How to evaluate risk of bias for clinical trials
- What is the GRADE assessment for pooled results?

Lesson 7: Manuscript Writing

Many find manuscript writing the most challenging part of research projects. The purpose of this lesson is to make manuscript writing ridiculously simple and turn it into the most enjoyable part of the research journey. We will cover how to write a manuscript's introduction, methods, results, discussion, and conclusion in addition to examples and exercises you will be working on