

Methodological tools for in vitro systematic reviews

A systematic analysis of all the tools that are used for in vitro systematic reviews

Background

Systematic reviews are a great research method to gather all information known on a specific topic. Over the past decade, our team has specialized in the use of systematic review of animal studies to uncover both the successes and the limitations of animal studies in various fields of research, including anaesthesiology and neurosurgery. For the animal research field performing a systematic review is becoming a common step, and many tools have been developed to increase the efficiency for performing these reviews. However, in the *in vitro* field (e.g. for cell cultures, organoids and organs-on-a-chip), systematic reviews are not yet common, even though this type of pre-clinical research could really promote the development of animal-free research methods. Tailored tools that can facilitate and optimize reviews of *in vitro* studies specifically are less well-known or still under development.

We offer you the opportunity to join one of our projects where we review all tools used by researchers for systematic reviews of *in vitro* studies and make recommendations for future tool development and implementation.

Department

You will primarily work at the Dept. for Anaesthesiology at the Raboudumc, with at least one (primary) supervisor from this department. It is possible to partially work from home, but we welcome you to (also) work at the department.

Start and duration:

We are looking for an enthusiastic intern who is preferably available from January 2026 (but please contact us if you prefer a different start date). The duration of the internship can be flexible, e.g. 3 months for BSc internships, or 6-9 months for MSc internships.

Research question

Which tools for (phases of) *in vitro* systematic reviews have been published and how can these best be implemented in the review process?

Research objectives (“*what will I be doing?*”)

1. Extract study characteristics and relevant outcome measure data.
2. Define, extract and interpret indicators of the quality of the identified tools.
3. Interpret the results and formulate directions for future research based on your findings
4. Write your report in publication format, prepare and give an oral presentation

Learning objectives (*“what will I learn from this?”*)

In brief, you’ll join a specialist group of worldwide experts on evidence synthesis and have unique knowledge about what makes systematic reviews so important!

In more detail, you’ll learn:

1. To extract study characteristics and data for relevant outcome measures
2. To critically reflect on a broad range of used tools and the quality of in vitro systematic reviews
3. To write a scientific report in English and prepare and give an oral presentation in English

If you are interested, please contact raven.vandervegt@radboudumc.nl or kim.wever@radboudumc.nl