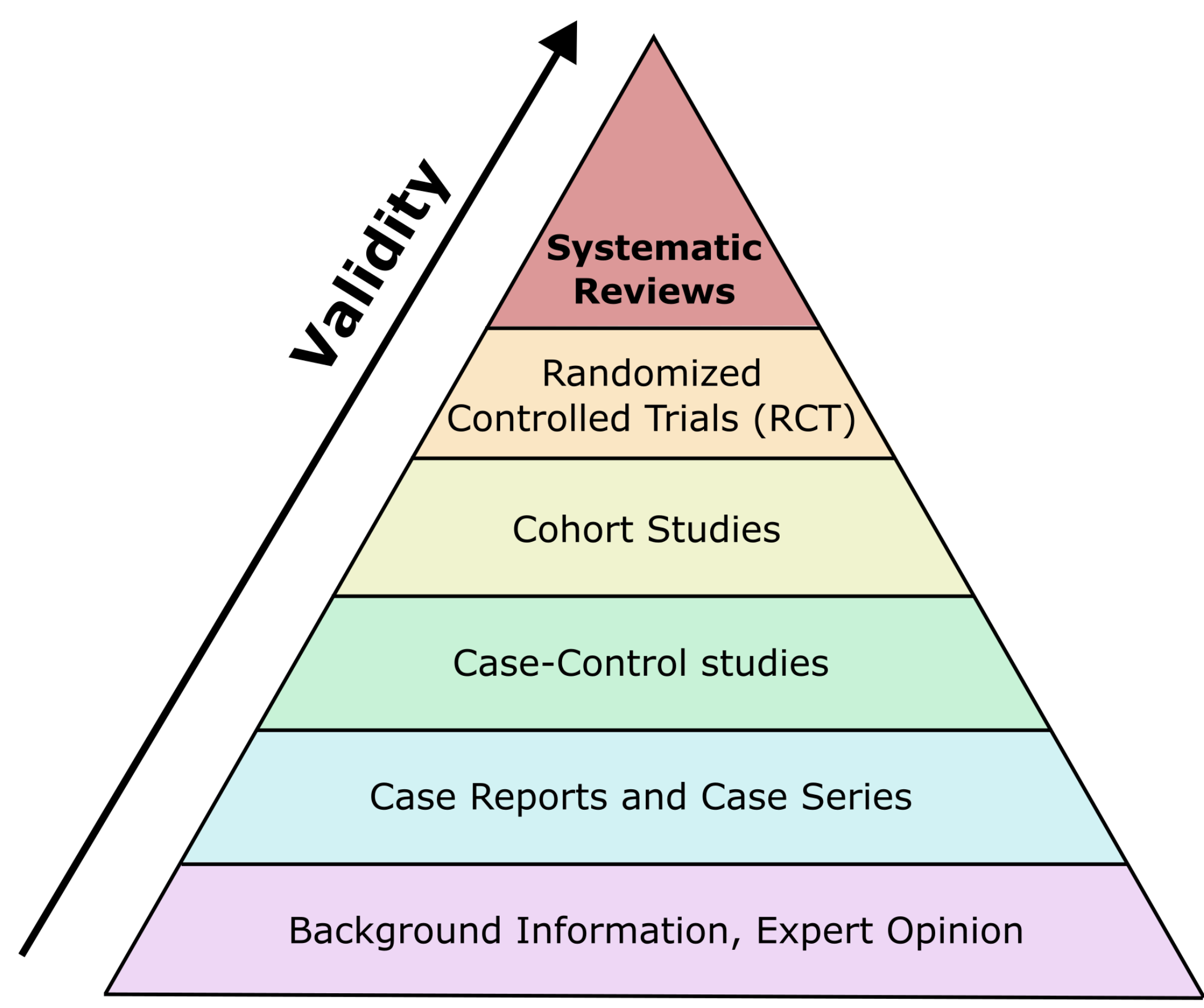


# Systematic review and meta-analysis: a hands-on, research-based semester course for life science students

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Evidence pyramid

From: <https://camarades.ch/why/>

## Innovative because...

Information overload is an omnipresent challenge hindering informed decision making. Our semester course “systematic review and metaanalysis“ aims to fill this gap by equipping students with skills to independently complete a systematic review. This research-based course brings together students from life sciences, integrating biomedical, statistics, as well as information science. Students will engage in hands-on projects derived from their own research questions, supported by individualized 1:1 sessions and peer-led teaching, bringing theoretical knowledge to practical application.

## Idea

Instead of merely teaching systematic review theory, we have the ambition to create a hands-on course, enabling students to independently conduct systematic reviews.

Based on this, in summer 2023, we successfully hosted an international summer school at the University of Zurich, dedicated to systematic reviews and meta-analysis (<https://camarades.ch/news/>). This event covered the practical steps involved in conducting systematic reviews—from formulating a research question to designing a literature search to summarizing findings, and managing projects aimed at improving animal welfare and research integrity. It also addressed the critical aspect of identifying and mitigating systematic biases in research. Feedback from participants was overwhelmingly positive, highlighting the program's effectiveness in transferring skills for performing systematic reviews.

## Goals

The students will benefit from the course on systematic review and meta-analysis from:

- The exposure and practice of the entire research cycle, from formulating a research question to publication
- Gaining the interdisciplinary understanding of how rigorous, high-level evidence is generated, relevant across research fields
- Fostering their evidence synthesis methodologies and preparing them to handle the overwhelming volume of data published in scientific literature every year, and therefore stay abreast with the latest research findings
- Formulating a structured framework of research at the beginning of their MSc or PhD thesis

## Success factors / Results

Further implementing digital teaching tools at the UZH while complementing them with hands-on and 1:1 sessions

- Encourage the development of more interdisciplinary courses that include Bachelor's, Master's and PhD students and, importantly, bring together different life science fields to foster an interdisciplinary culture at UZH
- Strengthening research-based teaching and evidence-based research.
- Apply similar approaches to other courses, such as those teaching research methods at Bachelor's and Master's levels.

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