Evaluating the Evidence

START

Select article for review

Determine domain of your clinical question (CQ) & the study’s CQ:
- Intervention (therapy/treatment/prevention/harm/quality improvement)
- Diagnosis/Assessment
- Prognosis
- Meaning /KAB*
- Etiology/Risk Factors
- Prevalence/Incidence
- Decision Analysis

Determine study design

Complete the appraisal form and Level the Quality of the article.
The level/quality of this article will depend on the domain of your single CQ.

NOTE: Adjust the level, based on the domain of your CQ and the directness of the evidence to your CQ.

Repeat entire appraisal process for each study selected to answer a single CQ.

Develop a recommendation(s) to address your CQ

Grade the body of evidence for your recommendation(s).
(See Grading the Body of Evidence table)

Judge the strength of the recommendation(s).
(See table)

*KAB = knowledge, attitudes and beliefs

**Quality (individual study):** the extent to which all aspects of a study’s design and conduct can be shown to protect against bias.

**Strength (body of evidence):** considers the collective quality, quantity and consistency of the individual studies.

Some of the terms and definitions based on:
Tips for Determining Study Design:

All Users:

- Selection of the appropriate appraisal form is based on the domain of the study design and the study’s clinical question. Some study designs share the same form, and the terminal boxes in the algorithm on the following pages represent one appraisal form per box.

  **Note that:**
  - Study designs are not always obvious from the publication.
  - Some studies are mixed types.
  - Some authors use misleading words to describe their studies.

  Therefore, if the user is unsure that the correct study design is selected, IT'S NOT A BIG DEAL. The user may:
  - Pick one and if the appraisal form isn’t helpful, try another.
  - Use questions from more than one study design, if appropriate.
  - Omit answers to questions if they don’t apply to the study.

Users somewhat familiar with study designs:

- Scanning the title or abstract may provide the answer immediately.
- For clarifying details, the methods section will be very helpful.
- For less obvious study designs, a careful reading of the methods will be necessary.
- The use of the algorithms on the following pages may help confirm the answer or help decide between two or more possible designs.

Users very unfamiliar with study designs:

- Look at the terminal boxes on the following pages—these are the possible types of study designs.
- Scanning the title or abstract may provide the answer immediately.
- For additional details, the methods section will be very helpful.
- For less obvious study designs, a careful reading of the methods will be necessary.
- The use of the algorithms on the following pages may help confirm the answer, help to decide between two or more possible designs, or consider going step-by-step through the algorithm as a learning process.
- Many of the terms in the algorithm are technical, and the user may need to ask for help or use other information resources.
Determining Study Design

START

Systematic Review or Meta–Analysis
- RCT
- Cohort
- Case-Control
or Meta–Synthesis
- Qualitative

Yes

No

Is there a quantitative comparison within or between groups of human subjects?

Yes

No

Is there more than one analysis? (i.e., Mixed Methods Study Design)

Yes

No

Quantitative Comparative Studies

Is the data collected at a single point in time?

Yes

No

Longitudinal Trials
- One before- and one after-evaluation point
  - Before-After
- Other studies with more than one evaluation point
  - Time Series

No

More than one group studied?

Yes

No

Case-Control
(could also be single point in time)

Are groups selected based on outcome?

Yes

No

Factors other than outcome e.g. EXPOSURE or INTERVENTION

No

Yes

Cohort:
Retrospective (in the PAST) or Prospective (in the FUTURE)

Controlled Trials
Exposure assigned randomly:
- RCT (Randomized Controlled Trial)
- Group randomized trial

Non-random assignment:
- CCT (Controlled Clinical Trial, group or individual)

*Not all studies fit neatly into this algorithm.
Please refer to the Tips for Determining Study Design for additional help.

Let Evidence Guide Every New Decision
Evaluating the Evidence Algorithm

Is there **quantitative analysis** (without comparison or human subjects)?

- YES: **Bench Study**
- NO: Is there **qualitative analysis**?

  - YES: **Case Report**
  - NO: **Expert Opinion**
    - general review article
    - other opinion
    - Guideline

- **Qualitative**
  - phenomenology (exploration of subjective experience)
  - ethnography (exploration of the culture of an environment)
  - grounded theory (generation of an explanatory theory of human behavior)
  - focus group
  - narrative
  - other

- **Descriptive**
  - descriptive survey
  - case series (many persons)
  - epidemiological study
  - other descriptive

- **Psychometric**

- **Decision Analysis**
  - decision analysis
  - economic analysis
  - computer simulation

- **Expert Opinion**

- **Mixed Methods**
  - Identify qualitative and/or quantitative components used in the mixed methods study.
  - Use the algorithm to determine the correct evidence appraisal form for each component.
  - Complete evidence appraisal forms for each of these components.
  - Use the mixed methods form to complete the appraisal.