Comprehensive Medical Research Guide

Step-by-Step Instructions From Idea to Publication

PHASE 1 – RESEARCH FOUNDATIONS

Module 2:

Conducting a Literature Review

Key Steps Checklist :

- Formulate a focused research question

- Select reliable databases & resources

- Screen and filter relevant studies

- Extract and organize findings

- Identify knowledge gaps

- Synthesize into a clear narrative

1. Why Do a Literature Review?

Every research journey begins with a **map** and that map is your literature review. Without it, you may travel in circles, repeating what others have already done or asking a question that has already been answered. A well conducted **review helps you understand what is known**, **where the gaps lie**, and how your research can make a meaningful contribution.

For example,

 if you are interested in hospital-acquired infections, a literature review might reveal dozens of studies from Europe and North America but very few from Jordan.
That gap tells you: "There is room for me to study this in my own setting."

👉 Think of the literature review as the foundation of your research house **, if the base is weak, the whole project may collapse.**

2. Defining Your Research Question

Before you search, you must be clear on what you are looking for.
Vague questions like "asthma treatment" will overwhelm you with thousands of articles.
Instead, refine it using frameworks such as
PICO (Population, Intervention, Comparator, Outcome).

Example:
Does simulation training improve CPR skills among medical students compared with traditional teaching?
PICO (Population, Intervention, Comparator, Outcome).

Element	Question Component
P	Medical students
I	Simulation training
C	Traditional teaching
O	CPR performance

This clarity ensures you only collect relevant evidence instead of drowning in unrelated articles.

3. Where to Search?

Not all sources are equal. Reliable**, peer-reviewed databases** are the backbone of a strong review.

Database	Best For	Notes
PubMed	Biomedical & clinical	Free, most widely used
Scopus	Multidisciplinary science	Great for citation tracking
Web of Science	High-impact journals	Useful for citation networks
Google Scholar	Broad & fast	Useful for gray literature

👉 Many beginners rely only on Google Scholar, but this can miss crucial peer-reviewed work.

Always combine it with PubMed or Scopus for a complete picture.

4. Building a Search Strategy

Searching is an art. If you only type a single word like "asthma", you will find millions of articles.
The trick is to use keywords, synonyms, and Boolean operators (AND, OR, NOT).

Example Search:

• Keywords: "asthma", "bronchial asthma"

• Population: "children", "pediatrics"

• Intervention: "inhaler", "corticosteroid"

Final Search String:

("asthma" OR "bronchial asthma") AND ("children" OR "pediatrics") AND ("inhaler" OR "corticosteroid")

This way, you narrow results to exactly what you need.

5. Screening & Selecting Studies

Once you have hundreds of results, not all will be useful. Screening helps filter the noise.

• **Step 1:** Title & abstract screening → remove irrelevant studies.

• **Step 2:** Full-text screening → apply your inclusion/exclusion criteria.

Include ✅	Exclude ❌
2015–2025 publications	Older than 2015
Human studies	Animal experiments
Peer-reviewed journals	Blog posts, opinion pieces

6. Writing Your Review

Now comes the storytelling. Your review should not be a list of studies — that's boring. Instead, synthesize. Group studies into themes, highlight patterns, and point out contradictions.

For example:

• Most studies agree that inhaler education improves asthma control. However, evidence from low-income countries remains limited, and long-term adherence has not been well studied.

👉 **This final step identifies the <u>gap</u> your research will address.**

Without highlighting the gap, your review is incomplete.