مقالات مروری نظام‌مند و جایگاه آن‌ها در تصمیم‌گیری بالینی

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به طور کلی مقالات را به دو دسته تقسیم می کنند:

۱- مطالعات اولیه (primary studies)
مطالعاتی هستند که از تحقیق مستقیم به دست می آیند از آزمایشات، کارآزمایی بالینی و پایش ها
Experiment, clinical trail, survey

۲- مطالعات ثانویه (secondary studies)
مطالعاتی هستند که با مطالعات اولیه و با کار روی داده های آنها انجام و نتیجه بدست می آورد.

در یک دسته بندی ساده ما مطالعات مشاهده ای و غیر تحلیلی را داریم:

۱- مطالعات مقطعی (cross sectional studies)
ساده ترین شکل بررسی های مشاهده ای و اغلب در نمونه ای از کل جمعیت به وسیله معاینه، پرسشنامه یا پژوهش انجام می شود.(مطالعه میزان وفور و میزان شیوع یا بررسی فراوانی هم می نامندش).

۲- مطالعات طولی (longitudinal studies)
به مشاهدات مکرر در زمان طولانی از طریق پیگیری معاینات و ... پرداخته و هزینه آن از مقطعی بیشتر که البته اطلاعات مفیدی به ما می دهد. (بررسی میزان بروز)
این مطالعه مثل یک فیلم سینمایی و مطالعات مقطعی به مثابه یک عکس.

در یک دسته بندی دیگر ما مطالعات تحلیلی را به دو دسته تقسیم می کنیم:

۱- مطالعات شاهد موردی (گذشته نگر)(case control studies)

۲- مطالعات هم گروهی (cohort - studies)
به نوعی از مطالعات تحلیلی مشاهده ای گفته می شود که برای بدست آوردن شواهد بیشتر جهت رد یا قبول فرضیه ماست.
می تواند آینده نگر یا جاری باشد
گذشته نگر یا تاریخی
و مرکب از دو روش قبلی

انواع **مقالات** در علوم پزشکی

■ Original Article	■ مقاله پژوهشی اصیل
■ Review Article	■ مقاله مروری
■ Case Reports	■ مقاله گزارش مورد
■ Editorial	■ سرمقاله (سخن سردبیر)
■ Short Communication (short papers)	■ مقاله کوتاه
■ Letter to Editor	■ نامه به سردبیر

انواع **مقالات مروری** در علوم پزشکی

■ مقالات مروری سنتی
مرور روایتی، نقلی (ثانویه)

- Traditional Review Articles (Narrative Review)

■ مقالات مروری نظام‌مند
مرور ساختاردار(ثانویه)

- Systematic Review (Meta-analysis)
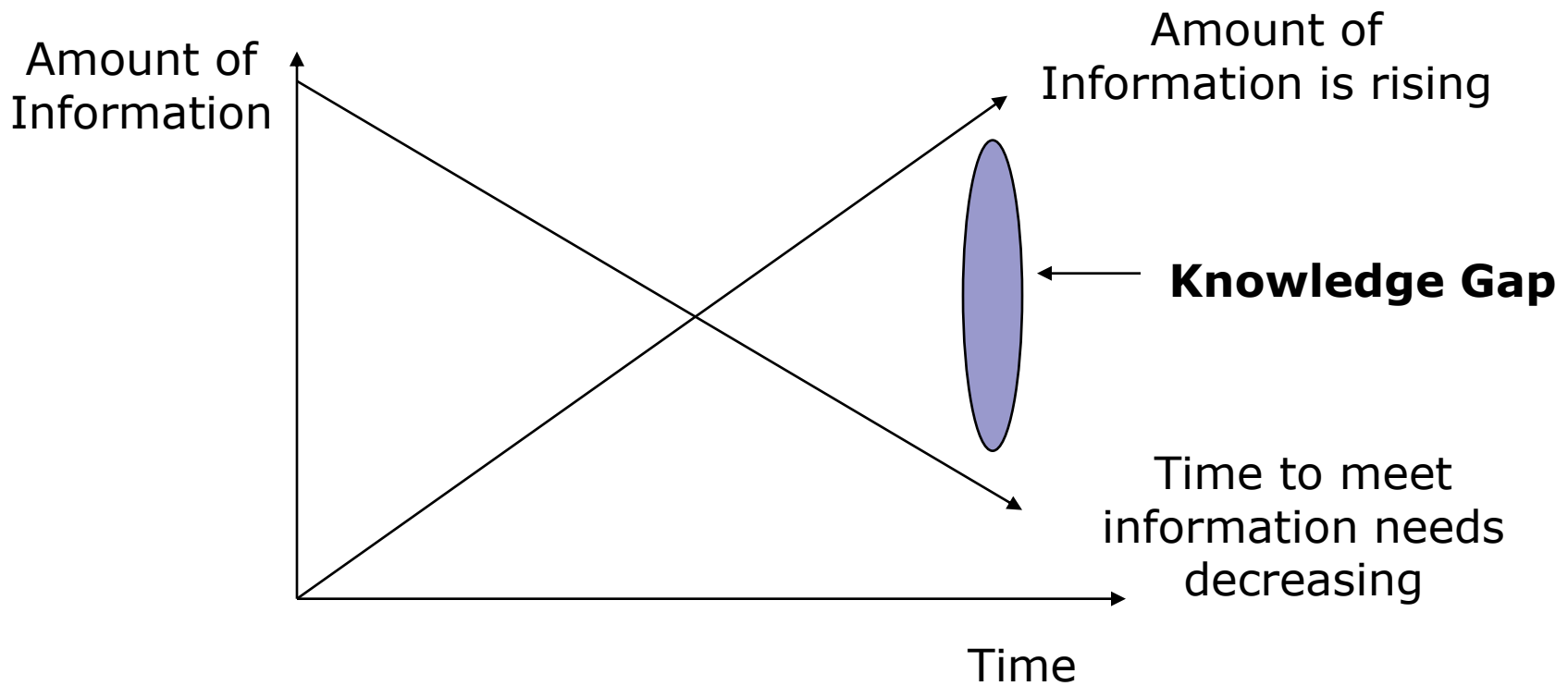
Medical Publishing Scope

Annually:

- +20,000 journals
- +17,000 new books

MEDLINE:

- +5,000 journals
- +25 Million references
- 400,000 new entries yearly

مشکل فاصله اطلاعاتی

Amount of
Information

Amount of
Information is rising

Knowledge Gap

Time to meet
information needs
decreasing

Time

The Knowledge Gap

Half-time or Half-life of Clinical Medical Science is now

about **6 Month**

Doubling time of biomedical science was

about 19 years in 1991

Doubling time of biomedical science was

about 20 months in 2001

So you work in a job which:

- Its half-time (half-life) is 6 months, &
- Its doubling-time is 20 month

- You works in a ever-changing & ever-growing profession !

- So you should keep updating !

For General Physicians to keep current:

Read 19 new articles per day which appear in medical journals

19 x 2 hrs (Critical Appraisal) = 38 hrs per day

Davidoff F et al. (1995)

EBM; A new journal to help doctors identify

the information they need. BMJ 310:1085-86.

What is 'level of evidence'?
سطوح شواهد چیست؟

- The extent to which one can be confident that an estimate of effect or association is correct (unbiased).

Hierarchy of studies
سلسله مراتب مطالعات

Evidence Pyramid
هرم شواهد

Systematic Review

Randomized Controlled Trial

Cohort studies

Case Control studies

Case Series/Case Reports

Animal research

Levels of Evidence

Level of Evidence	Type of Study
1a	Systematic reviews of randomized clinical trials (RCTs)
1b	Individual RCTs
2a	Systematic reviews of cohort studies
2b	Individual cohort studies and low-quality RCTs
3a	Systematic reviews of case-controlled studies
3b	Individual case-controlled studies
4	Case series and poor-quality cohort and case-control studies
5	Expert opinion based on clinical experience

Adapted from: Sackett DL et al. *Evidence-Based Medicine: How to Practice and Teach EBM*. 2nd ed. Churchill Livingstone; 2000.

Systematic reviews

- Postdam Consultation on Meta-analysis (Cook et al, 1995) defined a systematic review as

- **"application of scientific strategies that limit bias to the systematic assembly, critical appraisal and synthesis of all relevant studies on a specific topic"**

- **Postdam**

Systematic Reviews

- **Systematic review** is a method of
  - ☐ locating,
  - ☐ appraising,
  - ☐ and synthesizing evidence
  - ☐ while making explicit efforts to limit bias
- \> a quarter of a century since Gene Glass coined the term "meta-analysis" to refer to the quantitative synthesis of the results of primary studies

A 'systematic review', therefore, aims to be:

- Systematic (e.g. in its identification of literature)

- Explicit (e.g. in its statement of objectives, materials and methods)

- Reproducible (e.g. in its methodology and conclusions

Systematic Review

"Scientific tool which can be used to *summaries**,* *appraise**, and* *communicate* *the results and implications of otherwise unmanageable quantities of research" (NHS CRD, 1996)" NHS CRD ، 1996).*

They are not conventional Reviews

- Follow a strict methodological and statistical protocol
  - more comprehensive
  - minimising the chance of bias
  - improves transparency, repeatability and reliability

تفاوت مقاله مروری سنتی و مروری نظام‌مند

(Adapted from Cook, D. J. et. al. (1997). Ann. Intern. Med. 126: 376-380)		
Feature	Traditional Review	Systematic Review
Question	Often broad in scope	Focused question
Sources & search	Not usually specified, potentially biased	Comprehensive sources & explicit search strategy
Selection	Rarely specified, potentially biased	Criterion-based selection, uniformly applied
Appraisal	Variable	Rigorous critical appraisal, uniformly applied
Synthesis	Often a qualitative summary	Quantitative summary* when appropriate
Inferences	Sometimes evidence-based	Evidence-based
*A quantitative summary that includes a statistical synthesis is a meta-analysis		

مراحل انجام مطاالعه مروری نظام‌مند (۱)

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│  Formulating review questions   │
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┌─────────────────────────────────┐
│  Searching & selecting studies  │
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┌─────────────────────────────────┐
│   Study quality assessment      │
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│   Extracting data from studies  │
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      │   Data synthesis    │
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قالب‌بندی **عنوان** مطالعه مروری نظام‌مند
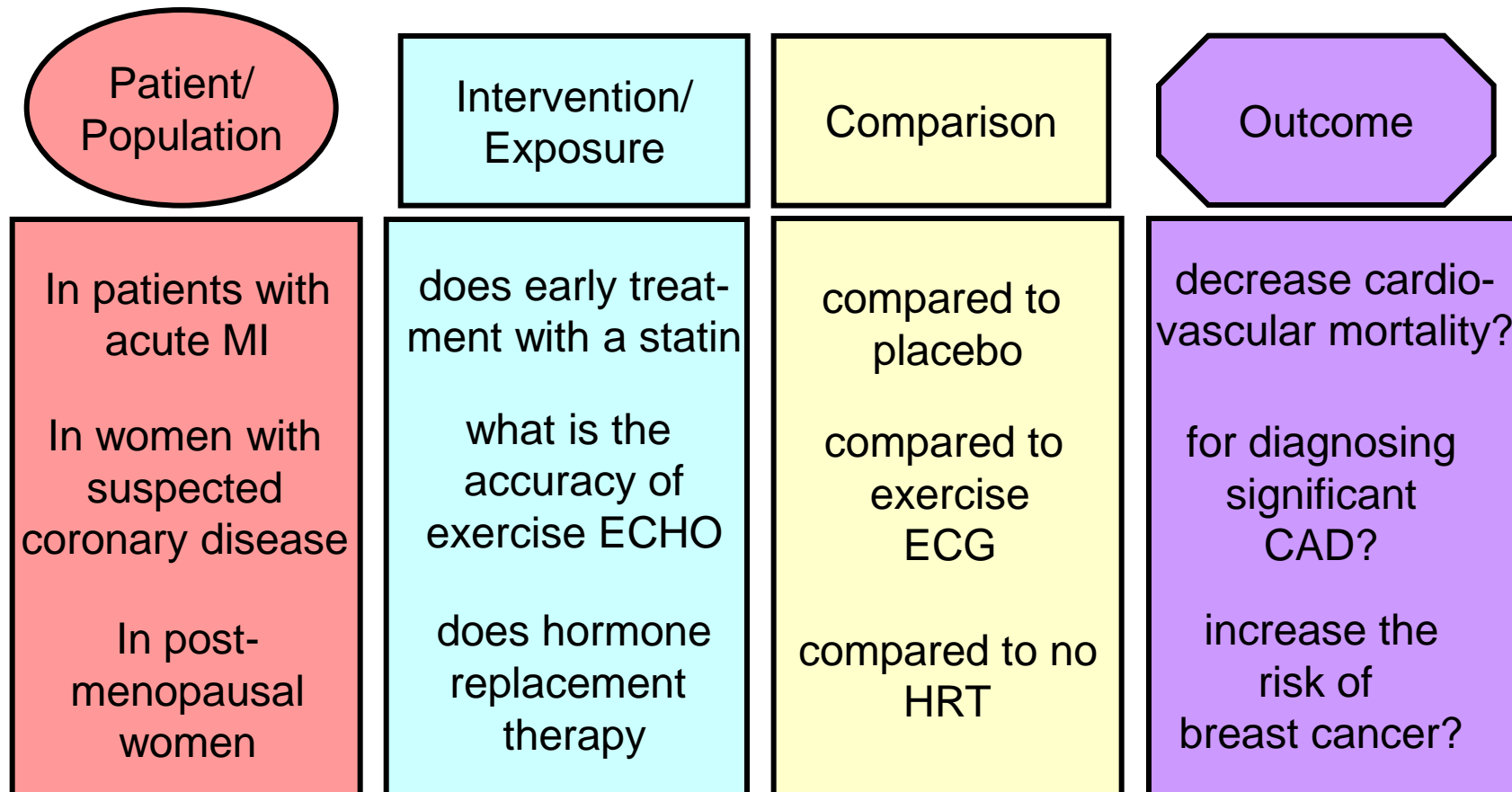
- The first and most important decision in preparing a review is to determine its focus

- This is best done by asking clearly framed questions.

- Define a four part clinical question, breaking the question down into its component parts

Question components: **PICO**

- What types of   **P**atients?

- What types of   **I**nterventions?

- What types of   **C**omparison?

- What types of   **O**utcomes?

طراحی سئوال بالینی در قالب PICO

Components of Clinical Questions

Patient/Population	Intervention/Exposure	Comparison	Outcome
In patients with acute MI	does early treatment with a statin	compared to placebo	decrease cardio-vascular mortality?
In women with suspected coronary disease	what is the accuracy of exercise ECHO	compared to exercise ECG	for diagnosing significant CAD?
In post-menopausal women	does hormone replacement therapy	compared to no HRT	increase the risk of breast cancer?

مراحل انجام مطالعه مروری نظام‌مند

Formulating review questions

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Searching & selecting studies

↓

Study quality assessment

↓

Extracting data from studies

↓

Data synthesis

Selecting studies

- performing a comprehensive, objective, and reproducible search of the literature
- selecting studies which meet the original inclusion and exclusion criteria

can be the most time-consuming and challenging task in preparing a systematic review

منابع اطلاعاتی مورد استفاده در مطاعات مروری نظام‌مند

- **Electronic databases**
  - MEDLINE and EMBASE
  - The Cochrane Central Register of Controlled Trials (CENTRAL)
- **Conference proceedings & abstract books**
- **Hand searching**
- **"Grey literature"** (thesis, Internal reports, pharmaceutical industry files)
- **Checking reference lists**
- **Unpublished sources** known to experts in the specialty (seek by personal communication)
- **Raw data** from published trials

Generating A Search Strategy
تولید یک راهبرد جستجو

- Multiple electronic databases and the internet using a range of Boolean search-terms

- Foreign language searches

- Include grey literature to avoid publication bias (see subsequent slides)

- Search bibliographies and contact experts
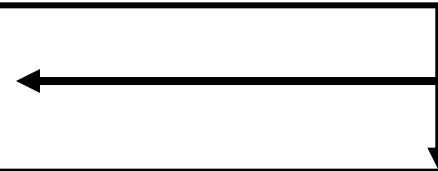
مراحل انجام مطالعه مروری نظام‌مند (۳)

Formulating review questions

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Searching & selecting studies

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Study quality assessment

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Extracting data from studies

↓

Data synthesis

Appraising Study Quality

- There is no such thing as a perfect study, all studies have weaknesses, limitations, biases

- Interpretation of the findings of a study depends on design, conduct and analysis, as well as on the population, interventions, and outcome measures

- The researchers in a primary study did not necessarily set out to answer your review question

مراحل انجام مطالعه مروری نظام‌مند (٤)
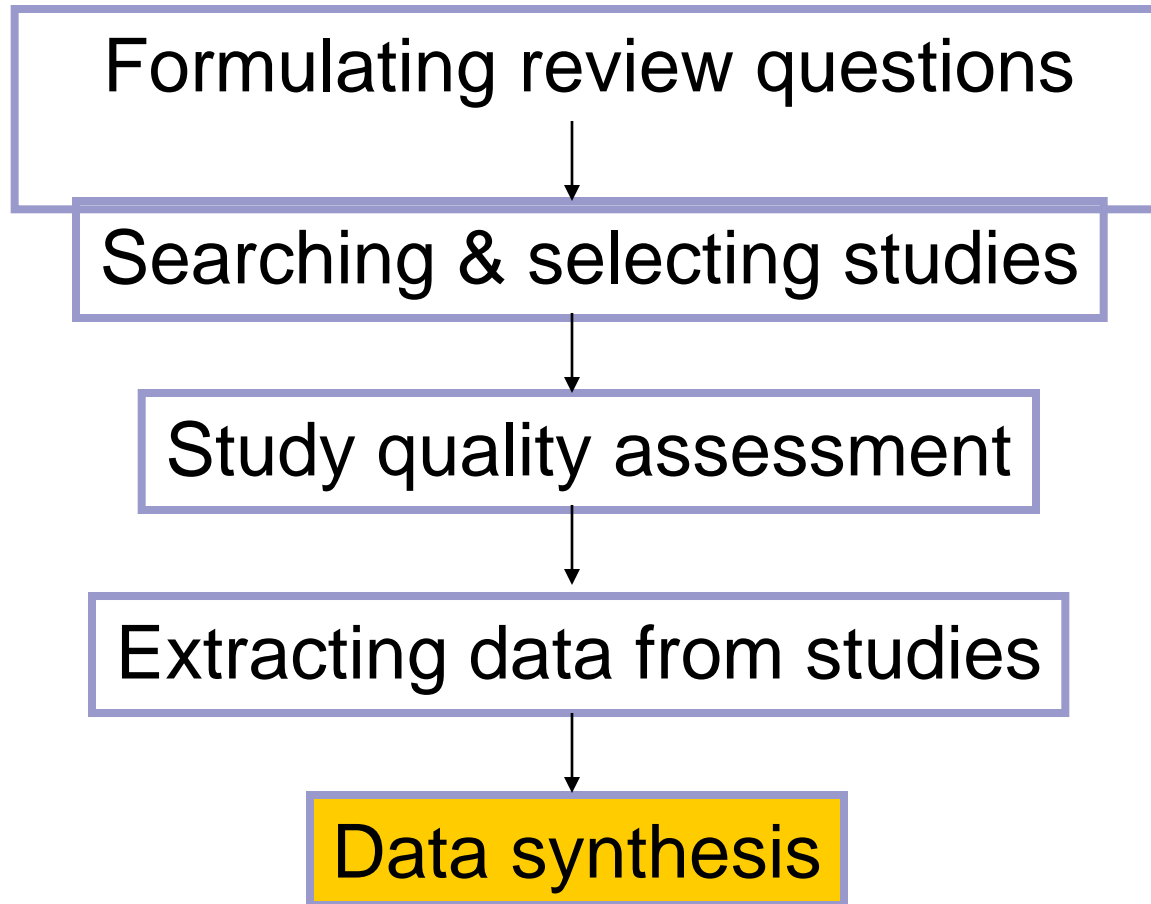
Formulating review questions

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Searching & selecting studies

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Study quality assessment

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Extracting data from studies

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Data synthesis

مراحل انجام مطالعه مروری نظام‌مند (۵)

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┌─────────────────────────────────────────┐
│     Formulating review questions        │
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│      Searching & selecting studies      │
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│       Study quality assessment          │
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│      Extracting data from studies       │
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┌─────────────────────────────────────────┐
│            Data synthesis               │
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Meta-Analysis

- when an overview incorporates a specific statistical strategy for assembling the results of several studies into a single estimate

اگر میل داشتید Email بزنید !

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