What is Evidence-Based Medicine?

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Some slides are adopted from

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طبق آمار منتشر شده در آمریکا سالانه بطور متوسط

۱۶۰۰۰ نفر به علت ایدز

۳۲۰۰۰ نفر بعلت سرطان سینه

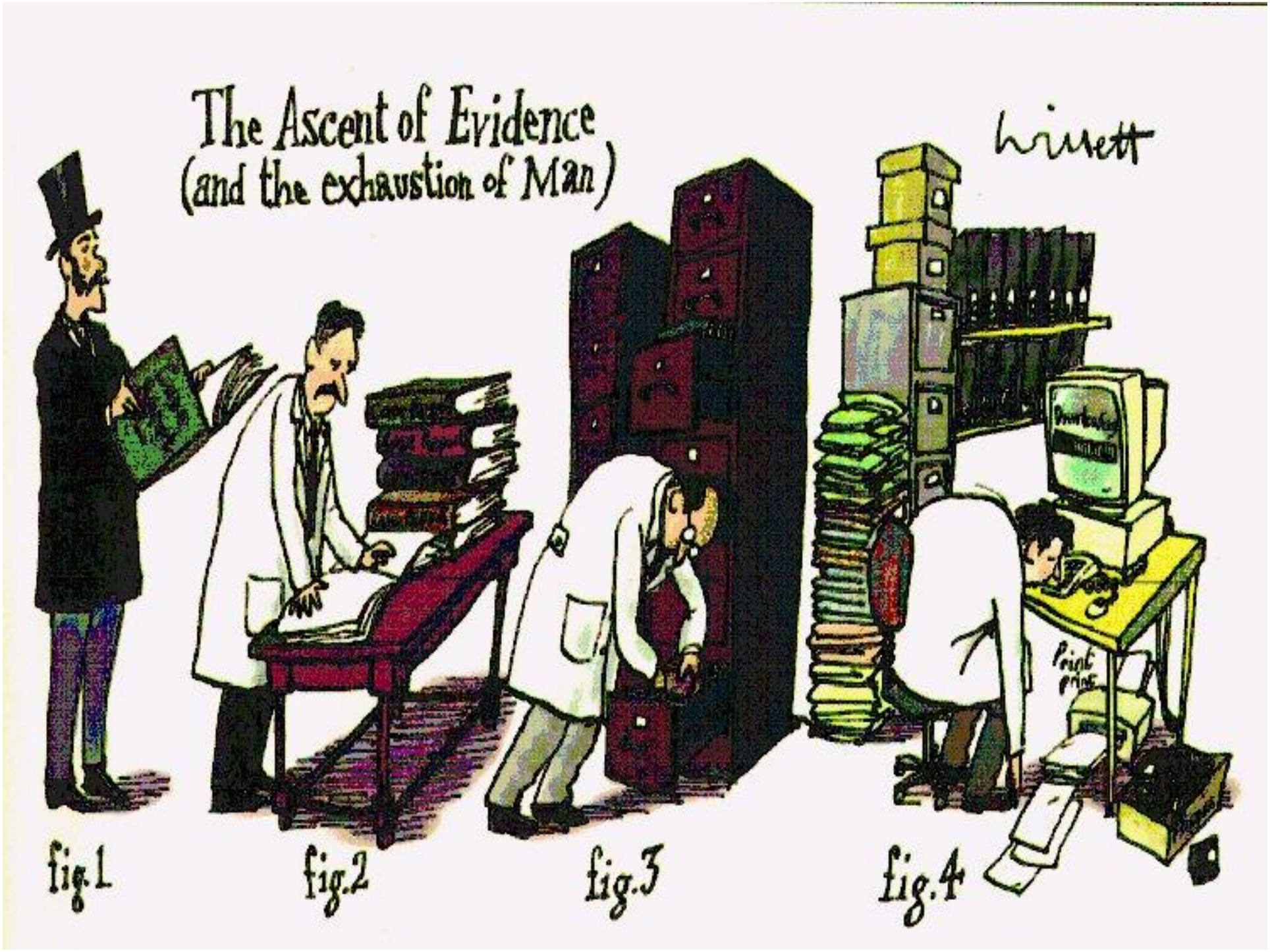
۲۳۰۰۰نفر بعلت تصادفات

و ۳۳۰۰۰ تا ۹۸۰۰۰نفربعلت خطای پزشکان

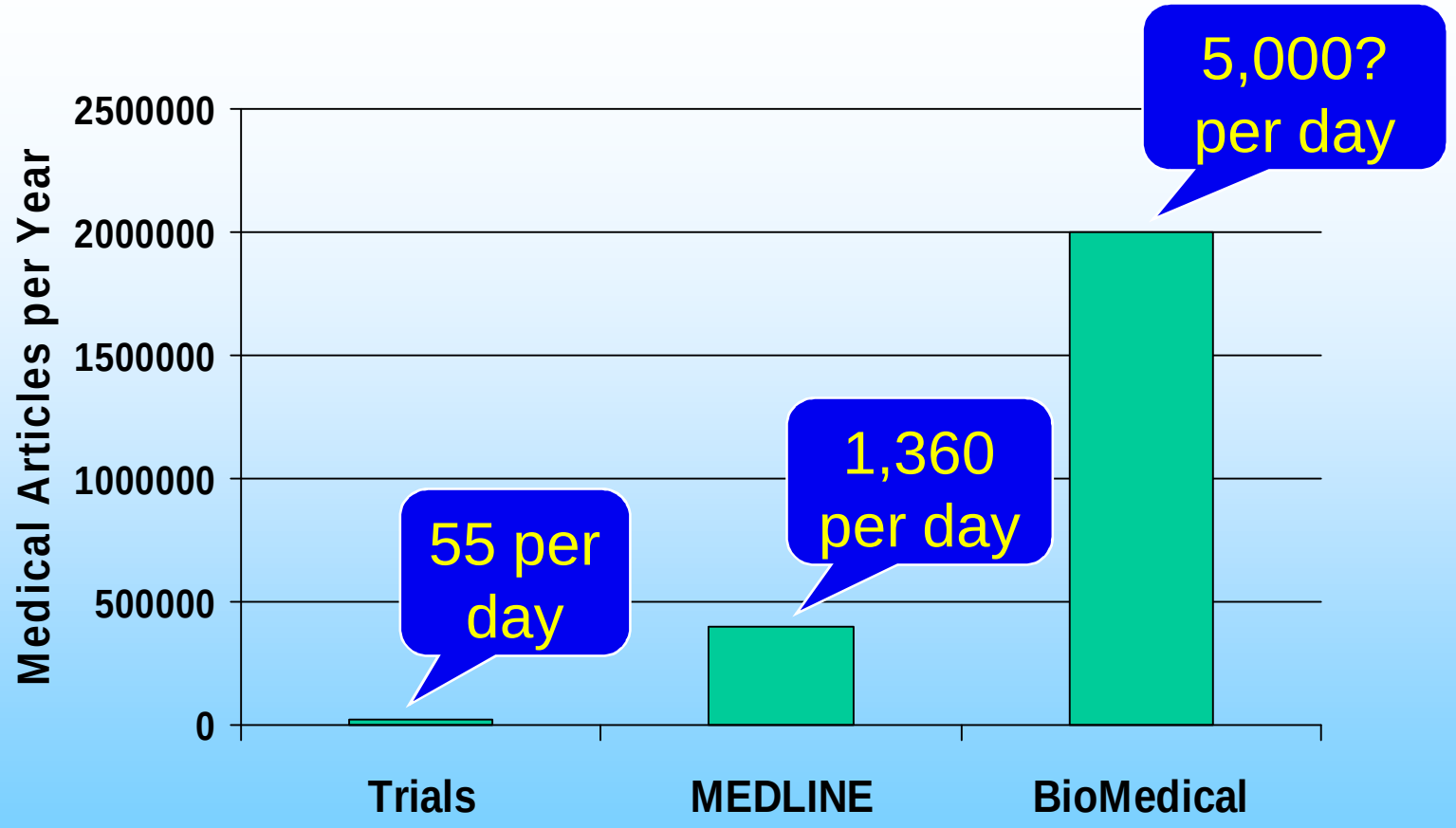
جان خودراازدست می دهند

به طور متوسط براي پزشكان به ازاي هر مريض بستري ٥ سوال و به ازاي هر ٣ مريض سرپايي ٢ سوال پيش ميآيد كه پاسخ آن را نمي دانند.

درمواردي كه اين سوالات پاسخ داده شد ه اند، در ٣٠ % مواردتصميم گيري باليني و در ١٠ % موارد پيامد بيماري تغييرمي كند.



Volume of new information a major barrier



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

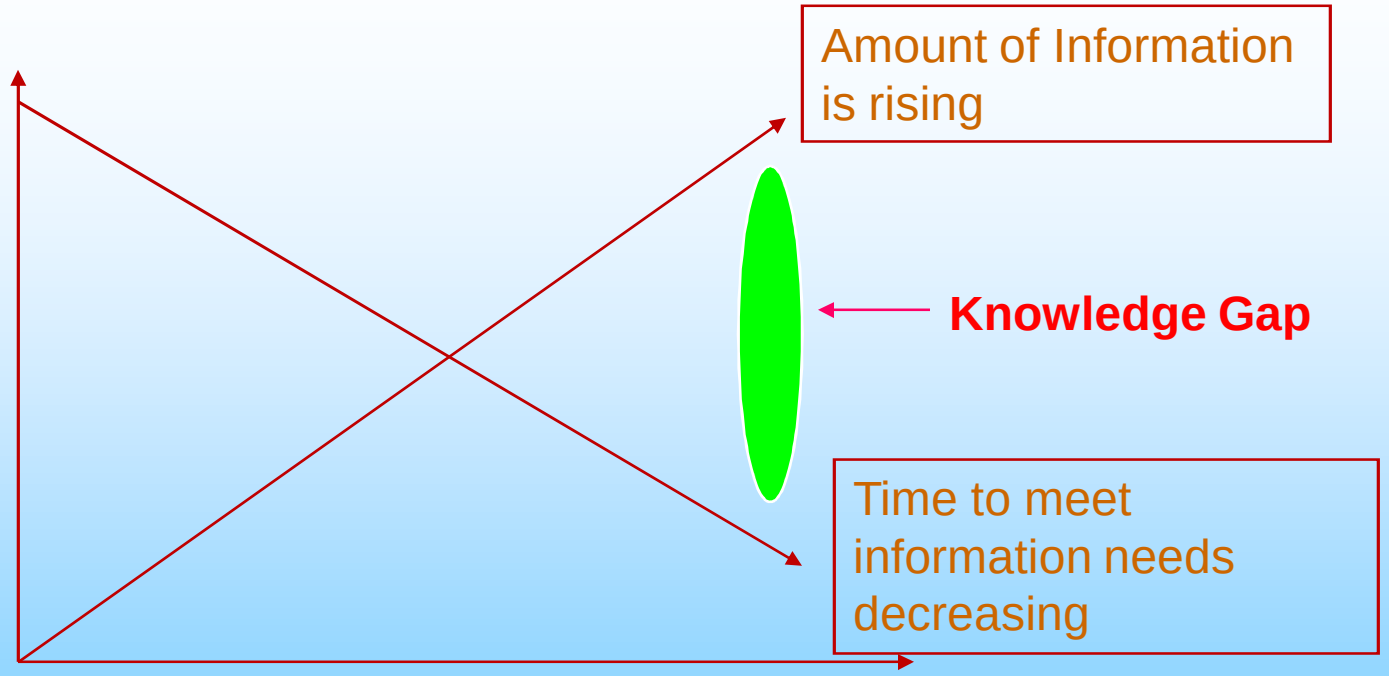
Davidoff F et al. (1995)

***EBM; A new journal* to help doctors identify the information they need. BMJ 310:1085-86.**

از زمان توليد اطلاعات تا ورود آن به حيطه كار پزشكان سال ها طول مي كشد. يك درمان موثر به طور متوسط ۱۰ سال بعد از اينكه كارآيي آن ثابت شد وارد كتاب مي شود. گاه توصيه آن تا ۱۰ سال بعد از ثابت شدن بي اثر يا مضر بودن آن ادامه مي يابد.

- اطلاعات پزشكي از درجه اعتباربسيار متفاوتي برخوردارند و پزشكان توانايي كافي براي نقد اطلاعات و جدا كردن اطلاعات معتبر از غير معتبر را ندارند. در حاليكه حتي در ژورنال هاي خيلي سطح بالا هم تعداد اندكي از مقالاتي كه چاپ مي شوند هم كيفيت بالا و هم اهميت بالايني دارند.

Knowledge Gap



The Knowledge Gap

Can’t I trust the editors?

Percent of articles meeting quality criteria

NEJM	12.6%
Ann Int Med	7.6%
JAMA	7.2%
Lancet	6.2%
BMJ	4.4%
Arch Int Med	2.4%

Medical Publishing

Annually:

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

MEDLINE:

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

Types of Medical articles

- **Original Article**
- **Review Article**
- **Case Reports**

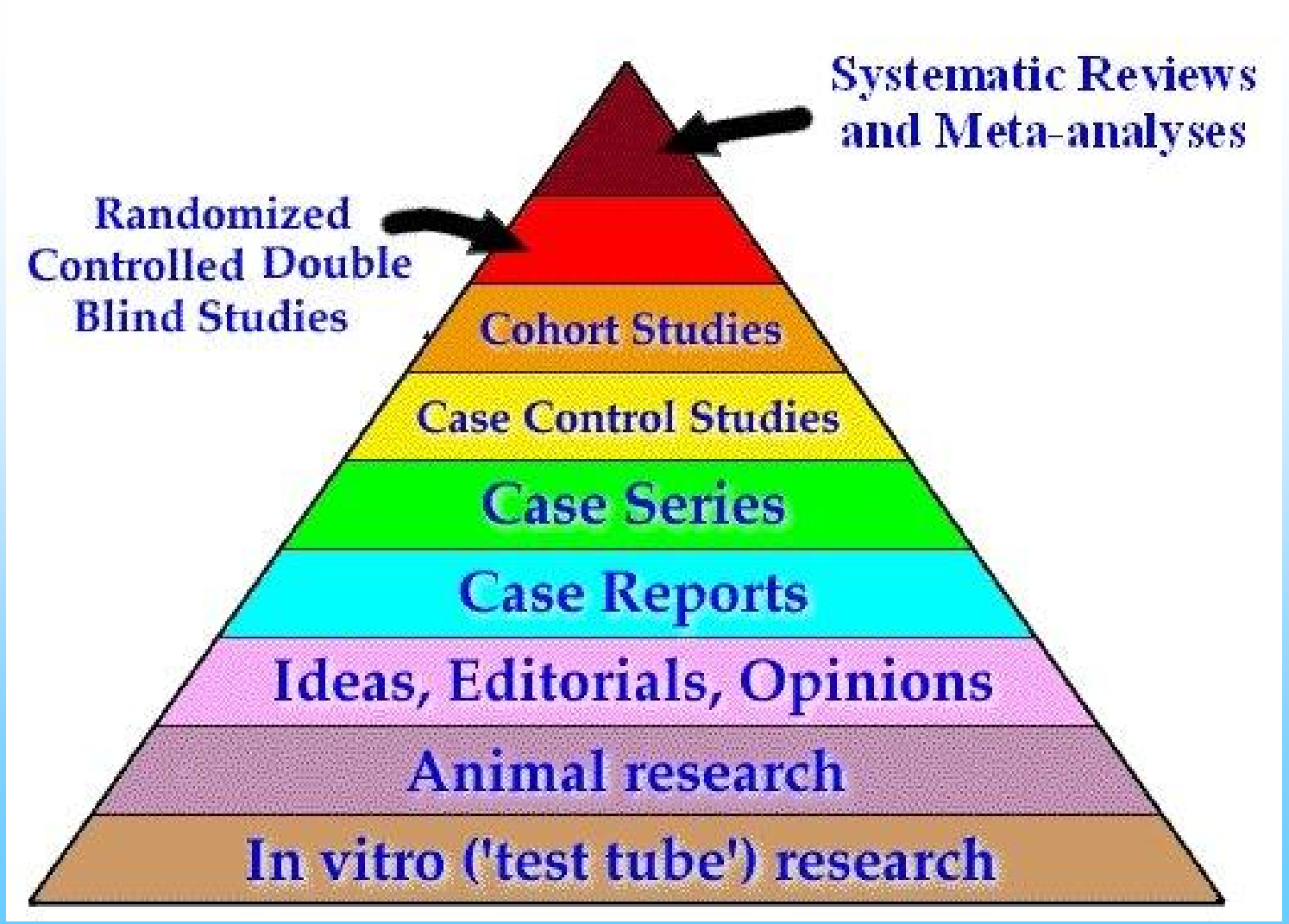
Primary studies

- Experiments
- Clinical trials
- Surveys

Secondary studies

- Reviews (Overviews)
  - Narrative reviews
  - Systematic reviews & Meta-analyses
- Guidelines
- Decision analyses
- Economic analyses

Hierarchy of studies



EBM History

- G. Guyatt from McMaster University in 90s
- Sackett in 1995 defined EBM
  - “Our clinical decision making should be based on the best scientific available evidence”

What is Evidence?

Evidence is anything used to determine or demonstrate the truth of an assertion.

- **Scientific evidence** is evidence which serves to either support or counter a scientific theory or hypothesis.
- In scientific research **evidence** is accumulated through observations of phenomena occur in the natural world, or created as experiments in a laboratory

What is ‘level of evidence’?

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

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

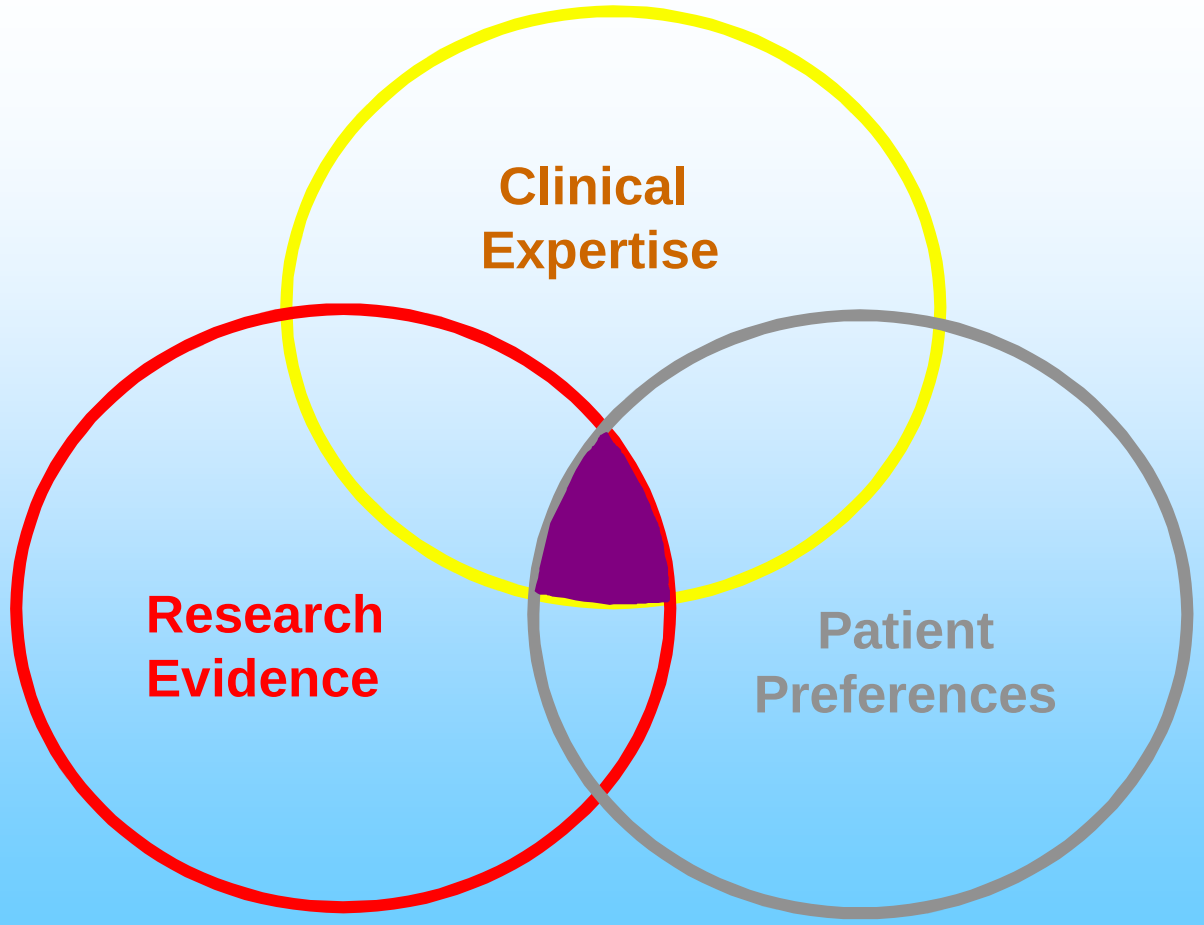
Adapted from: Sackett DL et al. *Evidence-Based Medicine: How to Practice and Teach EBM*. 2nd ed. Churchill Livingstone; 2000.

What is Evidence-Based Medicine?

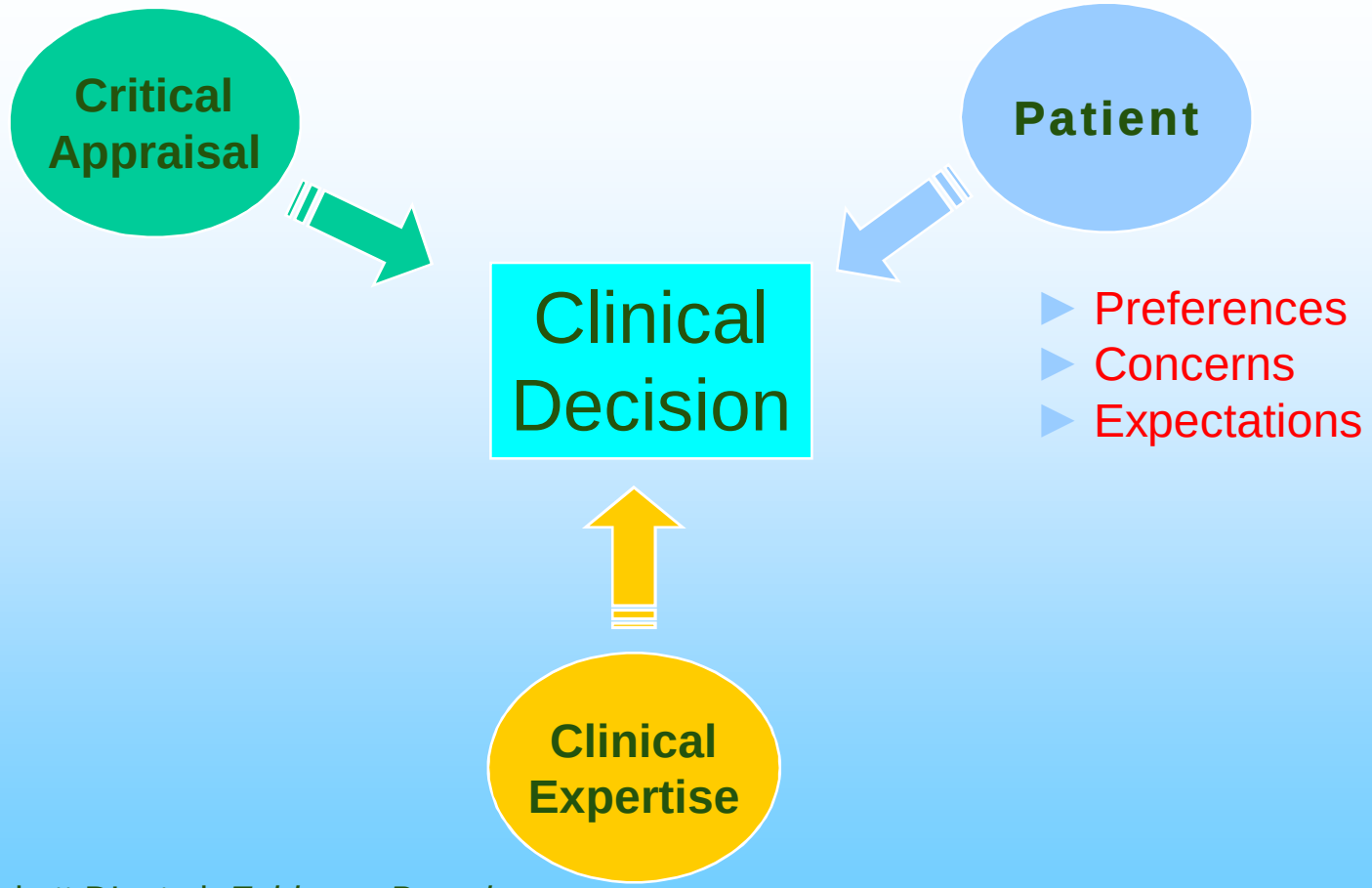
"Evidence-based medicine is the integration of best research evidence with clinical expertise and patient values"

- *Sackett & Straus*

EBM - What is it?



Integrate Findings With Clinical Expertise and Patient Needs



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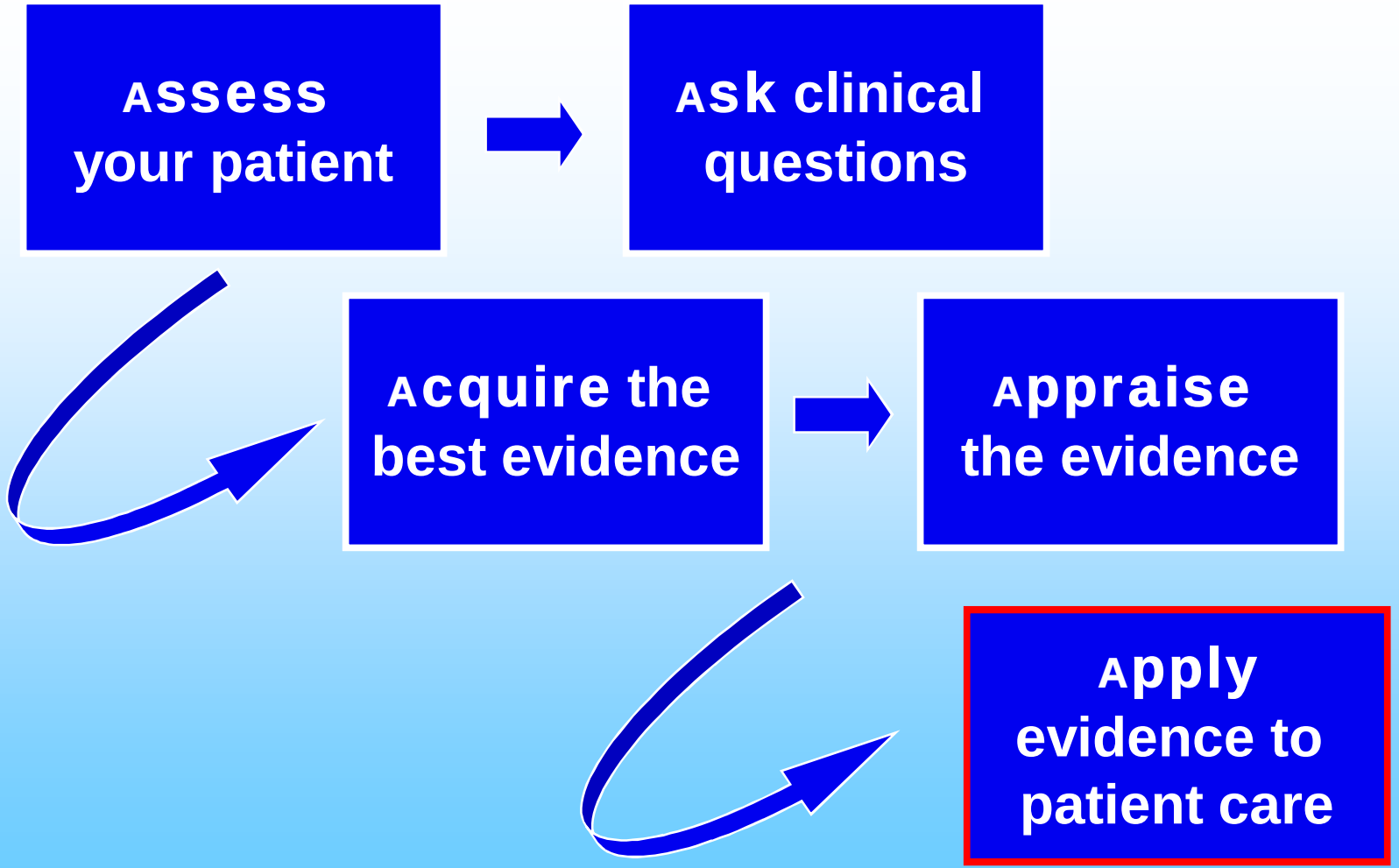
EBM Steps

1. **Ask** your clinical question
2. **Search** your literature for answer
3. **Appraise** the retrieved documents
4. **Apply** your findings
5. **Evaluate** the performance

EBM Method

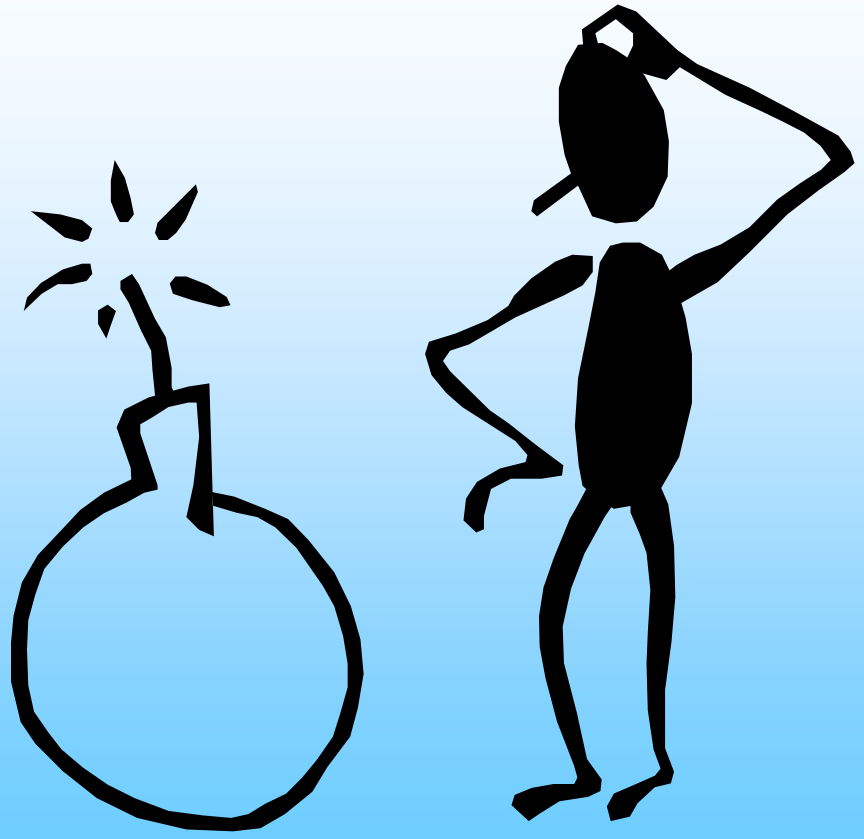


What are the limitations of EBM?

- First, the need to develop new skills in searching and critical appraisal

- **Second, busy clinicians have limited time to master and apply these new skills, and the resources required for instant access to evidence are often woefully inadequate in clinical settings.**
- **Finally, evidence that EBM "works" has been late and slow to come.**

Was it clear enough !



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موفق باشيد