

Evidence-based medicine — a paradigm ready to be challenged?

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Introduction

Definition of a scientific revolution according to Kuhn:

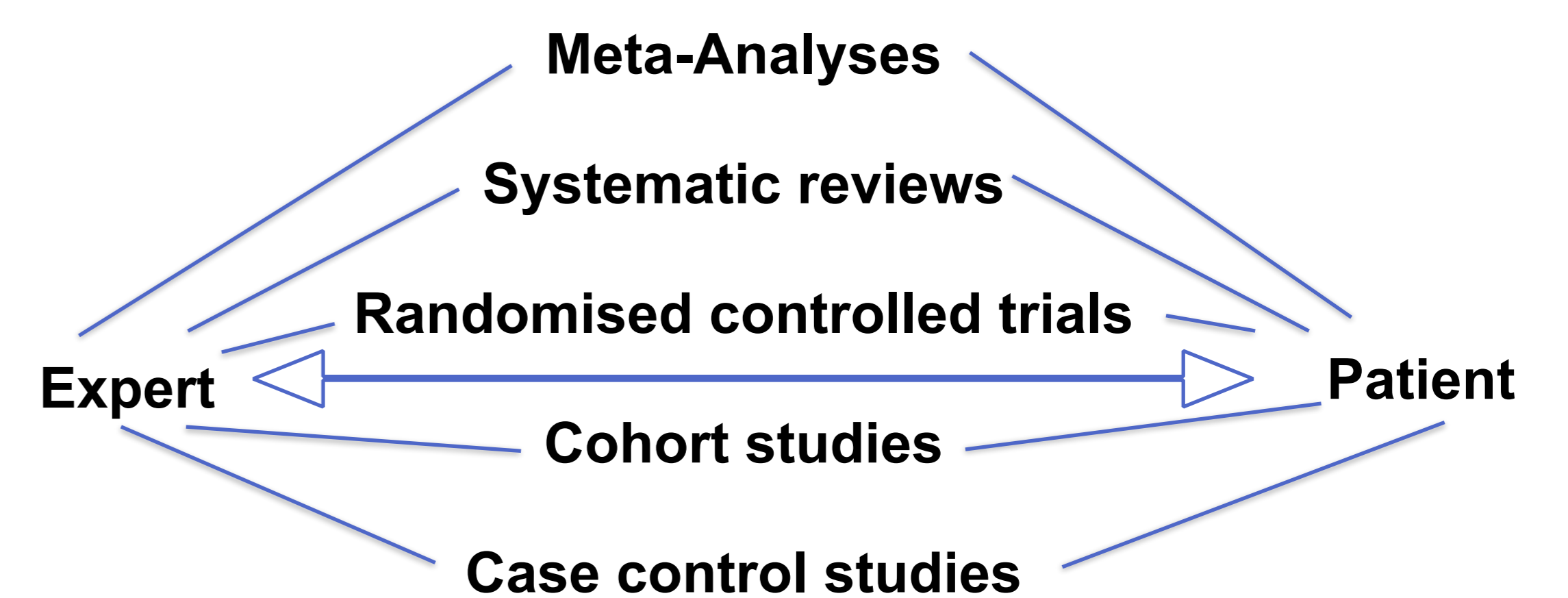
A scientific revolution is a shift in scientific methodology and its worldview, the old paradigm, triggered by a revolutionary process that leads to a new methodology and worldview, the new paradigm, which is “incommensurable” with the old, meaning that scientists have to choose to perform science only in one paradigm. Scientists of each paradigm cannot even communicate meaningfully with each other, since because of the shift, they do not even speak the same scientific language anymore.

- Is EBM a “new paradigm” in the science and art of medicine?
- Evidence is supposed to be the foundation of medical research and medical practice, but what transfers evidence into “usable” evidence for the clinician treating the individual patient?
- Evidence hierarchies are everywhere, but they only portray an “idealised” version of quantitative evidence, not its usability. Should we hold on to them then?

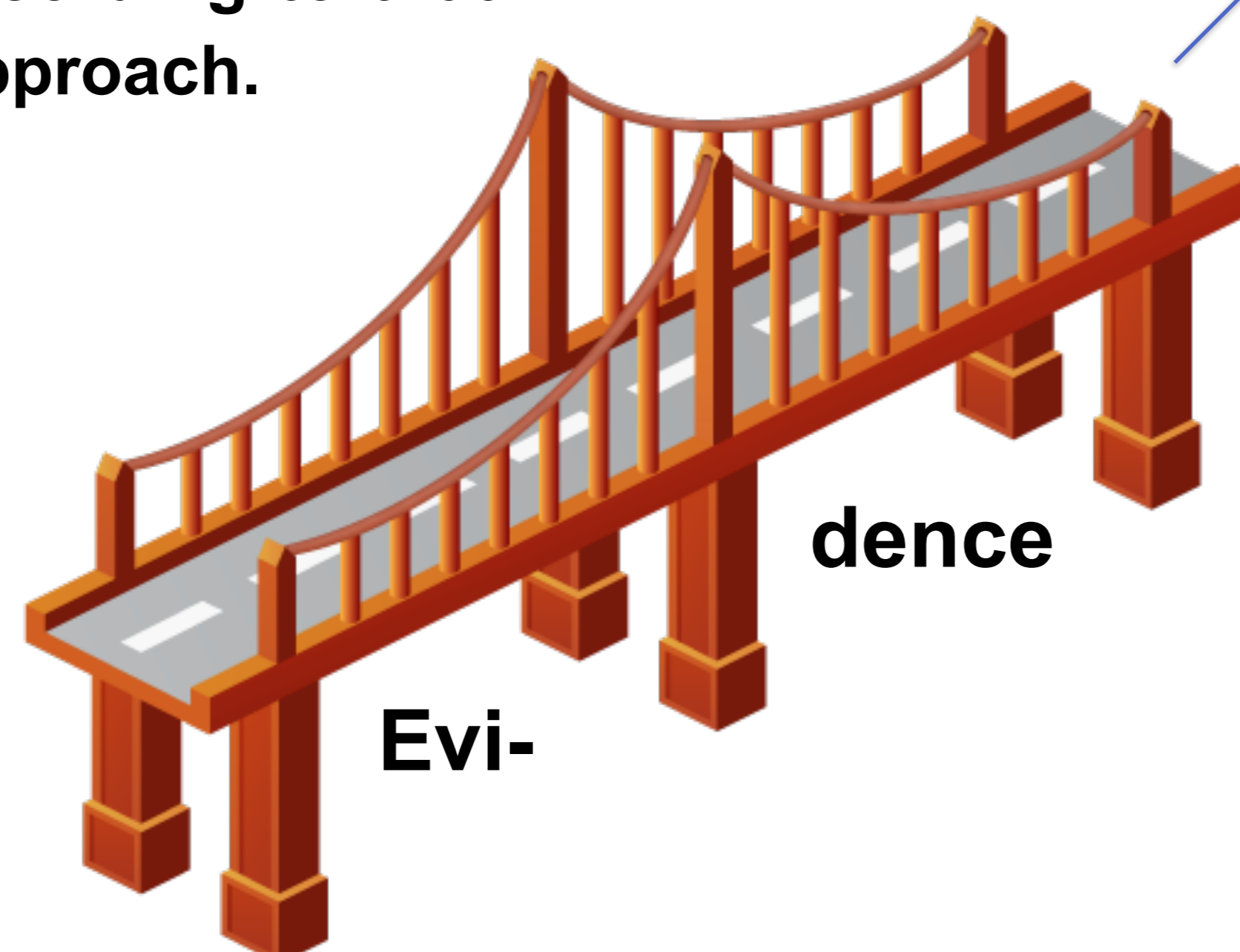
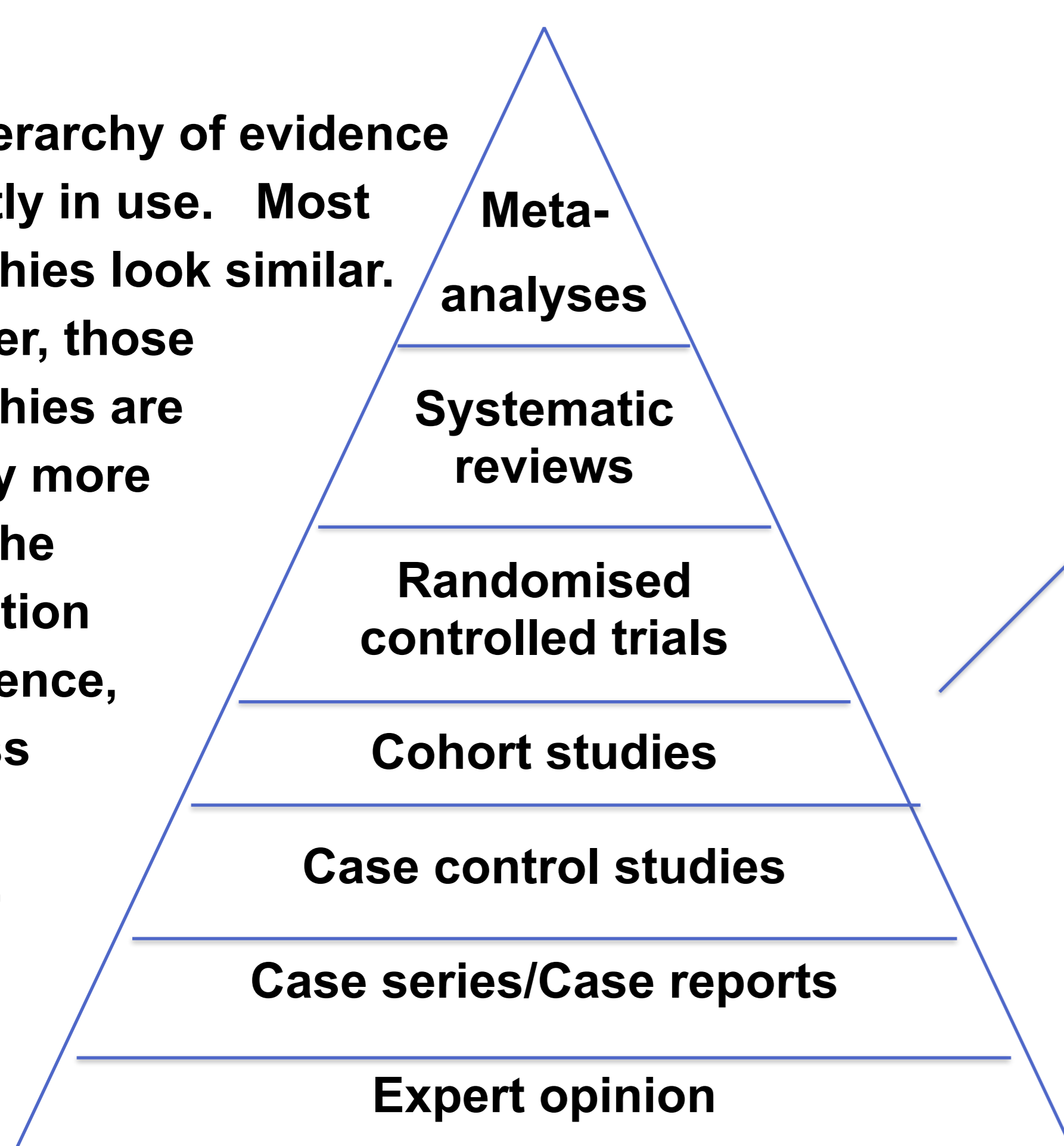
EBM — a Research Programme

- EBM is not a scientific paradigm in the Kuhnian sense, but a necessary measure in medicine to incorporate the rapid medical scientific progress between the 1950’s and the 1990’s into everyday medical practice and teaching, thereby making use of the available information technology, i.e. the internet.
- Evidence and its proper use can be the “bridge” between an old and a new practice of EBM.
- In order for evidence to be a successful “bridge”, the “new” EBM should be clearly divided into research, which by its very nature looks at disease on the population level, and medical practice, dealing with the individual.
- Evidence should be ranked in its importance according to that division. There cannot be a “one-size - fits- all” approach.

Quality, not Quantity, counts!



One hierarchy of evidence currently in use. Most hierarchies look similar. However, those hierarchies are actually more about the production of evidence, and less about its use.



Evidence is like the foundation of a bridge. It needs to be robust to successfully inform medicine, but the evidence user and the evidence producer have to be aware that there can be invisible flaws, hiding beneath the water line, so to speak.

- Results of RCTs are informative about the population level, not necessarily for the individual patient.
- A “good reason for belief” is a good start for research, diagnosis and treatment.
- Experts need to all forms of best evidence in order to conduct research *and* to inform the patients.
- Every trial needs to be published, regardless of its outcome, so that systematic reviews can encompass the entire body of evidence.
- Evidence changes over time due to more research, and that necessary change needs to be taken into account.

Conclusion

- EBM should not be understood as the golden rule, or a new paradigm, but as a scientific program that encompasses the art and the science of medicine and that can and should be shifted back to patient centred care by using all the available “good” evidence for the treatment of the individual patient.
- EBM should be clearly divided into research and practice in order to gain information about the population level, as well as making it usable for the individual patient.
- The more evidence we have, the better. Evidence is only good in high doses, quite contrary to some medication.

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