

# Teaching Tips

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## Department of Family & Social Medicine Faculty Development E-Newsletter



### Clinical Reasoning - Part 2

In Part 2 of this Teaching Tips series, we will share highlights of two decades of work in the area of clinical reasoning and discuss what this means for teaching in the clinic.

#### 1980s: A Decade of Knowledge and Memory

Because diagnostic accuracy was not highly correlated with specific thought processes, research shifted to the role of memory and recall and was modeled after research on chess experts. Replicating the findings in medicine, however, failed; expertise was not related to amount of knowledge or the ability to recall patient data, which led to exploring how doctors mentally organize knowledge.

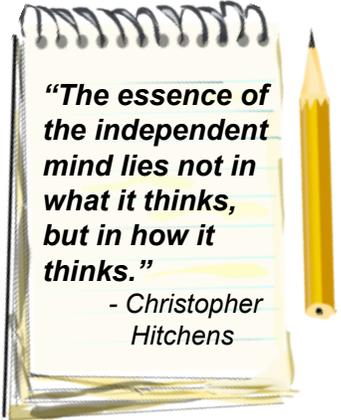
#### 1990s: Mental Representations and Cognitive Organization of Knowledge

Broad categories of research include integration of basic science, schemas, and intuition. Except in very complex cases, experts use less basic science than novices. However, diagnostic accuracy is often better for students who learned the basic science explanation than for those who simply memorized signs and symptoms; a good reason to **integrate basic science discussions** when asking students to reason through a case. Schemas are cognitive frameworks that help organize and interpret information. Specific examples are beyond the scope of this issue, but they are usually based on previous experience and allow for quick decisions. Although sometimes linked to biases, using schemas (sometime called heuristics) has also been associated with diagnostic accuracy and should not be considered inferior to analytic models in all cases. Similarly, studies instructing learners to use intuition have shown equal to greater diagnostic accuracy than analytic reasoning alone.

#### What Does This Mean and How Do We Teach It?

Medical school curricula often discourage the use of schemas in clinical reasoning, probably because novices lack the knowledge and experience to use them effectively. Yet, physicians do not use analytic models for each patient visit, so why teach students that intuition is the enemy? Clinicians can:

- **point out scenarios** when it might be appropriate to trust patterns or intuition and when it is absolutely necessary to seek evidence for verification.
- **role model** the use of schemas by sharing their own thought processes about one or two cases each day.
- **work with learners as reflective partners** to improve and understand these intuitive processes better.



**"The essence of the independent mind lies not in what it thinks, but in how it thinks."**

- Christopher Hitchens

**NEXT MONTH:  
Combined strategies**

#### References / Resources:

Norman, G. (2005). Research in clinical reasoning: past history and current trends. *Medical Education*, 39, 418-427.

Dhaliwal, G. Going with your gut. *J Gen Intern Med*, 26(2), 107-109.

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*Teaching Tips* is a monthly e-newsletter for Faculty, Residents, and Community Preceptors sponsored by the DFSM Faculty Development Fellowship at Montefiore Medical Center. *Teaching Tips* will include practical teaching techniques for busy physicians who want to enhance teaching and learning at their clinical practices. If you have any questions, comments, or suggestions for future topics for *Teaching Tips* please contact Ellen Tattelman at [etattelm@montefiore.org](mailto:etattelm@montefiore.org) or Molly FitzGerald at [mofitzge@montefiore.org](mailto:mofitzge@montefiore.org).