

# Teaching Tips

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

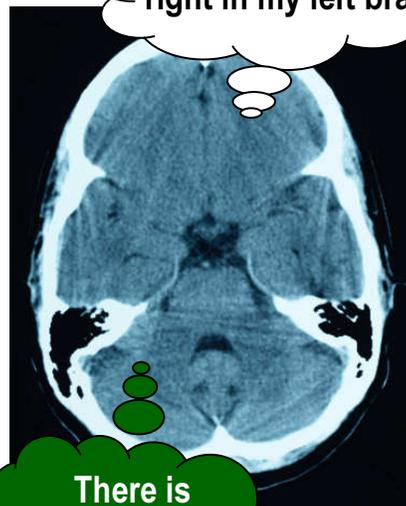


### Supporting Smart Synapses: Changing the Brain to Improve Learning

Recent research has demonstrated that the nervous system not only impacts learning, but changes as a result of that learning. From memory to problem solving, there is a direct link between biology and the ability to learn. Consider using the following neurologically-studied educational strategies in clinic.

1. **Repetition** results in knowledge retention because neural processes become more efficient. Plan to revisit concepts with students using different patients over the entire clerkship or elective.
2. Students decide where to focus their energy based on internal and external **motivations**. Satisfaction with learning itself taps into the brain's capacity to provide reward signals more often, which is shown to facilitate learning. Formative feedback and self-assessment, then, may promote more effective learning than using only end-of-course summative evaluations.
3. **Visualization** and **mental rehearsal** improve learning, but it is mediated by experience. Strategies like reflection are often more effective for residents or 4th-year students than those just entering medical school.
4. **Active engagement** promotes positive changes in neural circuitry compared to more didactic methods.
5. **Learning styles** correlate with specific types of neural responses. Addressing multiple learning styles to teach the same concept, then, can increase the chance of reaching more learners.
6. **Stress** can be good or bad. Small amounts of stress, often created when students are asked to answer questions or present work, can improve memory.
7. **Fatigue** and **multitasking** are shown to decrease the ability for learners to shift information from working to long-term memory. Scatter more difficult tasks throughout a session and suggest information gathering around one topic at a time. Sleep also improves one's ability to generate new ideas.

There is nothing right in my left brain



There is nothing left in my right brain

#### References / Resources:

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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), Jennifer Purcell at [jennifer.purcell@einstein.yu.edu](mailto:jennifer.purcell@einstein.yu.edu), or Stacia Maher at [smaher@montefiore.org](mailto:smaher@montefiore.org).