1. Use **self-explanation**. Pause often, and explain the material to yourself out loud or in writing.

Hinze, S. R., Wiley, J., & Pellegrino, J. W. (2013). The importance of constructive comprehension processes in learning from tests. *Journal of Memory and Language*, *69*(2), 151–164. https://doi.org/10.1016/j.jml.2013.03.002

Carpenter, S. K., Lund, T. J. S., Coffman, C. R., Armstrong, P., I., Lamm, M. H., & Reason, R. D. (2016). A classroom study on the relationship between student achievement and retrieval-enhanced learning. *Educational Psychology Review*, *28*(2), 353–375.

**Best**

**Acetylcholine** (**ACh**) is an [organic chemical](https://en.wikipedia.org/wiki/Organic_chemical) that functions in the brain and body of many types of animals (including humans) as a [neurotransmitter](https://en.wikipedia.org/wiki/Neurotransmitter)—a chemical message released by nerve cells to send signals to other cells, such as neurons, muscle cells and gland cells.[[1]](https://en.wikipedia.org/wiki/Acetylcholine#cite_note-Tiwari_413–420-1)

**Pause! What is the main idea?**

Its name is derived from its chemical structure: it is an [ester](https://en.wikipedia.org/wiki/Ester) of [acetic acid](https://en.wikipedia.org/wiki/Acetic_acid) and [choline](https://en.wikipedia.org/wiki/Choline). Parts in the body that use or are affected by acetylcholine are referred to as [cholinergic](https://en.wikipedia.org/wiki/Cholinergic). Substances that increase or decrease the overall activity of the cholinergic system are called [cholinergics](https://en.wikipedia.org/wiki/Cholinergic) and [anticholinergics](https://en.wikipedia.org/wiki/Anticholinergic), respectively.

**Pause! What inference can I make about esters?**

Acetylcholine is the neurotransmitter used at the [neuromuscular junction](https://en.wikipedia.org/wiki/Neuromuscular_junction)—in other words, it is the chemical that [motor neurons](https://en.wikipedia.org/wiki/Motor_neuron) of the nervous system release in order to activate muscles. This property means that drugs that affect cholinergic systems can have very dangerous effects ranging from paralysis to convulsions. Acetylcholine is also a neurotransmitter in the [autonomic nervous system](https://en.wikipedia.org/wiki/Autonomic_nervous_system), both as an internal transmitter for the [sympathetic nervous system](https://en.wikipedia.org/wiki/Sympathetic_nervous_system) and as the final product released by the [parasympathetic nervous system](https://en.wikipedia.org/wiki/Parasympathetic_nervous_system).[[1]](https://en.wikipedia.org/wiki/Acetylcholine#cite_note-Tiwari_413–420-1) Acetylcholine is the primary neurotransmitter of the parasympathetic nervous system.[[2]](https://en.wikipedia.org/wiki/Acetylcholine#cite_note-2)

**Pause! Let me explain this back to myself.**

https://openstax.org/books/anatomy-and-physiology

**Worst (Read straight through)**

**Acetylcholine** (**ACh**) is an [organic chemical](https://en.wikipedia.org/wiki/Organic_chemical) that functions in the brain and body of many types of animals (including humans) as a [neurotransmitter](https://en.wikipedia.org/wiki/Neurotransmitter)—a chemical message released by nerve cells to send signals to other cells, such as neurons, muscle cells and gland cells.[[1]](https://en.wikipedia.org/wiki/Acetylcholine#cite_note-Tiwari_413–420-1) Its name is derived from its chemical structure: it is an [ester](https://en.wikipedia.org/wiki/Ester) of [acetic acid](https://en.wikipedia.org/wiki/Acetic_acid) and [choline](https://en.wikipedia.org/wiki/Choline). Parts in the body that use or are affected by acetylcholine are referred to as [cholinergic](https://en.wikipedia.org/wiki/Cholinergic). Substances that increase or decrease the overall activity of the cholinergic system are called [cholinergics](https://en.wikipedia.org/wiki/Cholinergic) and [anticholinergics](https://en.wikipedia.org/wiki/Anticholinergic), respectively. Acetylcholine is the neurotransmitter used at the [neuromuscular junction](https://en.wikipedia.org/wiki/Neuromuscular_junction)—in other words, it is the chemical that [motor neurons](https://en.wikipedia.org/wiki/Motor_neuron) of the nervous system release in order to activate muscles. This property means that drugs that affect cholinergic systems can have very dangerous effects ranging from paralysis to convulsions. Acetylcholine is also a neurotransmitter in the [autonomic nervous system](https://en.wikipedia.org/wiki/Autonomic_nervous_system), both as an internal transmitter for the [sympathetic nervous system](https://en.wikipedia.org/wiki/Sympathetic_nervous_system) and as the final product released by the [parasympathetic nervous system](https://en.wikipedia.org/wiki/Parasympathetic_nervous_system).[[1]](https://en.wikipedia.org/wiki/Acetylcholine#cite_note-Tiwari_413–420-1) Acetylcholine is the primary neurotransmitter of the parasympathetic nervous system.[[2]](https://en.wikipedia.org/wiki/Acetylcholine#cite_note-2) In the brain, acetylcholine functions as a [neurotransmitter](https://en.wikipedia.org/wiki/Neurotransmitter) and as a [neuromodulator](https://en.wikipedia.org/wiki/Neuromodulator). The brain contains a number of cholinergic areas, each with distinct functions; such as playing an important role in arousal, attention, memory and motivation.[[3]](https://en.wikipedia.org/wiki/Acetylcholine#cite_note-Kapalka_2010_pp._71–99-3)

https://openstax.org/books/anatomy-and-physiology

2. Read the passage **with the mindset you’ll be asked to make inferences**, not just learn facts. If you read expecting future higher-order questions, you’ll do better on both inferences and facts. If you read just for facts, you’ll miss these higher-order questions.

Hinze, S. R., Wiley, J., & Pellegrino, J. W. (2013). The importance of constructive comprehension processes in learning from tests. *Journal of Memory and Language*, *69*(2), 151–164. https://doi.org/10.1016/j.jml.2013.03.002  
Carpenter, S. K., Lund, T. J. S., Coffman, C. R., Armstrong, P., I., Lamm, M. H., & Reason, R. D. (2016). A classroom study on the relationship between student achievement and retrieval-enhanced learning. *Educational Psychology Review*, *28*(2), 353–375.

* “explain a phenomenon”
* “order [the] events in a scientific process”

Detail questions can often be answered from “information available in one sentence of the text” (Hinze, p. 154).

Inference involves the following:

* “integrating of information from multiple sentences”
* “predict what might happen in a novel situation”

3. Use **effort toward comprehension**. Don’t look at answers too soon. Pondering will increase long-term retention.

Auble, P., & Franks, J. (1978). The effects of effort toward comprehension on recall. *Memory & Cognition*, *6*(1), 20–25.

Auble, P. M., Franks, J. J., & Soraci, S. A. (1979). Effort toward comprehension: Elaboration or “aha!”? *Memory & Cognition*, *7*(6), 426–434. https://doi.org/10.3758/BF03198259

The home was small because the sun came out

The girl turned when her pet talked

What comes to mind? Wait 5 seconds before you turn the page!

Igloo Parrot

4. Relate new information with previously learned information. **Use schemas.**Sanford, D. R. (2021). *The Rowman & Littlefield guide for peer tutors*. Lanham : Rowman & Littlefield.

= =

How do I **DO** this? But, I do **KNOW** this

x in the denominator often looks confusing!

But, x in the numerator looks familiar (a known cross-multiply and divide problem is the **schema** here)

5. Use **generation effect** in small group study sessions. Allow time for every member to explain the concept (learning is suboptimal when a student only listens to another person explain something)

Abel, M., & Roediger, H. L., III. (2018). The testing effect in a social setting: Does retrieval practice benefit a listener? *Journal of Experimental Psychology: Applied*, *24*(3), 347–359. https://doi.org/10.1037/xap0000148

6. Keep on **studying after you have an “aha” moment** so you can **routinize schemas**. The aha moment by itself is not sufficient for long-term memory (Sanford, 2021). And, don’t study something brand new immediately afterwards as you need time to rest and consolidate your memory (Shea & Upton, 1976).

Sanford, D. R. (2021). *The Rowman & Littlefield guide for peer tutors*. Lanham : Rowman & Littlefield.

Shea, J. B., & Upton, G. (1976). The effects on skill acquisition of an interpolated motor short-term memory task during the KR-delay interval. *Journal of Motor Behavior*, *8*(4), 277–281. https://doi.org/10.1080/00222895.1976.10735082

**Best**

Aha!! Now I understand!  
“I **wonder if there is anything else** I am overlooking…”

**Worst**

**Aha!!** Now I understand!  
***Close the textbook****.* “Let me go do…”

7. **Do not learn isolated facts**! Long-term memory has “no free-floating facts.” Integrate your knowledge and learn relationships!

Sanford, D. R. (2021). *The Rowman & Littlefield guide for peer tutors*. Lanham : Rowman & Littlefield.

**Best**

The Electoral College relates to the early conflict between the Virginia Plan and the New Jersey Plan. Fears that large states would dominate national politics was real. ***I know*** 100 of the 538 current electors represent 2 senators from each state, so at least 400 must be based on US Representative seats per state, but ***how do*** *I* calculate for DC? [***further reading***] Oh, 3 for DC and 435 for the States. How many does Georgia have…?

**Worst (memorize facts from one paragraph)**

538 electors in Electoral College

10 year census because of Article I, Section 2

270 electoral votes needed for Presidency

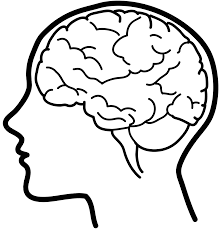
8. **Dual-coding** (learning with a combination of two senses, i.e., verbal and visual, as not to overload one channel) is an alternative theory to the now scientifically unproven “Learning Styles” theory, or VARK. A crossover interaction would be the key to prove “Learning Styles” (i.e., one method of teaching helping one group but reducing learning for another). This interaction is lacking in studies where self-described “auditory” learners were taught with text and “visual” learners were taught with audio; studies found no statistically significant differences in how students were taught.

Cuevas, J. (2016). An analysis of current evidence supporting two alternate learning models: Learning styles and dual coding. *Journal of Educational Sciences & Psychology*, *6*(1), 1–13.

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning Styles: Concepts and Evidence. *Psychological Science in the Public Interest*, *9*(3), 105–119.

Willingham, D.T., Hughes, E.M., and Dobolyi, D.G. (2015). The scientific status of learning styles theories. *Teaching of Psychology, 42*(3), 266-271. DOI: 10.1177/0098628315589505.

**Use Visuals** **Use Verbal (text)**



“Look carefully at the brainstem…”

**9. Limit exposure to false** information. Avoid negative suggestion. So, don’t take multiple choice practice quizzes (with false a, b, c, d choices) until you have **thoroughly learned the textbook material**! If you select an incorrect Multiple-choice question option, one is more likely to select the same incorrect choice again in the future.

People **judge false statements they have seen often as more true** than other false statements that they have not been exposed to before.

Don’t use practice multiple-choice (MC) quizzes too soon in your study session

a) False information

b)

c) False information

d) False information

e) False information

Jacoby, L. L., & Hollingshead, A. (1990). Reading student essays may be hazardous to your spelling: Effects of reading incorrectly and correctly spelled words. *Canadian Journal of Experimental Psychology*, *44*(3), 345–358.

Henry L. Roediger III, & Jeffrey D. Karpicke. (2006). The power of testing memory: Basic research and implications for educational practice. *Perspectives on Psychological Science*, *1*(3), 181–210.

10. Use quality **retrieval practice (combined with spaced retrieval)**, which is often better than simply rereading the passage.

**Best** **Worst**

Retrieve the passage from memory & ask questions Read over and over again

“Can the size of Virginia and New Jersey help me comprehend the concept?”

“Why did Connecticut originally support the New Jersey Plan but later propose the Great Compromise?

“The New Jersey Plan proposed equal state…”  
 “The New Jersey Plan proposed equal state…”

**The quality of retrieval is what counts!!**

* Use self-explanation during retrieval (as you did during initial reading). It’s elaboration and seeking to understand, not just thinking out loud (Bisra et al., p. 709).
* The best retrieval is free recall (writing, speaking out loud, etc.) or responding to essay prompts rather than taking quizzes that just test recognition
* It should be a low stakes/low pressure self-test or class quiz
* Drop well-learned material from further study, but NOT from periodic recall sessions

Studyall Testall Feedbackall Studymistakes **TestALL** Feedbackall

* The ease or difficulty of retrieval sometimes doesn’t matter for long-term retention
* Generate inferences
* Aim for a “coherent explanation”
* Comprehend the material rather than using rote memory recall
* Construct your thoughts to include relevant information from other sections, not just the single paragraph or passage you studied earlier (otherwise your recall could be too narrow and you forget broad connections)
* Do not view feedback as threatening
* Experiment timing with the **first retrieval practice**. 24 hours later may be the best. Re-testing after a few minutes or within the hour would not help long-term memory
* Retrieve (remember) a fairly complete set of information for it to be effective. If you can’t remember anything, you didn’t learn the material well enough or you waited too long to recall it.
* Some individuals with lack of background knowledge in the subject may benefit from additional study rather than retrieval (Minear et al. p. 1483-84)
* Procedural, math, problems may equally benefit from working additional problems rather than retrieval (Yeo & Fazio)

**Tutor Quote**s

“When studying for an exam, quiz yourself on the material or have someone else quiz you after a delay (a few hours or maybe a day after you have studied the material). This requires you to retrieve the information you have studied and will provide confirmation that you either understand the material or will highlight the areas where you need more study time. This will also give you more confidence in your testing abilities” (Sarah)

Bisra, K., Liu, Q., Nesbit, J. C., Salimi, F., & Winne, P. H. (2018). Inducing Self-Explanation: a Meta-Analysis. Educational Psychology Review, 30(3), 703–725. https://doi.org/10.1007/s10648-018-9434-x

Minear, M., Coane, J. H., Boland, S. C., Cooney, L. H., & Albat, M. (2018). The benefits of retrieval practice depend on item difficulty and intelligence. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *44*(9), 1474–1486. https://doi.org/10.1037/xlm0000486

Hinze, S. R., & Rapp, D. N. (2014). Retrieval (sometimes) enhances learning: Performance pressure reduces the benefits of retrieval practice. *Applied Cognitive Psychology*, *28*(4), 597–606. https://doi.org/10.1002/acp.3032

Hinze, S. R., Wiley, J., & Pellegrino, J. W. (2013). The importance of constructive comprehension processes in learning from tests. *Journal of Memory and Language*, *69*(2), 151–164. https://doi.org/10.1016/j.jml.2013.03.002

Maddox, G. B., Pyc, M. A., Kauffman, Z. S., Gatewood, J. D., & Schonhoff, A. M. (2018). Examining the contributions of desirable difficulty and reminding to the spacing effect. *Memory & Cognition*, *46*(8), 1376–1388. https://doi.org/10.3758/s13421-018-0843-3

Minear, M., Coane, J. H., Boland, S. C., Cooney, L. H., & Albat, M. (2018). The benefits of retrieval practice depend on item difficulty and intelligence. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *44*(9), 1474–1486.

Mulligan, N. W., Rawson, K. A., Peterson, D. J., & Wissman, K. T. (2018). The replicability of the negative testing effect: Differences across participant populations. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *44*(5), 752–763.

Karpicke, J. D., & Roediger, H. L. (2007). Repeated retrieval during learning is the key to long-term retention. *Journal of Memory and Language*, 57, 151-162.

Henry L. Roediger III, & Jeffrey D. Karpicke. (2006). The power of testing memory: Basic research and implications for educational practice. *Perspectives on Psychological Science*, *1*(3), 181–210.

Yeo, D. J., & Fazio, L. K. (2019). The optimal learning strategy depends on learning goals and processes: Retrieval practice versus worked examples. *Journal of Educational Psychology*, *111*(1), 73–90. https://doi.org/10.1037/edu0000268.supp (Supplemental)

11. **Wait to get Feedback**: Check an entire set of problems (perhaps 15) rather than immediately one at a time. Thus, get feedback in **summary form**, not individually. Immediate **Knowledge of Results** will **NOT** help as it keeps one from self-assessment of possible errors.

Agarwal, P. K., Karpicke, J. D., Kang, S. H. K., Roediger III, H. L., & McDermott, K. B. (2008). Examining the testing effect with open- and closed-book tests. *Applied Cognitive Psychology*, *22*(7), 861–876. https://doi.org/10.1002/acp.1391

Bilodeau, E. A., & Bilodeau, I. M. (1958). Variation of temporal intervals among critical events in five studies of knowledge of results. *Journal of Experimental Psychology*, *55*(6), 603–612.

Henry L. Roediger III, & Jeffrey D. Karpicke. (2006). The power of testing memory: Basic research and implications for educational practice. *Perspectives on Psychological Science*, *1*(3), 181–210.

Lavery, J. J. (1962). Retention of simple motor skills as a function of type of knowledge of results. *Canadian Journal of Experimental Psychology*, *16*(4), 300–311. https://doi.org/10.1037/h0083257

Scmidt, R. A., & Bjork, R. A. (1992). New conceptualizations of practice: Common principles in three paradigms suggest new concepts for training. *Psychological Science (0956-7976)*, *3*(4), 207–217. <https://doi.org/10.1111/j.1467-9280.1992.tb00029.x>

Swinnen, S. P., Schmidt, R. A., Nicholson, D. E., & Shapiro, D. C. (1990). Information feedback for skill acquisition: Instantaneous knowledge of results degrades learning. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *16*(4), 706–716.

12. Use **interleaving within a review session**, i.e. alternating between problem type one after the other, so you “generate a strategy” not simply “execute a strategy.” Don’t get into an easy routine of solving *blocked* questions (same kind over and over again).

**Best (Interleaved)**

(x + 5)(x – 2) Turn to a new textbook practice section!

“Find the midpoint between…” Turn to a new textbook practice section!

“What is the percent increase…” Turn to a new textbook practice section!

**Worst! (Blocked)**

(x + 5)(x – 2) You know how to solve the next problem without even thinking!

(x + 13)(x – 8) You know how to solve the next problem without even thinking!

(x + 4)(x – 5) You know how to solve the next problem without even thinking!

Küpper-Tetzel, C. E. (2014). Understanding the distributed practice effect: Strong effects on weak theoretical grounds. *Zeitschrift f[Uuml]r Psychologie/Journal of Psychology*, *222*(2), 71–81. https://doi.org/10.1027/2151-2604/a000168

Rohrer, D., Dedrick, R. F., Hartwig, M. K., & Cheung, C.-N. (2019). A randomized controlled trial of interleaved mathematics practice. *Journal of Educational Psychology*, *112*(1), 40–52.

Schorn, J. M., & Knowlton, B. J. (2021). Interleaved practice benefits implicit sequence learning and transfer. *Memory & Cognition*, *49*(7), 1436–1452. https://doi.org/10.3758/s13421-021-01168-z

13. Use **spaced repetition** (a little bit of study spread out every few days) rather than cramming (i.e., massed study). Spaced repetition is best for long-term retention! Experiment with fixed review schedules (every x days) or expanding review schedules (progressively longer intervals).

Best Worst

Mon Wed Friday ~~All day Thursday~~

**Tutor Quotes**

“Before a test, ask your professor the best way to review for their test and schedule study time weeks leading up to it!” (Abby)

“Take time to study for your test a little bit every day. The more you are exposed to the material, the better you will retain it and see things you might have missed before” (Hanna)

“Don’t cram the night before the test. Cramming will leave you tired the next day, and your performance will significantly drop. Instead, study at least one week away. That way you have some time to digest the information and properly study” (Haley)

Karpicke, J. D., & Roediger, H. L., III. (2010). Is expanding retrieval a superior method for learning text materials? *Memory & Cognition*, *38*(1), 116–124. https://doi.org/10.3758/MC.38.1.116

Küpper-Tetzel, C., Erdfelder, E., & Dickhäuser, O. (2014). The lag effect in secondary school classrooms: Enhancing students’ memory for vocabulary. *Instructional Science*, *42*(3), 373–388. https://doi.org/10.1007/s11251-013-9285-2

Maddox, G. B. (2016). Understanding the underlying mechanism of the spacing effect in verbal learning: A case for encoding variability and study-phase retrieval. *Journal of Cognitive Psychology*, *28*(6), 684–706. https://doi.org/10.1080/20445911.2016.1181637

14. **Be aware of overconfidence**. Judgments of Learning (JOL) may not always be accurate.

Foster, N., Was, C., Dunlosky, J., & Isaacson, R. (2017). Even after thirteen class exams, students are still overconfident: The role of memory for past exam performance in student predictions. *Metacognition & Learning*, *12*(1), 1–19. <https://doi.org/10.1007/s11409-016-9158-6>

Valdez, A. (2013). Student metacognitive monitoring: Predicting test achievement from judgment accuracy. *International Journal of Higher Education*, *2*(2), 141–146.

15. **Experiment with** **Taking notes by hand**. Studies indicate that there is a special benefit for taking notes by hand (not typing on a laptop) for natural science courses as “it may have to do with some element of processing related to the technical and precise information relating to math and formulas” (Allen et al. p. 148, 150).

Allen, M., LeFebvre, L., LeFebvre, L., & Bourhis, J. (2020). Is the pencil mightier than the keyboard? A meta-analysis comparing the method of notetaking outcomes. *Southern Communication Journal*, *85*(3), 143–154. https://doi.org/10.1080/1041794X.2020.1764613

16. **You will remember bizarreness**, i.e., “bizarre or uncommon sentences” (McDaniel & Bugg, 2008). Make up memorable sentences or stories (i.e., one academic term placed in a separate room of your house)

McDaniel, M. A., & Bugg, J. M. (2008). Instability in memory phenomena: A common puzzle and a unifying explanation. *Psychonomic Bulletin & Review*, *15*(2), 237–255. https://doi.org/10.3758/PBR.15.2.237

Peterson, D. J., & Mulligan, N. W. (2010). Enactment and retrieval. *Memory & Cognition*, *38*(2), 233–243.

17. **Time ≠ money**. “But recent studies show that thinking of time as money leads to a slew of negative outcomes, including time pressure, stress, impatience, inability to enjoy the moment, unwillingness to help others, and less concern with the environment” (Aeon, Faber, & Panaccio, 2021).

Aeon, B., Faber, A., & Panaccio, A. (2021). Does time management work? A meta-analysis. *PLoS ONE*, *16*(1), 1–20. https://doi.org/10.1371/journal.pone.0245066

18. **Distinguish between** **multitasking** (doing two things simultaneously, i.e., driving and listening to music) and **task switching** (going back and forth between projects). **Task switching usually decreases productivity**. Some studies show that true multitasking can “decrease, increase, or have no effect on retention” (Sozinov et al.). Studies also show people “do not listen well when [they] are doing other things’” (Al-Musalli).

Al-Musalli, A. M. (2015). Taxonomy of lecture note-taking skills and subskills. *International Journal of Listening*, *29*(3), 134–147.

Sozinov, A. A., Bakhchinaa, A. V., & Alexandrov, Y. I. (2021). The way of learning preserved in the structure of individual experience shapes task-switching: Implications for neuroscience and education. *International Journal of Cognitive Research in Science, Engineering & Education (IJCRSEE)*, *9*(2), 291–299. https://doi.org/10.23947/2334-8496-2021-9-2-291-299

19. When taking notes, **don’t simply move information** “**from** one **external source** [i.e. PowerPoint]…**to another external source** [your notes]” without thinking about the information! (Moos, 2009, p. 1125). Verbatim note taking may actually even hinder the learning process (Salame & Thompson, 2020).

Listen, understand, and then write in your own words.

And, **separate note taking from listening**. Experiment! Listen for a few minutes (4 minutes in the study by Aiken et al.) and then take notes.

Aiken, E. G., Thomas, G. S., & Shennum, W. A. (1975). Memory for a lecture: Effects of notes, lecture rate, and informational density. *Journal of Educational Psychology*, *67*(3), 439–444.

Moos, D. C. (2009). Note-taking while learning hypermedia: Cognitive and motivational considerations. *Computers in Human Behavior*, *25*(5), 1120–1128. https://doi.org/10.1016/j.chb.2009.05.004

Salame, I. I., & Thompson, A. (2020). Students’ views on strategic note-taking and its impact on performance, achievement, and learning. *International Journal of Instruction*, *13*(2), 1–16.

Tutor Quote

“Try to review your notes within the same day of the lecture class. While you may not need to get deeply involved in studying the material on the first day that you are introduced to it, when you come back to study more thoroughly, you will be more familiar with the material and it will only aid you in the studying process” (Sarah)

20. **Match** **practice timetable to the timeframe of the test**. Tests months away (GRE, NCLEX, etc.) require reviews spaced wide apart, and tests just weeks away require shorter time frame reviews. (similar to #13). Have you learned your specific information well and don’t want to forget it? Is you test over a month away? One study found optimal spaced reviews.

Is your test 5 weeks (35 days) away? Review every 11 days (perhaps at day 11 and day 22)

Is your test 10 weeks (70 days) away? Review every 21 days (perhaps at day 21 and day 42).

Is your test 50 weeks (350 days) away? Review every 70 days (105 days was too long though!)

Cramming often works for day-of tests, but will not help with long-term memory (often measured by psychologists at 1 week and up to 1 year later)

Rohrer, D. (2015). Student instruction should be distributed over long time periods. *Educational Psychology Review*, *27*(4), 635–643. https://doi.org/10.1007/s10648-015-9332-4