

The Secret to Learning Music Faster: Take More Breaks

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Take home message: You will learn music faster and it will be more reliable if you space out your practicing and take more breaks (within the day and over weeks and months), rather than practicing every day for long sessions without breaks.

Evidence from surgical training

- Training either within a single day with breaks or once a week results in higher skill ratings, more transfer of skills to other tasks, and more students reaching proficiency, as compared to training for several hours without breaks all in one day.

What happens in the brain when you take a break? Short term (within a day)

- Long-term potentiation (LTP): first step in long-term storage of a new skill or knowledge, strengthens the synapse and makes communication better.
 - When you simulate LTP, if you wait **one hour** between stimulations, more synapses reach LTP than if the stimulations are closer together in time.
 - If you wait another hour, even more synapses reach LTP.
 - A 4th or 5th round of stimulation makes no difference (no additional LTP)
 - Why? The neurons have to move proteins and other materials to the cell wall to before they can benefit from the stimulation and they need time to do this. This can't happen until you take a break.
- The synapse also has to undergo reconstruction, which can only happen when you take a break.
 - Without breaks, the reconstruction can't happen as effectively and so you forget what you learned more quickly.
- When you learn something new, prefrontal cortex is activated (working memory)
 - After a 5.5 hour break, the brain has reorganized itself so that areas in the back of the brain are now activated, making the motor memory more stable.

What happens in the brain when you take a break? Long term (more than a day)

- What you learn during the day is consolidated during sleep and put into long-term, stable storage.
 - This only happens during sleep and is not just due to the passage of time.
- Repetition suppression: the brain gets bored when you do the same thing over and over and stops responding.
 - When you take breaks, the brain can “recover” and will respond more after the break.
 - The sum of brain activation across learning predicts how much you will remember on a test.
 - Taking breaks = more brain activation = you remember more

Tips to find the perfect schedule

- The more complex the task, the more spaced out the practice sessions should be (think days/weeks rather than hours/minutes).
- If the break between practice sessions is too short, the changes that have to take place at the synapse can't happen. But if the break is too long, the memory trace disappears entirely.
- Better too long a break than too short a break.
- Expanding schedules tend to be best, unless the time between the first practice and the performance is really short (within a week).
 - Expanding = short breaks at the beginning of learning, longer and longer breaks as you get better at it.
 - Increase the number of days between when you practice something the better you get at it.
- Don't just practice something once in a day. Come back to it 2 or 3 times, with breaks in between. But don't overdo it: 3 times is enough.
- If you can play it well, leave it alone and don't practice it at all for at least a few days.
- If you are frustrated with something and you've done everything you can think of to make it better, don't practice it for a few days so your brain can stabilize the practicing you've done.
- Use the days off from one thing to practice other sections/pieces.

Sample schedule

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Practice	Practice	Practice		Practice		Practice
	Practice					
	Practice	Practice	Practice			
			Practice	Practice	Practice	

1. 3 days in a row (red)
2. Take a day off
3. Every other day 3x (blue)
4. Take a week off
5. 3 days in a row (green)
6. Take 2 weeks off
7. 3 days in a row (purple)

At this point, the passage/phrase/whatever should be well-learned and feel almost performance-ready.