



Sleep Improves On-the-Job-Training Effectiveness

Lack of sleep impacts OJT learning effectiveness

On-the-Job Training (OJT) is a large part of the training provided to developmental controllers on their path to proficiency. It includes learning the rules and procedures of air traffic control and applying them to the mechanical tasks of separation of aircraft, such as making calls or computer entries, effecting hand-offs, etc. Sleep, or the lack of it, can affect your ability to learn this new information, retain it in memory, and recall and apply it on the job.

How do we learn?

When we are exposed to new information or a new experience, our brains create memories that can be **declarative** — about facts or information, or **non-declarative** — about how to perform an action. Both types of memories are important outcomes of OJT. Memory creation follows a specific process, which enables us to learn new information and then recall and act on it:

1. New information is encoded into our brain when an ensemble of neurons fire in a specific sequence, and this creates a memory.
2. The memory is consolidated into our brain by the strengthening of the connections between the neurons in the ensemble. This consolidation causes the memory to resist being forgotten or replaced by new information.
3. The memory gets associated with existing memories, moved from our short-term memory, and integrated into our long-term memory.

Does sleep influence the process of memory and learning?

YES! Sleep improves learning by enhancing our ability to form, store, and use new memories. We all need about 8 hours of sleep each night to allow our bodies and minds to recover fully. Quality sleep includes cycles of deep sleep in the first half of the night, followed by cycles of Rapid Eye Movement, or REM sleep, in the second half of the night.

Research confirms that quality sleep is essential for memory consolidation and integration. Subjects trained on new facts or physical processes who were then deprived of sleep during the next 12 to 24 hours had greatly reduced memory consolidation compared to subjects who received quality sleep. In addition, those who received quality sleep were able to integrate new memories better to create insights required to solve problems. Plus, taking naps in addition to quality nighttime sleep resulted in an additive improvement in memory.





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THE BOTTOM LINE

- If you are involved in OJT, make sure to get plenty of sleep every night.
- Quality sleep each night will improve your ability to consolidate learning from the previous day consistently. This type of sleep also allows you to integrate the new learning with previous knowledge so that you can perform your ATC duties better.
- **PLUS** — *quality sleep should enhance your path to proficiency!*

Myth: Missing a few nights of quality sleep will not affect my learning.

Fact: Making up sleep a day or two after training has no effect on the consolidation or integration of new memories. To boost your learning, the sleep has to occur within 12 to 24 hours after the training.

