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The Science of Taking a Break

Many studies have found that pausing for a moment to relax and reboot is essential for achieving productivity, success, and a positive outlook on the future. This is especially true for students who spend hours huddled in front of a computer. While many believe cram sessions and all-night study groups will ultimately help them earn their college degree, the fact is that not taking regular breaks can lead to a significant decrease in academic performance and, in some cases, serious health concerns like anxiety, insomnia, and depression.

Studying With and Without a Break

In 2011, University of Illinois psychology professor Alejandro Lleras [led a study](#) to determine the effectiveness of prolonged work or study periods without a break. Eighty-four subjects were divided into four groups that all performed the same repetitive, computerized task for 50 minutes:

- The **control group** was asked to work non-stop for the 50-minute duration
- The **switch group** and the **non-switch group** memorized four numbers before the work period began, and both groups were told to inform the research team if any of these digits appeared on their computer screen during the 50-minute duration.
- The numbers appeared twice on the computer screens of those in the **switch group**, but they never appeared on the screens of those in the **non-switch group**.
- The **digit-ignored group** was also shown the same set of numbers, but told to simply disregard them if they appeared on their screens.

For the control, non-switch, and digit-ignored groups, performance began to progressively decline until the 50-minute mark. However, researchers noted that the switch group remained sharp and on-task for the entire duration; Lleras believed the group fared so well because they were allowed two brief diversions in which they performed an entirely different task (in this case, responding to the numbers on their screens). "It was amazing that performance seemed to be unimpaired by time, while for the other groups performance was so clearly dropping off," he told *Science Daily*.

The Impact of Learning Too Much at Once

[A similar study conducted in 2006](#) also sought to explore the effect that 'overlearning' has on the brain. Researchers from the University of South Florida and University of California, San Diego, asked two groups to study for the same vocabulary test.

- One group read through the list five times; each participant earned a perfect score no more than once.
- The other group read through the list 10 times; in this case, each participant scored perfectly at least three times.

These scores would seem to suggest that 'overlearning' was an effective short-term strategy. However, the researchers recorded some surprising results when the students were re-tested on the vocabulary.

- Some students from both groups were re-tested exactly one week later; in this case, the 'overlearners' still scored better than those who initially read through the list only five times.
- But when the remaining participants were re-tested four weeks later, there was little difference in scores between members of either group.
- These findings suggested that 'overlearning' was not an effective strategy for long-term retention of information.

[The same study was later repeated](#), albeit with breaks between study sessions. The duration of these study breaks varied from five minutes to one month; researchers found that the length of the break directly correlated to how long the information was retained. Students who took a one-day break recorded the best scores when they were tested 10 days later, while those who broke for one month performed the best after six months.

These collegiate studies have real-world parallels. Earlier this year, [The New York Times reported](#) about a study at Harvard University that found American companies lose roughly \$63.2 billion every year due to sleep-deprived employees who are unable to stay productive. [Another survey by Harris Interactive Inc.](#) found that the average American adult conceded 9.2 vacation days in 2012; this figure stood at 6.2 vacation days just one year earlier.

Take a Break — Effectively

While the studies listed above collectively suggest that break-time is a crucial component of any serious study session, it's important to note that there are both effective and ineffective ways to reboot.

It should come as no surprise that many students spend their breaks updating Facebook, calling or texting friends, and otherwise engaging in tech-savvy time killers. Although enjoyable, [a recent survey by Huffington Post](#) found that activities like social networking can significantly increase stress. Survey respondents were divided into two groups:

- Those who actively engage in social media, and those who do not.
- Of those who are active social networkers, 83% stated their lives were either 'somewhat stressful' or 'very stressful.'
- 72% of those who did not participate in social media gave the same reply.

But in addition to stress, other studies found that constant engagement with social media also reduces the student's ability to focus and effectively learn. In his article, ['Your Brain on Facebook'](#), *Harvard Business Review* contributor David Rock notes that social media platforms are today seen as comparable (if not downright equivalent) to real-world interaction; however, commenting on Facebook and conversing with friends in a coffee shop are strikingly dissimilar in terms of body chemistry.

"When we connect with people online, we don't tend to get the oxytocin or serotonin calming reward that happens when we bond with someone in real time, when our circuits resonate with real-time shared emotions and experiences," Rock says, adding that web users are left with an "overabundance of dopamine" that distracts them from the task at hand.

Exercising Both Body and Mind When Taking a Break

[A recent study from Princeton University](#) suggests that some good, old-fashioned exercise is a great alternative to hopping online during study breaks. While the brain produces the same amount of neurons regardless of physical activity, researchers found that people who exercise form more neurons that emit a neurotransmitter known as GABA, which has been proven to calm the brain and reduce overall anxiety. The study's leader, Dr. Holly Phillips, told CBS *Morning News* that GABA also has long-lasting effects. "Even 24

hours after exercise, you're less prone to experience anxiety symptoms," she explained, adding that 30 minutes of exercise, four times a week, is sufficient for significantly reducing most people's stress.

In addition to exercise, meditation is another effective way to lower anxiety and to boost personal health. [According to the Mayo Clinic](#), meditating for just a few minutes every day will not only ease school-related stress but also fight against depression, fatigue, high blood pressure, and insomnia. Like other important activities, however, meditation should be scheduled at certain times of the day. [Linda Wasmer Andrews of Psychology Today notes](#) four particularly helpful times to meditate: first thing in the morning, during a midday break, at the end of the work-day, or whenever you feel stress. On the other hand, you should refrain from meditating up to an hour before bedtime; otherwise the wakeful, refreshed feeling you'll get from meditation could counteract your body's ability to relax and prepare for sleep.

The Power of a Good Nap

While exercise and meditation improve our personal health and reduce stress, a 2012 study conducted by researchers at Case Western Reserve University and Boston's Brigham and Women's Hospital found that a daily, 10- or 20-minute nap can significantly increase productivity and academic focus.

- Participants were divided into five groups; four groups were allowed to nap for variable periods (five, 10, 20, and 30 minutes), while a control group was not allowed to nap at all.
- Then, the researchers tested the alertness, attitude, and other sleep-related outcomes (including "sleep latency, subjective sleepiness, fatigue, vigor, and cognitive performance") of all participants for three hours after the nap ended.
- While the group who napped for five minutes recorded similar outcomes to the control group, those who slept 30 minutes were unfocused upon waking due to the onset of sleep inertia that they experienced.
- The group that slept for 10 or 20 minutes reported the best results, and the benefits of napping were observed for up to 125-155 minutes after waking.

However, [The Wall Street Journal profiled](#) a 2013 study that suggests longer nap periods may also be beneficial — for certain learners. While 10-20 minutes represented the ideal 'power nap' duration, a 60-minute rest period was found to be suitable for individuals who are attempting to memorize facts, names, dates, and other important items. The study also found that 90-minute naps boost creativity and emotion-driven memories; and since an hour and a half represents a full sleep cycle, the effects of inertia upon waking will be much less prominent.

Assess Your Individual Needs

Of course, the duration of effective study breaks — as well as the benefits of different relaxation techniques — will vary from student to student. For this reason, it's important for every learner to determine the best schedule to suit their own needs. The Energy Project has created '[The Energy Audit](#)' to help web users identify the best strategies for remaining alert and focused during long study sessions. This survey will help you figure out whether you're study habits are helping you achieve peak academic performance — or if you need to introduce more breaks into your daily routine.

It can be tough to step away from important assignments or materials for an important exam, but studies have shown that regular breaks will actually increase our potential for success. So next time you're feeling overwhelmed during an extended study period, don't stress — simply turn off the television, logout of Facebook, and take some time to stretch your legs, take a power nap, or meditate for a few minutes. Your body *and* mind will thank you for it.

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