

The Art of Napping

A day without a nap is a day wasted. Learn how you should nap..

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It's 1:00 pm. A stifled yawn escapes from my mouth, my eyelids are growing heavy, my shoulders are drooping and I'm drifting off to a place where the grass is green and the skies are blue. It's naptime for me. There's nothing quite like an afternoon snooze to rejuvenate the mind and, most importantly, the body. Even though North America is a productive society, unfortunately, in our overly regulated 24/7 work-a-day routines, the art of napping has been, somehow, underrated.

There are many of us who are not people of the siesta, unlike some Latin Americans and Europeans who view 10-30 minutes of shut-eye in mid-afternoon as a worthwhile tradition. In Mexico and in Greece it's customary to close shop sometime after high noon so shopkeepers can count sheep. Not only is napping a practice in many countries, but some of the world's most influential leaders have practiced this custom. While leading a victorious campaign during the Battle of Britain, Sir Winston Churchill took naps. His Italian enemy, Benito Mussolini, also napped, however, it is said to have cost him the war. Napoleon Bonaparte, Ronald Reagan, Bill Clinton and John F. Kennedy have also have been in the ranks of notable nappers. (all of them napping, of course, for the benefit of the nation). Seven-time Tour De France winner, Lance Armstrong, napped his way to the podium. His coach, Chris Carmichael says that these "naps were critical” in his overall training plan.

Despite a history of positive views of napping, many people today still frown upon this sleep tradition because most of the western world tends to associate napping with lethargy and non-productivity. However times are changing, and there is now a North American group called the World Nap Organization which proclaims itself as "the nap lobby —an unabashed special interest group devoted to battling negative images of the blissful practice of nap-taking."

The art of napping is staging a come-back. The evidence is mounting, and our day-to-day lifestyles are reinforcing the notion that napping does the body good.

If you're a student, you're usually up at the crack of dawn, ready to hit class and to get down to learning. You've made your meals for the day, and head off to train, to study and then hit the sack. If a student's lucky they'll usually get 6 hours of quality sleep a night. If you're a college athlete, you'll have mandatory practices, games, training sessions and course-work. For those of you in the work force who put in an 8-15 hour day, 5-6 days a week combined with several intense training sessions a each week. . .well you get the idea. . .sleep is a luxury. For females, if it's that time of month sleep can become compromised, usually for the duration of the menstruation. And, let's not forget stay-at-home moms and dads (hey, it's a liberated era). Sleepless nights from attending to a newborn (did you know that this results in 400-750 hours of lost sleep for parents in the first year?). Running the kids to soccer practice and ballet, cooking dinner, and house chores can take quite the toll on the body.

Even Super Hero's Take Naps

When it comes to making progress in the gym, people take into account their training, nutrition and supplementation. They spend hours tweaking their routines, finding the right performance-boosting supplements, and making sure, as they prepare and cook their meals that they are eating the right foods at the right time of day. Unfortunately, it's the need for quantity and quality of sleep that is often overlooked in a trainee's routine. Sleeping eight hours a day is not always enough and, even then, the quality may be poor.

The next time you're in the local Barnes & Nobles or Chapters, browse through the "fitness" and "exercise" section. Notice how many books have been written on the topic of strength training, supplements and nutrition. Then look at how many have been dedicated to getting a good night's sleep, or talk about the quality of sleep and its effect on the body in relation to strength training. If you're lucky, you might find a chapter somewhere that touches briefly on the subject. The impact that sleep has on overall health, body composition, performance and recovery means that it should rank high on any list of strength-training priorities. It is also equally important that people realize why a nap can do the body good—even after a full 8 hours of sleep a night.

Did You Know?

The National Sleep Foundation (NSF) reports that:

The average adult sleeps under 7 hours a night during a work week.

33% of adults surveyed sleep only 6 1/2 hours nightly.

40% of adults admit that the quality of their work suffers when they're sleepy.

68% say their ability to concentrate is diminished by sleepiness.

19% report making mistakes and errors due to sleepiness.

Sleepy drivers cause approximately 100,000 car crashes annually.

33% of adults surveyed would nap at work, if allowed.

Sleep can be defined as an anabolic state since it increases the process of growth, and contributes to the restoration of the immune, nervous, and muscular systems. It is also responsible for maintaining normal levels of cognitive skills such as speech, memory, innovative and flexible thinking. In other words, sleep is an essential part of life. The world record for the longest period without sleep (11 days) was set by Randy Gardner in 1965. It's up there with all those other body-abusing milestones, such as the ones which deny the body food and water for long periods of time.

Sleep Overview

Those of us who live an active life should every day, give-in to a snooze, come mid afternoon. However, to appreciate why we need to include this nap in our daily routines requires a quick overview of the mechanism of sleep.

After a long day, it's time for bed. You prepare your meals for the next day, gulp down your last protein shake or meal and then the lights go out. But wait—there's more to sleep than just closing your eyes and then pulling yourself out of bed the next morning.

There are 5 stages that the body goes through during a good night's rest. The first stage of sleep, called non-rapid eye movement (NREM) contributes to the physical regeneration of the body. Although more info is needed, NREM has also been said to be responsible for the bolstering of the immune system. NREM is known as a transitional stage between waking and sleeping and lasts for approximately 5-10 minutes. During this period, breathing slows down, the heart rate decreases, the eyeballs start rolling and drowsiness occurs.

Moving into stage two of sleep, eye movements disappear, images start to pass through the mind, the muscles start to relax and the body starts to shut down.

In stage three, breathing becomes increasingly slower as does the heart rate. Stages three and four are usually grouped together. These two stages are referred to as "Delta Sleep" or "Slow Wave Sleep." This stage is probably the most important stage for weight trainers as growth hormone (GH) is released (1,2). GH is responsible for a number of things. Increased mental alertness, increased strength, increased feeling of well-being, decreased body fat and improved neurological function. The fifth and final stage of sleep is rapid eye movement (REM) otherwise known as "Dream Sleep". During REM the brain is very active, dreams occur at this stage as well as paralysis of the muscles. Other characteristics are irregular breathing, increased heart rate, and rapid eye movements.

In total, the brain's sleeping pattern repeats its cycle every 90-120 minutes. The brain will move from a light sleep, to a deep sleep then to a mentally active sleep and finally back to a light sleep. This cycle will repeat itself 2-7 times in young and middle-aged adults (3, 4, 5, 6, 7, 8).

Typical sleep cycle

Why Nap?

Even though we spend a third of our lives sleeping, scientists are still trying to learn exactly why people need sleep. In animal studies it has been shown that sleep is necessary for survival. For example, while rats normally live for two to three years, those deprived of REM sleep survive only about 5 weeks on average, and rats deprived of all sleep stages live only about 3 weeks. In humans, those who had been deprived of just one night's sleep were shown to have a reduction in mental exertion. In real life situations, the consequences of being sleep-deprived are grave. Some speculation has linked sleep-deprivation to certain international disasters such as the Exxon Valdez oil-spill, Chernobyl, Three Mile Island and the Challenger shuttle explosion.

Taking this into the gym can mean that the ability to concentrate and focus can become compromised which means less of an effort and intensity in the workout (9). Hopefully it's not leg day.

Athletes who suffer from sleep-deprivation have been shown to see a decrease in cardiovascular performance (10), that is, their time to exhaustion is quicker. Sleep-deprivation in studies has been shown to occur around 30-72 hours. For an athlete who has a full course-load, studies, mid terms and trains, sleep-deprivation can accumulate very rapidly.

Another study looked at cortisol and performance levels after staying up for an 8-hour period overnight. Performance declined and cortisol levels increased. For someone looking to pack on muscle and increase strength, this is bad news since the main focus is to minimize cortisol release as it's a catabolic hormone (11).

From a fat loss perspective, sleep deprivation can impair fat loss through a decrease in levels of the satiety hormone leptin, and increases in the hunger hormone ghrelin. According to Dr. Van Cauter a professor of medicine at the university of Chicago, "One of the first consequences of sleeplessness is appetite dysregulation." "Essentially, the accelerator for hunger [ghrelin] is pushed and the brake for satiety [leptin] is released." "The leptin levels are screaming "More food! More food!" What this means is that the hormone leptin is responsible for telling the body when it is full. However, with decreased production of this hormone, the body will crave calories (especially in the forms of carbs) even though its requirements have been met. For someone trying to diet, good luck!

Voluntarily sleeping less than 6 hours per night has been associated with an increased incidence of impaired glucose tolerance, according to a cohort analysis of the Sleep Heart Health Study (SHHS) reported in the Archives of Internal Medicine. (12) This may mean that a chronic lack of sleep can impair glucose tolerance, which can make body recomposition a difficult task. Most people have a hard enough time trying to regulate their carbohydrates and time them so that the body metabolizes them efficiently.

So, if you're getting the required 8 hours of sleep, are you ok? Well, if this sleep is broken up, then its value decreases as the sleep cycle is interrupted. Deep sleep appears to be connected with the release of growth hormones in young adults. Many of the body's cells also show increased production and reduced breakdown of proteins during deep sleep. Since proteins are the building blocks needed for cell growth and for repairing bodily stress (muscle damage from strength training), uninterrupted deep sleep plays an important role in recovery and regeneration of the body.

Finally, adequate sleep and a properly functioning immune system are closely related. Sleep-deprivation compromises the immune system by altering the blood levels of specialized immune cells and important proteins called cytokines. These chemical messengers instruct other immune cells to go into action. As a result of being compromised, greater than normal chances of infections are likely to occur. And we all know that being sick can be a big-set back both in and out of the gym.

The Benefits of Napping

Hopefully, you are beginning to understand why taking a nap just might be beneficial, if you aren't already snoozing sometime during the day. The question that needs to be answered is: how long do I nap for?

The Center for Applied Cognitive Studies states:

"Studies show that the length of sleep is not what causes us to be refreshed upon waking. The key factor is the number of complete sleep cycles we enjoy. Each sleep cycle contains five distinct phases, which exhibit different brain-wave patterns. For our purposes, it suffices to say that one sleep cycle lasts an average of 90 minutes: 65 minutes of normal, or non-REM (rapid eye movement), sleep; 20 minutes of REM sleep (in which we dream); and a final 5 minutes of non-REM sleep. The REM sleep phases are shorter during earlier cycles (less than 20 minutes) and longer during later ones (more than 20 minutes). If we were to sleep completely naturally, with no alarm clocks or other sleep disturbances, we would wake up, on the average, after a multiple of 90 minutes--for example, after 4 1/2 hours, 6 hours, 7 1/2 hours, or 9 hours, but not after 7 or 8 hours, which are not multiples of 90 minutes. In the period between cycles we are not actually sleeping: it is a sort of twilight zone from which, if we are not disturbed (by light, cold, a full bladder, noise), we move into another 90-minute cycle. A person who sleeps only four cycles (6 hours) will feel more rested than someone who has slept for 8 to 10 hours but who has not been allowed to complete any one cycle because of being awakened before it was completed.... "

Power naps can be defined as "brief periods of daytime sleep lasting an hour or less." They should be directed at targeting sleep stages 1 and 2, and take place in the afternoon. Dr. Claudio Stampi's, aka Dr Sleep (one of the worlds foremost sleep researchers), found that afternoon siestas were chockful of slow-wave sleep. The main benefit that is derived from these stages is restoration from mental fatigue or an increase in alertness. During a 10-20 minute nap the brain cells reset their sodium & potassium ratios when the brain is in Theta state. This state of mind is associated with a flow of ideas or a positive mental state. The sodium & potassium levels are involved in osmosis, which is the chemical process that transports chemicals into and out of your brain cells. After an extended period in the Beta state (when the brain is aroused and actively engaged in mental activities, it generates beta waves) the ratio between potassium and sodium is out of balance. This is the main cause of what is known as "mental fatigue". A brief period in Theta (about 5 - 15 minutes) can restore the ratio to normal resulting in mental refreshment. Stampi says, "Sleep charges your battery more at the beginning of the sleep cycle than at the end."

Nap of Choice

The Nothing-Nap: This nap lasts a whopping 10 to 90 seconds. Studies are inconclusive as to the benefits of nodding off on someone's shoulder while on the bus (13).

The Quickie Nap: 5 to 20 minutes of shut-eye can increase alertness and motor performance (14,15).

The 20 Minute Snoozer:: This also allows for an increase in mental alertness and the increased performance of tasks (16).

The Deluxe Nap:If you can afford the time a 50 to 90 minute nap allows for muscle recovery to take place. This nap includes slow-wave plus REM sleep; which is when growth hormone is released.

The Caffeine Nap: Drink your favourite Starbucks caffeinated beverage and immediately take a 15-minute nap. Coffee helps clear your system of adenosine, a chemical which makes you sleepy. A combination of a cup of coffee with an immediate nap chaser provided the most alertness for the longest period of time (17).

Note: One of the side effects of snoozing occurs upon awakening. The feeling of grogginess that is often experienced here is called Sleep Inertia. Minimizing the time it takes your brain to get into sync can be accomplished by not waking up while you are in the Slow Wave Sleep stage.

If you don't want your naps to interfere with your night-time sleep keep them under the 3 hour mark and make sure they are completed at least 3-4 hours before going to bed (18).

Conclusion

Taking a power nap provides more patience, less stress, increased learning, better health, better reaction time, more efficiency. Many athletes, moreover, find a daytime nap further increases their body's ability to build muscle. Dr. Sara Mednick, a scientist at the Salk Institute for Biological Studies adds that "Napping also benefits heart functioning, hormonal maintenance, and cell repair."

So stop feeling guilty and take a well-deserved nap at work or at home. Your Nattitude (nat'y-tood')n.: a proud attitude about one's napping) should be displayed by laying your head down and grabbing some well-deserved shut-eye. Now, if you'll excuse me, it's past my naptime, and I've got to get set-up for the rest of the day.

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