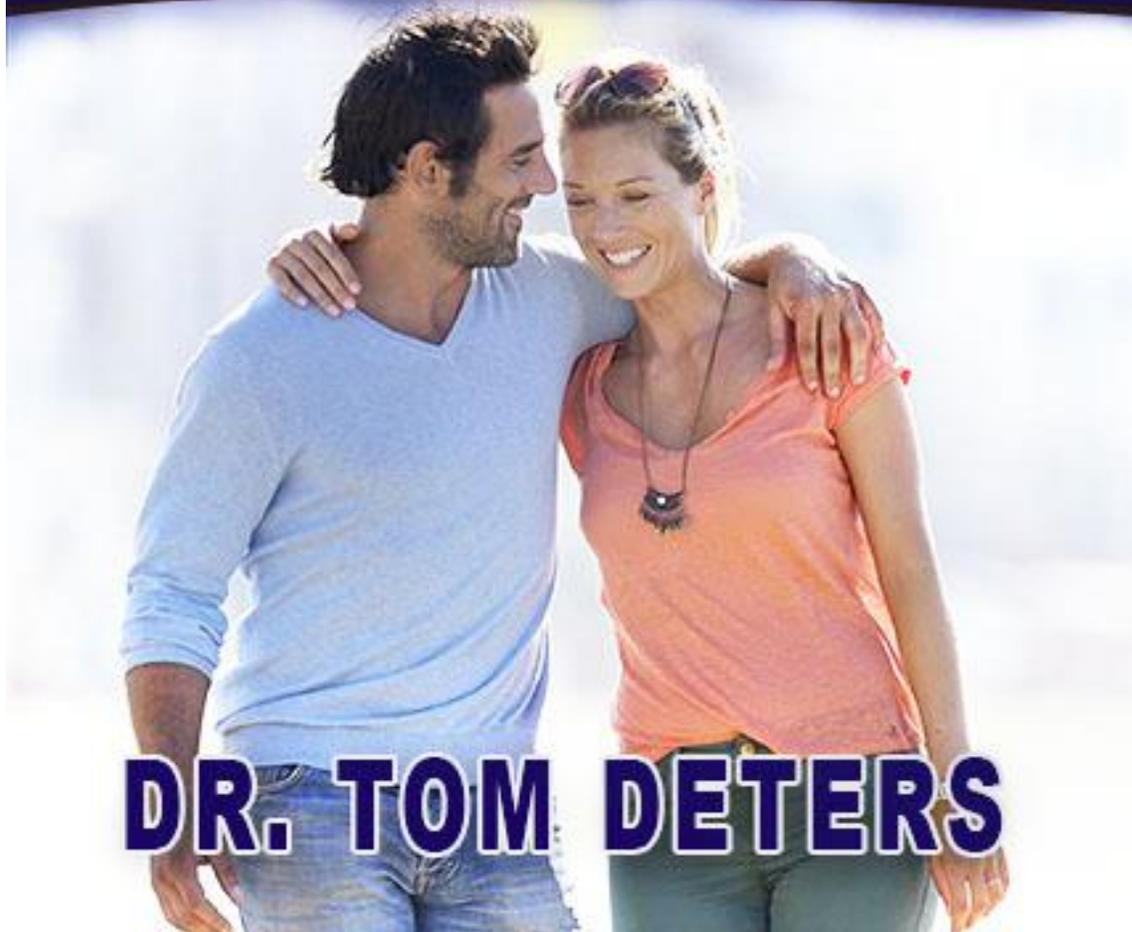


16 TIPS TO DEEPER, MORE RESTFUL SLEEP



DR. TOM DETERS

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16 TIPS TO DEEPER, MORE RESTFUL SLEEP

Have more energy, think better and burn more fat!

If you've struggled with getting a good night's sleep like I have, you know how frustrating it can be. Sure, we all know that sleep is important. **But do we really understand why it's one of the single most important factors in determining how we feel, how we think, our moods, our mental and physical performance, our health, our longevity – and even how we store fat? And do you know what you can do to get a better night's sleep? Lots!**

According to the National Sleep Foundation, 45% of Americans say that insufficient or poor sleep affects their activities on a weekly basis! That's not good. You don't have care about health, fitness, performance, or mental sharpness to get that sleep is critical. Corporate execs need to be mentally crisp when under the stress of making decisions that affect hundreds of employees, the success of a company, and their futures. Mom's responsible for the lives and the well-being of their children, while balancing dozens of other tasks, need to be sharp as a tack. I learned that even Marine Corps warfighting doctrine teaches that while front line infantry troops may have to go days without sleep, officers are ordered to rotate offline in order to get some sleep so that they can make sound, life-saving decisions under stress. Athletes are another example. There are few athletes who are more

obsessed with growing muscle than bodybuilders – and they are the first to tell you that sleep is one of the most anabolic (tissue building) things they do. Bodybuilders try to get as much sleep as possible, including naps!

Studies on sleep are revealing new information and unlocking secrets that we can all apply to feel more energized and be healthier. Let's get down and dirty on sleep and look at the ways that you can use this new information for a better, more energized quality of life, better outlook, and better health! If you're an athlete, if your success depends on how well you think, or if you want to be leaner or grow muscle, you won't want to miss this.

Where do I get off sharing this type of information? For those of you who don't recognize or remember my name, I've been immersed my entire career in this health, fitness, performance nutrition, peak performance thing. For fifteen years, I served as Editor in Chief and Publisher of the largest fitness magazine on the planet, Muscle & Fitness, which we grew to over 8 million readers on a monthly basis. It was a blast! Together with our staff of science writers, I scoured the research, read thousands of studies and did countless interviews on human performance, muscle growth, fat loss, longevity, and recovery. Our Advisory Board read like a Who's Who in the industry. Researchers shared their cutting-edge study data with us **before** submitting it for Peer Review and we worked with dozens of the top professional bodybuilders. Talk about a science project and a social experiment all in one! I had military contracts with Naval Special Warfare (SEALs) and Special Ops Marines to help them enhance their performance. I learned fast what worked and what didn't on how to lose fat, build muscle and boost performance. I was surrounded by, and learned from, legends who were in their 70's and 80's, but looked, acted, and performed in the gym like most

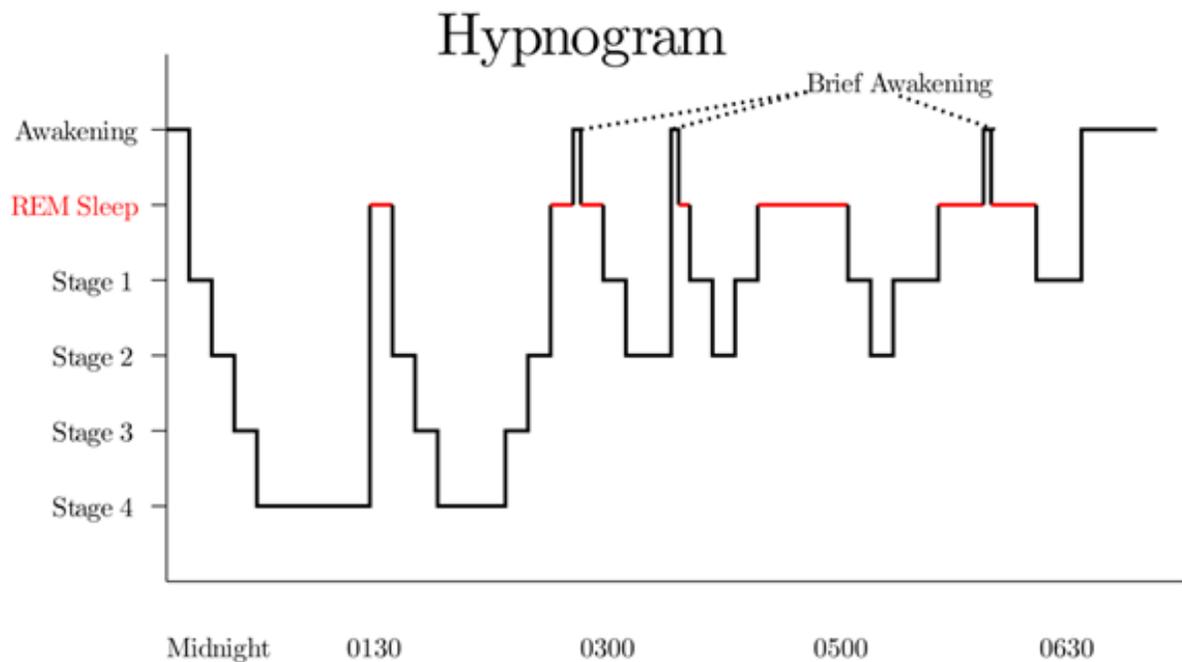
40 year olds only wished they could. I delivered hundreds of seminars and was able to apply that cutting-edge knowledge to “regular people” to help them with their personal health, fitness, weight-loss, and longevity goals. I assure you, I do my best to practice what I preach, and sleeping like a rock is a big part of it.

I’ve dedicated my life and made it my mission to help people make sense of the madness of marketing messages. I would like to finally reveal the real truths of what it takes to lose fat, build muscle, and live a healthy active life well beyond what is currently accepted as “normal”. I am not a fan of “normal”. I much prefer “optimal”.

So, in this report I will be as **short and sweet, yet as complete** as possible in this limited space, delivering *for you* the functional knowledge you need to know.



WHAT HAPPENS WHEN WE SLEEP?



There are two major stages of sleep – non-rapid eye movement sleep (NREM sleep) and rapid eye movement sleep (REM sleep).

They break down as follows:

1) NREM Phase 1 “Falling Asleep”: When we first begin to drop off to sleep, our eyes roll. This Phase of NREM sleep is a short phase lasting maybe 5-10 minutes. We can be easily woken up during this phase.

2) NREM Phase 2 Light Sleep: After the short period of “falling asleep” we move into Phase 2 of NREM or light sleep. Our body begins to drop its heart rate, blood pressure, respiration and temperature (as much as a degree or two). Many people twitch at this time, although no one knows exactly why.

3) NREM Phase 3 Deep Sleep: The last stage of NREM sleep is considered a deep sleep stage. The brain waves slow down. Adrenaline levels fall. This is when the body's tissues repair and regenerate. Bone and muscle is built. The immune system is re-energized and strengthened. The brain strengthens memories and removes toxins at this time. The liver switches from detoxifying to building and synthesizing new proteins and other rejuvenating activities. Growth hormones are secreted to help repair and rejuvenate, and skin collagen cells are stimulated.

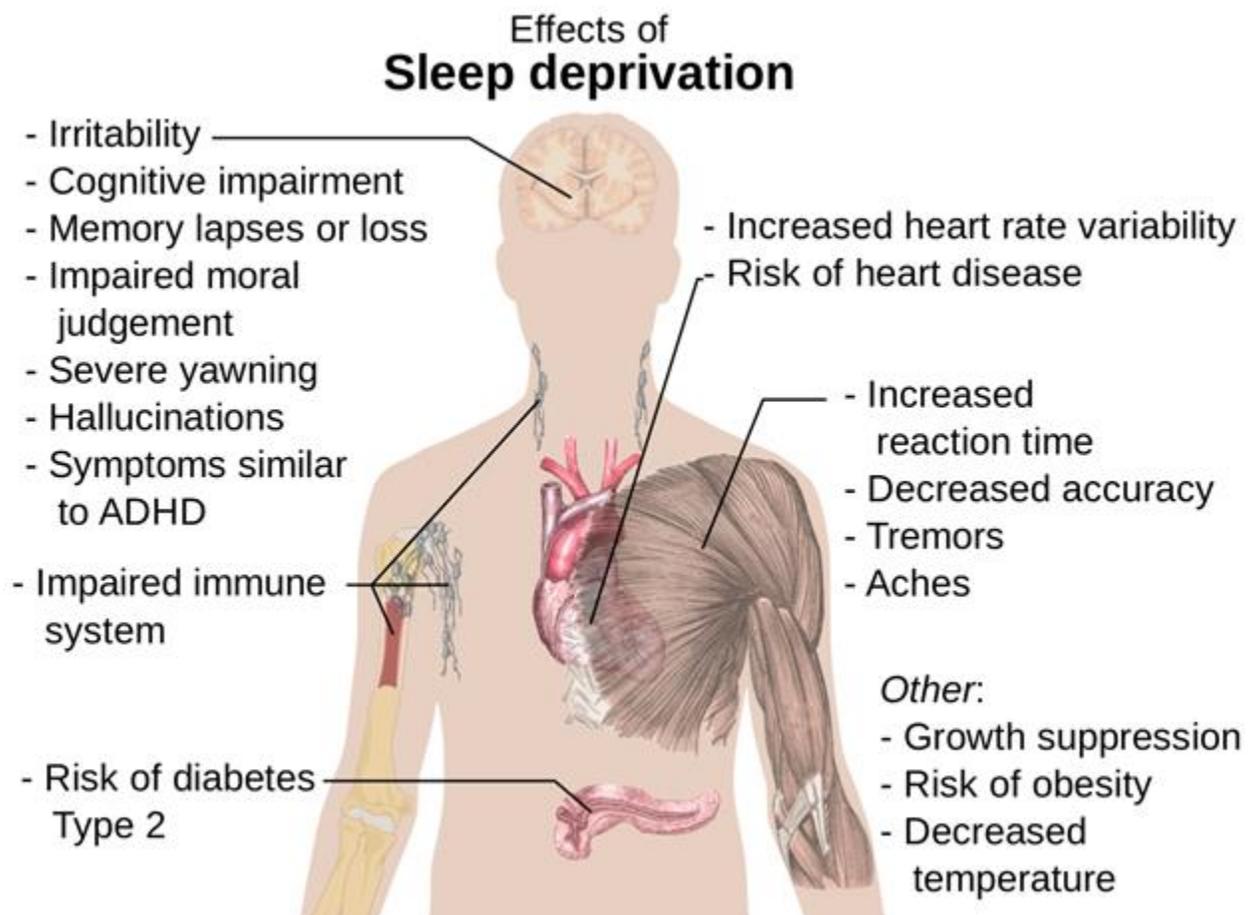
4) REM Phase Sleep: Typically, about 90 minutes after falling asleep, we go into our first rapid eye movement (REM) phase where our eyes move quickly from side to side. REM phase is when we dream (whether we remember them or not). The first REM cycle can last about 10 minutes, but subsequent REM Phases will become longer as our sleep cycles continue.

5) REM state is fascinating. During REM, our brain is as active as when we are awake and thinking hard, and it uses a lot of oxygen. General blood flow increases and men get erections during REM phase. Women too have increased clitoral blood engorgement as well. This is simple physiology and happens whether you are having a "sexy dream" or not. Yet our muscles are paralyzed during REM sleep because the brain impulses that control movement are suppressed (except for heart, diaphragm, and other essentials). This is thought to be protective so that we don't literally run out of bed during a dream and hurt ourselves (although some people with sleep disorders may). Lack of REM sleep impairs learning ability and can also affect memory.

6) Sleep cycles last about 90-110 minutes. Each sleep cycle, going into and out of REM, lasts approximately 90-110 minutes. If our quality of sleep is good and uninterrupted, the REM cycles will

repeat approximately every 90 minutes and grow longer in duration to the point where the last REM phase itself can last up to an hour or more. Being awakened out of a REM state will leave you feeling temporarily groggy and disoriented until your body comes back online.

WHAT HAPPENS IF YOU DON'T GET ENOUGH QUALITY SLEEP?



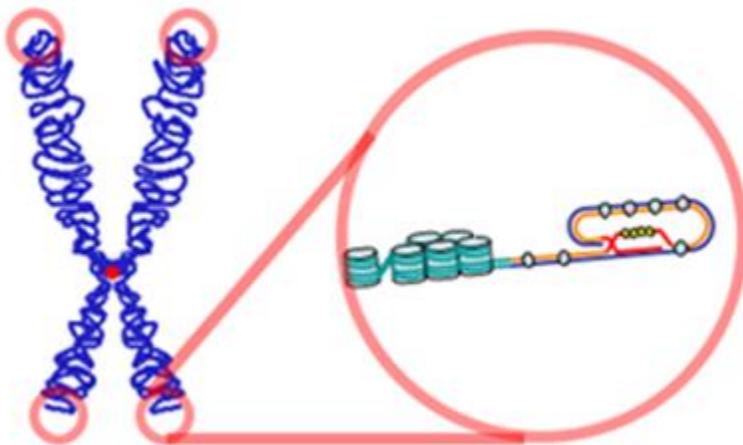
There have been hundreds of studies on sleep, sleep requirements and sleep deprivation. Many of these studies have answered questions and some have spawned new questions. Intuitively or instinctually, we both know and feel that not getting

enough sleep isn't good for us. In fact, after about eleven days without sleep we would *die*. Sleep interruption and deprivation has long been a technique used to confuse and disorient prisoners during long term interrogations. Too little sleep leaves you tired and edgy, decreases motivation, messes with our moods, and suppresses immune system function as stress hormone levels rise. Learning and memory retention are also affected. Sleep is the time when our body replenishes, rejuvenates, and repairs, so too little of that can't be a good thing.

Sleep also affects our metabolism – the rate at which we burn calories. It also directly affects appetite. If you don't get enough quality sleep, hunger regulating hormones, leptin and ghrelin, can be affected which can **lead to eating more calories resulting in weight gain.**



TOO LITTLE SLEEP AND AGING – IT'S A BIG DEAL



With aging, both sleep quality and quantity tend to suffer, yet older people need as much sleep as younger people. Babies can spend as much as 50% of sleep in REM phases,

whereas adults spend about 20-25% of sleep in REM phase. In the elderly, that number can fall even lower.

Sleep also has a major impact on telomere length. Telo-what? Telomeres are a relatively new, but very hot topic in anti-aging research. Telomeres are chains of DNA sequences on the ends of our chromosomes which actually protect our genetic material. Think of them as a sort of protective endcap. With age, our telomeres shorten, allowing more damage to our chromosomes, which leads to disease and eventually gets to the point where the cells are not able to successfully reproduce. That means cell death. There are simple tests available where you can estimate your “age in telomeres”, versus your chronological age, to let you know how well you are aging. Longer telomeres are more protective and therefore better for overall health and longevity. Shorter telomeres are associated with higher death rates from a wide variety of diseases and an overall shorter lifespan.

Remember hearing about Dolly the sheep – the first animal cloned back in 1996? Dolly lived only 6.5 years, but her breed has an average life expectancy of 12 years. Dolly died of progressive lung disease and had severe arthritis.



Dolly essentially died of old age at a young age! Why? Because Dolly was created with chromosomes that already had shortened telomeres because the sheep she was cloned from was six years old. Dolly’s “genetic age” at birth was really 6 years old, therefore genetically Dolly’s genes did complete their species “average” 12 year life span.

A number of factors affect the rate at which telomeres shorten over time. Free radicals (which is why supplementing with

antioxidants is so important), toxins, diet (too much saturated animal fat), obesity, diabetes, smoking, radiation, and lifestyle (exercise is good) all impact telomere shortening. While all these factors are important, arguably two of the most important factors are stress (#2) and sleep (#1). There is a definite relationship between significant telomere shortening in people who sleep less than 5 hours per night versus those who sleep 7 hours or more.

16 TIPS TO GET MORE AND BETTER QUALITY SLEEP

To get the maximum benefits of sleep, it's all about the *quantity* of *quality* sleep. Ideally, we want as much uninterrupted, deep sleep as possible. Do you really want to sleep better? Everyone says they do, but like anything else, are you willing to change a few things...consistently? Here's a grocery list of ways to sleep better, but they only work if you do your part. And yes, it's worth it!

1) Sensory Deprivation



One of the best things I have ever tried that noticeably increased my quality of sleep is **silicone earplugs**. They are very inexpensive and available in a multi-pack from your favorite drug store. They block out noise better than any other earplugs I have ever

tried. I bring them everywhere with me and now I'm even able to sleep on airplanes. The second part of the sensory deprivation equation is darkness, whether in the room or with blinders (which I also have in my carry-on bag on airplanes – and use for short, early afternoon naps, when I can steal them). Eliminating or

deadenning background noise or ambient light is key and will make a huge difference. That means turning off cell phones, TV, and even pointing your digital alarm clock in a different direction so that you don't glance at it and get your brain starting to think about all the stuff you have to do in the day ahead.

2) Cut The Racket!

Speaking of peace and quiet, or lack thereof, it's estimated that almost 50% of men and 30% of women snore regularly. Snoring can interrupt deep sleep (both your's and your partner's) and can have a significant negative impact on relationships. A number of factors may contribute to snoring, such as nasal conditions, obesity, and alcohol consumption. Suffice it to say, snoring does no one any good. Snoring can be associated with sleep apnea (cessation of breathing or interrupted breathing during sleep) which can pose very real risks to your health, including death! Changing sleeping position helps sometimes, as may mouthpieces and chin straps, however compliance is often low due to lack of comfort or jaw pain. Recently, a nasal spray product that has been sold in Europe for twenty years got introduced to the U.S. market (Zz Snore). This solution simply lubricates the back of the nasal passages and throat, helping to eliminate the friction that causes snoring. In some cases, cervical (neck) pillows have also been known to help keep airways open which may reduce snoring (see #14 below).

3) Hallowed Ground

Do everything possible to make your bedroom "hallowed ground" for a great sleep environment. Dark and silent is best. It also means preserving your bedroom just for sleep, meditation, reading, and sex. Don't invade that sanctuary with work or

discussing family, marriage, or work issues. If a discussion pops up that even approaches being stressful or requires problem solving brain work at a time when you are trying to shut down and recover, make every effort to get up and go in the other room to talk. Make sure to get your spouse to agree beforehand.

4) Leave The Animals To Their Own Sleep Space

While I'm convinced that no one loves their dogs more than I do (don't we all say that?), I also know that sleeping in the same bed with them decreases sleep quality and increases interruptions of deep sleep and REM states. While some may not be willing to make this "sacrifice" (and it surely is), just know that neither of you is sleeping as well as you could.



5) Cool It

While our body temperature falls during sleep, studies have also shown that keeping your bedroom a few degrees cooler than the rest of the house can also enhance or promote deep sleep. Of course this does not mean you should keep your bedroom so cold that you awake in desperation for more blankets or are shivering, but keep it cool nonetheless.

6) Keep The Rhythm

Our body's systems largely operate on Circadian Rhythms – rhythms that impact physiological processes, hormone release, metabolism and sleep itself. Our bodies tend to run best when we *follow regular patterns*. We tend to sleep better when we go to sleep and wake at the same times which is why jet lag (changing time zones and how daylight impacts us) can be so disruptive to sleep. Condition your body to a sleep schedule and do all you can to stick to it.

7) Develop Your Ritual

Kin to the above, studies have shown that developing a regular night-time ritual as bedtime approaches helps signal both the



body and mind to begin the shutdown process. Sure we all brush our teeth and change clothes, but we could expand that routine to turning down the thermostat, setting the alarm (remembering to turn the clock away), turning off electronics and grabbing a relaxing book to drift off to.

8) Food And Fluids

Eating stimulates your metabolism – not as much as exercise for sure, but chewing, swallowing, and digestive activity do bump things up a notch. As such, large meals or large calorie meals, as well as proteins should be avoided within the last 3 hours at least before bed to ensure the deepest sleep cycles. Any snacks or drinks that rapidly increase blood sugar levels should also be avoided as they charge your body up just when you are trying to shut down. Limit fluids in general the last few hours before bed so

that you don't have to make bathroom trips, which further disrupt sleep.

9) Say No To The Nightcap

While alcohol is a central nervous system depressant, it can increase heart rate and blood pressure. While it can make you drowsy and help you fall asleep, it definitely can interfere with deep sleep and REM phases – the end result being less deep sleep or waking more frequently. While there are no hard and fast rules, one drink an hour before bed hasn't been shown to impact much. Any more than that could affect metabolic activity and therefore sleep quality.



10) Avoid Stimulants – Especially Tobacco

Needless to say (but that's never stopped me before) caffeine, even if you think it doesn't inhibit you from falling asleep, should be avoided to ensure the best quality deep sleep. The half-life for caffeine is anywhere from 4-6 hours depending on how rapidly



your body processes, so mid-afternoon might be a good cut off for many people. Similarly, if you happen to be a smoker, you may want to...uhhh...STOP! That aside, reduce and avoid nicotine sources as much as possible in the evening and night. Nicotine is detectable in your bloodstream for as long as 3 days, so less is better. Smoking changes

your Circadian Rhythms, causing lower quality sleep, more restless sleep, and higher rates of insomnia.

11) Work Out Early

Working out is great for a vast number of reasons, one of which is the metabolic boost it stimulates while you're in the gym – a boost that lasts for as long as 48 hours *after* the workout ends. During that time, you're burning a greater number of calories. That said, night-time workouts amp up your metabolism and make it harder to both fall asleep and stay asleep. Exercise also increases appetite, the implications of which we discussed above. *Ideally*, it would be best to work out no later than early evening to give all your body's systems time to wind down in preparation for deep sleep. However, if the only time you can workout is late at night, go for it!



12) Naps Can Make You Or Break You

We all know that a brief 20-30 minute power nap can help us feel refreshed and be of sharper mind, but it's best to limit them in both duration and time of day. Assuming you are a typical 11:00 p.m. to 7:00 a.m. type sleeper, naps extending past 3:00 pm *may* impair your ability to fall asleep. This is largely an individual thing in that, if you are tired, over-exerted, fighting off the flu or overstressed, longer napping can be very helpful, just be mindful of the more significant goal of still falling asleep quickly at night and getting a solid night's sleep.

13) Breathe With Guided Meditation

If falling asleep is a challenge, have no fear. There are dozens of Apps that will take you through 10 minutes of calming music and

soft breathing instruction to actually slow brain activity helping you to fall asleep. Doing simple breathing exercises on your own are extremely helpful and meditative in their own right, as breathing and brain activity is linked. All of our Special Forces commandos (SEALs, Delta, Green Berets) are taught to use breathing techniques when in a stressful situation (like a gunfight) to calm their minds and control adrenaline levels. We can voluntarily control our brain activity simply by controlling our breathing. It's a great segue to drifting off.

14)Pillow Time: Get Comfortable – Really Comfortable



Orthopedic pillows, neck roll pillows and body pillows (held between the knees in the fetal position) can all do wonders to keep your body comfortable and your spine in a neutral position so less restless movement (sleep fidgeting) is necessary. Of course it pays to get the best mattress

you can (and seal it for allergy purposes) to get the best night's sleep.

15)Take Your Position

What's the best position to sleep in? Not to complicate things, but it depends on a number of things. If you snore, side posture may be best to reduce snoring. If you have orthopedic problems, such as neck or shoulder issues, on your back may be best. If you're pregnant, sleeping on your left side in the fetal position with a pillow between your knees is often recommended. If you have none of the above, on your back is often considered best, but may take some getting used to.

16) Sex

Has sex been linked to promote both sleep onset and a more deep and restful sleep? Yes and no. Yes, if the sex is pleasurable and non-stressful. No, if the sex is linked to staying up all night, stress, anxiety, guilt, or other negative emotions.



Scientists who have claimed sex as a cure for insomnia,

as well as a benefit to deeper sleep, cite research studies on the release of neuropeptides or endorphins during sex. This combats stress and promotes a feeling of well-being. In women, a spike in estrogen levels after intercourse enhances REM cycle sleep. In men, a hormone called prolactin which causes a feeling of fatigue (not to mention fatigue from the physical exertion) promotes sleep onset. Studies also show that the link between sleep and sex works both ways – people who get too little sleep tend to have lower sexual desire and arousal. Sex and sleep, or sleep and sex, can be a good thing!

Supplements For Sleep

Addressing this point could be a book in itself as there are dozens of supplements out there claiming to give you better sleep. Some work and are scientifically based, while some...well, don't. Keep on the lookout for an upcoming report where I will address the issue of supplements directly.

Good luck, stay healthy and sleep well!