

Insomnia and Sleep Disorders

- By Dave Siever - 2014

Introduction

Millions of people struggle with poor sleep. An estimated 50-70 million American adults have a sleep or wakefulness disorder. Data from the 2009 Behavioral Risk Factor Surveillance System (BRFSS) survey were used to assess the prevalence of unhealthy sleep behaviors by selected socio-demographic factors and geographic variations in 12 states. The analysis determined that, among 74,571 adult respondents in 12 states, 35.3% reported <7 hours of sleep during a typical 24-hour period, 48.0% reported snoring, 37.9% reported unintentionally falling asleep during the day at least once in the preceding month, and 4.7% reported nodding off or falling asleep while driving at least once in the preceding month. The National Institutes of Health suggests that school-age children need at least 10 hours of sleep daily, teens need 9-10.5 hours, and adults need 7-8 hours. According to data from the National Health Interview Survey, nearly 30% of adults reported an average of 6 hours or less sleep per day. In 2009, only 31% of high school students reported getting at least 8 hours of sleep on an average school night.

There are two main kinds of sleep problems: sleep-onset latency (where one has trouble falling asleep) and; middle-of-the-night-awakenings. The sleep-onset latency (SOL) type is often a result of stress or over-arousal from having too much activity in one's life. Middle-of-the-night (MON) type of sleep disturbances also result from stress and business, but are more typically brought on by neurochemical imbalances such as low serotonin or GABA. They are also the result of a noisy environment or from sleep-apnea.

ADHD children are more abundant in low-cost housing and inner-city apartments. Many of these buildings are of wood construction where noise easily travels across several suites before it becomes attenuated. As a result, its occupants are frequently, partially woken up. It is well known that when people have sleep disruptions, their brain waves slow down, they get foggy-headed and can't focus or concentrate and become moody and impulsive. One of the best treatments for this type of sleep disturbance is to wear earplugs.

Many adults have sleep-apnea, especially if they are not particularly fit and overweight. Some of those with sleep-apnea wake up as often as 10-20 times per hour – and they wake up exhausted. If you suspect that you may have sleep-apnea, get tested and buy a CPAP breathing machine.

Another cause of poor sleep may be a simple lack of exercise. People should be getting plenty of exercise, and aerobic exercise is preferred. People who stay fit generally sleep much better than those who don't. It's a good plan to be running six miles (10 km) or swimming one mile (1.6 km) twice per week.

Aside from noise, stress and apnea, middle of the night awakenings are usually related to nutrition, hormone and/or neurotransmitters. Both Audio-visual entrainment (AVE) and cranio-electro stimulation (CES) naturally help with "middle of the night" type of sleep disorder as they release serotonin, which gets converted into melatonin, one of the neurotransmitters involved in sleep. GABA, vitamin D, minerals such as magnesium, hormones and neurotransmitters all play a role in sleep. An imbalance in one of these is generally reflected as middle-of-the-night (non-stress related) awakenings, although stress may also play a part. Ask yourself this, when you wake up, is there a theme in mind or just random thoughts. If your thoughts have a theme, then your sleep issue is most likely related to daily mental congestion. If your thoughts are random and you feel fairly relaxed, but just awake, then consider that your awakenings might be caused by a factor other than stress or a hectic lifestyle.

When neurotechnology isn't helping much for overall sleep quality and feelings of being well rested and energized in the morning, then nutritional / chemical enhancers may need to be considered.

Psychometric Testing

ALL supplements affect brain function. So when using ANY supplement, fill out a cognitive/emotional index. The one that I like to use is the SCL-90R (Symptom Check List-90 Revised). This is a 90 question mental-health checklist. I have found myself get very forgetful on Amoxicillin and develop extreme and unsettling anxiety when using melatonin, so testing is important. Always take a baseline first. Once on the supplement or treatment etc., redo a fresh questionnaire. DO NOT look at your original questionnaire until completing your test questionnaire.

Sun-tanning

A low vitamin D level is often associated with sleep disorders. And given that oral D often loses its effectiveness after a few months, tanning will be the most important way to improve sleep and vitality. Tanning is the best way of acquiring vitamin D and that is because tanning actually makes vitamin D sulfate – a water soluble form of D, that is far more active and effective than oral D. Sun-based D mimics testosterone and affects over 1000 metabolic processes in the body. It settles down neurons and also releases serotonin within the brain. Think about the times when you felt mellow and relaxed after being outside and getting some sun. Find a tanning salon with low-pressure bulbs with a minimum ultra-violet B (UVB) content of 5%, although it could be 6 – 7%. Be sure the tanning salon has a bulb replacement program of about 500 hours. Otherwise, the quality of emitted light will deteriorate. Start at 4-5 minutes and tan NAKED, so you can make as much D as possible. Do not let the salon talk you into any creams or skin “conditioners” and certainly do not use sun-screen. You will need to increase your time to 10-15 minutes over the next few months. Many people are worried that tanning causes cancer. I can assure that I have researched tanning extensively and the smear campaign against tanning is indeed a scam. Drug companies and hospitals make \$billions annually by keeping us out of the sun!

Meditation Breathing

Aside from tanning, breathing properly is THE MOST IMPORTANT skill to learn for helping to return to sleep. Go to the Heartmath website and order the hardware and software (MWavePC or the iPhone app) to teach yourself meditative breathing. Do NOT use other smartphone apps as the ones that I have suggested, as other have shown to be unreliable. Because the outbreath is parasympathetic, you can put yourself back to sleep with breathing. (I have used this technique for years). When going back to sleep, use a breathing rhythm where your in-breath is about 3 seconds long and your out-breath is about 7 seconds long. This way the brain and body will be mostly parasympathetic and will assist in putting you back to sleep.

Both AVE and CES have been shown to help a lot with certain types of sleep issues. AVE is dissociative and reduces the chatter related to a busy day and is quite effective for helping get to sleep when the mind is racing. Both AVE and CES increase serotonin levels, which aids asleep.

The Nutritional Approach

St. John's Wort works by increasing serotonin within the brain. Serotonin has a calming effect on the brain and is further broken down into melatonin, an important neurotransmitter for having a good night's sleep. Serotonin is available in most drug and health food stores and generally sold as 5HTP. In some people, it binds with serotonin receptors in the gut and can produce extreme diarrhea. If this happens to you, discontinue use. I have found that many brands don't seem to work, but the brands "Flora" and "A. Vogel" seem to be quite effective.

GABA (gamma amino-butyric acid). GABA enhances the important delta (sleep) brain waves. However, long-term stress, especially childhood stress, strips out the GABA receptors of the amygdala (the emotional and fear center). As a result, a person with GABA issues is always revved up and cannot find deep relaxation.

Myo-Inositol is sometimes referred to as vitamin B8. It is helpful for persons who don't have good methylation of food. Methylation is a vital biochemical process that is essential for optimal function of almost all of your body's systems. It occurs continuously as it helps repair DNA, controls homocysteine (an unhealthy compound that can

damage blood vessels) and helps recycle molecules needed for detoxification. It plays an important role in boosting mood, reducing anxiety and improving sleep.

Melatonin is a further processed form of serotonin and is essential for sleep. It may be taken in pill form or introrally and absorbed through the oral mucosa (skin in the mouth). Whether or not one form is better than the other is unclear, but it sure can help with sleep. The Jamieson brand has a two-part, 10mg tablet with one part as quick release and the other part is timed release. The technique will help a person fall asleep and stay asleep.

The downside to melatonin

I know people who take 5-10 mg of melatonin every night without any undesirable side-effects. However, many people cannot tolerate more than 1-2 mg daily, and I happen to be one of them. In my 2-week study, I took 2.5 mg at bedtime. When I wake up at 3-4 AM, I would take a few drops of St. John's Wort (which I have been doing for years). On melatonin, the Wort really worked very well and would knock me clean out for a very deep sleep. However, by the week's end, I was extremely foggy-headed until noon, which was making me feel lethargic and out-of-sorts. Into the 2nd week, I began to feel depressed and by day 10, my anxiety began climbing through the roof. By day 14, I was a mess. I felt too anxious to drive, had facial ticks and was having to keep my head together constantly. It was a truly an awful feeling – even though I seemed to be sleeping well. After I quite, the anxiety was completely gone in 4-days. But the St. John's Wort wasn't very effective anymore either. It's possible that 1 mg is the maximum dosage I should be taking. – Another experiment.

Audio-visual Entrainment

Assuming that nutrition and hormones are doing fairly well, both AVE and CES lend themselves well for stress-related sleep problems. If you find that you are generally thinking about the same thing much of the time (work, family, health, news events, a particular relationship or something that you have done and feel bad about) and it is causing stress, then AVE and CES might be well suited for you. Also, if your day is just too busy and you lay in bed with dozens of random thoughts and you cannot fall asleep, then AVE and CES might work well for you. An AVE study of eight insomniacs, spanning the ages from 22-76 years old was completed in 1998. It was an ABA design, with a 3-week baseline, a 2-month treatment period using theta stimulation, followed by a 3-week followup had the following results:

Sleep Onset Latency	40	23	minutes
Wakenings After Sleep Onset	65	40	minutes
Frequency Of Night Awakenings	1.9	1.6	nights
Feeling upon Awakening	2.5	3.7	(1-5) Self-rated
Quality of Sleep	2.8	4.1	(1-5) Self-rated
Beck Depression Scale	15.5	9.8	(10 and above indicates depression)
Somatic causes (pain)	2.2	1.7	(1-5) Self-rated
Cognitive causes (noisy brain)	3.5	2	(1-5) Self-rated

Cranio-electro Stimulation

AVE doesn't generally work well for middle-of-the-night awakenings (MONA). If you do feel the need to use AVE during the night, then using the blue color on a dim setting is the preferred approach. Sometimes sub-delta is the best session to use at this time. Using the Depression session during the day can help improve sleep. Given that the lights are often found to be annoying during a MONA, CES is a good alternative. Given that CES increases serotonin, it is helpful for sleep. To date, sleep studies on CES, span almost 20 studies and 700 participants, with average improvement in sleep by about 67%. CES at 100 Hz or in the alpha/theta range work best.

The Last Straw Drug Approach

This is truly the LAST STRAW approach and even at that, break your pills into the smallest amount which will help with sleep and don't take these drugs more than once / week – or they will "get you." For the most part, drugs are nasty chemicals that are made in labs and are hard on our livers and kidneys. Without a good nutritional program,

including vitamin D, drugs don't properly induce good Stage 4 sleep, so it's possible to wake up tired and foggy-headed anyway. So, I would suggest avoiding drugs for sleep without first being on a sun-tanning program and having tried melatonin, St. John's Wort, GABA, nutrition, lifestyle changes and breath work first. I have used small quantities of drugs (especially when I travel) for improving sleep and have done so for several years without incident. But there are some strict rules that I follow. If you wake up at 2, 3 or 4 AM, you could try this:

1) Klonopin – Clonazepam - Boosts GABA (GABA increases delta (sleep) brain waves). Take as little as possible to be effective. I find that a ¼ or less of a 2mg tablet, (500ug) will put me into a deep sleep for four hours. After swallowing the Klonopin, open a 500 mg capsule of GABA and put about a ¼ of the contents of the capsule's powder onto your tongue. Swish it around your mouth and do not wash it down. Go to bed with it in your mouth. These small doses of Klonopin may be taken twice / week for two months. After that, take no more than once / week or you may develop a tolerance to it.

2) Nytol / Sleep Aid – diphenhydramine – This is a depressing antihistamine. Therefore it may be used for both allergies and sleep. This is the same chemical that is in Benadryl. Therefore it is unfortunately marketed for both allergies and for sleep. It is an antagonist to acetylcholine (a neurostimulant) thus calming the brain. It is quite habituating as so people who use it for allergies may also develop sleep disorders. As with Klonopin, take as little as possible to be effective. I find that a ¼ or less of a tablet will put me into a fairly deep sleep for four hours. After swallowing the Nytol, open a 500 mg capsule of GABA and put about a 1/4 of the GABA powder onto your tongue. Swish it around your mouth and do not wash it down. Go to bed with it in your mouth. Avoid taking Nytol more than once / week or you may develop a tolerance to it and then really be awake.

I struggle with sleep and have a variety of techniques that get me a fairly fine sleep every night.

- 1) Keep my stress down. Practice HRV breathing. I go home from work by 5PM and try to not think about it after.
- 2) Exercise every day – Bike 10 miles / day or run 3 miles, swim etc.
- 3) I take 1mg of melatonin at bedtime and put roughly 100mg of GABA powder from a capsule on my tongue as swish it around in my mouth.
- 4) I generally wake up between 2-4 AM. Then I take 4-6 drops of liquid St. John's Wort on my tongue and swish it around.
- 5) Vitamin D sulfate (the real vitamin D from tanning) is essential. When I stop sun tanning, I develop extreme insomnia in about 6-weeks.

Testimonials

My sleep was deteriorating over the years to the point of needing sleeping pills, which I have been taking quite a bit over the past three years. I noticed that sometimes when I awoke, I could hear my wife snoring, but only on occasion. I finally bought some ear plugs to see if they would make any difference and to my surprise, the snoring must have been more interfering than I had realized because ever since I have been using ear plugs my sleep is great – and I have rarely used sleeping pills since. – DR (Authors note: at night, as we relax, the stapes muscle relaxes and quits attenuating the ear. As a result, noises are several times louder in the middle of the night than during the day).

I love the sun and I sleep great in the summer. But in winter, I really struggle with poor sleep, often waking up at 3 AM and feeling exhausted by morning. I began sun tanning at a local suntan spa this winter and after two weeks of tanning, I was sleeping like a baby! I also use a little melatonin sometimes, which helps. - BK

My job gets really busy with hundreds of things to do during the day. Then when I get home, I still have to rush dinner and get my kids to soccer, music and whatever other events they are into. My mind is all racy when I try to sleep, so I have been using sleeping pills to get me relaxed enough to fall asleep. After I began using the DAVID

products with the blue lights, my mind easily clears itself and before I know it I'm waking up in the morning feeling all refreshed. I don't even remember falling asleep! - JS

I play soccer in an office sports league. Our play times are typically between 9 and 11 PM. Even though we mainly play for fun, I found that I was so wound up after a game that I often could not get to sleep until 3AM. After learning to breathe with the HeartMath program, I now breathe for 10 minutes following a game – and that really calms me down. Then, when I get home, I use the Schumann Resonance program on the DAVID – and it knocks me right out. Now I can play and sleep well when I get home. - JS