
THE HMS Guide to Successful Sleep

Strategies for Women

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Dedication

To My Patients

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Introduction

Would you like to fall asleep faster, sleep more soundly, or wake up more refreshed? If so, this book is for you. Here, you will find stories about women who share one or more of these goals. After each story, I discuss natural and over-the-counter remedies and lifestyle changes, as well as medications and other strategies that may help you to achieve these goals.

Some of the strategies are ones you can try on your own, others require that you team up with your doctor or a sleep specialist. For those cases, I provide questions that you can ask your doctor as you work together to achieve your personal sleep goals.

We spend a third of our adult lives sleeping. Although sleep is critical to our health, women are apt to cut back on sleep to meet the many demands on our time. I have certainly done it myself, even a few times while writing this book! As you will see, sleeping less than seven hours a night; or trying to get by with poor quality sleep causes you to not feel your best and it may even sabotage your long-term health.

This book includes up-to-date research to inform you about the latest remedies and strategies to improve sleep. Each scenario in the book is fiction. The women are not real patients, but the situations are the same ones my patients come to me with as their physician. If you, or someone you know, think one of the women resembles you, it is purely a coincidence. This just goes to show how common these problems are in women as we struggle to fulfill our many roles.

Whether you are young, old, or young at heart, if you would like to sleep sooner, better, longer, or awaken more refreshed, you have a lot of company. Researchers looking at college students find sleep disturbances abound. Younger adults may suffer from most of the sleep changes that I discuss throughout this book. If you are in mid-life, then sleep issues may plague you, too. Approximately 70% to 80% of American women in peri- and postmenopause (often as young as 35 to 65 plus) have sleep-disordered breathing, and more than 40% have insomnia, with trouble falling asleep or staying asleep. All too often, women with correctable sleep difficulties are not diagnosed or treated by their health care provider.

I hope you find these scenarios and the discussions that follow interesting and helpful - and that you are sleeping better soon.

Julia Schlam Edelman MD, FACOG, NCMP

Part I: Fall Asleep Faster

Chapter 1: Lifestyle Choices

Camille is a 30 year old high school teacher with two children in elementary school. “My husband is an emergency medical technician who works different shifts. I often stay up late to spend time with him after the kids go to bed, and before he leaves for a night shift. I might not go to sleep until midnight those nights. I still have to wake up by 5:30 AM the next morning to shower and get ready for work, then drop my kids off at their before-school program by 7 AM, after making them breakfast and packing their lunches. After that, I grab a large coffee at the local drive-in window, and arrive at work just before the 7:30 AM bell. In the evening, after helping our kids with their homework and putting them to bed, I stay awake to grade school papers.”

“By 10 AM the next morning my 7 AM large coffee is no longer enough to keep me going. I start to feel exhausted, and grab another cup of coffee while my students go to their driver’s education class. At 1 PM, I have my third and last cup of coffee after lunch. It helps me get through the afternoon.”

“At bedtime, between 11 PM and midnight, I am exhausted, but I still have trouble falling asleep quickly. I have been attributing this to stress. Lately, my husband has been getting fewer shifts, and the financial strain is taking its toll. In addition, our younger son needs his tonsils out soon. I will have to take time off from work and we need money for the hospital co-pay. My husband and I see each other less since he has been trying to pick up extra shifts. I do almost everything the kids need during these times, and function like a single parent.”

“One teacher suggested unwinding before going to sleep. Grading papers up until bedtime adds to her stress. Since then, I have tried watching the late news on TV, or playing an electronic game on the

new iPad my parents gave me for my 30th birthday. I like playing the game 'Angry Birds.' Even though I eliminated the stress of grading papers before bed, I still can't fall asleep for hours."

"In the teachers' lounge, another teacher is falling asleep faster since she started exercising. I won't get up earlier, so after I finish grading papers, I do exercises on a videotape I borrowed from the library. But I'm still tossing about for hours before falling asleep."

"I need relief—I'm exhausted 24/7. I'd like to avoid taking a prescription medication, and prefer to try an over-the-counter preparation or make a lifestyle change. I started brewing myself some Chamomile tea before bed, but woke up to urinate too often. The extra trips to the bathroom disrupted my remaining sleep."

"At an annual visit with my primary care physician this June, I brought up my concerns about sleep, and asked for recommendations. The only request I made is: Do NOT ask me to give up my coffee. I can't do without it!"

Discussion

Camille's doctor agrees that eliminating her coffee all at once is not a good idea. As I discuss in my first book, *Menopause Matters*, abruptly discontinuing caffeine is likely to trigger headaches from the sudden caffeine withdrawal. Two strategies will work without triggering headaches. One, slowly cut back on the amount of caffeine over time, and two, adjust the timing of the caffeine consumption so the last coffee is earlier in the day. These are two lifestyle modifications that will help Camille fall asleep faster. Her doctor's additional lifestyle modifications are below.

First he addresses the issue of screen time. The National Heart Lung and Blood Institute (NHLBI) and the Harvard Health Press both have excellent overviews of sleep routines that will enhance your ability to fall asleep, including the impact of viewing a back-lit screen before going to sleep. Viewing a back-lit screen such as a TV or computer screen, an electronic reader, or a smart phone stimulates the brain and makes it harder to fall asleep. The stimulation likely results from a reduction in melatonin. Less melatonin hampers the body's transition into sleep mode. Reading a book made from trees, listening to music, having a relaxing conversation, or doing a craft will help Camille fall asleep faster. She may also consider writing in a diary or journal, or making lists of things on her mind.

Second, he addresses her exercise routine. In general, those who exercise regularly tend to fall asleep faster. However, exercising within two hours of bedtime is overly stimulating, and makes it more difficult to fall asleep. Keep exercising for health and to reduce stress, and change the timing so the exercise is completed by early evening, at least two hours before bedtime.

Third, he recommends an earlier bedtime that allows for at least seven hours of sleep. Less than that amount will leave her tired. Further, several researchers, including Dutch researcher Marieke Hoevenaar-Blom and her colleagues, find that individuals who sleep less than 7 hours have a higher risk of heart disease than those who sleep longer. Sleeping extra on week-ends is not equivalent.

Next, he encourages a regular sleep schedule. Going to bed and waking up the same time every day of the week will train Camille's body to sleep on cue. The less varied the schedule, the better. A set sleep schedule will help her body expect to fall asleep and wake up at set times. If Camille cannot fall asleep quickly, she will get out of bed, leave the bedroom, and occupy herself with an activity until she is tired. At that time she may attempt to sleep again. This routine dedicates the bedroom exclusively to sleep or sex. In addition to eliminating tossing and turning while trying to sleep, it decreases worrying about the

inability to sleep. Leaving the bedroom if she cannot sleep, trains Camille to associate her bed with sleeping, not struggling to sleep.

Finally, Camille's doctor returns to discussing her coffee intake in greater detail. She told Camille that her body clears only half the caffeine she consumes every six hours. A large mug of coffee may contain more than 200 milligrams of caffeine. Camille and her doctor do the math. Three mugs of coffee by 12 noon, introduces 600 milligrams of caffeine. Half of that caffeine is cleared by 6 PM, leaving 300 milligrams. Six hours later, at midnight, 150 milligrams remain in Camille's system. The residual caffeine makes her mind spin and causes her to feel jittery, adding to her stress about not falling asleep. She also referred Camille to the second chapter in Edelman's book, *Menopause Matters* for more information about tapering coffee or other caffeine while minimizing headaches from caffeine withdrawal.

Before drinking her last cup of coffee each day, the doctor suggested that Camille try pouring off two ounces of coffee every day for one week. If she falls asleep easily, and wakes up rested, she stops there. If not, the next week, before drinking her last cup of coffee, she pours off four ounces. If she falls asleep easily, her coffee taper is complete. If not she continues this gradual taper until she falls asleep easily and awakens rested. This avoids withdrawal headaches, and allows Camille to keep as much coffee as possible while falling asleep faster.

Camille tapers her coffee, finishes her last cup at 10 AM, moves her exercise time to before dinner, and falls asleep faster. She records the evening TV shows she likes and stops watching them during the 90 minutes before bedtime. Nor does she use her computer, iPad, or electronic reader for two hours before bedtime. Lastly, she designates 10 PM as her personal bedtime to allow herself a minimum of seven hours of sleep. "I am pleased that I did not need to buy medications or remedies to fall asleep faster. Even though I still have stress in my life, I am equipped to handle it after a full night's sleep."

Camille successfully used lifestyle changes to fall asleep faster. These lifestyle changes are also called sleep hygiene measures by sleep experts. You may try them on your own to improve your ability to fall asleep faster.

Tips for a better night's sleep

Hygiene is the application of scientific knowledge to maintain good health. These procedures are known as “sleep hygiene,” because they represent scientific thinking about maintaining healthy sleep patterns.

- Go to bed and wake up at the same time every day, even on weekends.
- Use the bed only for sleeping or sex.
- Forgo naps, especially close to bedtime.
- Limit the time you spend in bed. Turn in only when you're sleepy. If you don't fall asleep within 15 minutes or if you wake up and can't fall back to sleep within that amount of time, get out of bed and do something relaxing until you feel sleepy again.
- Avoid caffeine-containing beverages (coffee, many teas, chocolate, and cola drinks) after 2 PM, or noon if you're caffeine-sensitive.
- Avoid eating foods that contribute to heartburn.
- Don't drink alcohol for at least two hours before bedtime.
- Limit fluids before bedtime to minimize nighttime trips to the bathroom.
- Stop smoking, or at least do not smoke for one to two hours before turning in for the night.
- Exercise regularly (but not within two hours of bedtime).
- Keep the bedroom cool, dark, and as quiet as possible.
- Replace a worn-out or uncomfortable mattress.
- Take a hot bath before bedtime.
- Use relaxation techniques before bedtime.

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Chapter 2: Medication Options

Theresa is a 56 year old paralegal. She works long hours, and has a lengthy commute. Despite the demands on her time, she cannot fall asleep for hours. “I know my lifestyle is not a healthy one. I don't

have time to prepare healthy meals or exercise regularly. Right now, I don't have much flexibility. I have a daughter in college—I would like to help with her tuition - and an elderly mother whose finances are tight. And if I don't keep up with my heavy workload, a younger paralegal will take over my job in a heartbeat.

"Some nights I don't fall asleep until midnight, yet I still wake up at 5 AM to catch the commuter train to work. After several cups of coffee, I am alert enough to do my job. I sleep on the train during the return ride. Fortunately, the drive home from the train station is short, so I have not yet fallen asleep at the wheel of my car.

"One of my co-workers, Barbara, is roughly the same age and also has trouble sleeping. Recently she came to work with her bottle of prescription sleeping pills. 'Why don't you call your doctor and ask for some of these? It has made a big difference in my life. Now I fall asleep in less than fifteen minutes!' Barbara offered me some sleeping pills to try.

"Normally, I don't sample other people's prescription medications, but Barbara was persuasive. Besides, I am healthy, and don't take any other medications. Barbara said, 'Here, take 20, I need to fill a new prescription anyway—I am sending away for a three month supply. Just try one each night and see how you like them.'

"I tried one of Barbara's sleeping pills each evening, and fell asleep faster. When I saw my family physician, I asked him to prescribe sleeping pills for me to take on a regular basis."

Discussion

Theresa's doctor agrees she needs help to fall asleep faster. He also empathized with the demands she is juggling, and assured her that she is not alone. Insomnia, a serious health problem, affects millions of people worldwide. According to Octavian Ioachimescu, a critical care medicine and sleep medicine specialist in Atlanta, S. Taavoni, an Iranian sleep expert who has written about women's sleep issues, from 22 to 50% of individuals suffer from insomnia, and women are more likely to have it than men.

More than a third of respondents in one National Sleep Foundation poll, as Paivi Polo-Kantola, a sleep expert in Finland, reports, had difficulty falling asleep. Trouble falling asleep may be a side effect from taking a particular medication, or it may result from a medical condition that makes falling asleep harder. For others, difficulty falling asleep is a signal that their sleep process is compromised, or their environment is not conducive to falling asleep.

Theresa's doctor elaborated on the features of the medication she tried, a sedative-hypnotic. Sedative-hypnotics are a family of medications that often help individuals fall asleep sooner in the short term. However, they are not a long term solution. Theresa is concerned—her stresses are chronic.

The "down" side of taking this type of medication is that it can be habit-forming, particularly those with a history of substance abuse or a genetic predisposition to addiction. Further, Daniel Kripke, a psychiatrist and sleep expert in La Jolla California, and his colleague reviewed the experiences of individuals who took a sedative-hypnotic and noted they may have rebound insomnia. Individuals that get rebound insomnia, have more trouble falling asleep after stopping the medication than they had before starting it.

Newer concerns about sedative-hypnotics have surfaced in the last five years. However, these concerns are not yet shared by all clinicians and researchers to the same degree. Kripke and others did a

meta-analysis where they pooled the results of many different research studies. Groups of individuals who took sedative-hypnotic medications had a higher risk of getting cancer and of dying sooner. Even those who took fewer than 18 pills a year were more likely to die or get cancer than those who did not use any sedative hypnotic pills. There was a four to six times higher risk of death.

Theresa was stunned. “If the sedative-hypnotic pills are associated with a four to six times higher risk of death, why are doctors still prescribing them, and why are they still on the market?” Her doctor explained that the studies themselves have drawbacks and limitations. While the association of cancer and death is strong, the reason for the association is less clear. The type of study is a retrospective study—the researchers reviewed medical records and interpreted the data looking back at medical records. The studies do not prove that the sedative-hypnotic medications caused a higher risk of cancer and of dying sooner. It is an association by analyzing the data. The researchers speculate about ways that the medication could cause death and cancer to be more likely, but the speculations are still theory, not proof. Her doctor explained that another theory is that the individuals studied had medical problems before taking the sleep medications, and that these medical problems increased their risk of dying sooner.

Table 3: Prescription medications for insomnia		
Generic name (brand name)	Side effects	Comments
Benzodiazepines (for short-term treatment of insomnia)		
alprazolam* (Xanax) clonazepam* (Klonopin) diazepam* (Valium) estazolam (ProSom) flurazepam (Dalmane) lorazepam* (Ativan) quazepam (Doral) temazepam (Restoril) triazolam (Halcion)	Clumsiness or unsteadiness, dizziness, lightheadedness, daytime drowsiness, headache	Should be used with caution by people with sleep apnea or other breathing difficulties; not to be used with alcohol or other depressants; tolerance may develop; withdrawal symptoms occur if stopped abruptly. Triazolam is a short-acting medication.
Nonbenzodiazepines (for insomnia)		

eszopiclone (Lunesta) zaleplon (Sonata) zolpidem (Ambien, Ambien CR)	Headache, daytime drowsiness, dizziness, nausea, drugged feeling	Avoid combining these medications with alcohol and certain depressants (including antihistamines, muscle relaxants, and sedatives).
Antidepressants* (for insomnia, nonrestorative sleep, and depression)		
Serotonin modulator trazodone (Desyrel)	Dizziness, dry mouth, headache, nausea, constipation or diarrhea, painful erections	Certain antidepressants should not be used with a monoamine oxidase inhibitor (MAOI) or during immediate recovery from a heart attack.
Selective serotonin reuptake inhibitors (SSRIs) citalopram (Celexa) fluoxetine (Prozac) fluvoxamine (Luvox) paroxetine (Paxil) sertraline (Zoloft)	Dry mouth, drowsiness, dizziness, sexual dysfunction, nausea, diarrhea, headache, jitteriness, sweating, insomnia, weight gain	
Serotonin and norepinephrine reuptake inhibitor (SNRI) venlafaxine (Effexor)	Upset stomach, excitement or anxiety, dry mouth, skin sensitivity to sunlight, weight gain, headache	
Tetracyclic mirtazapine (Remeron)	Dry mouth, constipation, weight gain, headache, dizziness	
Tricyclics amitriptyline (Elavil) doxepin (Sinequan) nortriptyline (Aventyl,	Dry mouth, dizziness, constipation, incomplete urination, weight gain, sun sensitivity, sweating, faintness upon standing, increased heart rate, sexual dysfunction	

Pamelor) trimipramine (Surmontil)		
Melatonin receptor agonist (for insomnia at bedtime)		
ramelteon (Rozerem)	Dizziness	May exacerbate depression; not to be used by people who have severe liver damage or who take fluvoxamine (Luvox).
<p><i>*Although the FDA has not approved these drugs for this use, physicians have found that they often help people with insomnia and therefore prescribe them.</i></p> <p><i>Reprinted with permission from the Special Health Report: Improving Memory (Harvard Health Publications/Harvard Medical School, 2012).</i></p>		

After the discussion with her doctor, Theresa disposed of Barbara’s sleeping pills. The next day at the office, Theresa shared her doctor’s updates with Barbara, and encouraged her to look for other options to help fall asleep sooner. After reading the Harvard Mental Health Letter, Theresa decided to try Cognitive Behavioral Therapy (which is known as “CBT” for short). CBT has been shown to successfully change people’s habits and thought patterns. She also used CBT to develop more psychological tools and strategies to address the stresses in her life.

Through counseling, Theresa found that she needs to carve out time for herself, particularly in the evening before going to bed, when she is not worrying about her job, her mother, her daughter, or her own future. The short-term therapy helped reduce her stress. Theresa is digging out her old cross-stitch patterns from the attic and re-discovering how tranquil she feels when she works with the silk threads that feel soft to the touch and form beautiful patterns.

Barbara was perturbed about the disadvantages of taking her sleeping pills, and decided to explore her options and do Internet research on natural remedies. CBT worked well for Theresa, and provided added benefits of decreasing her stress in addition to helping her fall asleep faster. In the next chapter, I’ll discuss Barbara’s experience looking at natural remedies..

Chapter 3: Natural Remedies

Barbara is a 56 year old paralegal. “Last week I offered my friend and co-worker, Theresa, some of my prescription sleeping pills to try. After Theresa saw her doctor, she told me that the sleeping pills I am taking increase my risk of dying or getting cancer!

“After this frightening experience, I plan to research natural remedies. This week-end, my husband is going on a fishing trip, and I will have time to search the Internet. I also plan to go to the natural food store a few towns over and speak with the clerks.

“At the natural foods store, I cornered an employee in the supplements department. He told me that Melatonin and Valerian are the most popular supplements he sells to help customers fall asleep faster.

“Although I have not completed my Internet research, I need help now to fall asleep faster, and I purchased both Melatonin and Valerian. While I originally planned to complete my research first, I need a break from doing research this week-end—I do research all day long at the law office. I want time to enjoy my friends.

“My evening with the girls on Saturday was fun. I had a cocktail before dinner at the bar, and two glasses of wine with dinner. Since I stopped the sleeping pills I am worse off than when I started them, so I decided to try the Valerian Root that night. I took 600 milligrams of Valerian root and went to bed. I woke up with a headache.

“After four nights of taking Valerian Root at bedtime, I still did not fall asleep faster. The following night I tried the over-the-counter Melatonin preparation. The first week I fell asleep fifteen minutes faster. The second week I did not fall asleep for more than an hour.”

Discussion

About 50% of postmenopausal women have some type of insomnia: trouble falling asleep, trouble staying asleep, or waking up tired. Postmenopausal women have had no menstrual period for twelve consecutive months after their final menstrual period. The average age to become postmenopausal in the United States is 51 years old. The range is from age 40 to age 58. For more information about postmenopause and its effects on women see the first chapter of *Menopause Matters*, posted on line.

The Iranian physician and researcher Taavoni and his colleagues studied 100 postmenopausal women between ages 50 and 60 who had insomnia. They used the Pittsburgh Sleep Quality Index (PSQI) to determine the specific types of sleep issues women were experiencing. Thirty per cent of the women in the study reported falling asleep sooner, and slept better after taking Valerian Root.

Valerian is the most commonly used herbal product for inducing sleep. If Barbara had time to complete her Internet research, she may have discovered that some women get a headache after using Valerian Root, as she did. At this time, Taavoni and colleagues attest that there are no known contraindications to using Valerian, or worrisome interactions to consider.

Valerian Root helps some individuals fall asleep faster due to its sedative and hypnotic properties. It has also been suggested for use in relieving anxiety, depression, stress and even menopausal symptoms. Evidence that Valerian Root is helpful for these other purposes is limited, and there is no definitive proof that it works to alleviate them.

The evidence that Valerian Root works to help women fall asleep faster is mixed. As Quentin Regestein, a Psychiatry professor and sleep expert at Harvard Medical School and Brigham and Women’s Hospital states in an editorial he wrote, some studies show that women who take even 600 milligrams of Valerian Root before bedtime do not sleep better. Other studies are more encouraging. Most studies do not evaluate the use of Valerian Root for more than seven days.

In the example above, Valerian Root did not work for Barbara. She was not in the 30% that benefit from its effects. One explanation for why Valerian Root did not help her, but may help other individuals, is that individuals differ substantially in how they eliminate Valerian. Those who eliminate Valerian quickly may not retain it long enough to experience relief. Others, who take longer to process and eliminate Valerian, have a chance to benefit from its therapeutic properties.

Barbara's next move is to try Melatonin, the other over-the-counter supplement she purchased. Melatonin is a neurohormone that occurs naturally in the human body. It is secreted by the pineal gland from serotonin, a feel-good hormone. Melatonin influences nerve activity that governs temperature, sleep, and daily body rhythms called circadian rhythms. One challenge in using Melatonin is that it does not stick around long. The half-life is short, from 45 to sixty minutes: only half the melatonin remains in your body less than an hour after taking it.

Melatonin is processed by the liver, where 90% of it is cleared. It brings on sleep by dampening wake-promoting impulses in a specific area of the hypothalamus, a portion of the brain. In loachimescue's review, a healthy group of individuals with no other medical issues besides insomnia, fell asleep four minutes faster after taking melatonin, and increased their total sleep time by 12.8 minutes.

Older adults with insomnia have lower levels of night-time melatonin than those without insomnia. At present, Daniel P Cardinali, a neuroscientist who studies the physiology of sleep in Buenos Aires, and other experts believe that the low melatonin levels in over-55 insomniacs are responsible for causing the insomnia. Over-55 individuals with insomnia and low melatonin levels are likely to benefit the most from taking melatonin. Taking melatonin is correcting their melatonin deficiency and allowing them to fall asleep faster.

Low doses of melatonin have been studied, usually 3 milligrams or less. Experts feel that higher doses, even over 8 mg, should be studied to learn the potential impact on sleep. Larger studies are needed.

Over-the-counter melatonin is sold as a food supplement in the United States, and is not regulated. There are two major categories of melatonin products: the natural product melatonin, and melatonin act-alikes called non-melatonin receptor agonists, or MRA's. MRA's mimic melatonin and act similarly in the body. Ramelteon is one prescription form of an MRA available in the United States. It is used to treat those who have trouble falling asleep, and has fewer side effects than the benzodiazepines or other sleep medications described in Chapter 2.

Ramelteon is absorbed quickly, and it takes only twenty minutes to achieve the peak blood level. In 1.2 hours, half of the Ramelteon is already being eliminated by the kidneys. According to loachimescue's review, the isoenzyme, CYP1A2, plays a critical part in processing Ramelteon. As a result, there is a list of medications that cannot be taken with Ramelteon that includes drugs that inhibit this enzyme and others that are closely related. The family of medications that should not be taken with Ramelteon is extensive, and includes commonly used antibiotics, antifungals, and antidepressants. Check with your physician and your pharmacist for possible interactions with other medications you may take if you are filling a prescription for Ramelteon. If Ramelteon is safe for you to take, it should help you fall asleep ten or fifteen minutes faster, and decrease night awakening.

Side effects of Ramelteon include dizziness, fatigue, nausea, vomiting, headache, and sleepiness. It also may increase the female lactation hormone, Prolactin. Ramelteon may also cause menstrual periods to stop, or produce nipple discharge, lower sex drive, or infertility. Those with severe liver

disease cannot safely take it. On the plus side, Ramelteon does not have the potential to be addictive, and does not impair motor function or mental function. After stopping Ramelteon, you should not experience rebound insomnia.

If Melatonin and Valerian Root do not help Barbara, she may try other alternative approaches. However, their track record is less established.

Acupuncture may help some individuals. While some studies show it helps individuals fall asleep faster, other studies do not support this finding. Acupressure studies, according to Jerome Sarris, a PhD Postdoctoral Clinical Research Fellow, and Vice Chair of the International Network of Integrative Mental Health based in Melbourne, Australia, and his colleague, Gerard Byrne, show more promise. Half a dozen studies support using acupressure (pressure on acupuncture points with no needles).

Tai chi and yoga help individuals fall asleep faster, and promote improved quality of sleep. At present, Sarris and Byrne's review indicates that Tai chi, yoga, and acupressure show the most promise as alternative choices for falling asleep faster and improving sleep quality. Whether an individual practices Tai chi or yoga, they will benefit from the mental relaxation as well as muscle relaxation that these practices provide. Meditation may help as a calming and relaxing technique. Larger studies are needed that evaluate these techniques as well as over the counter remedies and supplements for longer periods of time, and with controls, to more clearly establish the benefit of each alternative regimen.

Part II: Sleep More Soundly

Chapter 4: Overcoming Restless Legs Syndrome

Rhonda is a 43 year old woman who runs her own daycare center. "I am physically active and often play with the young children who attend my daycare center. In addition, I enjoy cycling and gardening in the summer; and going for hikes in my snow shoes, and cross-country skiing in the winter."

"Recently I noticed that I cannot get comfortable in bed. I start having discomfort in my lower legs in the early evening. Once I get into bed, I toss and turn, swinging my legs and often kicking my partner until I get comfortable. Only moving my lower legs relieves the gnawing discomfort deep under the skin."

Discussion

Rhonda's doctor says her story is typical of Restless Legs Syndrome, RLS. To be certain, he takes a thorough medical history and asks detailed questions about her symptoms. He also asks about her family history. RLS is common in some families. Researchers are sorting out the type of genetic predisposition and hereditary pattern involved. At present 50% of RLS cases are thought to be hereditary. He asked Rhonda if she had a parent or sibling with restless legs syndrome, since that would increase her chances of having it. Rhonda checked with her family and learned that both her older sisters had RLS when they were pregnant. Since Rhonda did not conceive, they did not discuss it with her until she asked about it.

Next the doctor performs a physical examination of her legs to check for clots and other causes of leg pain. He looks and feels for knots in the muscle. Knots in the muscle would suggest muscle spasms

are responsible for the leg cramps. There are no muscle knots, and the rest of the physical examination of her legs is normal.

The doctor confirms that Rhonda has RLS. She meets the four criteria for diagnosis: an uncomfortable sensation in the legs, the sensation occurs at rest, it improves with movement, and it occurs in the evening and at night. These criteria are reaffirmed by Dr. Diego Garcia-Borreguero, MD, PhD who is currently the Director of the Sleep Research Institute in Madrid, Spain. Rhonda asked, “Do I need a sleep study?” Her doctor’s answer: A sleep study is not usually needed to establish the diagnosis of RLS. If treatment is not successful, or the diagnosis is in question, the doctor may reconsider the need for a sleep study.

Since her sisters had RLS when they were pregnant, Rhonda asked, “Is RLS associated with high estrogen levels?” Her doctor explains: RLS is twice as common in women, and is more common in pregnancy. According to Mauro Manconi, a sleep expert at the Neurocenter of Southern Switzerland, researchers have not found RLS to be associated with high estrogen levels, and postmenopausal women with low estrogen levels are just as likely to get RLS.

Rhonda asks, “Do I have to take medication?” Her doctor determines that Rhonda’s RLS is debilitating. It occurs more than five days a week, and affects her quality of life and that of her partner. While treatment is not mandatory if RLS is mild, Rhonda’s meets criteria for debilitating RLS, according to Paul Yeh, a sleep expert based at Vanderbilt University Medical Center in Tennessee, who has a particular interest in RLS research.

Before Rhonda accepts a prescription for her RLS she has a few more questions.

“Am I at risk for RLS for any other reason besides family history?”

“Why am I first getting RLS now, at age 43?”

“What are the alternatives to prescription medication?”

Discussion

Restless legs syndrome (RLS) may occur out of the blue, in a healthy individual with no other medical conditions. It affects 5-20% of the population. RLS is more common during pregnancy, which is when Rhonda’s sisters first saw their symptoms.

Rhonda is currently perimenopausal. Her body is transitioning from menstruating and being fertile, to postmenopause when she will no longer be fertile, and her natural estrogen levels will drop. 80% of women in perimenopause have irregular menstrual periods.

If Rhonda’s menstrual cycles are closer together—she bleeds too often—or the flow is heavier, or she bleeds for more days than usual, the additional blood loss may cause anemia. Anemia is detected with a blood test. RLS is more common in those who have iron deficiency anemia.

The most common blood tests for anemia are the hematocrit and hemoglobin. They are performed before blood donation. Even if the hemoglobin and hematocrit are normal, the blood Ferritin level may show that the iron reserves are low. Iron deficiency anemia with a low ferritin is common in those with RLS, and the RLS symptoms may subside after taking iron by mouth. According to Paul Yeh, even if an individual with RLS does not have iron deficiency anemia, they may benefit from taking iron.

Other medical conditions that are associated with RLS include high blood pressure, diabetes, multiple sclerosis, and kidney disease—particularly if there is kidney failure, according to Dr. Salma Batool-Anwar, a sleep medicine and pulmonary specialist at Massachusetts General Hospital in Boston.

RLS is also seen in those who take medications in the dopamine antagonist family. Some medications for nausea and vomiting, bipolar disorder, or depression also fall into this category.

Rhonda takes iron and still suffers from RLS. She returns for additional advice. "I want to try alternative remedies first, even if their track record is not as well established."

Ulrike Mitchell, with colleagues at Brigham Young University, did a small study using monochromatic near-infrared light to deliver twelve light treatments over four weeks to thirty-four volunteers. Twelve of the volunteers were women whose symptoms improved with treatment. This small study shows promise, although the way the near-infrared light works to help reduce RLS symptoms is unclear.

Herbal preparations in Traditional Chinese medicine are helpful, but not easily prepared in this country. Researchers are studying the track records of different preparations. Active ingredients are being identified: further study is needed.

Yoga shows promise in reducing RLS symptoms according to Kim E Innes and Terry Kit Selfe at the Department of Community Medicine, West Virginia University School of Medicine. In their recent study, women attended a 90-minute yoga class twice a week for eight weeks. They were compared to similar women who only watch a film, and did not do yoga. RLS symptoms improved in women who did yoga classes. Rhonda's doctor recommends she add gentle yoga to her regular routine, twice a week, as it is mentally and physically relaxing, and may alleviate some of her RLS symptoms.

Dr. Matthew Cripps, from the United Kingdom, published his views on the role of acupuncture in alleviating RLS. The letter describes his positive experience with acupuncture in alleviating RLS. Seeing a qualified acupuncturist may provide relief, and has little downside.

Prescription medications are proven to alleviate RLS symptoms. Common side effects of these medications may include nausea, vomiting, low blood pressure with change of position, a small risk of addictive gambling, excess sex drive, and binge eating.

Gabapentin Enacarbil, a medication traditionally used for seizures or nerve pain, has a new role in alleviating RLS with fewer side effects, according to a recent review by PharmD William J Hayes and others. It acts on nerve transmitters, and is retained in the body longer than Gabapentin so that it may be taken once a day. Morning drowsiness is minimal, and any initial dizziness usually resolves quickly. Nausea, fatigue, insomnia, headache, and diarrhea are reported but are uncommon side effects.

For individuals who have RLS and also suffer from depression, Bupropion may be a helpful choice. Max Bayard of East Tennessee State University and colleagues show that prescribing Bupropion for depression will not worsen the RLS symptoms. Other antidepressants such as those in the Selective Serotonin Reuptake Inhibitors (SSRIs) family often worsen RLS symptoms. Antihistamines have also been found to worsen RLS symptoms.

Chapter 5: Eliminating Hot Flashes and Night Sweats

Heidi is a 39 year old international banker. "I go to high level meetings, and cannot be seen with hot flashes, or sweating through my blouses and suits. During the day, I keep a small fan near my desk at work, and in my bedroom at home. I always have a fresh pitcher of ice water nearby."

"Six months ago I started getting night sweats, especially during the week of my menstrual period. And my menstrual cycle is getting less predictable. Last year I bled every 26 to 30 days. This year it could

be 25 days or 45 days between cycles. In the last four weeks my night sweats are more severe, and occur every night. They wake me up every hour from 11 PM until 2 AM. In the morning I am exhausted.”

“My older sister had her final menstrual period at age 47, and also started having hot flashes in her late 30’s. She told me that coffee and alcohol triggered her hot flashes, and that avoiding these triggers reduced the number of hot flashes. Things that helped my sister cope with the hot flashes have also helped me. She recommended slow yoga-type deep breathing, as well as wearing breathable fabrics, and layering my outfits so I can remove a sweater or jacket if I get hot.”

“My sister never had night sweats, nor did I until now. I refuse to do yoga in the middle of the night. I am already sleeping without a night gown, leaving the window open, and turning on a fan. I don’t know what else to do.”

“Our mother had breast cancer in her late 40’s. Even though my doctor says I can take estrogen safely to treat the hot flashes, I don’t want to try it if there are other alternatives.”

Discussion

Heidi is in perimenopause, the five to ten year period of time when a woman’s body converts from a fertile state with regular menstrual cycles to an infertile state. The ovaries continue to make estrogen during perimenopause, but not during postmenopause. During perimenopause, 80% of women have hot flashes, and 80% of women have irregular menstrual cycles. Hot flashes and night sweats represent the same process: only the timing differs. The intensity of the flashes and sweats may be mild, moderate, and severe. Severe hot flashes may require treatment if they do not respond to lifestyle changes alone. They are described here.

Heidi is making effective lifestyle changes to decrease her hot flashes during the day. Breathable fabrics allow the body to cool off rapidly after a hot flash. She keeps her office and bedroom temperature cool. She minimizes her consumption of caffeine and alcohol, common triggers for hot flashes and night sweats.

Stress also triggers hot flashes and night sweats. While Heidi’s job is stressful, she is committed to her career, and will not consider changing jobs or professions in this tough economy. Adding regular exercise and ten or twenty minutes of meditation each day may help calm her thoughts, help her focus, and reduce her stress level.

The deep breathing Heidi’s sister suggested is called Paced Respiration. It does not cost money to learn, and has no side effects. According to the North American Menopause Society (NAMS), and RR Freedman, a researcher in the Department of Psychiatry at Wayne State University School of Medicine in Detroit, Michigan who has been doing research on hot flashes for more than 25 years, Paced Respiration decreases hot flashes and night sweats by 50% to 80%. To do it, practice breathing much slower than normal. When you have practiced it for ten to fifteen minutes straight, you will be able to count to six slowly, while breathing in, and saying the number “1000” silently to yourself between each count. Count to yourself “one-one thousand, two-one thousand, three-one thousand,” up to six, or the number you are comfortable with when you have filled your lungs with air. After that, slowly release the air and reverse the count so you take roughly six seconds more to empty your lungs.

After you can do Paced Respiration for fifteen minutes in one sitting, you are ready to use the technique as needed. Try doing it five or ten minutes each morning before you leave your house, and five or ten minutes each evening before you go to bed. Start doing it when you begin to feel a hot flash

or night sweat. The hot flash will recede as you do this breathing technique. Paced Respiration also helps lower high blood pressure naturally.

Heidi tried the lifestyle changes and Paced Respiration with excellent results. “If I wake up to use the bathroom then get a night sweat, I begin doing Paced Respiration, the night sweat fades away, and I go back to sleep.”

“The following year, when I turned 40, the hot flashes and night sweats got worse and became debilitating. I went to my gynecologist to discuss my options.”

“I asked about acupuncture, and got the OK to try it. My doctor says the study results are mixed. While I am open to trying acupuncture, I am suffering too much to spend time trying something that may or may not work well.”

One recent study that looks at the benefit of acupuncture on reducing hot flashes is NE Avis’ study at Wake Forest University. It reports that acupuncture may decrease hot flash frequency, but not more than the placebo or the sham acupuncture.

“I also asked about Black Cohosh. My doctor pointed out that it might provide relief, but some studies do not show that the available over-the-counter preparations available are helpful or effective. “My doctor recommended I try a low dose birth control pill (OCP.) Since I am over 35 years old, she, first confirmed that I am a nonsmoker and that I had never had a heart problem, stroke, deep vein clot in my legs or lungs, or breast cancer. She said a low dose OCP often stops hot flashes and night sweats while also regulating the menstrual cycle. She said that I could read more about the difference between low dose birth control pills and hormone treatment in Edelman's menopause book.”

“I asked why she was not prescribing hormone therapy like my sister received last year when her hot flashes worsened. My doctor explained that my sister was postmenopausal and over 50. In postmenopause a woman has had no menstrual periods for twelve consecutive months, and she is no longer fertile. In postmenopause lower doses of estrogen are safer.”

“Within two weeks of starting a low dose OCP, my hot flashes and night sweats were gone, and I was sleeping well. I plan to stay on this OCP until I reach postmenopause.”

Lifestyle changes and avoiding hot flash triggers help many women with mild hot flashes and night sweats. Those with severe flashes and sweats often need additional help. There are also non-hormonal options for those who cannot take hormones safely, or do not wish to take them. Examples of these non-hormonal options include Neurontin (Gabapentin), some antidepressant medications from the SSRI family, listed in the table "Prescription Medications for Insomnia" in Chapter 1 of this book, and others.

Chapter 6: How Alcohol Impacts Sleep

Abby is a 58 year old realtor. “I sell both residential and commercial real estate. I am often asked to host open houses for clients. They provide wine and cheese for prospective buyers. Naturally, to be a welcoming hostess, I have wine with the buyers.”

“I also look forward to having wine each evening with my boyfriend. This ritual helps put our workday behind us.”

“I have always fallen asleep quickly. Since I got my real estate license, I still fall asleep quickly but I don't sleep well—I cannot get a good night's sleep.”

“I called my doctor’s office and asked for a prescription for sleeping pills. The nurse told me the doctor was concerned that they can be addictive, so I made an appointment.”

“At the appointment the doctor asked my alcohol consumption. I explained that I’m a social drinker. He discussed the amount and timing of my alcohol intake. I told him I wasn’t worried about it since wine has benefits for the heart, and both my parents have heart disease.”

Discussion

Abby’s doctor confirmed that alcohol helps with falling asleep faster. However, alcohol disrupts deep sleep, and changes how the nervous system works at night. The quality of Abby’s sleep is compromised by the alcohol she consumes socially and for work. Researchers find that women, regardless of their size, can only metabolize one three ounce glass of wine, one cocktail, or one beer at once. Each glass of beer, wine or liquor over that amount increases the risk of getting breast cancer and does not promote additional heart health.

Alcohol puts women at risk of other health problems as well, including thin bones, with a higher risk of osteoporosis, as well as a higher risk of breast cancer. When Abby learns this, she decides to have only a sip of wine at her open houses, and enjoy a 3 ounce glass of wine with her boyfriend only on week-ends. Since two of her mother’s sisters had breast cancer, she does not want to increase her odds of getting it. After reducing the amount of alcohol she consumes, Abby sleeps more soundly, and enjoys a full night’s rest. Both her memory and her moods improve after a sound night’s sleep. She focuses better at work. Her next bone density shows that her bones are strong.

Alcohol alters sleep quality and quantity in young adults as well as their older friends and relatives. Even modest amounts of alcohol have an effect. Dr. Pierce Geoghegan of Trinity College Dublin, in Ireland, and colleagues investigated the effects of alcohol on sleep in young healthy college students who wore actigraphs, and measured the quality and quantity of their sleep after they consumed a set amount of alcohol. The alcohol reduced their total sleep time and increased the number of times they woke up during the second half of the night. In addition, the students who had alcohol woke up reporting fatigue the next morning. In another recent study, Shannon R Kenney, whose research focuses on how alcohol consumption affects the behavior of college students, used surveys to evaluate variations in sleep quality of college students after they consumed alcohol. In her study students with poor sleep quality experienced more adverse effects from the alcohol. The alcohol adversely impacted them academically and also had legal, physical, sexual, and social consequences.

As you can see from the example and the studies above, alcohol affects the quality and quantity of sleep in adults of all ages, as well as bone health and memory.

Part II: Sleep Soundly Sooner

Chapter 7: Medical Conditions and Medications That Impact Sleep

Sybil is a 37 year old woman with arthritis, asthma, and environmental allergies.

“I got arthritis in my late teens. My doctor told me I had Rheumatoid Arthritis. Early on, I managed the joint stiffness with exercises and stretching. I still do yoga regularly. It relaxes me and keeps my joints

moving well. I also have asthma and severe allergies to pollen, trees, cats and dogs. For the past year, weekly allergy shots have provided relief. This year the extra-high pollen counts force me to take antihistamines as well. I want to avoid exacerbating my asthma.”

“Lately, my arthritis symptoms have worsened. The over-the-counter anti-inflammatory medications I usually take no longer control the joint pain and swelling. For the past two weeks I haven’t used the computer at work or done the quilting projects I enjoy.”

“My rheumatologist recommended a course of steroids. I wasn’t eager to take steroids, but didn’t see another alternative.”

“Since starting steroids, my moods have worsened. I am more irritable, and I have gained ten pounds—despite the fact that I am eating the same and exercising the same amount. What disturbs me most is that I cannot get a good night’s sleep. Even after sleeping for eight hours, I wake up exhausted and feel like I never went to bed.”

Discussion

There are a number of reasons that Sybil wakes up tired. All three of her medical conditions compromise her sleep quality. As the Finnish researcher Paivi Polo-Kantola notes, arthritic joint pain may prevent individuals like Sybil from finding a comfortable sleeping position, and the pain causes interruptions in sleep. Asthma disrupts Sybil’s breathing pattern during sleep. Environmental allergies block her nasal passages and may cause swelling in the back of her throat, narrowing her airway, and disrupting her sleep.

Sybil’s medications also interfere with sleeping soundly. Some prescription inhalers for treating asthma interfere with sleep, as do asthma medications taken by mouth that may speed up her heart rate, and make her feel jittery. Steroids commonly make moods plummet and interfere with deep sleep. Finally, over-the-counter antihistamines may help Sybil fall asleep faster, but compromise sleep quality. Her doctors are working with her to adjust her medications so they interfere less with her ability to sleep soundly through the night.

In addition to the medications Sybil takes now, her doctors alerted her about others in her medicine cabinet that interfere with quality sleep, including decongestants and stimulant medications used to treat Attention Deficit Hyperactivity Disorder (ADHD.) These and other medications are reviewed in the NHLBI reference and in loachimescue’s paper.

Medications that may affect sleep			
A number of drugs steal sleep, while others may cause unwanted drowsiness. Your doctor may be able to suggest alternatives that do not disrupt sleep.			
Medication	Used to treat	Common examples	Possible effect on sleep and daytime functioning
Anti-arrhythmics	Heart rhythm problems	procainamide (Procanbid), quinidine (Cardioquin),	Nighttime sleep difficulties, daytime fatigue

		disopyramide (Norpace)	
Beta blockers	High blood pressure, heart rhythm problems, angina	atenolol (Tenormin), metoprolol (Lopressor), propranolol (Inderal)	Insomnia, nighttime awakenings, nightmares
Clonidine	High blood pressure; sometimes prescribed off-label for alcohol withdrawal, smoking cessation, or other health problems	clonidine (Catapres)	Daytime drowsiness and fatigue, disrupted REM sleep; less commonly, restlessness, early morning awakening, nightmares
Corticosteroids	Inflammation, asthma	prednisone (Sterapred, others)	Daytime jitters, insomnia
Diuretics	High blood pressure	chlorothiazide (Diuril), chlorthalidone (Hygroton), hydrochlorothiazide (Esidrix, HydroDIURIL, others)	Increased nighttime urination, painful calf cramps during sleep
Medications containing alcohol	Cough, cold, and flu	Coricidin HBP, Nyquil Cough, Theraflu Warming Relief	Suppressed REM sleep, disrupted nighttime sleep
Medications containing caffeine	Decreased alertness	NoDoz, Vivarin, Caffedrine	Wakefulness that may last up to six to seven hours
	Headaches and other pain	Anacin, Excedrin, Midol	
Nicotine replacement products	Smoking	nicotine patches (Nicoderm), gum (Nicorette), nasal spray or inhalers (Nicotrol), and lozenges (Commit)	Insomnia, disturbing dreams
Sedating antihistamines*	Cold and allergy symptoms	diphenhydramine (Benadryl), chlorpheniramine (Chlor-	Drowsiness

		Trimeton)	
	Motion sickness	dimenhydrinate (Dramamine)	
Selective serotonin reuptake inhibitors (SSRIs)	Depression, anxiety	fluoxetine (Prozac), sertraline (Zoloft), paroxetine (Paxil)	Decreased REM sleep, daytime fatigue
Sympathomimetic stimulants	Attention deficit disorder	dextroamphetamine (Dexedrine), methamphetamine (Desoxyn), methylphenidate (Ritalin)	Difficulty falling asleep, decreased REM and non-REM deep sleep
Theophylline	Asthma	theophylline (Slo-bid, Theo-Dur, others)	Wakefulness similar to that caused by caffeine
Thyroid hormone	Hypothyroidism	levothyroxine (Levoxyl, Synthroid, others)	Sleeping difficulties (at higher doses)
<p>*These medications are also found in over-the-counter sleep aids.</p> <p><i>Reprinted with permission from the Special Health Report: Improving Memory (Harvard Health Publications/Harvard Medical School, 2012).</i></p>			

Part III: Wake Up Refreshed

Chapter 8: Dealing with Mood Changes and Depression

Deirdre is 47 years old. “My second marriage is going well, and I have started my own business as a party planner—something I always dreamed of doing. My twins are sharing an apartment, attending community college, and working part-time. I cannot understand why I wake up tired. I am so exhausted I fall asleep immediately.”

“I have less on my plate than ever. The twins are independent: I have fewer responsibilities in the house—meal planning is simpler, and my house is less chaotic without teenagers increasing the clutter. I am proud of them even though I miss them.”

“My new business is a positive source of stress. I enjoy the work, and also the planning, even though I never ran a business before. For years friends and family have been asking me to plan their parties and events. Stress is not preventing me from sleeping well.”

“I did some Internet research on the International Sleep Foundation site, and tweaked my sleep routine. After speaking with my primary care physician, I even had a sleep study, and it showed I did not have sleep apnea. My physician was puzzled, and recommended we meet to discuss strategies improve my quality of sleep.”

“Meanwhile, when I saw my gynecologist, she asked about my menstrual cycles and explained I am in perimenopause (for more information about perimenopause, see Chapter 4, RLS.) She also asked about my moods and my sex drive.”

“Even though I am happily married and things are going well, my sex drive is lower. My mood is blue: I don’t enjoy seeing friends as much as I did in the past. I don’t get to the gym three times a week as I did last year. Working out regularly has always been important to me—I like staying in shape, and it relieves my stress.”

Discussion

Depression may cause sleep problems. As patients and physicians know, and researchers have reaffirmed: depressed patients often have trouble sleeping. More recently, researchers such as Susan D Reed in obstetrics and gynecology as well as an epidemiology professor at the University of Washington in Seattle, are finding that women who do not sleep soundly may become depressed. Wheaton, Ohayon, Avis) Deidre’s story is an example of someone who is depressed and is not sleeping soundly.

Depression is more common during perimenopause. The biology of perimenopause involves wildly fluctuating levels of estrogen. Erratic estrogen levels influence the supply of serotonin, the “feel good” hormone. A woman who was depressed in the past, or had postpartum depression, is more vulnerable to becoming depressed again during perimenopause. Even women without a history of depression are more likely to become depressed for the first time during perimenopause, as Dr. Hadine Joffe, a Harvard psychiatrist and Director of Research in the Perinatal and Reproductive Psychiatry Clinical Research Program at Massachusetts General Hospital and an Associate Professor of Psychiatry at with expertise in women’s health and sleep, reaffirms in her research.

Depression disrupts normal sleep patterns. Depressed individuals may sleep too much or too little and often wake up without feeling refreshed. If you have trouble sleeping soundly, you may have an underlying depression. If you do, it is important to identify the depression and get treatment for it in addition to addressing the sleep issues.

One quick screen for depression is to answer these two questions designed by Dr. David Brody:

- 1) Over the past two weeks have you felt down, depressed, or hopeless?
- 2) Over the past two weeks have you felt little interest or pleasure in doing things?

If you answer yes to both questions, you may be depressed. Discuss this with your health care provider. Effective treatment options are counseling, Cognitive Behavioral Therapy, medication for

depression, or a combination of these. CBT has the advantage of providing tools and practical approaches you can use in your daily life to change your outlook.

When Deirdre reinstates her regular exercise routine, it will help alleviate her depression, says Dr. Andrea L Dunn, a leading researcher examining the use of exercise to treat depression. Before deciding on counseling or a prescription antidepressant, Deirdre wants to hear about the complementary and alternative options. Her doctor reminds her that counseling, CBT, or antidepressant medications have the best track record for reversing depression. However, there are alternatives.

St. John's Wort, an herbal preparation available over-the-counter, may help to relieve mild depression. However, it interferes with birth control pills: they cannot be taken together. St. John's Wort may also interact with other medications and may cause excess bleeding. Check with your pharmacist before taking it.

Acupuncture may help some individuals who are depressed, but researchers' findings are not uniformly positive.

Deirdre decides to try an antidepressant medication from the family called Selective Serotonin Reuptake Inhibitors (SSRI's), and her moods lift within six weeks. However, her sleep pattern does not improve. Her doctor clarifies that, in some individuals, an SSRI may disrupt normal sleep patterns. Even though the depression is being treated, the SSRI antidepressant may not allow sleep quality to improve. In other cases, the SSRI may help improve both the depression and sleep quality. In Deirdre's case, before she was treated, her sleep quality was compromised by depression. Now it is disrupted by the SSRI antidepressant. When he saw Deirdre's response to the first SSRI prescription he chose, Deirdre's doctor then selected an antidepressant from a different family of medications. After that, Deirdre's depression lifts, her moods improve, and she sleeps well through the night, waking up refreshed.

Deirdre also reschedules her regular exercise sessions, gets counseling, and is able to taper off the antidepressant after six months. She remains in good spirits and continues to sleep soundly.

If you are depressed, your sleep may be compromised. If you are sleeping poorly, you have a higher risk of being depressed. Discuss the possibilities with your doctor if your mood is worse in addition to your sleep quality.

Discovering the cause of sleeplessness		
Are you depressed?	Yes	No
1. I feel downhearted, blue, and sad.		
2. I don't enjoy the things I used to.		
3. I have felt so low I've thought of suicide.		
4. I feel that I'm not useful or needed.		
5. I notice that I'm losing/gaining weight.		
6. I have trouble sleeping through the night.		

7. I am restless and can't keep still.		
8. My mind isn't as clear as it used to be.		
9. I get tired for no reason.		
10. I feel hopeless about the future.		
<p>You may be suffering from depression if you answered yes to at least five of these questions, you answered yes to either question 1 or question 2, and these symptoms have persisted for at least two weeks. You should seek professional help immediately if you answered yes to question 3.</p>		
Are you anxious?	Yes	No
1. Do you feel upset or tense, maybe without even knowing why?		
2. Does your heart often race uncontrollably?		
3. Are your hands often sweaty, clammy, or extremely cold?		
4. Do you often have a lump in your throat?		
5. Do you have difficulty slowing down or relaxing?		
6. Do you often feel insecure or anxious?		
7. Do you often feel ill at ease?		
8. Do you often feel tired without any reason?		
9. Do you often worry about things you've said that might have hurt somebody's feelings?		
10. Do you tend to worry, even over things that you realize don't matter?		
11. Are you presently worrying over a possible misfortune?		
12. Do you often feel nervous, jittery, or high-strung?		
13. Are you more apprehensive about the future than other people are?		

If you answered yes to five or more of these questions, you are probably more anxious or tense than other people, and you may need to seek professional help.

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Chapter 9: Correcting a Sluggish Metabolism

Tamara is 35 years old. “I work in the Human Resources department of a high tech start-up company, and put in long hours. In the last six months, my hair has been falling out more, my nails are breaking, and I am gaining weight. I sleep poorly. I have also been skipping menstrual periods during this time. I have chalked these changes up to extra stress I am experiencing at work.”

“My job is demanding. I interview newly minted college graduates for their first jobs, put together benefit packages for new employees, and supervise health benefits for established employees throughout the entire company. If I continue to manage this well, I’ll be promoted to head of the human resources department.”

“My job requires I project a professional image. Having my hair fall out in clumps, and gaining weight is not helping my prospects for promotion. I just ended a long-term relationship, and look forward to meeting someone new. Gaining weight and losing my hair are not helping my social life either.”

“Even though I exercise three times a week, and eat a healthy diet most days, I am gaining weight. I wake up tired each morning even though I go to bed at 11 PM and wake up at 7 AM—no change from my normal routine. When I wake up tired I can’t focus at work. Sleeping poorly also makes me cranky and less tolerant.”

“One of my friends said I could be in menopause. I hope that’s not it! I still want to meet someone special, get married, and have a family. That’s not likely if I keep losing my hair and gaining weight.”

Discussion

Tamara’s friend has a point. Irregular menstrual periods in a 35-year-old woman could signal the beginning of perimenopause. Fortunately, while Tamara’s fertility will decline slowly as she progresses through her 30’s, she still has time to meet someone and have a family. Tamara’s mother did not have irregular menstrual periods until she was 45 years old. Tamara makes an appointment with her gynecologist.

Her gynecologist recommends a blood test to check for thyroid disease. Thyroid problems are ten times more common in women, than in men. The thyroid is a butterfly-shaped gland in front of the wind pipe that plays a critical role in regulating metabolism. It also influences hair growth, nail growth, skin moisture, menstrual cycles, and temperature regulation in addition to body weight. Aberrations in thyroid function affect sleep patterns. Thyroiditis, or inflammation of the thyroid gland, explains all of Tamara’s symptoms.

Whether a woman has sluggish thyroid function, or the gland is overactive, she will have trouble sleeping in addition to irregular menstrual periods and hot flashes, even if she is not perimenopausal.

Weight gain, hair loss, and weaker nails that split are more common when thyroid gland function is sluggish.

Tamara's blood level of Thyroid Stimulation Hormone, or TSH, is elevated, indicating sluggish thyroid gland function. Most women feel comfortable with their TSH between 1 and 2. Laboratory values vary from lab to lab, and typically include a wide normal range such as 0.5 to 5.5.

Tamara's TSH was 15, much higher than normal. The TSH runs opposite to the gland function: a high TSH indicates sluggish gland function and an underactive thyroid. Sluggish thyroid gland function commonly results from inflammation due to an autoimmune disease affecting the thyroid gland and slowing its function. A woman may have a mild increase in TSH and notice symptoms, or she may have a marked increase in her TSH and not notice the changes I just described for Tamara.

To correct the imbalance, Tamara's doctor prescribes a low dose of oral thyroid hormone. She hopes for immediate relief. Her doctor predicts that it will take six weeks for the thyroid gland to respond to treatment. At that time, Tamara will have her TSH blood test re-checked. If the test is normal, and Tamara feels well, she will keep taking the same dose. If not, the dose can be adjusted.

After two more dose adjustments, Tamara feels like herself. The extra weight begins to come off, her hair starts to grow back, her nails get stronger, and she is sleeping well again.

Thyroid disease is common in women. Whether the thyroid becomes overactive or sluggish, it can imitate perimenopause, and cause hot flashes, irregular menstrual periods, or both. In addition, thyroid disease disrupts sleep. If an individual has poor sleep quality or wakes up exhausted, thyroid disease may be responsible. If thyroid disease is the culprit, treating the thyroid condition will alleviate the poor quality sleep.

Chapter 10: The Relationship Between Body Weight and Sleep

Beryl: "I am 47 years old, and have always been called "a big girl." Since I was 13 years old, I was heavier than all of my classmates, and had to buy dresses in another section of the store. I tried many weight loss diets, and they worked for a few months. As soon as I got tired of them I regained more weight than when I started out."

"When I was pregnant with my first child, at age 25, I gained another 50 pounds. After that I had over 90 pounds to lose. It was so discouraging. Since then I am tired when I wake up, even after sleeping more than eight hours. I am always hungry, and don't have the energy to exercise or plan healthy meals. My parents both have diabetes—I worry I'll get it also if I stay this weight."

"My new primary care doctor checked my thyroid blood test: it is normal. He asked if I snore: my husband says I don't. My weight is higher since my third and last child was born. I'm relieved that my new doctor didn't give me a lecture. Lectures about diet and exercise make me feel more like a failure."

Instead my doctor recommends a sleep study to learn why I am tired after a full night's sleep. I didn't want to leave my family, and he said I could have the sleep study at home. I will wear an actigraph, a wrist bracelet for monitoring sleep."

Discussion

Beryl's story is a common one: more than 65% of Americans are overweight. Overweight individuals are more likely to have sleep problems, particularly sleep apnea. Beryl's sleep study shows she has sleep apnea. Her pharynx, the passageway in the back of her throat, does not stay open long enough to allow

adequate air and oxygen to reach her lungs. Instead of getting deep and restorative rest for eight hours, Beryl wakes up more than 30 times an hour gasping for breath. This depletes her oxygen supply, stresses her heart, and startles her system. Frequent episodes of apnea cause her stress hormones to skyrocket.

Researchers, including Kristen L Knutson, a biomedical anthropologist and Assistant Professor of Medicine at the University of Chicago who studies the relationship between sleep, weight, and appetite, and James E. Gangwisch, a physician and researcher at New York State Psychiatric Institute and Columbia University Department of Psychiatry, have also demonstrated that poor quality sleep, lack of sleep, or both interfere with normal appetite signals. In some instances, individuals like Beryl may become overweight as a result of their sleep apnea. In addition to producing added physical and mental stress, poor sleep is now linked to the disruption of normal appetite signals. Patients with sleep apnea and poor sleep quality develop faulty cues for appetite and satiety.

Researchers are beginning to decipher how faulty appetite cues produce deceptive body signals. After a night of poor sleep or frequent awakenings, Beryl's body tells her she is hungry and must eat more although she has already met her body's fuel needs. The hormone ghrelin, produced in the gastrointestinal tract, stimulates hunger. It keeps working for Beryl when it should stop. Ghrelin fails to turn off the hunger signal, and Beryl's appetite stays inappropriately activated.

In addition, Beryl's satiety signals are turned off. She doesn't register when she has eaten enough to feel satisfied. Leptin, a hormone produced in fat cells, decreases hunger. The leptin doesn't work properly either: it does not signal satiety on time. Most likely, sleep apnea compromises normal function of both appetite hormones ghrelin and leptin. An obese or overweight individual may have a higher-than-normal leptin level, but they may have leptin resistance. Their leptin does not perform normally. In Beryl's case, she will feel hungry, and miss feeling satisfied after she has met her body's need for food, driving Beryl to feel hungry and miss feeling satisfied after she has met her body's need for food.

To correct the sleep apnea, Beryl is taught to use CPAP, Controlled Positive Airway Pressure. She wears a sleep mask that delivers puffs of air. The air pressure keeps her airway open, and allows her to take full deep breaths at night, eliminating the air hunger.

Beryl tries a few different masks, and adjusts to using CPAP at night. When she starts sleeping well, she begins to lose weight and notices that she has energy to exercise. Her hunger signals recalibrate: now she recognizes she is full at the end of a satisfying meal. Beryl joins Weight Watchers and follows the on-line program. She borrows exercise tapes from the library and experiments with various exercise routines. After losing twenty pounds, she starts attending exercise classes at her local gym. When Beryl reaches her goal weight, she follows the maintenance program. At her goal weight, she sleeps well and no longer needs to use CPAP. In addition to improving her heart health, Christopher Kline, Ph.D. a postdoctoral scholar at the Sleep Medicine Institute, University of Pittsburgh, and others are demonstrating that exercise helps to improve sleep apnea and sleep quality. While Beryl is an example of someone who no longer needed CPAP after she lost weight, other individuals may still need CPAP even after achieving substantial weight loss.

Sleep apnea may contribute to being overweight by disturbing normal appetite signals. Treating sleep apnea may help some individuals to lose weight more effectively, but does not always lead to weight loss in every instance. Those who are overweight have a high risk of sleep apnea, and those who

have sleep apnea are often overweight. Addressing both lifestyle changes and sleep quality may help both conditions.

Screening for sleep apnea

This six-question test can help you and your physician determine if you need to be tested for sleep apnea.

- Do you snore on most nights (more than three times per week)?
Yes **2** No **0**
- Is your snoring loud (can it be heard through a door or wall)?
Yes **2** No **0**
- Has anyone ever told you that you stop breathing or gasp during sleep?
Never **0** Occasionally **3** Frequently **5**
- What is your collar size?
Men: less than 17 inches **0** 17 inches or greater **5**
Women: less than 16 inches **0** 16 inches or greater **5**
- Have you had, or are you currently being treated for, high blood pressure?
Yes **2** No **0**
- Do you occasionally doze or fall asleep during the day when:
You are not busy or active? Yes **2** No **0**
You are driving or stopped at a light? Yes **2** No **0**

Score

9 points or more: See your physician or a sleep specialist to assess the need for a sleep study.

6–8 points: Uncertain; physician must use clinical judgment.

5 points or less: Low probability of sleep apnea.

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Chapter 11: Treatments for Snoring and Other Breathing Difficulties

Olivia: “My older sister Beryl has been battling to lose weight since she was 13 years old. I saw her struggle and didn’t want to walk in her shoes. So I became an athletic trainer. Staying fit is part of my job, even at age 40. Who wants to take advice from an overweight athletic trainer? I would have no credibility if I did not keep myself in excellent shape.”

“One benefit of staying fit is having a high energy level: I value that. Lately, however, I wake up tired. My work-out routine has not changed. The last six months I’ve been in a new relationship. My boyfriend and I eat out more often than I did alone, but my weight has remained stable.”

“My boyfriend says I snore, and sometimes I stop breathing completely. I thought that staying trim, at a healthy weight, and exercising daily would keep me from having to deal with sleep apnea like my sister and parents.”

Discussion

Slender active individuals like Olivia are at lower risk for having sleep apnea, but their risk is not zero, and they may still snore, as she does. A slender woman like Olivia may have a narrow jaw predisposing to airway narrowing in midlife, according to Visasiri Tantrakul, a sleep expert at Stanford University Sleep Clinic and Center for Human Sleep Research in Redwood City, California. Olivia does some Internet research and reads about Rotenberg’s and others’ research describing results for an implant that eliminates snoring. She wants the implant for two reasons: to eliminate the embarrassing snoring, and to get her energy back.

Olivia consults a physician who specializes in treating ear, nose, and throat problems. This doctor is able to surgically implant small devices to decrease or stop the snoring. One month later, “I am healed from the surgery and my snoring has stopped but I still wake up tired.”

Her family doctor sends Olivia to a board certified sleep specialist. Despite Olivia’s low risk, the sleep specialist recommends a sleep study.

The sleep study demonstrates that Olivia has sleep apnea. Olivia is slim and not at risk for apnea due to her body weight. Olivia has a narrow jaw, and a small pharynx: the opening in the back of her throat is narrow as well. In addition to the narrow airway, Olivia’s muscles spasm during sleep restricting the inflow of air.

Olivia’s implant successfully eliminated her snoring, but did not keep her airway passage from closing over or cure her apnea. Olivia is not eager to try a device that delivers controlled positive airway pressure, CPAP, to keep her airway open. The device includes a mask that may cover the nose, or the nose and the mouth. Since she is in a new relationship, Olivia tried using a custom mouth guard and obtain some relief, but still did not return to her normal energy level.

The sleep specialist told her about a new way to deliver positive airway pressure called using a device in the nostrils with a technique labeled Expiratory Positive Airway Pressure or EPAP. Dr. Meir Kryger, a specialist at the Yale Center for Sleep Medicine is one researcher among others from many university research centers that has completed studies showing the effectiveness of EPAP. The EPAP device is placed in both nostrils; then sealed to the nostril edges. Mouth breathers cannot use it, but it worked for Olivia. The EPAP uses the air she expires to keep her pharynx open. It is not a suitable choice for those who breathe through their mouths at night. However, since Olivia breathes through her nose, she tries it. It uses the air she expires to keep her pharynx open. The EPAP works well for Olivia. She wakes up refreshed and regains her former energy.

Even thin women may develop sleep apnea if they have airway muscles that are weaker or spasm, or if they have a narrow jaw. For women, obesity is only one of several risk factors for sleep apnea. In younger adults, enlarged tonsils or adenoids may compromise the airway and cause apnea, even in slender individuals.

Regardless of your age or body type, consider seeing a sleep expert if you do not wake up refreshed, sleep soundly, or fall asleep readily.

Chapter 12: Therapy for Sleep Misperception

Samantha is a 53 year old pharmacist: “I recently parted ways with my partner of ten years. I wake up tired every morning. Although my relationship was not going well, the finality of the ending is difficult: I am not adjusting well to living alone again.”

“Fortunately, I like my work. However, waking up tired affects my ability to concentrate fully and be as accurate as possible. When I start out tired, I worry that I’ll make a mistake on someone’s prescription, even though there are computer programs to double check us.”

“I thought my morning fatigue was from feeling down after my partner left. I discussed my situation with my primary care doctor. We both agreed I was deeply saddened by the end of my relationship, but I was not depressed.”

“We discussed modifying my pre-sleep routine. She suggested I drink more water before dinner, and a minimal amount before bed. This has decreased the number of times I wake up to urinate—now I only get up once to use the bathroom. Since I am still exhausted, I had a sleep study. It showed I did not have sleep apnea. I slept through the night, and my sleep quality is excellent.”

“Neither my doctor or I expected that answer. There had to be another explanation. She called several colleagues with expertise in sleep medicine.

Discussion

Based upon a review of my sleep study, and the clinical information that my doctor provided, she and sleep specialist concluded that I have Sleep Misperception or Paradoxical Insomnia. Sleep Misperception occurs when an individual thinks she is not sleeping well, yet her sleep study shows she sleeps soundly through the night. Despite the sound sleep, a woman with Sleep Misperception will wake up tired, not refreshed. Samantha fits this description perfectly. Objective measurements of her sleep patterns show that even when she gets a good night’s sleep, her brain signals perceive that she slept poorly, and she does not feel refreshed or well rested. Jason Ong is a clinical investigator at Rush University Medical Center who has designed clinical trials to evaluate the role of meditation and behavior therapy for insomnia. For the past few years he has piloted research that explores a mindfulness-based approach to treating insomnia, and also has explored combining mindfulness meditation with cognitive-behavior therapy. Another researcher who has explored sleep education for paradoxical insomnia is James D. Geyer, from the Alabama Neurology and Sleep Medicine department in Tuscaloosa at the College of Community Health Sciences of the University of Alabama.

Sleep Misperception or Paradoxical Insomnia is more common in women. The recommended treatment is Cognitive Behavioral Therapy (CBT). Using CBT techniques allows the individual to recalibrate and adjust her perception of sleep to match her physically adequate night of sleep. CBT is a practical approach—it is not psychotherapy with exploration of one’s past or one’s dreams. A trained therapist addresses issues in the present and helps the individual modify self-defeating thought patterns and behaviors. It puts more tools and strategies in your repertoire. CBT is a positive influence on both

emotional responses and reasoning while it allows development of healthier behavior patterns. It may take as few as six sessions of CBT to help. (Geyer)

Samantha agreed to see a therapist who specializes in CBT and had good results from the therapy. After six sessions of CBT, she was waking up refreshed and felt mentally and physically well rested.

For those who do not have access to a CBT therapist, Dr. Jaap Lancee of Utrecht, Netherlands, and Dr. Gregg D. Jacobs, an insomnia specialist at the Sleep Disorders Center at the University of Massachusetts Medical School and an Assistant Professor of Psychiatry at Harvard Medical School, have begun exploring the value of internet based self-help treatment for insomnia. Results are still preliminary, but these approaches are showing promise.

Conclusion

Sleep is fundamental to human health. Yet life's demands, fascinations, and temptations often lead us to sleep less than we need. Even when we allow enough time for sleep, the quality of our sleep may be poor. If you are not sleeping well—whether you have trouble falling asleep or staying asleep, or you wake up exhausted – hopefully this book has given you some ideas that will help you to sleep better and wake up more rested. Some of the lifestyle modifications you can try tonight. Other strategies will require you to consult with your primary care physician or a sleep expert. In any case, don't postpone taking action. Your body and your mind will both be better for it.

A sample sleep history questionnaire

Your physician may ask you some of the following questions during an evaluation for a sleep problem. You may find it helpful to write down your answers to these questions and bring the completed questionnaire to the exam so you and your doctor can discuss it.

- What bothers you most about your sleep habits?
- How long have you had trouble sleeping, and what do you think started the problem? Did it come on suddenly?
- How would you describe your usual night's sleep?
- What time do you go to bed, and when do you wake up?
- How long does it take you to fall asleep?
- Once you're asleep, do you sleep through the night or wake up frequently?
- What's your bedroom like?
- What do you do in the few hours before bedtime?
- Do you follow the same sleep pattern during the week and on weekends? If not, how

are weekends different?

- How well do you sleep on the first few nights when you're away from home? At home, do you sleep better in your bedroom or in another room in the house?
- Do you often feel sleepy during the day?
- Do you fall asleep at inappropriate times or places?
- Have you ever been in a car accident or had a close call because you nodded off at the wheel?
- Do allergies or nasal congestion bother you at night?
- Do you have physical aches and pains that interfere with sleep?
- What medications or drugs (including alcohol and nicotine) do you use? Have you ever taken sleep medications? If so, which ones?
- Do you often have indigestion at night?
- Do you ever feel discomfort or a fidgety sensation in your legs and feet when you lie down? Do you have to get up and walk around to relieve the feeling?
- Do you kick or thrash around at night?
- Do you ever have trouble breathing when you lie down, or do you awaken because it's hard to breathe?
- Does your bed partner or roommate mention that you snore loudly or gasp for air at night?
- Do you ever awaken with a choking sensation or a sour taste in your mouth?
- Do you wake up with a headache or with cramps in your legs?
- How have you been feeling emotionally? Does your life seem to be going as well as you would like?

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