



## Overcoming Effects of Stress Offers Greatest Opportunity to Sleep Well

*Relaxation strategies, including “sleep hygiene” — regular bedtime rituals that help put the mind at ease — are useful for many. And the environment in which sleep takes place can make a large difference, for good or bad. Exercise and diet can also play an important role in obtaining restful sleep.*

*FSF Editorial Staff*

Medical research suggests that there is no single technique that will ensure a good night's sleep for everyone. Instead, there is a variety of methods, practices and attitudes that promote restful sleep. Yet much of the advice offered by sleep specialists has a common denominator: To sleep well, you must find ways to counteract stress.

“Far and away the most common reason for sleeplessness is stress — not necessarily momentous stress, but the usual stresses of life,” said Richard Graber writing with Paul Gouin, M.D., a sleep-disorder specialist. “A tight schedule with no time for inviting good sleep leaves us thinking about those stresses at night, not being able to turn them off.”<sup>1</sup>

In the world's developed countries, and increasingly in developing countries, mechanical labor-saving devices have contributed to a sharp decrease in physical labor. Further, much of today's work is in the conceptual category. These factors make work easier in some ways, but they do not tend toward better sleep. On the contrary, they contribute precisely to the kind of psychological stresses that reverberate in the mind at bedtime and make sleeping more difficult.

The professions associated with aviation are a good example. Piloting an aircraft now requires only minor physical work, but its demands on the mind are great, involving planning, decision making, interaction with flight-management



computers and with air traffic control, and attention to detail and situational awareness. Flight attendants and maintenance technicians also may find that the mental component of their work outweighs that of lifting and walking.

Sleep involves more than simple bodily rest or inertness. It is an active, dynamic process that has as much importance for the mind as for the body.

“We now know that various activities of the sleeping brain play a dramatic role in regulating gastrointestinal, cardiovascular and immune functions, in energizing the body and in cognitive processing, including the storing, reorganization and eventual retrieval of information already in the brain, as well as in the acquisition of new information while awake,” said James B. Maas, Ph.D., a professor of psychology at Cornell University, Ithaca, New York, U.S.<sup>2</sup> He says that the overall level of neural activity drops by only 10 percent during sleep.

“In fact, the ‘sleeping’ brain is often significantly more active than the ‘awake’ brain,” said Maas.

A typical night's sleep involves four or five cycles, each consisting of various stages. The stages fall into two basic categories: rapid-eye-movement (REM) sleep and non-REM sleep (Figure 1, page 2). The stages of non-REM sleep, which precede REM sleep in each cycle, are as follows:<sup>3,4</sup>

**Stage 1.** This first, borderline, stage of sleep lasts for a few seconds to 10 minutes. A person awakened in this stage may not even realize he had been asleep. The muscles relax, and the pulse and breathing slow, as do the brain's electrical waves (four waves to eight waves per second).

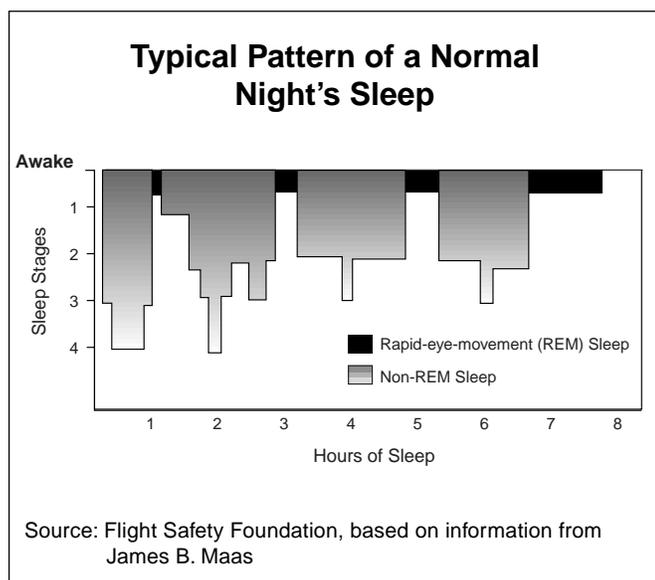
**Stage 2.** This stage, slightly deeper, lasts between 10 minutes and 45 minutes. Sleep researchers consider this the first part of "real" sleep. Brain waves follow an irregular pattern, including bursts of activity called "spindles."

**Stages 3 and 4.** These stages characterize deep sleep, their depth and duration greatest in the earlier sleep cycles. Brain activity is marked by slow, or delta, waves (0.5 waves to two waves per second).

"Slow-wave [stages 3 and 4] sleep [SWS] is known for its restorative and growth-inducing properties, and plays a major role in maintaining our general health," said Maas.<sup>5</sup> Among the benefits he cited are:

- An increase in blood supply to the muscles, helping the body recover from physical stress;
- A decrease in metabolic activity, helping tissue growth and repair;
- A peaking of the secretion of a growth hormone by the pituitary gland, aiding growth in young people and repair of the body's tissues; and,
- An increase in natural immune-system modulators, maintaining resistance to viral infection.

REM sleep completes each sleep cycle, although the REM sessions become progressively longer as the night continues.



**Figure 1**

"During REM sleep, the muscles are paralyzed and the body, virtually motionless," said Neil B. Kavey, M.D., director of the Sleep Disorders Center at Columbia-Presbyterian Medical Center. "The brain, however, is just as active as it is when you are awake."<sup>6</sup>

Almost all dreaming occurs during REM sleep.

"Sleep researchers are still not certain why we dream," said health reporter and researcher Norman Ford. "But all agree that REM sleep and dreaming are essential for sound physical and mental health. Humans deprived of REM sleep for more than a few nights become anxious and irritable. They often exhibit erratic behavior and have difficulty performing the simplest tasks."<sup>7</sup>

"REM sleep plays a major role in facilitating memory storage and retention, organization and reorganization, as well as new learning and performance," said Maas.<sup>8</sup> "REM sleep is often referred to as 'paradoxical' sleep because it's more like wakefulness than sleep in terms of vigorous brain-wave activity. The intensive firing of neurons spreading upward from the brain stem is thought to be responsible for aiding memory storage and retrieval as well as for reorganizing and categorizing information."

Recognizing that sleep fulfills specific and vital physical and mental needs is the first step in sleeping well, because — as most sleep specialists emphasize — today's 24-hour world provides all kinds of pressures and inducements to forgo sleep and replace it with some activity deemed more productive or pleasurable.

"We expect our sleep/wake system to carry us through virtually any kind of work schedule, anywhere, anytime, regardless of the limitations imposed by physiology," said Canadian science writer Lydia Dotto. "This is often described as treating the human body like a machine, but actually, the opposite is closer to the truth. ... We don't expect machines to function indefinitely if we push them beyond the operating limits for which they were designed."<sup>9</sup>

"Sleep's the thing we cheat on," said David Dinges, Ph.D., of the Institute of Pennsylvania Hospital and University of Pennsylvania, Philadelphia, Pennsylvania, U.S. "It's what we cut out to get the car to the repair shop, to do our taxes, to have a party. We have more and more segments of our society under some sort of chronic sleep deprivation."<sup>10</sup>

Some, though not all, of the pressures for reduced sleep time are beyond the individual's control — for example, shift work, jobs that require working many hours for weeks at a time or those that present unpredictable emergencies at any hour. For people in such situations especially, the development of good-sleep practices is important to maximize the value of sleep time.

"Each individual has a basic sleep requirement that provides for optimal levels of performance and physiological alertness during wakefulness," said the FSF Fatigue Countermeasures

Task Force report. “On average, individuals require eight hours of sleep in a 24-hour period.”<sup>11</sup> Some people claim that they need less than the conventional eight hours of sleep per day, and they may be correct. But others need more than eight hours of sleep per day. According to most researchers, the optimum sleep duration among the population varies from six hours to nine hours.

“We all recognize that sleep at night affects how we feel during the day,” said Dr. Kavey. “Less obvious is that what we do during the day affects the way we sleep at night.”<sup>12</sup>

The first group of considerations involved in sleeping well consists of psychological factors.

Primary among them is reducing the effects of daily stress when it is time to sleep. Stress is a normal part of life; it is almost impossible to get through a day without experiencing at least some incidents that are annoying, disturbing or otherwise disruptive of peace of mind. (In medical terms, stress differs from anxiety, a similar but more extreme condition of continuous dread, nervousness or worry. Stress can lead to temporary or mild insomnia; anxiety is one of the causes of sleep disorders.)

The body’s response to stress, including the relatively mild, everyday type, is known as the “fight-or-flight” syndrome. At the sign of a threat (whether physical or psychological) the nervous system triggers a series of responses through the endocrine system, to prepare the body for the real or perceived emergency. In particular, adrenaline is pumped into the bloodstream, speeding up the heart rate and tensing the muscles.<sup>13</sup> That, of course, is the opposite of the calm that eases the way into sleep.

The stress response occurs as a reaction not only to outside events, but also to emotional sources of stress such as memories and worries. It does not matter, from the fight-or-flight standpoint, whether the stressor is real and immediate, remembered, anticipated or hypothetical. Thus, people can create self-induced stress that amplifies the day’s routine stress. Overly driven personalities are one example.

“The unrealistic goal setter is never ready for bed because the list is never finished, the job is never right, the deadline is never met,” said Charles B. Inlander, president of the People’s Medical Society, and Cynthia K. Moran. “If you’re a high-achieving personality drawing up the daily to-do list, you may be inviting chronic stress and continued insomnia without realizing it. ... Studies show that many people who have chronic insomnia at night are perfectionists during the day.”<sup>14</sup>

Intensively achievement-oriented individuals find that their drive for success cannot bid sleep to come.

“While trying harder is often the surest path to success in business, sports or other waking activities, it is the surest path

to failure in getting to sleep,” said Dr. Kavey. “Attempting to force yourself to sleep simply won’t work.”<sup>15</sup>

Worry is another form of do-it-yourself stress.

“One of the most common forms of insomnia is worrying about being unable to fall asleep,” said Ford. “The more we worry about not being able to sleep, the less we sleep and the more we worry.” He called the condition “subjective insomnia.”<sup>16</sup> Anger can keep the would-be sleeper agitated just as worry can.<sup>17</sup>

For the emotional and worry-prone, or those experiencing temporary, unusual life difficulties, self-imposed admonitions to let go of stressful thoughts are unlikely to be successful. For others, trying to stop mental activity by will power alone will probably have only limited success. Therefore, sleep specialists emphasize the importance of a group of practices known collectively as “sleep hygiene.” The basis of sleep hygiene is to “wall off” troubling thoughts with a layer of psychological insulation that keeps waking and sleeping compartmentalized.

One key to maintaining separation is that the sleeping room should be that, and that only. The room should be strongly associated with sleep, and “sterilized” against anything that might encourage stressful thinking.

“Keep the bedroom for sleeping and sex only,” said Inlander and Moran. “If you use your bedroom as a place to eat, watch [television], read, talk on the phone, fight or discuss weighty matters with your partner, break that habit to get better sleep.”<sup>18</sup>

Dr. Kavey said, “Another way to help prepare yourself for sleep is to adopt presleep rituals — rituals that signal your body and mind that it’s time to sleep. ... Before you get into bed, turn off the lights in your house, turn on any night lights, check the locks and the stove and close the windows. Performing these rituals helps create a sense of security — if you don’t feel secure, you’ll find it difficult to relax. Establishing presleep rituals such as these also provides closure to your day and effectively sends the message to your mind and body that it’s bed — and sleep — time.”<sup>19</sup>

The exact content of the ritual should be determined by what is soothing or comfortable for you; it can be anything from reading a book, to sitting on the front porch in pleasant weather, to making sure the sheets are securely tucked under the mattress. The one caveat to keep in mind is that strenuous or exciting activities (other than sex) are to be avoided as bedtime approaches.

Watching television can be part of the presleep ritual, but specialists warn against watching frightening or violent dramas (or news programs) because they can imprint disturbing images on the mind just at the time it should be letting go of all but the most peaceful impressions.

Taking a warm bath, at a temperature of about 100 degrees Fahrenheit (F; 38 degrees Celsius [C]), shortly before retiring is frequently recommended. The benefit comes not from the warmth but from the body's cooling that follows, which enhances sleepiness and promotes more SWS.<sup>20,21</sup>

To further associate the bed with sleep, rather than with a struggle for sleep, do not remain in bed for long periods if you are awake. Get up and do something until you feel sleepy. But it is important to choose an activity that is routine or even mildly unpleasant, because you do not want to reward yourself for insomnia through pursuing something enjoyable when you cannot sleep.<sup>22</sup>

"Go to bed at the same time every night, and wake up without an alarm clock at the same time every morning, including weekends," said Maas. "That's seven days a week, 365 days a year." Although there is strong temptation to sleep late on weekends, especially Sunday morning after staying up late on Saturday night — a practice which Maas's advice would prohibit — this disrupts the body's sleep-wake schedule.

"Keeping a regular schedule will make you feel significantly more alert than sleeping for the same amount of time but at differing hours across the week and the weekend," said Maas. "If you sleep late on Sunday, you won't be very tired at your regular bedtime that night. You'll finally fall asleep well after midnight. Within a few hours your alarm clock will jerk you back into consciousness and you'll crawl to work with the Monday-morning blahs."<sup>23</sup>

Researchers are divided in their views about daytime napping.

Ford flatly said, "Eliminate all daytime napping."<sup>24</sup>

Dr. Kavey, in contrast, said, "Napping can help if you're exhausted or stressed out. The better rested you are, the better you'll be able to function. A short snooze can often restore much-needed energy.

"However, too much napping may end up doing more harm than good. ... Too much sleep during the day will keep you up at night. ... If you must nap, keep it short. A 15-[minute] or 20-minute nap will help you feel refreshed without throwing off your body's sleep rhythm or causing insomnia at night."<sup>25</sup>

A study conducted by the U.S. National Aeronautics and Space Administration (NASA) and the U.S. Federal Aviation Administration (FAA) in 1994 suggested that flight crewmembers who were allowed to take 40-minute naps during low-workload periods of long-haul flights subsequently showed better performance and greater alertness than a control group of pilots who had not taken naps. Some airlines have established policies for in-flight crew rest, including napping (by only one crewmember at a time, of course).<sup>26</sup>

The environment in which you sleep can also help, or hinder, your slumber.

Finding the ideal room temperature is important.

Evelyn Satinoff, writing in the *Encyclopedia of Sleep and Dreaming*, said, "Humans and other warm-blooded animals sleep best when they are in their thermal comfort zone [TCZ], the range of ambient (air) temperatures within which they do not have to spend energy on shivering or increasing metabolic rate in the cold or sweating or panting in the heat. Under conditions of cold or heat stress both the quality and quantity of sleep are disturbed." Outside the TCZ, SWS declines, and REM sleep declines even more.<sup>27</sup>

The ideal temperature for sleeping is between 60 degrees F and 65 degrees F (16 degrees C to 18 degrees C). Humidity of between 60 percent and 70 percent is also recommended.<sup>28</sup>

The right mattress and pillows are also important in encouraging good sleep.

Willibald Nagler, M.D., of New York Hospital-Cornell Medical Center, said, "Ninety-nine-point-nine percent of the population would sleep better on a firm mattress than a soft one. ... A soft mattress allows the back muscles to become overextended, which prevents them from getting the rest they need. A firm mattress, on the other hand, allows the back muscles to keep the spine in a more restful alignment."<sup>29</sup>

But Dr. Kavey said, "Too stiff isn't great either. A mattress that is too hard can put pressure on the shoulders and hips. The ideal surface is gently supportive and firm, not rock hard or squishy."<sup>30</sup>

The two most common types of mattresses are innerspring, with steel coils inside to support the surface, and polyurethane foam. A king-size innerspring mattress should have more than 450 coils, a queen-size mattress more than 375, and a double-size more than 300 coils. In a foam mattress, the denser the foam, the better, with the minimum density two pounds per cubic foot (32 kilograms per cubic meter). The bed should be at least six inches (15 centimeters) longer than the sleeper, and because people turn over during the night, there should be ample room to move around without awakening.<sup>31</sup>

"For the best night's sleep, look for pillows that let you fluff and squish the pillow to fit your unique contours, shape and sleeping posture," said Maas. "Your pillow should 'fit,' just like shoes. Buying a pillow that offers maximum adjustability assures you a comfortably healthy fit."<sup>32</sup> He believes that pillows filled with natural materials, such as down or feathers, offer the most comfort and adjustability. But, as with so many items that relate to sleep, the ultimate test is what feels right for the user.

"Just because your Aunt Griselda uses pillows made with hair from the East African two-humped camel doesn't mean

you should,” said Dr. Kavey. “Try a variety of types and stick with the one that provides you with the best night of sleep.”<sup>33</sup>

Sheets, too, must feel comfortable. For cotton sheets, the most common type, 180-thread count (that is, 180 woven threads per inch) is rather coarse; 200-thread count is better; 250-thread count is in the luxury class, and feels best to most people. One source argues that silk or satin sheets, though they may look attractive, feel too cold or slippery for comfort;<sup>34</sup> another suggests that silk sheets “have a luxurious feel and keep you warm in winter.”<sup>35</sup>

Other sleep-environment considerations include:

- **Light.** With one exception, sleeping environments should be as dark as possible. Many home curtains are too flimsy to completely eliminate the light from street lamps, the headlights of passing cars or early sunlight during long summer days. “Blackout” curtains, such as are often found in hotels, are more effective.

The exception is a dim night light, which aids navigation if there is a need to get up during the night. Stumbling over an item left on the floor or striking a piece of furniture can cause physical pain, mental disturbance or both that can interfere with sleep.

- **Noise.** Noise is the bane of many a sleeper, raising blood pressure and increasing heartbeat. “Dripping faucets, noisy radiators, ambulance, fire and police sirens, barking dogs, loud stereos and late-night revelers are common rest inhibitors,” said Maas.<sup>36</sup>

There is not much you can do to prevent most noise that originates beyond your property, but there is an often-effective antidote. Paradoxically, it is noise — of a kind that the sleeper finds soothing. For some, that noise is the sound of the ocean or continuous rain, re-created by “environmental” recordings played on a bedside cassette or compact-disc player.

Another benign form of noise is steady, multifrequency noise, known as “white noise.” Specialty retail stores sell white-noise generators, but there are also simpler, makeshift ways of creating a steady tone. One is to tune a radio to a frequency *between* stations. Hotel and motel heating–air conditioning units often have fans that produce a hum that eliminates or reduces extraneous noises. In many such units, the fan can be selected to operate even without heating or air conditioning.

- **Clocks.** Avoid placing a clock with a prominently illuminated display by the bed; the clock makes it too easy to become fixated on the time or the duration of awakening, causing sleep-inhibiting anxiety.

- **Pets.** Unless you (not only your pet) find it comforting, sleeping next to pets is unsatisfactory. Animals move while sleeping too, which can be disturbing, and your pet may not keep the same hours that you do.

Exercise, relaxation, diet and drugs form another group of strategies for inducing sound sleep.

- **Exercise.** “Over 90 percent of all people with subjective insomnia are sedentary individuals who, due to lack of exercise, experience a minimum of [SWS],” said Ford. “Most of their sleep time is spent drifting in and out of stages 1 and 2. You can increase your need for deep, restorative sleep by tiring your body with physical exercise and by tiring your mind with mental activity. ... By significantly increasing your level of body-mind activity, you will spend more time in [SWS] and in dreaming instead of drifting in and out of shallow sleep.”<sup>37</sup>

Exercise causes the body to produce more endorphins, natural mood elevators that increase feelings of general well-being, always an aid to sleep. Tension and anxiety are reduced. Exercise elevates the body’s core temperature, and the eventual drop in body temperature, five hours or six hours later, increases SWS.

“The best form of exercise is aerobic — continuous 20-[minute] to 30-minute sessions three to five times a week, consisting of repetitive motions that make your heart beat faster and speed up your breathing, preceded by 10 minutes of warm-ups and stretches,” said Inlander and Moran.<sup>38</sup>

But any kind of exercise, including brisk walking, running, swimming or other sports can be beneficial to sleep. The best time to exercise is from noon to early afternoon. Morning exercise, although it may be good for you in other ways, is too far removed from bedtime to affect sleep; exercise too late at night does not allow for the five or six hours needed for the body temperature to drop, and may prevent sleep.<sup>39</sup>

Exercise must be performed regularly, ideally every day, for the greatest benefit.

- **Relaxation strategies.** There are numerous techniques for relaxing the muscles and quieting the mind. Many involve stretching or tensing muscle groups one by one, then letting go of the tension. Others are based on breathing exercises.

A typical breathing exercise, recommended by Ford, is as follows:

“Take a full, deep belly breath to the slow count of four. As you inhale, fill the abdomen first and the upper chest last. Hold your breath to the count of four. Then exhale

and empty your lungs to the count of seven. ... Take five more of these same deep, slow breaths.

“Then begin to breathe normally. Place your awareness on your forehead and eyes and mentally relax them. Relax your entire face, mouth and jaw. Then place your awareness on the flow of air back and forth through your nostrils as you breathe. This technique will slow your brain wave into ... a deeply relaxed and meditative state. Simultaneously, it raises the carbon dioxide level in the bloodstream, creating a tranquilizing effect.”<sup>40</sup>

Meditation is another means that many find useful for relaxation. There are also numerous varieties of meditation technique, but most involve concentrating on one thing — a sound, an idea, breathing — to the exclusion of everything else.

Bookstores and libraries have many books containing relaxation and meditation techniques. None of them will be effective for everyone. Again, the most effective strategy is to use is the one that feels right for you.

Although not practical for every day, a massage from time to time, especially during periods of extra stress, can contribute to overall relaxation. If performed near bedtime, Swedish massage, using smooth strokes to eliminate muscle tension, is better than Shiatsu massage, which uses strong, concentrated pressure, because the latter might be overstimulating.<sup>41</sup>

- **Diet.** What, and when, you eat can profoundly affect how you sleep. Some consensus recommendations from sleep specialists include:

Emphasize fruits, vegetables and whole-grain foods. Complex carbohydrates, such as cereals, pasta, potatoes and rice, promote calm by increasing the production of serotonin, a neurotransmitter that regulates sleep and moods.

Avoid too much protein near bedtime. Protein is a fuel for energy, necessary for nutrition but a problem when you want to sleep.

Avoid sugar, fried foods and fats, and avoid spicy foods for dinner.

Eat a large breakfast, a moderate lunch and a light dinner.

- **Drugs.** For better or worse, drugs, medications and natural sleep aids affect the quantity and quality of sleep.

The most commonly prescribed medications to aid sleep are in a class called benzodiazepines, which include both tranquilizers such as Ativan and sleeping pills such as Dalmane. They are safe when used as

prescribed, and some, such as Halcion and Ativan, stay active for relatively short periods — important in avoiding the daytime “hangover” effect that some benzodiazepines create.

Although prescription sleeping pills often do bring on sleep, there are many reasons to be cautious about their use. Researchers are divided between those who counsel avoiding them outright and those who argue for occasional or limited-time use.

Charles F. Ehret, Ph.D., senior scientist at the Argonne National Laboratory, Illinois, U.S., and Lynne Waller Scanlon, said, “Drugs ... may make your eyes close and may make you lose consciousness, but the sleep they promote is woefully inadequate. In fact, drugs cause the body, whether in a state of consciousness or unconsciousness, to work hard to rid itself of alien chemicals during the time it should be totally involved in the recuperative sleep process.”<sup>42</sup>

Maas said, “If possible, you should avoid sleeping pills and over-the-counter sleep remedies. They make you drowsy and appear to induce better sleep, but in reality they lead to disturbed, fragmented sleep.” Nevertheless, he acknowledged that sleeping medications might be useful on a temporary basis to counteract short-term insomnia caused by a crisis or the anticipation of a specific stressful event.<sup>43</sup>

Sleeping medications should not be used chronically, because the body develops a tolerance for them, leading to the need for higher and higher dosages for effectiveness; that, in turn, can result in addiction, and uncomfortable withdrawal. The standard term “rebound effect” refers to the consequences of discontinuing sleeping medication, which can include anxiety, nightmares and heightened insomnia.

Like prescription medications, over-the-counter sleep aids can be effective for occasional use, but they, too, have problems. Most contain antihistamines (substances used to counteract allergies), one of whose side effects is drowsiness. But some people have adverse reactions to antihistamines, and — especially on first-time use — over-the-counter sleep aids are prone to producing drug hangover.

Many naturally occurring or derived substances are said to promote sleep, and practitioners of “alternative” or “complementary” medicine maintain that they can be used with little risk compared with medications.

Among the most popular herbal treatments for sleep problems are valerian, chamomile, passionflower, hops and kava kava. Adequate daily intakes of B-complex vitamins, particularly B<sub>3</sub> (niacin), B<sub>6</sub> and B<sub>12</sub>, and folic acid, are also conducive to good sleep.<sup>44</sup>

Synthetic melatonin is a supplementary form of a hormone that is secreted by the pineal gland in response to darkness, telling the brain in effect that it is time to sleep. In theory, additional melatonin should be the ideal, natural way to slip into restful sleep, and so it is according to some anecdotal reports. But synthetic melatonin supplements are highly controversial, and most medical doctors are skeptical or adamantly opposed to their use, principally because there have been too few scientific studies of the long-term side effects.<sup>45</sup>

Some drugs are usually or always harmful to the cause of good sleep:

- **Alcohol.** Maas said, “A drink before dinner, or a glass of wine with dinner, probably won’t make too much of a difference in your sleep. But avoid having any alcohol within three hours of bedtime if you expect to sleep well.”<sup>46</sup>

Alcohol has a sedative effect, which can perhaps make you fall asleep faster; but what it gives with one hand, it takes away with the other. After the sedative effect wears off, within a few hours, an opposite reaction occurs, which Dr. Kavey calls “withdrawal insomnia.”<sup>47</sup> Both deep restorative sleep and REM sleep are disturbed, resulting in restlessness and arousal. Further, relying on alcohol for sleep (or relaxation, or mood enhancement) creates a strong risk of addiction.

- **Caffeine.** Caffeine offers the boon of temporary alertness enhancement during the day. But, taken anywhere near bedtime, its effects on sleep can be devastating because it can produce increased heart rate, more muscle tension, headaches and anxiety.

Caffeine is found not only in coffee and tea, but also in many soft drinks, chocolate and some over-the-counter medicines, including some popular painkillers.

- **Nicotine.** Aside from all the other dangers of smoking, nicotine is no friend to sleep. “Nicotine raises blood pressure, increases the heart rate and stimulates brain-wave activity — three conditions that don’t invite good sleep,” said Graber and Gouin. “Smokers in general have more fragmented sleep than nonsmokers, which also may mean they get less of the deep restorative sleep.”<sup>48</sup>

[Certain sleep disorders involve medical or psychiatric conditions. Insomnia can also be a side effect of medications, including antidepressants and painkillers. If you experience severe or prolonged insomnia, consult a physician before undertaking any program, particularly if it involves self-medication, to alleviate the condition.]

People vary widely in their physiology and psychology, so what works for one person might not be effective for another. Numerous factors affect the length and quality of sleep.

Although there is no one infallible way of getting a good night’s sleep, the good news is that there are many possibilities for improvement.♦

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