Good night, sleep tight
Get better sleep without taking a pill

It’s been a long day, and you’re tuckered out. It’s time for bed, and your head gratefully hits the pillow. Your eyes close, your legs stretch, but sleep eludes you. You toss and turn, exhausted, but slumber still won’t come. Or perhaps you’re out as soon as you’re down but wake up a few hours later, unable to fall back asleep.

The nightly rest that many take for granted earlier in life tends to attract a higher premium as time goes by. Sleep isn’t just a luxury, it’s a powerful human drive that confers multiple health benefits. Studies suggest that sleep gives our bodies a much-needed break from its full operational mode and provides time for faulty cell repair and establishment of new memory and learning processes.

Lack of sleep, on the other hand, leads to drowsiness and irritability during the day, impairs concentration and the ability to perform complex tasks, hinders memory, and decreases physical performance and reaction time.

So why does sleep seem to be more difficult to come by as you age, when you seem to need its restorative powers most? And what can you do about it? While it’s true that sleep patterns change over time, poor sleep isn’t an inevitable consequence of getting older. This report will give you an in-depth look at what’s known about the effects of aging on normal sleep, as well as steps you can take right away to improve the quantity and quality of your sleep without drugs.

Aging and insomnia

Older adults mention sleep problems more often than do younger adults. In a survey sponsored by the National Institute on Aging, more than half of the respondents 65 and older reported at least one sleep complaint. The most common were not being able to fall asleep and not being able to stay asleep throughout the night.

As you age, changes do occur in sleep patterns, which is when sleep most often happens, and in sleep architecture, which is the quality and stages of sleep that occur while you’re sleeping. Usually these changes are slight, but in some people they are more pronounced and can contribute to sleep problems.

Over time, your biological clock tends to reset a little earlier. That means you’re
While you sleep

As you sleep, your brain's electrical activity occurs in recurring cycles. First, you move through three stages of non-rapid eye movement (NREM) sleep. These range from drifting in and out of sleep (stage N1) through light sleep (stage N2) and into deeper sleep (stage N3). People awakened from stage N1 sleep typically don't even realize they were asleep. Stage N2 sleep accounts for 40 to 50 percent of sleep time. Stage N3 is the most physically restorative, as your brain waves slow considerably. Stage N3 is when it's most difficult to be awakened.

Another sleep stage is rapid eye movement (REM) sleep, so-called because the eyes dart quickly back and forth under your lids. Dreaming occurs in this stage. The brain is so active during REM sleep that brain waves resemble awake patterns. Breathing is rapid, irregular and shallow, and heart rate and blood pressure increase. Arm and leg muscles are temporarily paralyzed. This stage plays an essential, but not fully understood function. REM sleep stimulates the regions of the brain responsible for learning and memories. When REM sleep is disrupted, it has to be made up. As a result, REM sleep is typically longer than normal on subsequent nights.

The average adult experiences four to five full sleep cycles in an eight-hour period. Each cycle lasts about 90 minutes. With age comes a slight decrease — maybe 30 to 60 minutes — in total sleep time. Deep-wave, restful sleep (stage N3) also decreases, dropping from about 20 percent for a young adult to less than 10 percent after age 70. Older adults spend more time in stage N2 sleep, when it's easier to be awakened.

likely to start to feel sleepy earlier in the evening than you used to, and you wake up earlier. Your biological clock's signals can become a little quieter, too, sending weaker signals to keep you awake during the day or to stay asleep at night. The result is that even though you get sleepy earlier, it may take you longer to fall asleep. Your sleep also becomes lighter and more fragmented throughout the night — you spend less time in deep sleep and have more periods of wakefulness during the night.

But dig just a little deeper, and the connection between aging and sleep problems becomes less obvious. Various factors complicate the relationship. As people age, chronic medical conditions and the accompanying use of medications become more common. Many older adults who have trouble sleeping (insomnia) also have one or more other conditions, such as heart disease, musculoskeletal pain, lung problems, acid reflux disease, stroke, anxiety, depression or pain caused by arthritis. In some cases, insomnia may be worsened by the condition. In others, it may be part of the cause. The drugs used to treat these conditions may contribute their own sleep-disrupting side effects.

When these other factors are taken into account, the actual percentage of healthy older adults with insomnia but no other problems is quite low. In healthy adults, for example, the difference in the time it takes to initially fall asleep becomes obvious only when you compare very young adults with elderly individuals. And even then, it takes less than 10 minutes longer for an 80-year-old to fall asleep compared with a 20-year-old.

But if the inability to fall asleep or stay asleep throughout the night is disrupting your day, or you're getting up too early to get a decent night's sleep, then it's time to do something about it. Regardless of your overall health, insomnia is a problem that should be taken seriously, given the harmful effects it can have on your life. Keeping medical conditions under control and choosing the right medications to reduce potential side effects is a critical part of treating insomnia. But it's also important to address the insomnia itself, especially since insomnia patterns may persist even after a contributing cause has been resolved.

Why not just take a pill?

With all the sleeping pills available, both prescription and nonprescription, it may seem as if the easiest solution is to take a medication to help you fall asleep. You're taking medicine for other conditions, why not insomnia? It's true that a sleeping pill is a quick fix. Medications, such as zolpidem (Ambien, others), eszopiclone (Lunesta) or zaleplon (Sonata), can help you fall asleep quicker and stay asleep longer. And when the alternative is no sleep, it may seem like a no-brainer to take a pill. In fact, older adults are some of the most common users of sleeping pills — older adults are twice as likely to be prescribed a sedative medication for insomnia as are younger adults.

The problem is, unless your insomnia is short-lived or unique to a particular set of circumstances, most sleeping pills aren't a good solution. Most sleeping pills aren't meant for use beyond four to eight weeks, yet many older adults report using them for months and even years.

Medications can come with unwanted side effects, including residual sleepiness during the day, dizziness, light-headedness, and impairment of mental functioning and muscle coordination. Some people experience sleep-related behaviors — such as sleep walking, driving, eating, shopping or making phone calls — that they can't recollect in the morning.
Older adults have an even higher risk of side effects from sleep medications. In addition, the risk of fractures from falling because of grogginess increases. Breaking a hip or a wrist is a frequent cause of disability and loss of independence among older adults.

There’s also an increased risk of interactions between sleeping pills and other drugs, and worsening of existing breathing-related sleep disorders, such as obstructive sleep apnea or breathing that is too shallow or slow (hypopnea). It’s also dangerous to drink alcohol if you’re taking a sleep medication. Studies of adults older than 60 have found that the benefits of sleeping pills are overshadowed by a decrease in cognitive and motor functions.

The good news is that treatment for insomnia isn’t limited to medications. There are several nondrug therapies that have proved to help relieve insomnia just as well as medications, in addition to promoting better sleep over the long run. They include some fairly common-sense strategies, such as avoiding caffeine and exercising more, but also ways to reframe your approach to sleep so that you look forward to nighttime in a whole new way. These methods may not provide the instant fix that pills do, but they are easy, safe and effective and more likely to provide long-lasting benefits.

Even if you’re currently taking sleeping pills, it’s not too late to incorporate these strategies into your life. In fact, evidence shows that learning these skills and putting them into practice can help you gradually discontinue the use of sleep aids without the risk of repercussions.

The following steps tend to work best in combination, but that doesn’t mean you can’t try them out one or two at a time.

**Set your daytime foundation**

The things you do during the day can set the stage for how you sleep at night. As you go about your daily routine, consider how including the following factors might impact the quality of your sleep.

- **Exercise** — Regular exercise has a lot of benefits, including increased energy, a more positive outlook, healthy weight maintenance and even increased longevity. Here’s another bonus: Evidence shows that incorporating regular exercise into your daily routine can also help you sleep better.

  Exercise increases the amount of energy you expend during the day, the amount of “feel-good” hormones (endorphins) your body produces and the balanced regulation of your body temperature. All of these factors combined are likely to lead to more peaceful sleep. Other evidence suggests that improved emotional well-being, a lower body mass index (BMI) and increased physical functioning help minimize the number of times you awaken during the night, improving sleep apnea and other issues.

  Helpful activities range from aerobic exercises — such as walking, endurance training and tai chi — to strength training exercises. In general, aim to exercise three to four times a week, for about 30 to 60 minutes each time.

  A number of experts recommend avoiding exercise right before bedtime. An invigorating aerobic class late in the evening revs up some people too much, perhaps leading to increased time to fall asleep. Still, other studies show that this effect is very individual — some people find exercise very relaxing even when done close to bedtime. All things considered, an hour of exercise late in the afternoon seems ideal. Even a peppy walk after dinner isn’t likely to hinder your sleep and may help you stay awake a little longer, perhaps enabling you to sleep later, as well.

**How much sleep do you really need?**

Eight hours seems to be the standard for the required amount of sleep at night. But does that number hold true for everyone? It depends.

Infants and toddlers need the most sleep — nine to 10 hours at night plus naps during the day. School-age children, including teens, do best with nine to 11 hours a night. Most adults require seven to eight hours of sleep each night.

While older adults need about the same amount of sleep as younger adults, older adults tend to sleep more lightly and for shorter periods than do younger adults.

Do some people just need fewer hours of sleep a night? Yes, it’s estimated that somewhere between 1 and 5 percent of the population sleep six hours or less a night without ill effects. The need for less sleep tends to run in families, as does the need for more sleep, which suggests a genetic basis for sleep duration.

Sleeping less than six hours — or more than nine hours — has been associated with increased risk of health problems and a greater risk of dying.

The most important factor in determining how much sleep you need is whether you routinely feel rested during the day. Do you tend to feel drowsy, or does your concentration ability decline in low-stimulus situations, such as long drives, reading, watching television, talking on the phone or completing desk work? If this sounds like you, you’re likely not getting enough sleep.
Napping: Good or bad?

When you’re not getting a good night’s sleep, taking a nap during the day seems like a good way to catch up. Sometimes a nap can be just the refresher you need, improving your alertness and performance. But in other cases, napping may be interfering with your nighttime sleep, which in turn can make you want to nap even more the next day, creating a downward spiral of poor sleep.

In general, naps that last longer than 30 or 40 minutes or occur late in the day can disrupt your nighttime sleep. If you’re being treated for insomnia, your doctor or therapist may want you to avoid napping until you can get a healthy nighttime sleep schedule established.

However, if your sleep problems are limited, there are times when napping might be appropriate. For example, you might want to take a brief nap if your sleep schedule was disrupted by a one-time event or if you expect to go without sleep for an extended period of time, such as an upcoming work shift. Some people enjoy napping so much they make it a planned part of their sleep routine.

if you’re going to nap, do it in a quiet, cool, dark place with few distractions so that you can actually sleep rather than toss and turn. To get the most out of a nap, keep it close to 30 minutes or so. The longer you nap, the more likely you are to feel groggy afterward. The best time for a nap is typically after lunchtime or in the early afternoon, which is when most people tend to feel sleepiest.

Take your usual bedtime into account, as well. Naps should generally occur at least four to five hours before your bedtime. Short naps taken during this time are less likely to interfere with nighttime sleep.

By the light of the moon

Have you ever heard someone blame someone else’s behavior on the moon: “Oh, it must be a full moon.” The idea that different moon phases influence behavior may not be too far off, it turns out, at least when it comes to sleep.

Evidence from a new study shows that during the two days that surround a full moon, the time it takes to fall asleep increases by about five minutes, the amount of time spent in deep sleep decreases by about 10 percent, and total sleep time is reduced by about 20 minutes. Study participants who slept in a laboratory with no time cues and no idea that their sleep was being compared with moon phases also felt that their sleep wasn’t as good as usual.

What sort of difference does this make? The answer is still unclear. But the idea that moon phases affect sleep, perhaps in a way similar to circadian rhythms, raises rather interesting ideas of how the cycles of the environment affect human physiological cycles.

- *What you eat and drink* — Caffeine is a common substance that many people take to increase their wakefulness or alertness. Caffeine does this by blocking the actions of adenosine — a natural chemical in your body that builds up during the day and promotes sleepiness at night. It seems logical then that consuming caffeine, such as coffee, tea or soda, would hinder natural sleepiness. And for some people, caffeine before bedtime can cause them to stare at the ceiling for most of the night. However, evidence is somewhat mixed on the overall link between the use of caffeine and insomnia. Some studies show little difference between good sleepers and poor sleepers in terms of their caffeine intake, and no real association between caffeine consumption before bedtime and subsequent sleep. It may just be that some people are more vulnerable than are others to the effects of caffeine. If you’re struggling to get a good night’s rest, limit your caffeine intake and reserve it only for the morning.

Alcohol is another common culprit among sleep disrupters. Consumption of alcohol before bedtime, particularly in large amounts, may make you fall asleep faster, but it has a tendency to produce more-fragmented sleep. Clear-cut distinctions in drinking habits between poor and good sleepers don’t always exist. But if even moderate to minimum use of alcohol seems to disrupt your sleep, it may be worth avoiding it to see if your sleep improves.

Eating a heavy meal before bedtime can increase your risk of digestive discomfort, which can also keep you awake. If you’re often in the habit of eating a large dinner and then having to wait for indigestion to pass before you can fall asleep, try going for lighter dinners that are more conducive to lying down and sleeping.

- *Daylight exposure* — Your circadian rhythms are strongly influenced by the amount of light in your environment. The lighter and brighter your surroundings, the more awake and alert you are. The darker your environment, the more...
melatonin your body produces. Melatonin is another substance that makes you drowsy. This is why most people are awake when the sun is up and feel sleepy after the sun goes down. Receiving little daylight or living in a perpetually dim environment can put your circadian rhythms in limbo and interfere with nighttime sleep and daytime functioning. Getting plenty of sunlight during the day can help synchronize your biological clock with the course of the day and promote better sleep.

If you find yourself falling asleep earlier than you’d like in the evenings, it may be helpful to be outside for those last few hours of daylight in order to prolong your wakefulness period. Or if conditions don’t allow you to be outside, you might ask your doctor about light therapy. With this therapy, you sit near a special light box for an hour or two in the evenings to keep yourself from becoming prematurely sleepy.

**Develop sleep-friendly habits**

Once nighttime rolls around, make sure you’re giving your body the proper signals and environment to help you get a good night’s rest.

*Create rituals around sleep* — Try to go to bed and get up at the same time every day, even on weekends, holidays and days off. Being consistent reinforces your body’s sleep-wake cycle and helps promote better sleep at night. It’s OK to occasionally catch up by sleeping an extra hour or two on weekends, but it shouldn’t give you an excuse for an erratic bedtime schedule.

Do the same things each night to tell your body it’s time to wind down. This might include taking a warm bath or shower, reading a book, or listening to soothing music — preferably with the lights dimmed. Relaxing activities can promote better sleep by easing the transition between wakefulness and drowsiness. If you have a lot on your mind and you tend to worry, jot down your concerns and possible solutions, then set them aside for tomorrow.

Before you make your way to your bedroom, find ways to start shedding the burdens and anxieties of the day or tomorrow or the week ahead. You may wish to use meditation to help clear your brain. Certain guided imagery CDs are produced specifically to aid with sleep. Some people find yoga helpful. Remind yourself that although these pressures may not go away, it’s important to create some mental and emotional space to rest and restore your energy reserves.

*Make your bedroom a sleeping room* — Some people think that the more time they spend in bed, the more likely sleep will come, regardless of what they’re doing in bed. But this approach is almost always counterproductive. Instead, use your bedroom strictly for sleep or sex. If you start engaging in other activities — such as eating, watching TV, browsing the Internet, looking over your calendar, answering emails or talking on the phone — soon your bedroom won’t be a haven of rest. Over time, all the different stimuli of the bedroom can become internal cues for the stress of trying to fall asleep. Also be wary of using the TV or other electronic devices at bedtime. Some research suggests that screen time or other media use before bedtime interferes with sleep.

*Go to bed when you’re feeling sleepy, and only then* — If after you get in bed, you don’t fall asleep within 15 to 20 minutes, leave the bedroom and go do something relaxing for a while until you do feel drowsy. This might include reading by a dim light or sitting quietly in a soft, comfortable chair but should not include “reward”-type activities, such as eating or watching TV. The point is to avoid linking your bed with difficulty falling asleep but not reverting to stimulating activities that keep you awake even longer.

**What’s your sleep score?**

Sometimes, people with sleep problems stay in bed longer than the amount of time they actually sleep in the hopes of snagging some more z’s. But this can create a shift in circadian rhythms and make you less sleepy the next night, so you end up staying in bed longer and longer to try to catch up on last night’s lack of sleep.

Sleep experts refer to the percentage of time that you’re asleep in bed as your sleep efficiency score. The higher your score, the better and more consolidated your sleep. To find out your score, divide your total time asleep by your total time in bed. For example, if you are in bed for eight hours but sleep for only six, your sleep efficiency score is 75 percent. For older adults, a score below 85 percent is usually considered to be less than efficient.

To help you achieve greater sleep efficiency, a therapist may limit the total time you’re allowed in bed, including naps and other sleep periods (sleep restriction therapy). Using a sleep log, you record the amount of time you sleep each 24-hour period in addition to the total amount of time you spend in bed. After a couple of weeks of logging this information, you can determine the average number of hours you typically spend sleeping. Then, you limit yourself to staying in bed for only that number of hours — but never less than five hours. As your sleep efficiency score increases, you increase your time in bed by 15-minute increments.

The goal of this type of therapy is to create a manageable sleep deficit in order to increase your drive to sleep when you do get in bed. It can also help you associate bed with successful sleep rather than trying to sleep.
It's also helpful to have the right environment for sleeping. Often, this means cool, dark and quiet. Consider using room-darkening shades, earplugs, a fan or other devices to create an environment that suits your needs. Your mattress and pillow can contribute to better sleep, too. Since the features of good bedding are subjective, choose what feels most comfortable to you and make sure you have enough room to stretch out.

**Relax** — Evidence indicates that one of the behaviors most strongly associated with poor sleepers is the habit of worrying, planning and thinking about important matters at bedtime or right after getting into bed. Finding ways to relax at bedtime can produce substantial sleep improvement, and it can also help reduce the use of sleep aids. A therapist can help you learn the following relaxation techniques, or you can try them on your own:

- **Progressive muscle relaxation** — Try this technique after a long day or if your muscles are feeling tense and bunched up. With this method, you focus on slowly tensing and then relaxing each muscle group so that you can feel the difference between muscle tension and relaxation. Start by tensing and relaxing the muscles in your toes and progressively working your way up to your neck and head. You can also start with your head and neck and work down to your toes. Tense your muscles for at least five seconds and then relax for 30 seconds, and repeat.

- **Autogenic training** — Autogenic means something that comes from within you. In this relaxation technique, you use both visual imagery and body awareness to reduce stress. For example, you focus on the physical sensation of your breathing or heart rate and picture your body as warm, heavy and relaxed.

- **Visualization** — With this relaxation technique, you form mental images to take a visual journey to a peaceful, calming place or situation. During visualization, you try to use as many senses as you can, including smell, sight, sound and touch. If you imagine relaxing at the ocean, for instance, think about such
things as the smell of salt water, the sound of crashing waves and the warmth of the sun on your body.

- **Mindfulness meditation** — This stress-reduction technique can be so simple that people often don’t realize its effectiveness. The idea is to cultivate an acute awareness of the present moment and to let go of everything else. Focusing your awareness on the sensations of becoming at rest — the sinking of your body into the bed, the softness of your pillow, the slowing of your breath — and keeping it there helps to dissipate stressful thoughts about other things.

- **Sleep restriction technique** — Restrict your time in bed temporarily. For example, if your normal bedtime is 11 p.m., change it to midnight or even 1 a.m., but keep your wake-up time the same. Moderate sleep deprivation promotes deeper and sustained sleep and may break the insomnia cycle.

Once you start associating your bed with a safe space to completely relax and retreat from the day, it will be easier to keep it that way.

**Reframe your mindset**

Sometimes you need a little extra help to overcome sleepless nights. If trying the above strategies on your own doesn’t seem to be helping, you might want to talk to a behavioral sleep medicine specialist or a counselor or psychiatrist who offers cognitive behavioral therapy for insomnia (CBT-I).

Your primary care doctor may be able to help you find such an expert, or you can search online for a practitioner near you through the following organizations’ websites: American Academy of Sleep Medicine, the National Sleep Foundation or the American Psychiatric Association. If you don’t have a computer, your local librarian should be able to help you find information.

Cognitive behavioral therapy has proved to be a highly effective therapy for people with insomnia, especially older adults for whom medications might carry too many risks. People who received CBT-I during clinical trials experienced greater total sleep time, less time to fall asleep and fewer waking periods during the night. They were also able to reduce their use of medication. Importantly, the benefits of this therapy seem to last much longer than does the program itself.

During CBT-I, a therapist helps you to learn and implement many of the strategies discussed in this report. The therapist may also include a cognitive therapy component, which helps you identify and change unhealthy thought and behavior patterns revolving around sleep. The therapist can help you deal with the anxiety and stress that may have developed around your sleep habits and help you establish healthier, more-realistic expectations.

A typical CBT-I program might start with an introductory educational session on sleep, followed by sessions that help you re-evaluate and control the stimuli in your bedroom and focus the time you spend in bed or actually sleeping. Other sessions might address healthy and unhealthy sleep habits as well as how to deal with stress and avoid relapsing into poor sleep habits.

Most people in CBT-I are asked to keep a sleep journal as they move through the program. A sleep journal can help you identify what helps improve your sleep and what doesn’t. A traditional CBT-I program usually lasts about eight weeks. In some cases, the therapist may initially combine cognitive behavioral therapy with medication to help you sleep. As you become better at reducing stress related to insomnia and other factors and gain better control over your sleep environment, your therapist can gradually reduce your dosage until you no longer need medication.

**Singing lessons — for snoring?**

Is your partner’s snoring making you lose sleep? You may want to suggest singing lessons, says a group of investigators from the United Kingdom.

Snoring occurs when you doze off and progress from a light sleep to a deep sleep, and the muscles in the roof of your mouth (soft palate), tongue and throat relax. The tissues in your throat can relax enough that they partially block your airway and vibrate, causing snoring sounds. Habitual snoring can be more than just a nuisance for you. It can disrupt your partner’s sleep as well, leading to daytime sleepiness and associated impairment in both of you. Deep or heavy snoring can also be a sign of sleep apnea.

The U.K. scientists found that daily singing exercises can improve the tone and strength of the muscles in your mouth and throat, leading to less frequent snoring. It can also help people with obstructive sleep apnea, a more serious form of sleep disorder.

Participants in the study spent at least 20 minutes a day practicing singing exercises from a CD. They did this for a total of three months. At the end of the trial, those who complied with the treatment program experienced less daytime sleepiness and a decrease in frequency and loudness of snoring.

The exercises are designed to target and tone the areas of the throat where the snoring vibration can take place. They focus on areas such as the muscles that control the soft palate and the movement of the tongue. For more information about the CDs, or to purchase them, visit www.singingforsnorers.com.
Nonprescription options

If you decide to try a nonprescription sleep aid, first check with your doctor to be sure it won’t interact with other medications or underlying conditions. Sleep aids are a temporary solution for insomnia and are not intended to be used longer than two weeks. Options include:

- **Melatonin** — This helps control your natural sleep-wake cycle. Some research suggests that melatonin supplements might be helpful in reducing the time it takes to fall asleep — although the effect is typically mild. The most common melatonin side effects include daytime sleepiness, dizziness and headaches.

- **Valerian** — Supplements made from this plant might reduce the amount of time it takes to fall asleep and promote better sleep. However, the active ingredient isn’t clear and potency can vary. Side effects of these supplements might include headache and abdominal discomfort.

Some people may not have ready access to a therapist who specializes in CBT-I, or they may encounter economic barriers. Internet-based CBT plans such as SHUTi and Sleepio may be of help in these cases. In addition, sleep experts are investigating whether such therapy could be delivered over the phone, or as a combination of self-help literature and follow-up telephone support. Briefer programs, such as a couple of sessions, also are being explored. Preliminary evidence shows that these alternate forms may work as well as does traditional CBT-I.

To a good night’s rest

If you’re having trouble sleeping, whether a lot or even just a little, you don’t have to toss and turn your way through it. The more sleep deprived you become, the more your daytime life suffers, including your physical performance, your mental functioning, your social life and even your relationships.

And you don’t have to depend on medications for the rest of your life in order to sleep, either. Medications may indeed play a role at some point in relieving your insomnia, but they aren’t the best solution in the long run. Instead, try the strategies outlined in this report, even if you are currently taking sleeping pills. With a bit of effort and consistent application, you’ll learn to develop a whole new way of looking at sleep and how to take a healthy approach to bedtime. Nighttime will be something to look forward to again.

For more information

The following websites offer more information about sleep and sleep disorders:

- American Academy of Sleep Medicine, www.yoursleep.aasmnet.org
- Centers for Disease Control and Prevention, www.cdc.gov/sleep