

Improving and Maintaining Healthy Sleep Habits

What is insomnia?

When people are not able to fall asleep or remain asleep, they suffer from insomnia. The most common cause of insomnia is a change in daily routine. This can happen when traveling, when there is a change in work hours, or when other things get in the way of good sleep. These could be noise, eating or exercise habits, leisure activities, and relationship conflicts. Insomnia is also often one of the first symptoms of anxiety and depression. Sleep problems are usually the first thing to improve when these conditions resolve. Difficulty falling asleep can be related to anxiety and mind racing, as the brain jumps from thought to thought. Waking up too early can be related to low levels of some hormones, which can be seen when a person struggles with anxiety, depression, and other mood concerns.¹⁻⁶

Why is lack of sleep a problem?

Sleep is one of the most important things people need to help keep their minds and bodies healthy. When people sleep, their tissues heal, grow, and repair themselves. Sleep helps the body make the right levels of important hormones such as the following:

- **Cortisol** - a hormone released every day to help us wake up in the morning. Extra doses are also released during times of stress.
- **Melatonin** - the circadian rhythm hormone. It helps the brain and body tell when it is daytime versus nighttime. It is released in the brain to help your mind and body relax for sleep.
- **GABA** - a hormone that helps the brain and nerves to relax and communicate.
- **Growth Hormone** - a hormone that helps cells grow and repair damage.^{3,5}

Good sleep also lets the brain do important wiring and re-wiring of the nerves. This is how the mind makes and stores new memories and learns new things. These hormones require time to balance out overnight during sleep. People are more likely to be tired, irritable, anxious and depressed if they do not get enough sleep. They also are more likely to have trouble concentrating and remembering things. In addition, people who do not sleep well are more likely to have pain, get sick easily, and have a hard time managing other diseases.³ People with insomnia are much more likely to be involved in car accidents and perform poorly in athletic competitions.^{7,8}

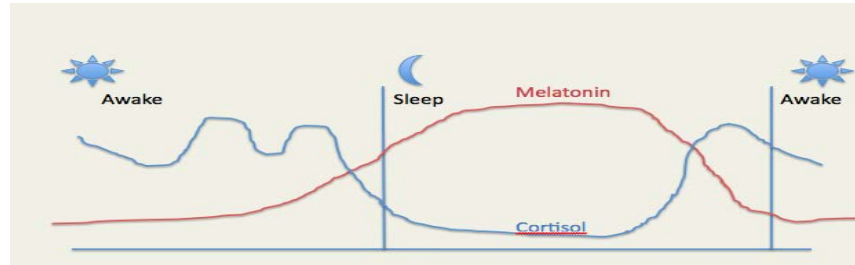
What does a healthy sleep/wake pattern look like?

Most adults from age 18 to 65 need about 7 to 9 hours of restful sleep. Older adults actually need a little less sleep, only about 7 to 8 hours per night. Children need much more sleep than adults. The amount really depends on their age. See the National Sleep Foundation website for guidelines based on age: https://sleepfoundation.org/sites/default/files/STREPCchanges_1.png.⁵

No matter what time a person plans to go to bed, the mind begins to release an important sleep-promoting hormone (melatonin) when it gets dark outside.^{1,3} This helps most people sleep at night and stay awake during the day. Here is an example of a normal sleep and wake cycle:



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The hormone **melatonin** goes up when it is dark outside. It helps the mind and body slow down, and get ready to rest and rebuild. If a person is around bright lights at night, the brain will not release very much melatonin. Bright light sources include indoor lights, as well as screens from a TV, computer, tablet, or phone.

Cortisol, the stress hormone, goes down overnight, and then spikes in the morning to help get your mind and body going for the day. It can also spike during the day if needed, or as a response to stress. That said, it should go down at night. However, if you are stressed or unable to calm down in the evening, your cortisol hormone level may stay very high. This high cortisol level will keep melatonin from being released in the brain. This is why it is important to find good ways to relax and manage stress during the day, so your daytime worries don't keep you from sleeping overnight.^{3,4}

Are there medications or supplements that can interfere with sleep?

There are several medicines, supplements, and substances that can get in the way of a good night's sleep. If you are taking any of these, it may be worth talking with your health care team to see if a different medicine (or lower dose) could help improve your sleep.^{1,2,9-11}

Medicines That Can Make It Hard To Sleep or Limit How Much Melatonin Your Brain Lets Out at Night

- Amphetamines (methylphenidate, dextroamphetamine, other medicines to treat ADD or ADHD)
- Antidepressants (many classes—ask your health care team.)
- Asthma “rescue” inhalers (albuterol)
- Beta Blockers (atenolol, bisoprolol, carvedilol, labetalol, metoprolol, propranolol)
- Decongestants (phenylephrine, ephedrine)
- Diuretics (also called “water pills,” especially if taken at night: furosemide, torsemide, bumetanide, metolazone, chlorthalidone, hydrochlorothiazide, spironolactone, triamterene)
- Histamine blockers (ranitidine, famotidine) and antihistamines (loratadine, fexofenadine, cetirizine)
- Steroids (prednisone, prednisolone, betamethasone, cortisone, dexamethasone, fluticasone, mometasone)
- Some thyroid replacement medicines (liothyronine, natural and other thyroid supplements containing T3/tri-iodothyronine)



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Supplements and Other Substances That May Make It Hard to Sleep

- Alcohol
- Caffeine (including coffee, green/black tea, energy drinks)
- Ginseng
- Nicotine
- SAMe
- Tobacco
- Weight loss supplements (Ma huang/ephedra, bitter orange)

What are some conditions that make insomnia worse?

Here are some medical conditions that can affect a person's ability to get good sleep. If you have any of these, it does not mean that you will never be able to sleep well. It does mean that you may need to try several approaches (i.e., not only a medicine, or only supplements, etc.).¹⁻⁶

- Anxiety, panic disorders, or PTSD
- Asthma, emphysema, COPD, and other lung diseases
- Depression
- Diseases of the central nervous system
- Heart failure
- Pain—any cause
- Restless leg syndrome/periodic limb movement disorder
- Sleep apnea
- Substance abuse

What is an integrative approach to treating insomnia?

The best way to improve your sleep habits is through a healthy lifestyle. This will raise your own melatonin at night and lower your cortisol/stress hormone in the evening (as well as keep it at a healthy level all the time).^{1,4-6}

What works for my mind and body?

The best approach is to allow your own hormones to come into balance. Here are some of the most effective changes you can make that will help you sleep both longer and better. Try to change the habits that you can, one at a time. Don't try to do too many new things at once!^{1,2, 4-6}

Daytime

- ☀ Recognize that you may not be able to do this alone. Research tells us that one of the most helpful ways to fight insomnia (and restore a healthy sleep pattern) is to get insomnia-related counseling. This is called CBT-I. See more information below.
- ☀ Spend time outdoors or in bright light regularly.
- ☀ Exercise daily. There is good evidence that regular exercise improves restful sleep, and it helps people feel more awake during the day.
- ☀ Get up from bed at the same time each day, no matter what.
- ☀ Keep a sleep diary. The National Sleep Foundation has an example of a good one on their website: <https://sleepfoundation.org/sleep-diary/SleepDiaryv6.pdf>. Then talk about this information with your health care team.
- ☀ Eat fresh foods.
- ☀ Reduce stress. Find ways to relax regularly.



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Nighttime

- › Cut out bright lights an hour before bed. Dim inside lights, turn off the TV, or wear sunglasses inside if others object to the low lighting.
- › Develop a relaxing pre-bedtime routine, just before going to sleep. (Some ideas: listen to a recording of guided imagery, practice a muscle relaxation exercise, massage tense muscles, take a warm bath, etc.).
- › Go to bed at the same time each day, no matter what.
- › Keep the temperature in your bedroom comfortable, or on the cool side.
- › Keep the bedroom quiet when sleeping, or use a source of “white noise” (e.g., a fan, white noise recordings).
- › Keep the bedroom dark to facilitate sleep. (This increases production of melatonin, the sleep hormone).
- › Use your bed only for sleep and sex.
- › Remove electrical devices from around your head when you sleep (e.g., radios, cell phones, outlet connectors). Easy access to your phone or tablet may cause you to use it more in bed. This can lower melatonin levels, both from the light of the screen, and any stress that may be related to your interactions.
- › Keep your feet and hands warm. Wear warm socks and/or mittens or gloves to bed if your feet and hands tend to be cold.

What doesn't work for my mind and body? (Remove barriers that may be preventing a good night's sleep)¹⁻⁶

- Try not to engage in stimulating activity just before bed, such as playing a competitive game, watching something exciting on television, or having an important discussion with a loved one.
- Do not have caffeine in the evening (coffee, many teas, chocolate, soda, etc.).
- Avoid reading material that excites or wake you up, watching television, or using your phone/tablet in bed.
- Do not use alcohol to help you sleep.
- Do not go to bed too hungry or too full.
- Stay away from daytime naps.
- Do not try to command yourself to go to sleep or worry about not sleeping. This only makes your mind and body more alert (and often upset). Research shows us that worrying about not sleeping actually makes it harder to sleep! Remember that there are several safe remedies and approaches to help you sleep.
- Try to steer clear of medicines, supplements, and substances that can make it difficult to get good sleep.

What are some integrative things to try if I still can't sleep?

Following are the top three most effective ways to fight insomnia:

1. Counseling, also called Cognitive Behavioral Therapy for Insomnia (CBT-I).

- The first step is to see what is really happening. Fill out a sleep diary for a week. An example of a good one is available from the website of the National Sleep Foundation: <https://sleepfoundation.org/sleep-diary/SleepDiaryv6.pdf>.
- The next steps will involve some visits with a trained counselor. CBT-I works because it takes into account a person's health, medicines, habits, thoughts and



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feelings, and helps to make a sleep plan. It may include some of the techniques listed above. It also often includes practicing relaxation techniques, setting specific sleep hours, and using techniques that help calm the mind and reduce nighttime (and daytime) stress. The counselor will also help set up a plan to prevent a relapse if sleep problems come back. This type of counseling is safe, without side effects. Also, the skills learned in this type of therapy last for years.^{4,9}

2. **Melatonin supplement.** A melatonin supplement helps boost the levels of the rest-related hormone made in the brain. People generally do well starting at 1 mg each night. Many people do better on smaller, rather than larger, doses. For this reason, it may help to try 1/2 mg or 1/4 mg at night if the full 1 mg dose does not help at first. It is safe to increase the dose up to 10 mg if needed. Try the same dose every night for 1-2 weeks, and see how it works. It is important to take it at least 60-90 minutes before going to bed, and 7-8 hours before you plan to wake up.^{1, 4-6, 10}
3. **Music Therapy.** It is well known that music can affect people's physical bodies, as well as concentration, feelings, mood, and overall well-being. Music can be played or listened to, and has no negative side effects. For some, it works best to use calming music. Others find that it helps to play music to match their mood at first, and then transition to more calm, restful music.^{1-2,4-6}

What are some other techniques to help with sleep?

- **Make the bed a place for sleeping:** If lying in bed awake for more than 20-30 minutes, get up and go to a different room (or different part of the bedroom). Participate in a quiet activity (e.g., reading that does not wake you up too much). Then return to bed when you feel sleepy. Do this as many times during the night as needed.^{1,2,4-6}
- **Guided imagery/visualization recordings:** Listening to these recordings helps your mind to lay aside stressors and move into a more relaxed state of being. They may also help your mind to process stress more easily in general.^{1,4,5} There are many good (and free) options. Here are links to some we use and recommend:
 - www.fammed.wisc.edu/mindfulness-meditation-podcast-series/
 - http://www.healthjourneys.com/kaiser/download/download_healthfulSleep.asp
- **Biofeedback:** The idea behind biofeedback is to become more aware of heart rate and breathing patterns. Many biofeedback devices have programs, which help people relax and take control of their "fight or flight" nerves. Biofeedback is also used for several other purposes, including better mood, focus, blood flow, and overall well-being. Many biofeedback devices can be purchased online, including the Stress Eraser, HeartMath, and many others.^{1,2,4-6}
- **Healing Touch and other self-care energy approaches:** These can easily and safely be done before bed or on an as-needed basis to help manage stress and increase your body's own ability to rest and heal itself.^{3,5} One example, called the "Self Chakra Connection," is included here:
https://www.healingtouchprogram.com/content_assets/docs/current/Self-CC-handout1.pdf



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- **Progressive muscle relaxation:** This is a technique that involves tensing specific muscle groups and then relaxing them to create awareness of tension and relaxation. It is called “progressive” because it proceeds through all major muscle groups, relaxing them one at a time. It eventually leads to relaxation of all your muscles. *You Must Relax* is a helpful book by the founder of this technique, Edmund Jacobson.^{1,2,4-6}

Step 1. Find a comfortable position. You may lie down. Loosen any tight clothing. Close your eyes and be quiet.

Step 2. Assume a passive, accepting attitude. Focus on yourself and on getting full relaxation in specific body muscles. Tune out all other thoughts.

Step 3. Tense and relax each muscle group as follows:

- Forehead - Wrinkle your forehead; try to make your eyebrows touch your hairline for five seconds. Relax and allow those muscles to loosen.
- Eyes and nose - Close your eyes as tightly as you can for five seconds. Now relax for 5 seconds.
- Lips, cheeks and jaw - Draw the centers of your mouth back and grimace for five seconds. Relax for a few seconds. Feel the warmth and calmness in your face.
- Hands - Extend your arms in front of you. Clench your fists tightly for five seconds. Relax. Feel the warmth and calmness in your hands.
- Forearms - Extend your arms out against an invisible wall and push forward with your hands for five seconds. Relax.
- Upper arms - Bend your elbows. Tense your biceps (the front muscles on your upper arms) for five seconds. Relax. Feel the tension leave your arms.
- Shoulders - Shrug your shoulders up to your ears for five seconds. Relax.
- Back - Arch your back off the floor for five seconds. Relax. Feel the anxiety and tension disappearing.
- Stomach - Tighten your stomach muscles for five seconds. Relax.
- Hips and buttocks - Tighten your hip and buttock muscles for five seconds. Relax.
- Thighs - Tighten your thigh muscles by pressing your legs together as tightly as you can for five seconds. Relax.
- Feet - Bend your ankles toward your body as far as you can for five seconds. Relax.
- Toes - Curl your toes as tightly as you can for five seconds. Relax.

Step 4. Focus on any muscles that may still be tense. If any muscle remains tense, tighten and relax that specific muscle three or four more times.

Step 5. Fix the feeling of relaxation in your mind. Make a decision to repeat the process again.

Remember, people respond differently to various activities. Some feel pleasant or refreshed, and others feel calm and relaxed after an activity like this one. Some people benefit from hearing the prompts in their own voice. Make a recording of these instructions if this is true for you. Some people notice very little change the first time, but



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with practice, their control increases—as well as the benefits. If you practice this activity, your relaxation should increase.

- **Mindfulness:** This is a whole class of techniques to help people become more aware of the constant activity in the mind and body.^{1,2,3-6} Following is an example of a mindfulness technique to help you sleep:
 - Place one hand on your chest and the other on your abdomen. When you take a deep breath, the hand on the abdomen should rise higher than the one on the chest. This ensures that the diaphragm is expanding, pulling air into the bases of the lungs. (The diaphragm is the muscle separating your chest cavity from your belly.) Once you have this mastered, you do not have to use your hands.
 - Take a slow deep breath in through your nose for a count of 3-4 and exhale slowly through your mouth for a count of 6-7. (Exhale twice as long as you inhale).
 - This breathing using your diaphragm, stimulates the vagus nerve, which increases the “relaxation response” (opposite of the “fight or flight” response).
 - Allow your thoughts to focus on your counting or the breath, as the air gently enters and leaves your nose and mouth.
 - If your mind wanders, gently bring your attention back to your breath.
 - Repeat the cycle for a total of 8 breaths.After 8 breaths, change your body position in bed and repeat another 8 breaths. Continue to do these 8 breath cycles. It is rare that you will complete 4 cycles of breathing and body position changes before falling asleep.
- **Movement/Exercise:** Regular exercise is one of the key ingredients in maintaining good sleep and overall health. Try to get 40-60 minutes of aerobic and muscle toning exercise most days of the week. This will lower the cortisol (stress hormone) in the body, which naturally helps raise your own melatonin levels.¹⁻⁶
- **Acupuncture and traditional Chinese medicine (TCM):** Acupuncture and TCM can help treat many conditions, including sleep troubles. Acupuncture uses very small needles to channel different energies in the body and speed healing. It has been around for over 5,000 years and has very few side effects for most people. Acupuncture may not be the best choice if you are taking medicine to thin your blood.^{1,2,4-6}
- **Supplements and prescription medicines:** Supplements are pills, oils, herbs, or other substances that have an effect like medicine. Generally supplements are not regulated by the U.S. Food & Drug Administration (FDA), nor are they made with pharmacy-grade ingredients. While they often are thought to be more natural than medicines, it is good to be cautious with supplements. Many brands are not tested in labs and may not contain the ingredients that are reported on the bottle.

Whether taking medicines or supplements, the goal is to use fewer of them over time. While helpful for a time, or on an as-needed basis, the brain and body can become dependent on them. Ideally, you want to help your body find what it needs to sleep well, but you do not want to develop a tolerance to products that can cause side effects when higher doses are needed. The products listed in the next two tables are to help jumpstart a better sleep/wake cycle. The goal is to stop taking them after 4-6 weeks, if not sooner.^{1,2,4-6,10}



Over-the-Counter Medications, Supplements, and Foods to Help with Sleep	
Melatonin (Regular or Extended Release)	<p>A common starting dose is 0.25 mg to 3 mg.</p> <ul style="list-style-type: none">• The regular/immediate release form works over 1-3 hours, and helps people get to sleep.• The extended release form slowly allows the melatonin to be digested over time, helping people stay asleep. <p>Take either form 60-90 minutes before going to bed, and 7-8 hours before you plan to wake up.</p>
Diphenhydramine (Examples: Benadryl, Tylenol PM)	<p>Taking 25-50 mg at bedtime can help people get to sleep.</p>
Valerian Root	<p>Take 400-900 mg 30 minutes—2 hours before bedtime. Valerian works best if used every night for 4-6 weeks. It does not work as well on an “as needed” basis. Slowly taper off since withdrawal symptoms can occur.</p>
Lavender or Sweet Almond Essential Oils	<p>Place a few drops of essential oil on a cloth under your pillow or on your temples (if you do not have a skin allergy to essential oils). Inhaling the aroma can make you sleepy.</p>
Chamomile Tea	<p>Chamomile has a soothing/calming effect. Drinking other warm, soothing beverages and teas may work similarly. Do not drink too much, or you may wake up to go to the bathroom.</p>
Foods Rich in Tryptophan and Melatonin	<p>These two are present in the nervous system and have a soothing or calming effect on the mind. It can take time to raise levels after eating. Eat at least one hour before bedtime, or earlier, to avoid possible heartburn and prevent weight gain.</p> <ul style="list-style-type: none">• Foods high in tryptophan: eggs (the whites), cod, soy, dairy products, poultry, bananas, sesame and sunflower seeds, whole grain cereals.• Foods high in melatonin: cherries, meats, bananas, rice, whole grains/cereals, plums, oranges, apples, tomatoes, cucumbers, cabbage, almonds, walnuts, sunflower seeds, mustard seed, fennel.
5HTP (5-HydroxyTryptophan)	<p>This is an important ingredient of serotonin, a chemical in the brain that helps regulate mood. There is not a lot of research about how effective this is, but many people feel it is helpful, and it has few side effects. Talk with your healthcare professional about taking this (and about possible side effects), if you also take other antidepressant or anti-anxiety medications.</p>
Magnesium	<p>This common electrolyte/salt can have a calming effect on the mind and body. It can be taken as a supplement, absorbed in an Epsom salt bath soaks, or eaten in magnesium-rich foods. These include almonds, spinach, cashews, peanuts, black beans, soybeans (soy milk, edamame, and tofu), yogurt, potatoes, and avocados.</p>



Prescription Medicines to Help with Sleep ^{1,5,6,11}	
<p>Ramelteon (Rozerem) 8 mg at bedtime</p>	<p>This medicine works inside the brain, in a similar way to melatonin. It connects with the brain’s melatonin “receptor cells” to help the body feel tired. Its effects are likely no better than over-the-counter melatonin for most people.</p>
<p>Zolpidem (Ambien) 5-10 mg at bedtime</p>	<p>This is the most effective sleep medicine, although research shows it increases sleep time only by an average of 7 minutes per night. It has several side effects: it is habit-forming, can cause sleepwalking and sleep-eating in a small number of people, and can interfere with deep rapid eye movement (REM) sleep. There are two forms:</p> <ul style="list-style-type: none"> • regular (immediate release) and • extended release. <p>Take it at least 8 hours before you plan to wake up.</p>
<p>Zaleplon (Sonata) 5-10 mg at bedtime</p>	<p>This medication is similar to Zolpidem but works more quickly. It would be most helpful for people with trouble falling asleep.</p>
<p>Trazodone (Desyrel) 25-50 mg at bedtime</p>	<p>Trazodone can be useful if a person also has anxiety or depression, since it also treats these conditions. It can also slow down or stop the brain from using its own serotonin and melatonin, however. It may be best used with a melatonin supplement.</p>
<p>Amitriptyline (Elavil) 10-100 mg at bedtime</p>	<p>Amitriptyline can be useful if a person also has pain symptoms and frequent headaches. It can cause several side effects: dry mouth, blurry vision, constipation, and low blood pressure after just standing up.</p>
<p>Mirtazapine (Remeron) 15-45 mg at bedtime</p>	<p>This medication can be useful if a person also has depression. It does not cause problems with deep REM sleep like other sedating antidepressants. It can cause weight gain.</p>
<p>Eszopiclone (Lunesta) 1-3 mg at bedtime</p>	<p>Eszopiclone is longer acting than Zolpidem (<i>Ambien</i>) and Zaleplon (<i>Sonata</i>), so it can help if someone has trouble staying asleep. It can interfere with deep REM sleep</p>
<p>Benzodiazepines:</p> <ul style="list-style-type: none"> • Temazepam (Restoril) 7.5-30 mg at bedtime • Lorazepam (Ativan) 0.25-1 mg at bedtime • Clonazepam (Klonopin) 0.25-1 mg at bedtime • Alprazolam (Xanax) 0.25-1 mg at bedtime 	<p>These medicines are sedating and can work as sleep aids. They can have side effects, including memory trouble and daytime fatigue. They can also cause more insomnia when the medicine wears off (called “rebound insomnia”). They can interfere with deep REM sleep. They can also be addictive. They are not a good first choice.</p>



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The information in this handout is for general education. It is not meant to be used by a patient alone. Please work with your health care practitioner to use this information in the best way possible to promote your health and happiness.

This handout was originally created by David Rakel, MD, Professor and former Director of the Integrative Medicine Health Program, Department of Family Medicine and Community Health, University of Wisconsin School of Medicine and Public Health. It was updated by Taryn Lawler, DO, former Integrative Health Fellow, and Anna Veach, DO, PGY3.

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