

How much sleep do you need?

At one week old:	16.5 hours: night sleep + 4 x 2 hour naps
At 6 months:	14.5 hours: night sleep + 2 x 2 hour naps
At 12 months:	13.75: night sleep + 2 x 1 hour naps
At 2 years:	13 hours: night sleep + 1 hour nap
At 3 years:	12 hours: night sleep + 1 hour nap
At 4 years:	11.5 hours
At 6 years:	10.75 hours
At 8 years:	10.25 hours
At 10 years:	9.75 hours
At 12 years:	9.25 hours
At 14 years:	9 hours
16 years plus:	7-9 hours

Sleep Stages

There are two basic types of sleep: rapid eye movement (REM) sleep and non-REM sleep (which has three different stages). Each is linked to specific brain waves and neuronal activity. You cycle through all stages of non-REM and REM sleep several times during a typical night, with increasingly longer, deeper REM periods occurring toward morning.

Stage 1 non-REM sleep is the changeover from wakefulness to sleep. During this short period (lasting several minutes) of relatively light sleep, your heartbeat, breathing, brain waves and eye movements slow, and your muscles relax with occasional twitches.

Stage 2 non-REM sleep is a period of light sleep before you enter deeper sleep. Your heartbeat and breathing slow, and muscles relax even further. Your body temperature drops and eye movements stop. Brain wave activity slows but is marked by brief bursts of electrical activity. You spend more of your repeated sleep cycles in stage 2 sleep than in other sleep stages.

Stage 3 non-REM sleep is the period of deep sleep that you need to feel refreshed in the morning. It occurs in longer periods during the first half of the night. Your heartbeat, brain waves and breathing slow to their lowest levels during sleep. Your muscles are relaxed and it may be difficult to wake you.

REM sleep first occurs about 90 minutes after falling asleep. Your eyes move rapidly from side to side behind closed eyelids. Mixed frequency brain wave activity becomes closer to that seen in wakefulness. Your breathing becomes faster and irregular, and your heart rate and blood pressure increase to near waking levels. Most of your dreaming occurs during REM sleep, although some can also occur in non-REM sleep. Your arm and leg muscles become temporarily paralyzed, which prevents you from acting out your dreams. As you age, you sleep less of your time in REM sleep. Memory consolidation most likely requires both non-REM and REM sleep.

What are the prompts for sleep?

A combination of melatonin production and circadian rhythm are interlinked in the sleep process.

Melatonin

When it is dark, your eyes send a message to the hypothalamus in your brain that it is time to feel tired.

Your brain in turn signals to your body to release melatonin which helps you feel tired, get off to sleep and stay asleep.

Drinking caffeine will block the melatonin receptors but doesn't block production hence the slump you might feel once your coffee has worn off.

Circadian rhythm

A roughly 24 hour internal clock runs in the background of your brain all the time and prompts you to cycle between sleepiness and alertness at regular intervals. Most people's lowest energy level is between 2am and 4am and around 1-3pm.

Each individual has a slightly different rhythm with people broadly falling into 3 categories:

- "Night owls" are happy to stay up late but struggle first thing in the morning,
- "Larks" are great first thing in the morning and are ready for bed early
- The least common category is those who have energy at either time.

Our circadian rhythm and our demand for sleep changes over our life span. The sleep urge builds over the day.

Your circadian rhythm also regulates your core temperature – higher during the day and lower at night – hence being too hot will disrupt sleep.

Outside factors e.g. how light it is, how active you are and what you eat or drink can impact on your circadian rhythm.

Flying through time zones can also affect your circadian rhythm because your body clock doesn't know the time zone has changed and you can end up asleep by 7pm or awake at 3am.

To get a good night's sleep you need your sleep urge and your highest melatonin level to meet at bed time.

Effects of not enough sleep

Not having enough sleep affects your heart and brain, can cause weight gain and increase the risk of cancer, heart disease and stroke. It can mean you are at higher risk of developing dementia, aging more rapidly and being less creative. You may find regulating your emotions and problem solving is more difficult. Not having

enough sleep can compromise your immune system, meaning that you will be more at risk of infections and will have a harder time recovering when you are ill.

Memories are moved from short term to long term memory while sleeping, so if you want to do well in an exam, a proper night's sleep is more important than the extra revision you could do in that time after 10pm. Put simply if you haven't slept, you won't remember it.

One research paper shows a reduction in recall even 3 days after a bad night's sleep compared to those who had slept well. So, doing an "all-nighter" before an exam is probably the worst thing you could possibly do. Less revision and a good night's sleep will mean you will at least remember the bit of revision you did do.

Difficulties settling?

What does your bedroom look like?
is like

Draw/write what your bedroom



What is your bedtime routine?
bed

Write/draw what you usually do before going to



Things to avoid

- Sugary food and drink
- Strenuous exercise less than 2 hours before bed
- Not doing any exercise during the day
- Not getting any natural light on your skin
- Using screens especially those that emit blue light
- Exciting computer games/rough and tumbling that leave you “buzzing or agitated”
- Scary films or books
- Naps during the day
- Being too hot or too cold
- Discussions, social media or phone calls that are likely to get you thinking too much
- Going to bed hungry or too full
- Coffee, red bull, monster drinks or anything with caffeine



Things to do

- Have a bath
- Have a warm milky drink
- Read
- Listen to calm music
- Meditation/mindfulness (good apps are insight timer or smiling mind)
- Inverted yoga poses e.g. lying with your legs against the wall
- Go to bed and get up at the same time every day
- Make sure your bed smells nice and is comfortable
- Change into comfortable bed wear (which is different from your day clothes)
- Use a comforter or weighted bed cover if that helps you feel safe
- Have a small glass of water by the bed
- Keep your room as dark as you feel comfortable with. If you feel afraid of the dark have a low level night light on
- Keep your room, and if possible the whole house, quiet during night hours



Wake up in the middle of the night what do you do?

- Coffee
- Music
- Reading a book
- Having a bath
- Cuddle a soft toy
- Stroking a pet
- Listening to an audio book
- Changing your bed linen
- Progressive muscle relaxation
- Intense exercise
- Watching the TV
- Playing computer games
- Going on your phone
- Doing a jigsaw

- Eat a large meal
- Drinking
- Play fighting
- Not eating even if you are hungry
- Eating sweet things
- Cleaning your teeth
- Brushing your hair
- Doing your nails
- Changing your clothes
- Sitting under bright lights
- Sitting in the dark
- Think about your to do list for tomorrow
- Talk to someone about an upset or disagreement

- Do your homework
- Go on Facebook
- Start snap chatting with your friends
- Meditate
- Email
- Do a craft project
- Colour in your colouring book
- Light an incense stick
- Light a candle
- Watch a scary film
- Tell ghost stories
- Eat in bed
- Watch the TV in bed

Sleep Protocol: Getting to Sleep & Getting Back to Sleep

Develop good habits that prepare you for sleep

1. Set a regular schedule to go to bed and get up. Stick to the schedule even if you are up a lot at night.
2. Develop regular rituals to move yourself toward sleep: no big meals or caffeine in the hours before sleep time; exercise during the day but no exercise in the hours before sleep time; "Move toward calm" with cleaning teeth, dressing for bed, turning down the covers, saying prayers, etc. all in the same order.
3. Make bed as comfortable, calming and safe as possible. Use the bed only for sleep: do not read, watch television or talk on the phone in bed. Make your bed for sleep only.
4. In each moment move yourself toward desiring sleep -- willingly. Notice, and throw yourself into, tiredness.

Get to sleep (get back to sleep)

1. As soon as you notice you are awake, try to get back to sleep immediately. This is not a time to ponder, plan, ruminate or rehearse. Observe the urge and return to getting back to sleep.
2. Stay physically drowsy. If you move at all, move only once, gently so as not to wake yourself up. Do not turn on the light. Use relaxation techniques: (1) Scan your body in a calm and leisurely way, noticing and letting go any tension you find. Particularly attend to your face, forehead, scalp and shoulders. Try hearing words in your mind such as, "Shoulders...warm and heavy, arms...warm and heavy, legs...warm and heavy."(2) Develop some calming and quieting images which promote safety, warmth and heaviness -- like lounging on a quiet beach in the sun. (3) Attend to your breathing. Count your breaths.
3. If you are making no progress toward getting to sleep after about 10 or 15 minutes, slowly and calmly get out of bed. Do not switch on the light or do anything active. Merely stand still, relaxing in the dark, with your mind as still as possible. Do not fight feelings of heaviness and drowsiness. Soon you will probably feel tired and will want to lie down. Return to bed, savouring your tiredness.

Control intrusive thoughts

1. Often what gets in the way of sleep are intrusive thoughts - worrying or planning or anticipating or rehearsing. It is important to commit yourself to letting go all such thoughts. You must convince yourself that even if the cure for cancer suddenly comes to you, you must let it go while you are in bed. Cheerlead yourself: "Everything is as it should be now. There is no need for me to lie awake thinking. I can simply go to sleep."
2. Set aside a quiet time just before bed, outside your bedroom, to do your worrying, planning, etc. Jot down any notes on thoughts or ideas you want to follow-up on. Do not dwell on any one thought or idea - merely jot something down and put the idea aside.
3. Block intrusive thoughts while you are in bed by doing the following: immediately start saying the word "the" over and over, under your breath, with only the slightest movement of your tongue each time you say the word "the". Repeat "the" at a comfortable rate, 2 or 3 times per second. If you also have intrusive images, try moving your eyes as if you were following an irregular circle. Keep your eyes closed, and follow the circle in a slow and lazy way. Try picturing a map of the United States and slowly move your eyes around the borders. If a thought intrudes, notice it non-judgementally and simply return to repeating "the" and following the circle. The unwanted thoughts will be blocked and you will soon drift off to sleep again.

Progressive relaxation exercise

Find a position which is comfortable for you, lying in your bed

Bring your focussed attention as best you can to your breathing – take a deep breath in through your nose and out through your, mouth noticing how the air changes as it comes into your nose and out of your mouth. Notice the feeling as the air comes into your nose. If you want, you can think ‘calm’ on the breath in and ‘relax’ on the breath out or just say ‘in’ and ‘out’.

Now take your attention to the tip of your toes and crunch your toes up tight. Notice the feeling of the muscles being pulled tight. How do they feel? Then relax your toes, noticing how different it feels with your toes relaxed. Repeat this 2 more times.

Move to tightening your calf muscles – again notice how the muscle feels when tight and how the feeling changes when you relax the muscle. Repeat 2 more times.

Move onto your knees, pushing your knee cap down just using your muscle. Notice how this feels and then notice the difference when you relax the muscles. Repeat 2 more times.

Move onto your thigh muscles – this is a big muscle so you can really pull it tight. Notice how it feels and then notice the difference when you relax the muscle. Repeat 2 more times.

Move onto your bottom, clench your bum cheeks and then relax 3 times noticing the difference.

Move onto your tummy, pulling your belly button into your spine and tense all the muscles, noticing where you feel the tension and how it changes when you relax the muscles. Do this 2 more times.

Pull your shoulder blades together, noticing how the muscles in your back feel tight and tense and then relax 3 times, always paying attention to the difference in the feeling.

Pull your shoulders up towards your ears, feel where the tension is and the allow them to relax down, feeling the difference. Do this 3 times.

Tighten your arm muscles, squeezing them into your sides and pulling your biceps tight, noticing the muscles in your arms where can you feel the pull as you squeeze your muscles tight and then relax. Do this 3 times.

Clench your fists. Notice how it feels to pull the fist in really tight, then open your hands and let them rest on the bed. Do this 3 times and notice how heavy they feel resting on the bed.

Scrunch up your face really tight, pulling your cheeks in, keeping your eyes tightly shut or frowning really hard. Then, allow your face to relax as you lay on your bed and notice the different feeling in your face.

Now scrunch and tighten every single muscle you have used already: toes, feet, legs, bottom, tummy, shoulders, back, arms, hands, face and then relax them, noticing how the feeling changes. Do this 3 times, allowing yourself to feel heavy on the bed.

Allow any thoughts that come just to drift past. Don't try and stop them, don't give them any energy, just let them float past and concentrate on the feeling of your natural breath coming in and out. Embrace the heavy feeling, not worrying about sleep. It will come.