Nite-Nite, Sleep Tight

It has been a long day. You yawn and your eyelids feel heavy. Your eyes begin to flicker shut. Your head bobs up and down as you slowly slip into the first stages of sleep.

Sleep is a huge part of your 24-hour day, and even during sleep, God has designed your body to still be at work. If you add all the time you've spent sleeping by the time you reach 70 years old, you would have slept over 20 years of your life! As you get older, your need for sleep decreases. A newborn baby sleeps 12 to 18 hours a day. School-age children need 10 to 11 hours. Adults require 7 to 9 hours a night. It is during sleep your body does some of its best work! The body uses sleep to repair, grow, and rejuvenate itself. You may have noticed when you are sick or injured you sleep even more.

You will cycle through the various stages of sleep in a night. NREM sleep Stage 1 to Stage 2 to Stage 3 back to Stage 2 and then REM. There are periods in the night in which your sleep is lighter. This is part of the reason a baby will awake several times through the night — not only to feed. Babies, as they grow older, have to learn to self soothe and get back to sleep on their own.

There are two major periods of sleep your body moves through during the night, Rapid Eye Movement Sleep (REM) and Non Rapid Eye Movement Sleep (NREM). Most of your sleeping is NREM, while REM is usually when we are dreaming.

NREM	REM
Sleep is composed of three stages. Stage 1 is when your eyelids feel heavy and you begin to nod off to sleep. It is not uncommon to have sudden twitches or jerks of your body prior to dozing off to sleep. You become a bit harder to awaken during Stage 2 sleep. Stage 3 is when things really slow down. Outside sounds and noises do not disturb your slumber.	The phase of sleep in which you dream. Your brain is as active as if you were awake. You can tell by observing sleeping people when they have entered this stage because their eyes will dart rapidly back and forth under their eyelids. It is also during this stage when you experience a type of paralysis, being unable to move. Your body protects itself through this type of paralysis so that you do not "act" out your dreams.

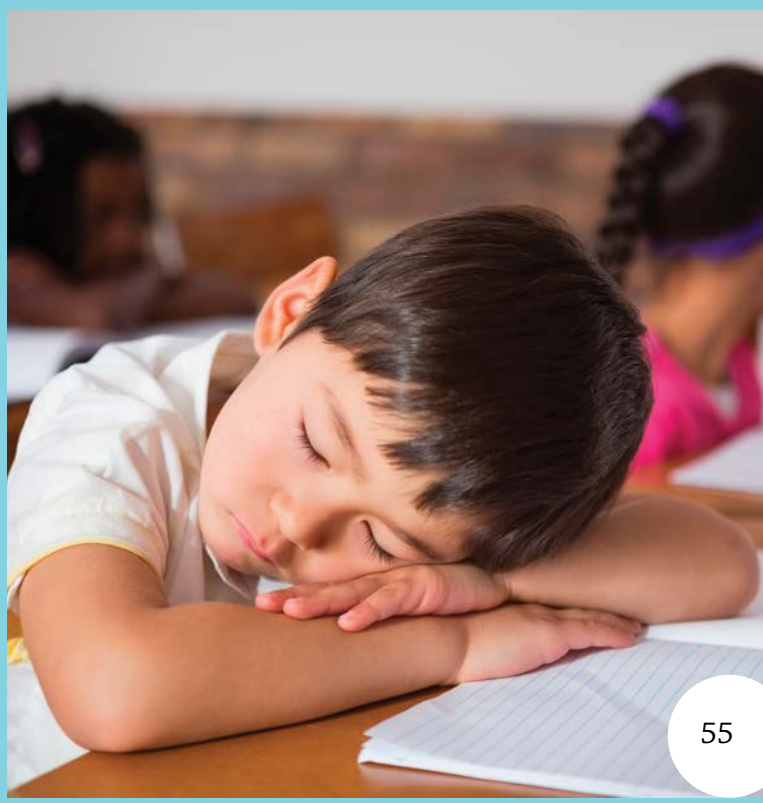
PSALM 4:8 **In peace I will lie down and sleep,for you alone, Lord,make me dwell in safety.**

Five Stages of Sleep

Stage 1 (NREM)	When you are barely asleep, almost like daydreaming.
Stage 2 (NREM)	When we are slowly becoming unaware of the sights and sounds around us, more relaxed, breathing rate is normal and regular, and our body temperature starts to drop a little.
Stages 3 and 4 (NREM)	When we are breathing slower, very relaxed muscles, deep and restful sleep, our energy reserves are being re-energized, the muscles are getting more blood, and tissue repair is underway.
Stage 5(REM)	Our closed eyes are moving back and forth, our muscles are not moving, we are dreaming, and the cycle continues around every 90 minutes after we fall asleep.

Adapted from "What Happens When You Sleep?," National Sleep Foundation, sleepfoundation.org

Many sleep disorders occur during the REM stage of sleep. Two sleep disorders experienced are ***Narcolepsy*** (NAR-ko-lep-see) and ***Cataplexy*** (CA-tuh-pleks-ee). Narcolepsy can be very problematic. One moment the person can be laughing and engaged in a lively conversation then suddenly fall deep asleep. People with this disorder can have many sudden episodes of this a day. These episodes of sleep can be as brief as 30 seconds and last up to 30 minutes. You can imagine with the potential of this striking at any moment could place a person in a dangerous situation. People who suffer from Narcolepsy do not go through the stages of sleep but fall directly into REM sleep. Cataplexy is similar to the paralysis that happens during REM sleep…. except the person is awake! These attacks happen at the onset of intense emotion like happiness, fear, or grief. The person will collapse to the ground unable to move while being fully awake. These episodes do not last long.



Sleepwalking

Somnambulism (som-nam'by?-lizm) is the scientific name for sleepwalking. Sleepwalking typically occurs in the first one to three hours after a person falls asleep. Sleepwalkers typically do not remember the incident. The sleepwalker's eyes may be open and appear glassy. In other words, the lights are on, but no one is home. Sleepwalking is most common in children, and many kids will outgrow these episodes by their teen years.

Lee Hardwin drawing in his sleep.

Common factors that may contribute to sleepwalking are fatigue, irregular sleep schedules, some medications, stress, or illness. The condition is not dangerous in itself. However, unusual behaviors have been reported while sleepwalking. A man named Lee Hadwin, from North Wales, experienced sleepwalking quite frequently. He was a nurse by occupation, but at night he became an artist. He would awake from his sleep to find incredible, awe-inspiring works of art. He never remembered drawing these masterpieces, but he soon discovered his hidden talent.

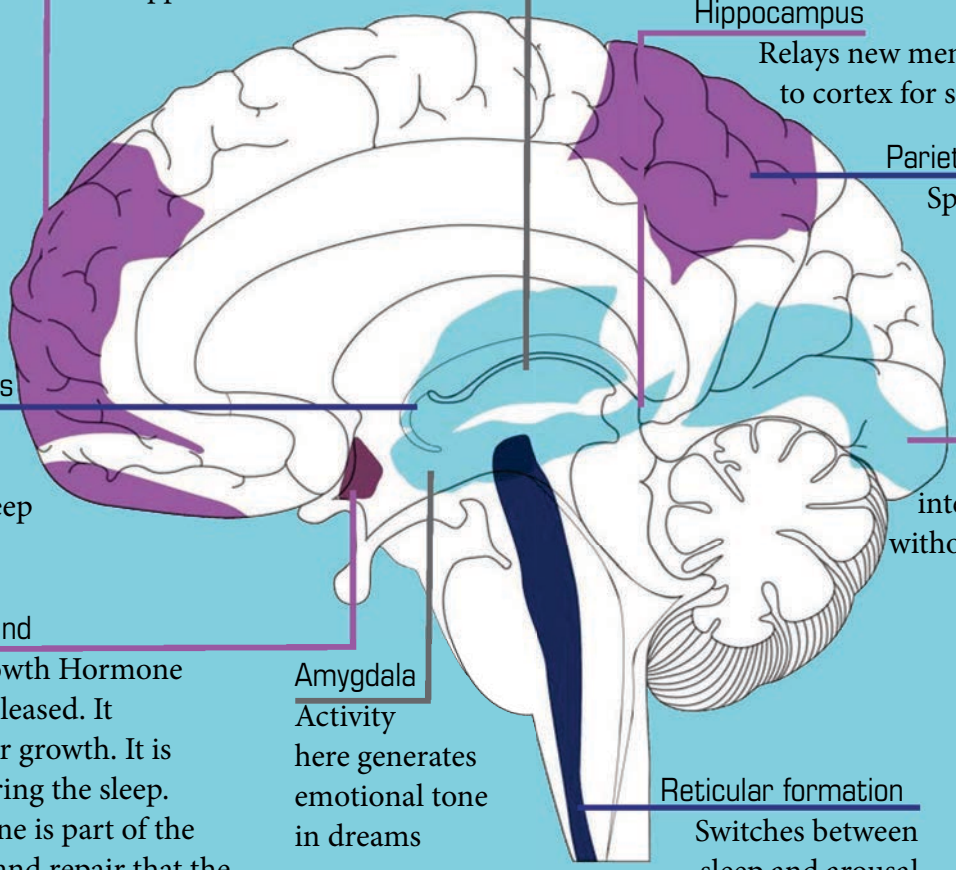
Why Your Brain Is Always Awake!

While you may have to be in bed by a certain time to get enough sleep, your brain is always awake! While you are sleeping and sometimes dreaming, your brain is busy organizing and filing away the things we have learned or seen that day. If something really good or bad happened, then those things can often be a priority for your brain to store as a memory.

Many areas of the brain are awake and active during sleep. However, sleep deprivation, lack of sleep, can have big effects on your body also. The world record holder for the longest period without sleep is up for debate. The most scientifically documented case is held by seventeen-year-old Randy Gardner in 1964. At the time of his record of 11 days continuous without sleep, he was heavily monitored in the Stanford Sleep lab. There have been other accounts of others who have attempted to break this feat. It is said that Maureen Weston of Cambridgeshire, UK, set a record of lack of sleep for 14-18 days during a rocking chair marathon in 1977. It was stated that she suffered from hallucinations, blurred vision, slurred speech, and memory/concentration lapses. All of these symptoms cleared after sleep was returned. *The Guinness Book of World Records* no longer records or recognizes any attempts for voluntary sleep deprivation. The concern is that this practice could be harmful to the record attempter's health.

Word Wise!

SOMNAMBULISM (Som-nam-byuh-liz-uhm) is an abnormal condition of sleep in which motor acts (as walking) are performed



Thalamus
Prevents incoming signals from reaching the cortex

Prefrontal cortex
"Turned off" so that reason is not applied to dreams

Hippocampus
Relays new memories to cortex for storage

Parietal cortex
Spatial awareness and movement control are blocked

Hypothalamus
Triggers the change from arousal to sleep mode

Visual cortex
Generates internal imagery, without input from your eyes

Pituitary Gland
Human Growth Hormone (HGH) is released. It aides in your growth. It is released during the sleep. This hormone is part of the restoration and repair that the body needs during sleep.

Amygdala
Activity here generates emotional tone in dreams

Reticular formation
Switches between sleep and arousal

Ever heard counting sheep helps you sleep? Actually, it's not that effective. According to a study done by Oxford University, expending more mental energy is more effective in helping a person sleep rather than just a repetitive distraction.[1]

1 http://en.wikipedia.org/wiki/Counting_sheep

Yawning

First, all kinds of creatures, not just humans, yawn. Dogs, cats, lions, birds, and even fish are included among animals that yawn. So why do we yawn, and why does one person yawning seem to make other people want to yawn too? Try it sometime and see what happens!

We don't know all the answers, but here is what we do know. Yawning is an involuntary action — meaning it just happens without us deliberately planning it. Our mouths start to open really wide and we take a huge breath of air. Our chest muscles expand and contract, and then we blow out some of the air. It could happen because we are sleepy or bored, or even because of a physical condition, but we begin yawning before we are even born, as early as 11 weeks old. There are a few theories as to why we yawn[1]:

Boredom	While yawning can happen when we are bored, it can happen other times too. When we are bored or tired, our breathing becomes shallow or slowed. Yawning increases the oxygen content in our blood.
Physiological	This is a big word referring to understanding how our body and internal systems function. Some people think yawning might be needed to get additional oxygen or get rid of carbon dioxide, but some tests have shown neither really is a cause for yawning.
Evolution	This idea is that yawning was a way of trying to scare others by showing more of our teeth. But, remember how Adam and Eve were created by God in the Garden of Eden — they didn't need to scare anything by showing their teeth. Sometimes when we don't know the answer to something, people use evolution to try and explain it, when in reality — no one really knows what causes it.
Brain-cooling	Scientists are studying if yawning happens when our brains are warmer. The idea is that when our brains are cooler, it is clearer and we are more alert. Interesting idea, but again, nothing has been proven yet.

So, while we don't know why we yawn, we do know that one person who yawns can often make someone else yawn too. They seem to be a little contagious! But for humans, you have to be older than four years old before you can "catch" someone else's need to yawn.

[1]Adapted from "What Makes Us Yawn?" by Melanie Radzicki McManus, http://science.howstuffworks.com/life/inside-the-mind/human-brain/question5721.htm