

Sleep Disorders



Sleep Cycle

First comes non-REM sleep followed by a short period of REM sleep.

Non-REM Sleep

Non-REM sleep consists of three stages, each stage lasting anywhere between 5 and 15 minutes. You will cycle through all three phases before entering into REM sleep.

Stage 1: Eyes are closed, but it's easy to wake you up.

Stage 2: You are in light sleep, your heart rate slows and your body temperature drops.

Stage 3: This is the "deep sleep" stage. It is harder for someone to wake you, and in the case you do wake, you will feel disoriented.

NREM sleep is extremely important; during this process, your body will repair and regrow tissue, build bone and muscle and strengthen your immune system.

REM Sleep

REM stands for Rapid Eye Movement. During your REM sleep, your eyes will move quickly in different directions. REM sleep usually happens 90 minutes after you have fallen asleep. During REM sleep, your heart rate and breathing quicken. The first period of REM sleep usually lasts 10 minutes. After this, each time you enter REM sleep the stage will get longer. Dreams typically happen during REM sleep because your brain is more active than in NREM sleep.

What are Sleep Disorders?

A sleep disorder is defined as someone having trouble getting to sleep, sleeping through the night, waking up too early or having a hard time waking up at all. Sleep can be divided into two types of sleep, non-REM sleep and REM sleep. Non-REM or NREM sleep has four stages of increasingly deep sleep on a scale of 1-4. During a normal sleep cycle, one will cycle through NREM

and REM sleep. If you are unable to complete each cycle, you are apt to feel tired, fatigued and may have trouble concentrating and paying attention. Circadian Rhythm disorders, insomnia, sleep apnea, narcolepsy, restless legs syndrome and nightmares are a few sleep disorders one may suffer from.

Types of Disorders

Circadian Rhythm Disorders

Typically, people sleep at night, which relates to our natural sleep and alertness rhythms, which are driven by our internal "clock." The clock is a small part of the brain called the suprachiasmatic nucleus of the hypothalamus. Light and exercise are known triggers that will reset the clock. Abnormalities related to this internal clock are called circadian rhythm disorders. Some of these abnormalities include jet lag, changes in work shifts, delayed sleep phase syndrome (fall asleep and wake up too late) and advanced sleep phase syndrome (fall asleep and wake up too early).

Insomnia

Insomnia is when an individual feels they do not get enough sleep. These individuals may have trouble falling

asleep, or may wake frequently during the night and/or early morning. Insomnia becomes an issue when it affects daily activities, such as work or school. There are many possible causes of insomnia, including: anxiety, depression, circadian rhythm disorders, stress, certain medications and poor sleep habits.

Sleep Apnea

Sleep apnea is defined as a blockage in the upper airway, resulting in the interruption of regular breathing for short periods of time, which then wakes you up. Sleep apnea can cause daytime sleepiness. If this condition is left untreated, sleep apnea may be associated with high blood pressure, stroke and heart attack.

Types of Disorders Continued

Narcolepsy

Narcolepsy is a brain disorder that causes excessive daytime sleepiness. Most commonly known as “sleep attacks,” many individuals who are diagnosed with narcolepsy experience constant sleepiness during the day.

Restless Legs Syndrome

Discomfort in the legs and feet that peaks during evening and nighttime hours is known as restless legs syndrome. Those that experience restless legs syndrome have the urge to move their legs and/or feet to get temporary relief. This condition can cause awakening during sleep and even delay sleep onset. Middle-aged and older adults commonly have restless legs syndrome.

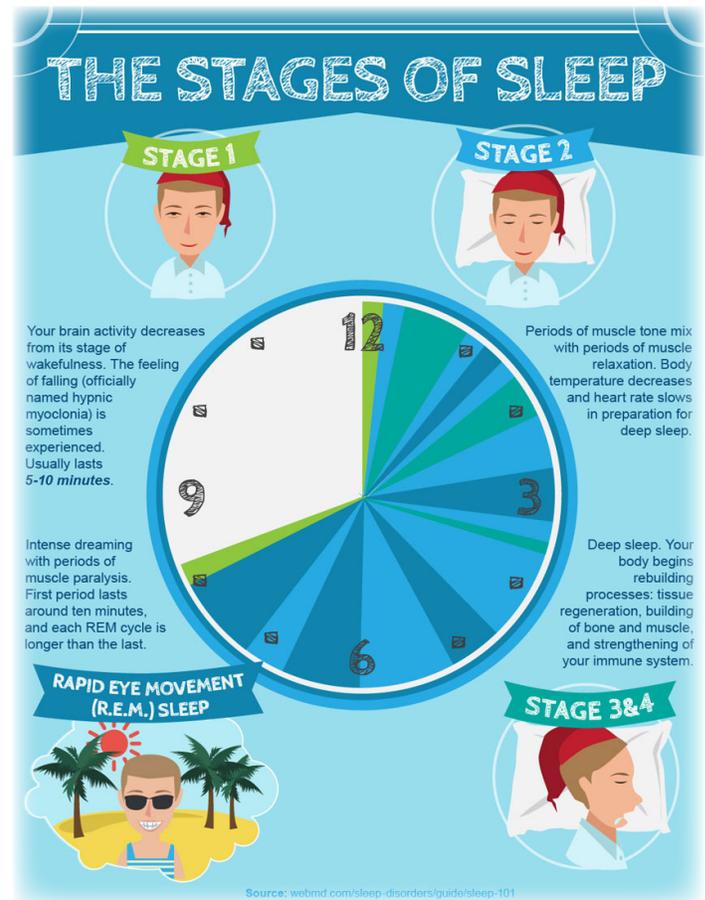
Nightmares/Night Terrors

Nightmares are frightening dreams that occur during REM sleep. Nightmares can be caused by stress, anxiety and even drugs. Night terrors most often occur in children ages 3-5 years of age. Night terrors may result in a child waking up screaming but unable to explain what is happening. Often, night terrors are more frightening for the parent than the affected child.

Treatment

Medication is most often prescribed when someone has a severe case of a sleep disorder. Each medication targets a different part of the brain. Depending on your condition, your physician may prescribe sleeping pills or a stimulant.

Establishing healthy sleep habits should be the initial focus in treating most sleep disorders. If changing your sleep habits does not help, medications such as Ambien (zolpidem) may be prescribed. Zolpidem is a non-benzodiazepine sedative hypnotic that is commonly used for the treatment of insomnia. It has a rapid onset of action and should be taken immediately before intending to fall asleep or for middle of the night awakening. Belsomra (Suvorexant) is a newer class of sleep medication indicated for the treatment of difficulty with sleep onset (falling asleep), and to help with sleep maintenance (staying asleep). Belsomra alters the



signaling of neurotransmitters called orexins, which regulate the sleep-wake cycle. Melatonin is another medication that can be used to normalize sleep-wake cycles. Melatonin is a neurohormone that is secreted by the pineal gland in all animals that maintain a circadian rhythm. It has been proven to be a beneficial treatment option for insomnia, jet lag, shift work related insomnia, and depression.

Narcolepsy can be treated by a wide array of stimulant medications. Provigil (modafinil) and Nuvigil (armodafinil) are medications specifically indicated for the treatment of narcolepsy, which help promote wakefulness and improve daytime vigilance. Other stimulants such as Adderall (amphetamine/dextroamphetamine) and Ritalin (methylphenidate) are also commonly used to help deter excessive daytime sleepiness.