

March is National Sleep Awareness Month.

There are 4 stages of sleep: 1 with rapid eye movement, and 3 with non-rapid eye movement. There are also cycles, typically you will go through the stages 4-6 cycles a night.

The first stage of sleep is the non-REM sleep. Stage 1 of the non-REM sleep is the stage in which you go from wakefulness to sleep. During this period (usually 1-5 minutes) you sleep pretty lightly. In addition, your heartbeat, breathing, and eye movements will slow down, and your muscles will relax with occasional twitches. Your brain waves begin to slow from their daytime patterns.

Stage 2 non-REM sleep is also a period of light sleep before you enter deeper sleep. In this stage your heartbeat and breathing slow, and your muscles will relax even further. Your body temperature will drop, and eye movements stop completely. Your brain waves show a new pattern. Your brain activity slows but there are short bursts of activity. Usually, 10-25 minutes during the first cycle and each cycle gets longer. About half your sleep time is in stage 2.

The last stage of non-REM sleep (stage 3) is a period of deep sleep. This period helps you feel refreshed when you wake up in the morning. Interestingly, this stage occurs in longer periods during the first half of the night and will shorten as the night goes on. When you are in this stage your heartbeat and breathing slow to their lowest levels during sleep. Your muscles are relaxed, and it can be very difficult to awaken. Your brain waves will become even slower than they were in the two previous stages. Experts think this stage is critical to restoration and may help the immune system as well as other body processes. According to the sleep foundation, there is evidence that deep sleep contributes to insightful thinking, creativity, and memory. The initial stage is usually 20-40 minutes and it gets shorter each time after.

The first REM sleep cycle occurs about 90 minutes after you fall asleep. In this stage your eyes move rapidly from side to side behind closed eyelids. You may have seen this if you were watching a baby sleep you can see their eyes moving quickly from side to side behind the eyelids. Your brain waves are more active in this stage. In fact, they are closer to what you would see in someone who is awake. Your breathing becomes faster and

irregular, and your heart rate and blood pressure increase to near waking levels. This stage is also where most of your dreaming occurs (although some dreaming can also occur in the non-REM cycles as well.

In addition to dreaming, your arm and leg muscles will also become temporarily paralyzed, this prevents you from acting out your dreams. This is important to prevent you from injury. There is actually a sleep disorder called REM sleep behavior disorder in which a person will physically act out vivid, often unpleasant dreams with vocal sounds and sudden, often violent arm and leg movements during REM sleep. In this disorder, the nerve pathways in the brain that prevent muscles from moving during the REM cycle do not work.

As you age, you spend less of your time in REM sleep.

More than 100 different sleep disorders have been identified. Most are characterized by 1 of 4 signs:

- trouble falling or remaining asleep;
- difficulty staying awake in the daytime;
- imbalance in circadian rhythm that interferes with sleep schedule;
- prone to unusual behaviors that disrupt sleep.

The most researched disorders are :

- Insomnia
- Sleep apnea
- Narcolepsy
- Restless legs syndrome
- Parasomnias – bed wetting, night terrors, sleepwalking
- REM Sleep disorders
- Excessive Sleepiness

Let's review coding for these conditions:

Insomnia is a disorder that can make it hard to fall asleep, hard to stay asleep, or it can cause you to wake up too early and not be able to get back to sleep. People with insomnia often still feel tired when they wake up

and it can affect not only your energy level, but your mood, health, and quality of life.

There are essentially 2 types of insomnia: Acute (also called short term insomnia) and Chronic. Heather has had bouts of acute insomnia since her early 30's and it generally will last a week or so at a time and then her sleeping goes back to normal. She says that most of the time the insomnia tends to occur when she's been under more stress than normal.

Unfortunately, some people have chronic insomnia which can last for months. Insomnia may be the primary problem, or it may be associated with other medical conditions or medications.

Acute insomnia is reported with a code from the G47.0 code block:

- G47.00- Insomnia unspecified
- G47.01- Insomnia due to a medical condition
- G47.09- Other Insomnia

The F51.0 code set is used to report insomnia not due to a substance or known physiological condition and includes:

- F51.01- Primary/Idiopathic Insomnia
- F51.02 Adjustment Insomnia
- F51.03 Paradoxical Insomnia
- F51.04 Psychophysiological insomnia (this is chronic insomnia)
- F51.05 Insomnia due to a mental disorder
- F51.09 Other insomnia not due to a substance or known physiological condition

Code A81.83 is used to report fatal familial insomnia which is a rare genetic disorder which causes the inability to sleep that causes brain damage and eventually leads to death.

Secondly, sleep apnea is a potentially serious sleep disorder in which breathing repeatedly stops and starts during sleep. Codes for sleep apnea are specified by type of sleep apnea and are found in the G47.3 code block.

- G47.30 Sleep apnea, unspecified

- G47.31 Primary central sleep apnea
- G47.32 High altitude periodic breathing
- G47.33 Obstructive sleep apnea (adult) (pediatric)
- G47.34 Idiopathic sleep related nonobstructive alveolar hypoventilation
- G47.35 Congenital central alveolar hypoventilation syndrome
- G47.36 Sleep related hypoventilation in conditions classified elsewhere
- G47.37 Central sleep apnea in conditions classified elsewhere
- G47.39 Other sleep apnea

Restless Leg Syndrome is a condition that causes unpleasant or uncomfortable sensations in the legs and an irresistible urge to move them. Symptoms generally occur in the late afternoon or evening hours and are often most severe at night when a person is resting, such as sitting or lying in bed. Heather's grandmother has had RLS since she was a teenager. She describes the sensations she feels as like an electrical pulse that is continuously going down her legs. This really affects her sleep, essentially causing her to also have insomnia. It has progressed with time and now her symptoms often start about 2 or 3 in the afternoon, so it affects her most of the day.

In ICD-10, code G25.81 is used to report Restless Leg Syndrome

Finally, there's narcolepsy. It is really interesting to know someone with this condition. My brother had it and it caused some significant problems in his life. This condition is characterized by an overwhelming daytime drowsiness and sudden attacks of sleep. He could put a pot on the stove and go to take a shower and end up asleep on the couch. Sometimes, narcolepsy can be accompanied by a sudden loss of muscle tone (cataplexy). In cataplexy your muscles suddenly go limp or significantly weaken without warning and its often triggered by strong emotion. He said when he was a kid he remembers feeling paralyzed when it was time for sleep and he knew what was going on around him but he could not wake or get up. There are two types of narcolepsy: narcolepsy type 1 (NT1) and type 2 (NT2); NT1 is narcolepsy with cataplexy and type 2 is without.

In ICD-10 Narcolepsy is reported with a code from the G47.4 code family

- G47.411- Narcolepsy with cataplexy
- G47.419- w/o cataplexy
- G47.421- Narcolepsy in conditions classified elsewhere with cataplexy
- And G47.429- w/o cataplexy

This is such an interesting topic, but unfortunately we don't have time today to talk about all 100 different sleep problems. If you have questions please send them in.

Resources:

<https://www.sciencedaily.com/releases/2020/01/200130144410.htm>

<https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Understanding-Sleep>

<https://my.clevelandclinic.org/health/articles/11429-common-sleep-disorders>

<https://www.mayoclinic.org/diseases-conditions/narcolepsy/symptoms-causes/syc-20375497>

