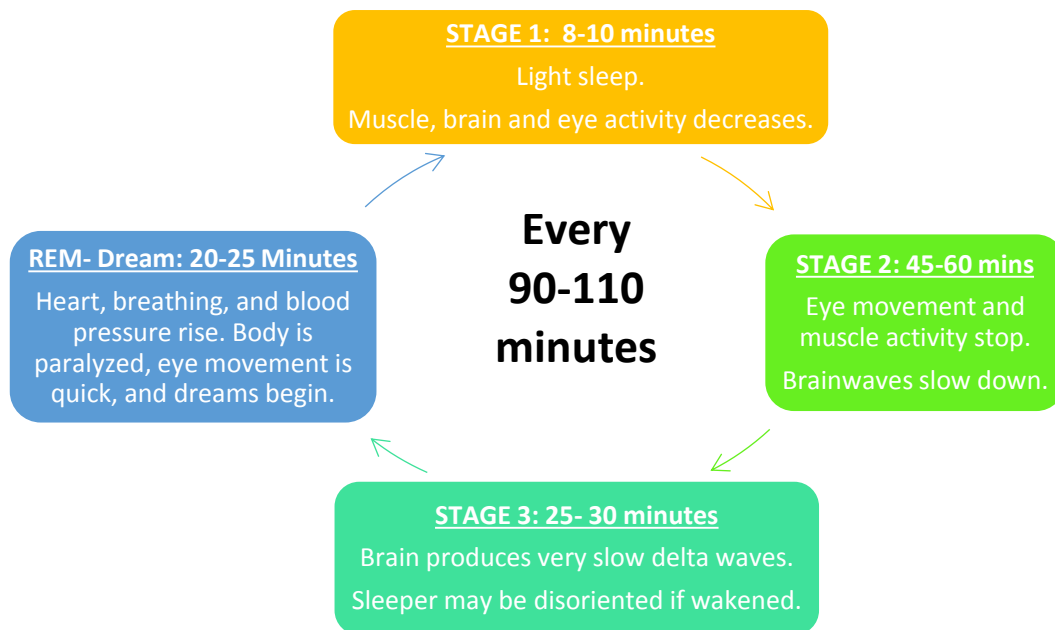


The Science: Sleep Cycle Versus Sleep Quality

Everyone wishes sleep; not just any kind, but the heavenly deep sleep that rejuvenates the mind, body, and spirit. The secret of sleep quality lies in the cycles of sleep. During the 7 to 8-hour sleep at night, the brain goes through 5-6 cycles of sleep. Each sleep cycle lasts 90-110 minutes. Each sleep cycle has four different stages or phases of sleep. The pattern in which these four stages move in one 90 to 110-minute sleep cycle determines the quality of sleep. An individual spends a specific time in each of the four stages of one sleep cycle, as is outlined below:

- **Stage 1: Light Sleep (also called N1 sleep).** This phase takes up only 5% (8-10 minutes) of the sleep cycle time. During this stage, there is drowsiness as brain waves start slowing down. The individual can quickly wake up clear-headed from this light sleep stage.
- **Stage 2: Deep Sleep (also called N2 sleep).** An individual spends 50% (45 – 60 minutes) of the sleep cycle time in this phase. Eye movements, brain waves, breathing, heart rate, and muscle activity all slow down, and the body temperature drops. Low body temperature is essential for a deep rejuvenating sleep.
- **Stage 3 (also called N3 sleep).** It is the stage of deep rejuvenating sleep. About 25% (20-30 minutes) of the sleep cycle time is taken up by this most vital phase of the sleep. To get to this stage, an individual must pass through the deep second stage of sleep. During this stage, an individual is difficult to arouse; breathing, heart rate, and blood pressure further decrease, the brain waves and muscle activity become sluggish. The level of growth hormone secreted from the brain rises. Under the influence of growth hormone, the body repairs and rejuvenates tissues build bones and muscles and strengthens the immune system. By natural design, the growing children who require more growth hormones get a sound stage 3 sleep from which they are difficult to arouse.
- **Stage 4: Dream sleep.** This is also called REM—rapid eye movement sleep. During a healthy sleep cycle, an individual enters the REM stage of dream sleep later, either after stage 2 or stage 3. REM or dream sleep takes about 20% (20-25 Minutes) time of the sleep cycle time, but it can be longer. As the name implies, the eyes are moving fast during the REM stage. The brain is highly active; the breathing is fast; the brain waves speed up, heart rate, and blood pressure go up. However, the muscles are in a paralyzed state, so the sleeping individual does not act out the fantasies of the dreams. The REM or dream stage is the time when the brain processes and consolidates the information for storage in long-term memory. This stage, therefore, plays a role in creating and enhancing learned procedural skills.



For a restful, rejuvenating sleep, the four stages of sleep need to move in a set order. If an individual fails to get into stage 3 from stage 2 sleep, he/she will get deep sleep, but not the vital rejuvenating sleep. Similarly, if an individual moves directly from stage 1 to stage 4 of dream sleep bypassing deep sleep, he/she will wake up tired.