**Supplemental Table 38. Glossary of terms used by the Sleep group**

|  |  |
| --- | --- |
| **Term** | **Definition/explanation** |
| **Sleep stages** | Distinctive periods of sleep with specific, well-characterized EEG (electroencephalographic), EMG (electromyographic), and EOG (electrooculographic) findings |
| Stage I (N1) sleep | A transitional phase between sleep and wakefulness. Very light sleep. Usually between 2-5% of total sleep time in young, healthy adults. Increases with increasingly disturbed sleep. |
| Stage II (N2) sleep | Follows stage I sleep. Characterized by findings on the EEG, specifically K complexes and sleep spindles (see below). Sleep is deeper than in stage I, ie requires more intense stimulus to produce an arousal or awakening. Usually between 45-55% of total sleep time in young, healthy adults.  |
| Stage III/IV (N3) sleep; also referred to as “deep sleep”, “delta sleep”, “slow wave sleep”. | Characterized by high-voltage, slow wave activity on EEG. Deep sleep, ie requires greater stimulus to produce an arousal or awakening then N1 and N2 sleep. Usually between 13-23% of total sleep time in young, healthy adults but the proportion decreases with aging.  |
| Non-REM sleep | Refers to N1, N2, N3 sleep. |
| REM (rapid eye movement) sleep | Characterized by episodes of rapid eye movements and muscle atonia. Breathing may be irregular. Requires the greatest stimulus to produce an arousal or awakening. Usually between 20-25% of total sleep time in adults. |
| Actigraphy | A non-invasive method of monitoring human rest/activity cycles. A device that is worn on the wrist that monitors movement. |
| Alpha rhythm | Sinusoidal rhythm usually 9-10 Hz most characteristic of wakefulness  |
| Apnea | Cessation of breathing >10 seconds  |
| Apnea-hypopnea index | The number of apneas and hypopneas per hour of sleep |
| Arousal | An abrupt change from “deep sleep” to lighter sleep in NREM sleep or from REM sleep toward wakefulness.  |
| Awakening | Return to PSG-defined and behavioral wakefulness with a rise in EMG tonic activity, alpha and beta EEG activity, and voluntary rapid eye movements and blinks. |
| Bispectral index | A processed EEG parameter used to monitor the effect of sedatives on the brain. |
| Central apnea | A cessation of breathing with no detectable inspiratory effort |
| Circadian rhythm | The “biologic clock” that regulates our sleep-wake cycle approximately every24 hr. Located in the suprachiasmatic nucleus in the hypothalamus. |
| Delta waves | High amplitude, slow waves seen on EEG characteristic of N3 sleep |
| Hypopnea | Reduction of airflow > 10 seconds and associated with an oxygen desaturation of 4% or more. |
| K complexes | An EEG finding that consists of an initial sharply contoured negative component that rises abruptly and may have an amplitude of several hundred microvolts. One of the defining features of N2 sleep. |
| Obstructive apnea | A cessation of breathing caused by partial or complete obstruction of the upper airway > 10 seconds. Associated with an oxygen desaturation of 4% or more. |
| Polysomnography | A “sleep study” that combines recording of EEG, EMG, EOG as well as measures of respiratory and cardiac activity to determine sleep stages and diagnose sleep disorders.  |
| Sleep efficiency | The proportion of time asleep relative to the time allowed for sleep (ie time asleep/time in bed) |
| Sleep fragmentation | The cumulative number of arousals and awakenings during a sleep period. |
| Sleep latency | The duration of time it takes from trying to sleep (going to bed) to actually falling asleep. |
| Sleep spindles | A burst of oscillatory brain activity visible on an EEG characteristic of stage N2 sleep. It consists of 12–14 Hz waves that occur for at least 0.5 seconds. |