

Sleep Impairment

Post-polio individuals have a high incidence of sleep disturbances with poor sleep quality and frequent awakenings, which may be due to several factors.⁶ These factors include primary sleep disorders and muscle twitching.

Primary Sleep Disorders

1. Obstructive Sleep Apnoea (OSA)

OSA results when the upper airway collapses and causes repeated interruptions in airflow (apnoea). Apnoeas are terminated by arousal from sleep, which may occur many times per night, resulting in sleep disruption. This may result in either hypersomnia or insomnia. OSA is also a risk factor for hypertension, myocardial infarction, congestive heart failure and stroke. OSA is suggested by a history of loud snoring, observed interruptions in breathing and daytime sleepiness. OSA is related to pharyngeal weakness plus an increase in musculoskeletal deformities such as kyphoscoliosis or a co-existent emphysema.

2. Central Sleep Apnoea (CSA)

CSA occurs when the brain's reflexes for triggering breathing during sleep are defective. This can occur due to brain diseases (such as some examples of PPS) or cardiovascular diseases, and may co-exist with other breathing problems. Many individuals with CSA have difficulty initially falling asleep because of frequent central apnoeas with arousal at the transition from wakefulness to sleep. In post-polio individuals it may be due to residual dysfunction of the surviving bulbar reticular neurons.

3. Hypoventilation

Hypoventilation results from restriction ascribed to scoliosis or respiratory muscle weakness, or both.⁹⁴

Muscle Twitching

Sleep disturbances may also result from random muscle twitching that occurs at night. A survey by Bruno and Frick (1991)⁸³ found that two-thirds of patients with a history of polio reported that their muscles twitched or jumped at night with 33 percent reporting that their sleep was disturbed by twitching. Further studies, involving monitoring PPS subjects, documented a number of abnormal movements during sleep. These included restless leg syndrome, periodic movement in sleep and generalised random myoclonus (involving contraction of muscles throughout the body), which disturbed the individual's sleep patterns.⁹⁵