



**Dr. Bill Moorcroft**



# Sleep Problems Update

Number 8

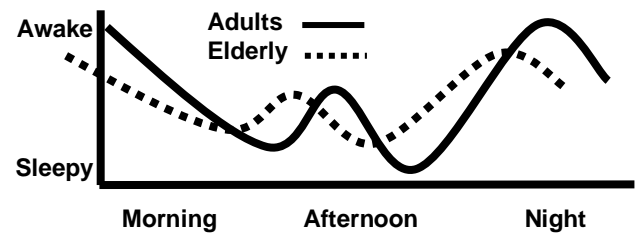
## *Overview: Insomnia in the Elderly*

Instead of presenting a case, for this edition of the Sleep Problems Update I would like to talk more generally about insomnia in the elderly. While there is an increase of insomnia complaints as adults age, they become noticeably prevalent in the elderly. It has been estimated that 30 to 50% of elderly have insomnia symptoms. There are a number of reasons for this.

### *Sleep System In The Brain*

First, there are gradual changes in the sleep system in the brain that begin during middle age. Slow wave sleep (SWS, also known as NREM stages 3 and 4) gradually diminishes in intensity as well as duration. In the young adult, SWS comprises about 20% of the total sleep, but in many elderly, it composes only a few percent of the sleep period or may even be non-existent. (Curiously, this drop is seen earlier and more dramatically in males than females with more elderly males than females showing no SWS at all.) In some ways, SWS can be considered “deep sleep” and is the most satis-

fying and refreshing. As SWS diminishes it is replaced by “lighter sleep,” especially NREM stage 1. People in stage 1 sleep do not report being asleep and are not refreshed by it, so it is no wonder that many elderly people report, “I don’t sleep as well as I used to.”



### *The circadian sleep system*

Another major change in the sleep system of the elderly occurs in the circadian clock. The solid line in the figure shows the typical 24-hour pattern for the “average young adult.” The dotted line shows the comparable pattern in the elderly. Two things stand out. First, there is a shift of the curve to earlier times. This accounts for why the most elderly people go to bed early and get up early. Second, note that the entire curve is flatter, meaning that the peak of nighttime sleepiness is not strong, but also the strength of the daytime wakefulness is weaker. The result is less sleep at night but more sleep (napping) during the day. Also the elderly tend to be more

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aware of awakenings during the night, are more easily awakened by environmental or internal stimuli, and have more difficulty returning to sleep after awakening. The result is a decline in “sleep efficiency” (the ratio of time asleep to time in bed) from around 0.95 in the average young adult to around 0.80 in the typical elderly person.

### ***Health factors***

Other major factors that affect the sleep in the elderly include changes in physical health and psychosocial circumstances. The elderly have more minor aches and pains as well as more serious illnesses (such as gastroesophageal reflux, arthritis, nocturia) that interfere with sleep. They also tend to take more medications – some of which can affect sleep or wakefulness. Many elderly have some degree of sensory impairment that can negatively affect sleep. Too often it is assumed that if the medical problems are addressed and resolved, the sleep complaint will remit. Unfortunately this is not typically the case – the sleep problem often outlasts the medical problems that precipitated it.

### ***Psychosocial factors***

Add to these changes in psychosocial factors such as retirement, less mental stimulation, increasing cognitive

impairments, emotional stress, and mobility problems. The elderly also often get less physical exercise and less daytime exposure to daylight. (Yet those in institutions may be exposed to too much light at night, such as from the hallway and too much noise from other residents and attendants. Studies have shown that reduction in nighttime light and noise plus increased exercise and light exposure by day generally improve the sleep of elderly residents.) Additionally, elderly tend to spend too much time in bed – both when trying to get night sleep and resting during the day. The long run extra time in bed contributes to and tends to maintain sleep problems.

### ***What can be done***

Very often the sleep problems of the elderly are thought to be “a normal part of aging” and nothing can be done about them. This is not true. Sometimes doses of medications that enhance sleepiness can be adjusted to be less soporific or the medication can be taken near bedtime rather than during the morning or day. The opposite may help for medications that interfere with sleep; taking them close to bedtime could both facilitate nighttime sleep and reduce daytime sleepiness. Increases in exposure to bright light, especially sunlight, plus significant daily exercise are inexpensive yet highly effective in facilitating the sleep of elderly persons. Good sleep hygiene and cognitive behavioral treatment can significantly improve the sleep of the elderly.

If all of these have been tried or if there is a lack of compliance, newer prescription hypnotics, such as Lunesta, can be helpful. It has been shown to be effective in the elderly for maintaining sleep through the night as well as initiating it at bedtime. It has been shown to be safe and effective, even when used on a chronic basis.

Whatever combination of means are used to improve the sleep in the elderly, the end result is improved next day functioning as well as increases in health, mood, and energy level. Improvements in sleep may even postpone need for institutionalization.

## **Did You Know?**

- *The average need for sleep does not change, or decreases only slightly, in the elderly, but there are much greater individual differences.*
- *Sleep may be distributed differently in the elderly with less at night and more napping during the day.*
- *Some disorders of sleep that are more prevalent in the elderly such as REM Behavior Disorder, sleep apnea, and periodic leg movement disorder can present as insomnia.*
- *The average adult, including the elderly, awakes 2-3 times during the night*