
Elderly Sleep Disorders and Alzheimer's Disease: Part One

Changes in sleeping patterns are part of the natural aging process. Elderly Alzheimer patients and their caregivers are, therefore, more likely to experience sleep disorders. Explaining healthy sleep habits and performing a proper physical examination on both the patient and caregiver helps reduce the incidence of the elderly patient feeling like they “hardly slept”.

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Alzheimer's disease (AD) most often affects elderly patients who may have primary caregivers that are also of an advancing age. Caring for a loved one suffering from AD is such an arduous task that a restful night's sleep is essential. Many elderly people, however, often experience sleep disorders. The purpose of this article is to help health-care professionals systematically deal with sleep disorders in both patients suffering from AD and in the patients' caregivers.

The Age Factor: Changes in Sleep Physiology

A pronounced change in sleep physiology takes place as people age, but the change is not significant in terms of quantity. As people progress into their later years, the difference in sleep duration between adults and the elderly is, on average, 30 to 40 minutes. There is, however, a great difference in the quality of sleep.

Sleep is divided into four stages—I, II, III and IV. Normal adults go through stage IV approximately twice per night, usually during the first three hours of sleep (Figure 1). Stage IV is

defined as the deep sleep stage, in which the individual experiences the subjective sensation of having had a good night's sleep. Elderly people, however, experience very little stage IV sleep, which deprives them of the deepest stage of sleep in the normal sleep cycle.

Younger adults often awaken twice per night, but the periods can be so brief that they are not even conscious of them. These awakenings often occur when the person changes his or her sleep position.¹ In contrast, elderly people can awaken five to 10 times during the course of a normal, natural sleep cycle—generally long enough for them to be conscious of the awakenings.

The combination of these two factors—loss of deep sleep and numerous awakenings—often results in elderly people feeling like they barely slept. It is interesting to note that, in his epidemiologic study of a normal population, Buysse discovered more than 51% of subjects aged 60 and over complained of sleeping poorly “often” or “very often”.² This extremely high percentage can be explained only by taking into account the normal changes in sleep mentioned above.

Many elderly patients, however, find themselves complaining of hardly having slept at night for periods as long as three months, and yet do not present any signs of true, prolonged insomnia. Even without a definitive diagnosis of insomnia, however, it is tempting for family physicians with extremely heavy workloads to hastily prescribe medication.

Explaining the natural changes in sleeping patterns to elderly patients in a clear, simple, nonconfrontational and detailed manner can help them understand that their symptoms are not pathological and do not require pharmacologic treatment.

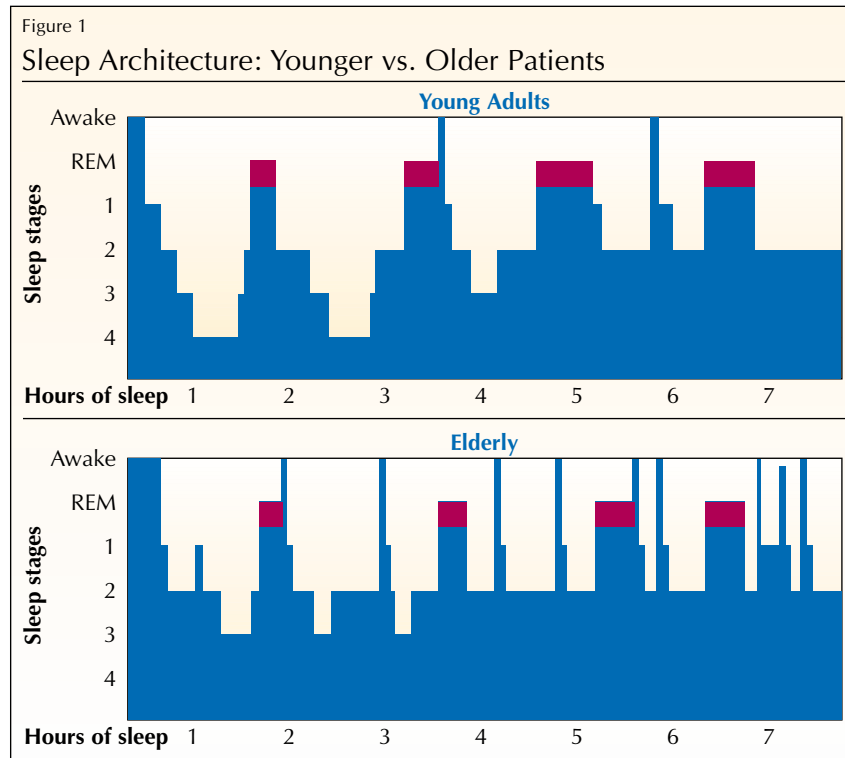
While perhaps one-third of sleep disorders in elderly people are the result of normal changes in sleep physiology, explanation for another third can be derived from performing a detailed patient case history. In both cases, as we shall see, non-pharmacologic treatment is recommended. Elderly people who constitute the final third of those who suffer from sleep disorders fall into a category where pharmacologic treatment may be required.

A detailed and complete assessment of a patient's history can help uncover reasons for sleep problems, which can usually be resolved by means other than prescribing sleeping pills. The process should begin by reviewing the basic principles of healthy sleep habits.

Principles of Healthy Sleep Habits

Create a comfortable sleep atmosphere. A noise-free environment and a good pre-sleep routine are essential when an elderly person's sleep is physiologically fragile. Maintaining a room temperature of around 21°C is ideal.

Avoid sleeping in. Staying in bed during the day will result in nocturnal sleep that is lighter and more broken, with frequent



awakenings. Elderly people should only stay in bed for the minimum amount of time required to satisfy their need for sleep. In addition, the cortical functions responsible for sleep (one's internal clock) becomes more fragile as one ages. Sleeping and waking at the same times every day can help elderly persons with sleep problems. Elderly people who do not experience sleep problems, however, can go to bed and get up whenever they wish.

Maximize sleep. The number of hours of sleep gained over a 24-hour period is a mathematical consideration; the number of hours of sleep gained during the day are subtracted from the hours of sleep gained at night. Elderly people in some care facilities, however, particularly those suffering from dementia, are encouraged to sleep during the day (due to lack of activity, stimulation, etc.) for two to four hours. When they are put to bed around 8 p.m. or earlier, it is not surprising that their sleep cycle ends between

midnight and 1 a.m. In such cases, many physicians are prone to prescribing sleeping pills.

Avoid eating large meals prior to bedtime. A heavy meal is not conducive to a good night's sleep. A light snack before going to bed, however, can be helpful. It is often forgotten that caffeine, nicotine and alcohol increase the risk of insomnia, but nasal decongestants, cough syrups and other medications are even worse culprits.

Don't wait to fall asleep. If it takes an elderly person more than 20 to 30 minutes to fall asleep initially, or to go back to sleep after waking, it is usually more beneficial for them to get up or read until they feel drowsy again, rather than consciously trying to fall asleep.

Active lifestyle ensures good sleep. Elderly people tend to be sedentary, which increases insomnia; regular exercise can help them recover stage IV sleep. Walking—or any other exercises that can be done

during the day at least four hours before going to bed—can help elderly people achieve stage IV sleep.

Proper Physical Examination

In addition to following healthy sleep habits, a family physician should perform a full physical examination on any patient experiencing sleep problems. Particular attention should be paid to the following points:

1. Prostate problems in older men are a very common cause of early morning awakenings. In addition to following other treatments, patients should be encouraged to increase liquid intake during the day and reduce intake substantially during the evening.

Performing a detailed and thorough physical examination on the elderly patient helps physicians isolate explanations for sleep problems.

2. Drugs affecting the central nervous system (antihypertensives, central nervous system stimulants, corticosteroids, diuretics, respiratory stimulants) are frequently prescribed to elderly patients, and increase the risk of insomnia.
3. Sleep problems may also be symptoms of other complications, such as nocturnal angina, paroxysmal nocturnal dyspnea and/or arthritic pain. Pharmacologic correction of these symptoms, rather than a hypnotic, is thus required.
4. Elderly people sometimes experience a syndrome of muscular irritation, tingling or twitching in their legs, which may be caused

by metabolic problems, peripheral neuropathy or vasculopathy. Diuretics might be also implicated; simply decreasing the dosage can yield excellent results. Certain American authors also suggest taking Vitamin E (400 international units, two to three times per day).³ Another form of this syndrome is akathisia, which is a side effect of neuroleptics. Antiparkinson medication (*e.g.*, bztropine, procyclidine) is preferable to sleeping pills, but these agents can enhance cognitive problems. This serves as a reminder that the use of neuroleptics in AD patients is sometimes complicated.

5. Heavy snorers, who are also obese, sometimes suffer from obstructive sleep apnea, which involves momentary cessation in breathing. One consequence these individuals may experience is non-restorative sleep.⁴ Weight loss or simple surgery, such as the repair of a deviated nasal septum, can be very helpful. In other cases, more complicated surgery or the use of continuous positive airway pressure (CPAP) devices are necessary. The most important point to emphasize is that the prescription of sleeping pills should be the last option for these people. Additional depression of the respiratory centres must be avoided, as it could be very dangerous.
6. Dementia problems often cause diurnal hypersomnia during the day, resulting in short periods of sleep. But even waking periods may be accompanied by attention deficit, which decreases the individual's efficiency and can affect the number of hours of sound sleep. Some American authors suggest the use of stimulants during the day, which, paradoxically, results in improved

sleep at night.⁵ On the other hand, a stimulating program of exercise can be just as effective.

7. It is common knowledge that sleep loss can be a symptom or objective criterion of a major affective disorder, or of endogenous depression. Insomnia is sometimes the only symptom mentioned to the family physician. If the physician does not thoroughly investigate other symptoms, he or she will be prone to prescribing sleeping pills rather than an antidepressant, which may be the appropriate medication in such cases.

Conclusion

Clearly, the above list is neither exhaustive nor complete. It is simply intended as a reminder that the physician must examine the patient's history for various causes of sleep disturbance. The prescription of sleeping pills is usually not indicated. At the risk of oversimplifying, it could be said that one-third of all cases of elderly patients with sleep disorders do not require pharmacologic treatment. A review of certain pharmacologic and nonpharmacologic approaches that can help AD patients and natural caregivers will be covered in an upcoming issue of *The Canadian Alzheimer Disease Review*.

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