The four most common sleep disorders are: 1. Insomnia 2. Sleep apnea 3. Restless legs syndrome 4. Narcolepsy

Of these sleep disorders, this publication discusses insomnia in the elderly. Insomnia is defined as continuously having difficulty in falling asleep and sleep maintenance.

General facts concerning insomnia in the elderly are:
1. Insomnia is often the result of changes in the body’s “internal clock.”
2. The elderly often experience depression or anxiety disorders which can disturb sleeping patterns.
3. The elderly often suffer from Alzheimer’s disease which can affect sleep.
4. The elderly are prone to become confused and restless at night in the dark.
5. The elderly are often more sensitive than others to medication due to a less functioning liver and a more sensitive nervous system.
6. Medication tends to linger for a long time in the bodies of elderly patients.
7. Careful assessment is necessary when prescribing sleeping pills for the elderly.

Research Findings
Although insomnia is not classified as a disease but a symptom to be investigated, it may be associated with diseases such as arthritis, heart disorder, etc. On April 1, 2008, an article in *Psychiatric Times* reported that up to 50% of the elderly population in the U.S. complained of chronic trouble with sleep. A variety of conditions that may account for the sleep difficulties experienced by many older adults include specific sleep disorders, arthritis, sleepiness disturbances, and medical and psychiatric comorbidities. Although some of the literature differ in whether older adults’ need for sleep decreases with age, it is consensus of opinion that the elderly’s “ability” to sleep decreases.

Findings from a meta-analysis that included more than 3500 participants showed that after age 60, sleep efficiency (defined as the ratio of total sleep time to nocturnal time in bed, normally defined as 85% or greater), which is considered a measure of sleep continuity, decreases with further increase in age. That same analysis reported that older adults experience more fragmented sleep.

Complaints of insomnia are more common in older women than in older men and can vary from difficulty in falling asleep, excessive sleep, or abnormal behaviors associated with sleep.

Compounded Treatment Options for Insomnia in the Elderly

It is estimated that over 70 million Americans suffer from one of the four most common sleep disorders. Definitively, sleep disorders are conditions that disturb sleep to the degree of interrupting someone’s life. In the elderly, sleep disorders involve any disruptive pattern of sleep such as problems with falling or staying asleep, excessive sleep, or abnormal behaviors associated with sleep.

A variety of conditions that may account for the sleep difficulties experienced by many older adults include specific sleep disorders, circadian rhythm disturbances, and medical and psychiatric comorbidities. Although some of the literature differ in whether older adults’ need for sleep decreases with age, it is consensus of opinion that the elderly’s “ability” to sleep decreases.

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Complaints of insomnia are more common in older women than in older men and can vary from difficulty in falling asleep, to difficulty in maintaining sleep, to frequent arousals from sleep, and early-morning awakenings. In a study of more than 9000
older adults (older than 65 years), 42% had difficulty in falling asleep and staying asleep. Three years later, insomnia complaints had resolved in 15% of the patients, although there was a 1% incidence of new sleep complaints.¹

Although diagnosing the cause of sleep disorders of any age group is challenging, it is especially challenging in the elderly. As stated previously, sleep disorders in the elderly may occur as a result of other underlying conditions, which generally are chronic in nature. Because approximately 80% of persons over the age of 75 suffer from at least one chronic disease and 40% suffer from two or more diseases, impaired sleep can occur quite frequently in this age group.¹

Too Many Medications? It has long been a concern that elderly patients may be taking far too many medications and that their medications may have the potential for drug interactions. This problem may be the result of an elderly patient being treated by several different physicians and the patient's failure to reveal to each physician the various medications they have been prescribed. Add to a patient's prescriptions over-the-counter medications, vitamins, or herbal products, which may be dosed inappropriately, and you begin to see the challenges involved in diagnosing the cause of a sleep disorder. Treatment must begin with a medical history and a comprehensive evaluation of the patient, whereby problems in sleep can be defined and medical or psychological conditions addressed.¹

Treatment Medical diagnoses are the responsibility of physicians. Supplying the patient with a checklist of basic causes of and contributors to sleeping difficulties may assist physicians in helping the patient in relief of their symptoms and the promotion of sleep. A sample checklist is included in this article. In many cases, a physician's efforts in diagnosing a sleep disorder may involve sending a patient to a sleep disorder center to determine the patient's sleep patterns. Therefore, the physician may also ask the patient to keep a journal of their sleep habits, and the checklist included with this article may be used for that purpose. Also included is a list of simple measures that can be taken by an elderly patient to promote sleep. Compounded formulations for the treatment of sleep disorders in the elderly are included.

Again, for the various reasons discussed in this article, pharmacologic therapy for the elderly patient is challenging. Changes in their metabolism dictate caution when prescribing an agent. The elderly experience a decrease in body water and an increase in total body fat, therefore, fat-soluble drugs such as flurazepam and diazepam can cause a delay in clearance and prolong the effect of the drug. Drug accumulation also can result due to alterations in hepatic and renal function. Regardless of the pharmacologic agent used to treat an elderly patient, it should be initiated at the lowest dose and the patient monitored closely for adverse effects.

Medications that may be compounded to meet the specific needs of a patient for the treatment of insomnia include:

**Chloral hydrate** is a hypnotic and sedative with properties similar to those of the barbiturates. It is used in the short-term management of insomnia. The usual hypnotic dose orally is 500 mg to 2 g. A reduction in dosage may be appropriate in frail elderly patients.

**Diphenhydramine** is a sedating antihistamine with antimuscarnic and pronounced sedative properties. It is used in a number of commercially nonprescription sleep-aids. It has a usual dose of 25 mg to 50 mg.

## Compounded Formulations for the Treatment of Insomnia in the Elderly

- **Chloral Hydrate 1-g Rectal Suppositories**
- **Diphenhydramine 25-mg Chewable Gelatin Troches**
- **Hydroxyzine 12.5 mg/0.1 mL in Pluronic Lecithin Organogel**
- **Melatonin 1-mg/mL Sublingual Solution**
- **Melatonin 3 mg/0.1 mL in Pluronic Lecithin Organogel**
- **Trazodone 50 mg/mL in Pluronic Lecithin Organogel**

### Checklist of Possible Causes of Insomnia

<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Do you take stimulants such as caffeine (found in coffee, tea, cola drinks, etc.) at least 3 or 4 hours before bed?</td>
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<td>Do you take naps during the day?</td>
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<td>Do you go to bed at the same time every night and wake at the same time each morning?</td>
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<td>Have you had a blood test to determine if you have iron deficiency anemia?</td>
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<td>Do you smoke?</td>
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<td>Are you taking over-the-counter medications or herbs?</td>
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<td>Do you consume alcoholic beverages excessively?</td>
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<td>Do you have episodes of sleep depression?</td>
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<td>Have you experienced a recent loss of a loved one?</td>
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<td>Have your sleepiness lasted for more than three weeks?</td>
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<td>Do you have confusion in differentiating between day and night?</td>
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<tr>
<td>Are you experiencing chronic pain for which the problem is undiagnosed?</td>
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</tbody>
</table>

Hydroxyzine is a sedating antihistamine with antimuscarnic properties. It has been used in the treatment of insomnia at a usual dose of 25 mg to 50 mg.

Melatonin is a hormone produced in the pineal gland from the amino acid tryptophan. It has been used in the management of various forms of insomnia, especially those associated with circadian rhythm disturbances. It has a usual dose of 3 mg to 6 mg.

Trazodone has sedative properties, and drowsiness, which usually disappears with continued treatment, may initially occur when beginning therapy. It has been used for short-term management of insomnia. It is used generally at a dose of 75 mg to 150 mg.

### References


