Sleep Disorders in the Older Adult – A Mini-Review

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Abstract

Approximately 50% of older adults complain of difficulty sleeping. Poor sleep results in increased risk of significant morbidity and mortality. The decrements seen in the sleep of the older adult are often due to a decrease in the ability to get needed sleep. However, the decreased ability is less a function of age and more a function of other factors that accompany aging, such as medical and psychiatric illness, increased medication use, advances in the endogenous circadian clock and a higher prevalence of specific sleep disorders. Given the large number of older adults with sleep complaints and sleep disorders, there is a need for health care professionals to have an increased awareness of these sleep disturbances to better enable them to assess and treat these patients. A thorough sleep history (preferably in the presence of their bed partner) is required for a proper diagnosis, and when appropriate, an overnight sleep recording should be done. Treatment of primary sleep problems can improve the quality of life and daytime functioning of older adults. This paper reviews the diagnoses and characteristics of sleep disorders generally found in the older adult. While aimed at the practicing geriatrician, this paper is also of importance for any gerontologist interested in sleep.

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Age-Related Changes in Sleep

Sleep Duration

It has long been the belief that the amount of sleep needed per night decreases with age. Yet, in a national survey of older adults, the total sleep time reported was, on average, 7 h a night – the same or more than that reported by younger adults [1]. Nevertheless, older adults do complain about their sleep. In a large epidemiological study of sleep, Foley et al. [2] found that over 50% of older adults had complaints of insomnia, but that chronic sleep disturbances were associated primarily with indications of poor health. At follow-up 3 years later, of the 2,000 survivors with chronic insomnia at baseline, about 50% had no symptoms and improved sleep was associated with improved health [3]. Other studies using rigorous exclusion criteria for comorbidities have found that disturbed sleep is rare in healthy older adults [4]. These studies have confirmed that, while the need for sleep may not change with age, the ability to get the needed sleep does decrease with age. Multiple causes could be responsible for reduced capability to achieve sufficient sleep with age, including medical or psychiatric illnesses, life changes (e.g. retirement, bereavement, decreased social interactions), environmental changes (e.g. placement in a nursing home) and polypharmacy. This decreased ability to sleep is often as a function of comorbidities associated with aging, rather than with aging per se. Nevertheless,

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as described below, there are significant consequences of poor sleep that put the older adult at greater risk for decreased physical functioning, problems with memory, increased risk of falls and mortality.

Sleep Architecture

Although aging itself does not result in increased sleep disorders, changes in sleep architecture do occur with age. A large meta-analysis of 65 overnight studies representing 3,577 subjects across the entire age spectrum reported that, with age, the percentage time of rapid eye movement (REM) sleep decreased while the percentages of light sleep (stage 1 and stage 2 sleep) increased [5]. Furthermore, slow wave sleep had a gradual and linear decrease of 2% per decade in young and middle-age adults. When only reviewing studies of elderly participants, slow wave sleep remained constant after age 60 with no significant continued change with age [5]. Finally, men in the ages 16–83 had an average decrease in total sleep time of 27 min per decade from midlife into late age [6]. While these age-related changes are well documented, their consequences are not fully understood or extensively researched. However, in the current theoretical framework, such changes in sleep architecture are considered non-pathological and might reflect age-related neural degeneration [7].

Circadian Rhythms

Circadian rhythms, such as core body temperature, hormone secretion and the sleep-wake cycle, oscillate approximately every 24 h. In humans, the sleep-wake cycle is regulated by an endogenous pacemaker and exogenous stimuli. The hypothalamic suprachiasmatic nucleus is believed to be this endogenous clock of the brain and is also considered the mediator of circadian rhythms. Circadian rhythms maintained by the suprachiasmatic nucleus are naturally entrained by exogenous stimuli, or zeitgebers (time cues). The most significant zeitgeber is light.

As people age, their circadian rhythms become weaker, desynchronized and lose amplitude. It is hypothesized that the deterioration of the suprachiasmatic nucleus and its subsequent weakened functioning contribute to the disruption of circadian rhythms in older adults. The external cues that are necessary to entrain the circadian rhythm of sleep-wake cycles may be weak or missing in older adults. The elderly, especially those who are institutionalized, spend very little time exposed to bright light. Healthy older adults have a daily average of 60 min exposure to bright light; those who suffer from Alzhei-

mer's and live at home have only 30 min and those who are in nursing homes have zero min of bright light exposure [8]. Other circadian rhythm disturbances known to be involved in the entrainment of the circadian rhythm of sleep may also develop. For example, the nocturnal secretion of endogenous melatonin, known to play an important role in the sleep-wake cycle, gradually decreases with age, possibly resulting in reduced sleep efficiency and an increased incidence of circadian rhythm sleep disturbances. Finally, the amplitude of the circadian rhythm may also decrease with age. These reductions can increase the frequency of nighttime awakenings and the severity of daytime sleepiness.

Changes in the phasing of the circadian rhythm can develop in older adults which can cause changes in the timing of the sleep period. Phase advance is common in older patients, causing them to wake up earlier in the morning and get tired earlier in the evening. Individuals with advanced sleep rhythms will typically fall asleep between 7:00–9:00 p.m., correlating with the cyclical drop in body temperature, and wake up about 8 h later between 3:00–5:00 a.m. Due to societal pressure, many older adults with an advanced sleep-wake cycle resist their fatigue and attempt to stay up late, believing that they will wake up later in the morning. Yet these individuals will still wake up early in the morning as a result of their phase advancement. This behavior results in less total time in bed, less sleep time and daytime sleepiness.

The most effective and common treatment for circadian rhythm shifts is bright light therapy, as bright light is the strongest cue for circadian entrainment. Patients with an advanced sleep-wake cycle should increase exposure to bright light in the early evening and avoid bright light in the morning. For those who are unable to spend time outdoors, exposure to artificial light via a bright light box in the early evening can improve sleep. Studies have shown that artificial light therapy is effective in both healthy and institutionalized elderly patients.

Factors Contributing to the Decreased Ability to Sleep

As stated above, normal age-related changes in sleep and rhythms alone do not result in a pathological sleep problem. It is more often the comorbidities that precipitate or perpetuate sleep problems. When older adults begin experiencing difficulty with daytime functioning, it is important to consider whether sleep disorders might be a source of the problems.

There are several pathological sleep disorders that are associated with the older adults' decreased ability to obtain adequate sleep. These disorders are not part of normal aging and should be carefully evaluated and treated.

Primary Sleep Disorders

The most common primary sleep disorders in the elderly population are: sleep-disordered breathing (SDB), REM sleep-behavior disorder (RBD) and restless legs syndrome/periodic limb movements in sleep (RLS/PLMS).

Sleep-Disordered Breathing
SDB describes a range of respiratory events that occur periodically during sleep, from simple snoring at the milder end of the spectrum to complete cessation of airflow (apnea) at the more severe end. The number of instances of apnea and hypopnea (partial reduction in airflow) per hour of sleep is called the Apnea-Hypopnea Index (AHI). SDB diagnosis is made when a patient has an AHI >5–10.

Sleep-disordered breathing is more prevalent in the older population and even more common in elderly nursing home patients, especially among those who suffer from dementia. In a large study of randomly selected community-dwelling elderly, 65–95 years of age, Ancoli-Israel et al. [9] reported prevalence rates of 62% for an AHI ≥10, 44% for an AHI ≥20 and 24% for an AHI ≥40. In a longitudinal study that followed older adults for 18 years, Ancoli-Israel et al. [10], found that the AHI remained stable and only changed with associated changes in BMI. The Sleep Heart Health Study [11] reported that for the ages of 60–69, 32% had an AHI 5–14 and 19% had an AHI ≥15. For ages 70–79, 33% had an AHI 5–14 and 21% had an AHI ≥15. For ages 80–98, 36% had an AHI 5–14 and 20% had an AHI ≥15. These SDB prevalence results in the elderly are in contrast to the prevalence of SDB among middle-aged adults, which is estimated at 4% for men and 2% for women defined by an AHI ≥5 with the presence of excessive daytime sleepiness (EDS) [12].

Risk factors for SDB in the aging population include: age, gender and obesity. Other conditions that increase the risk of developing SDB include: the use of sedating medications, alcohol consumption, family history, race, smoking and upper airway configuration. The main symptoms of SDB in the elderly population are snoring and EDS.

Gooneratne et al. [13] studied elderly subjects with both insomnia and SDB and found that they had more functional impairment, specifically significantly lower daytime functioning and longer psychomotor reaction times, than those with just insomnia alone. Most studies have suggested that older adults with SDB are excessively sleepy and that SDB likely contributes to decreased quality of life, decreased cognitive impairment and greater risk of nocturia, hypertension and cardiovascular disease [14]. The Sleep Heart Health Study found that the risk of developing cardiovascular disease, including coronary artery disease, congestive heart failure and stroke, is positively related with the severity of SDB [15]. A recent study in acute ischemic stroke patients reported that SDB was common, particularly in older male patients with diabetes and a nighttime stroke onset [16]. In the older adult, severe SDB (AHI ≥30) is consistently reported to cause impairments in attention, concentration, executive tasks, immediate and delayed recall, planning and sequential thinking, and manual dexterity. Older adults with milder SDB (AHI 10–20) may suffer cognitive dysfunction only in the presence of excessive sleepiness [17].

When assessing SDB in the elderly, practitioners should use a step-wise approach. First, a complete sleep history should be obtained focusing on the symptoms of SDB. Special attention should be given to snoring severity, unintentional napping and EDS. Assessment of sleep disturbances is more effective when the bed partner or caregiver is present since he or she is more likely to be aware of the subject's behavior during sleep. Assessments should consider the presence of other sleep disorders (i.e. RLS) and also sleep-related habits that may confound adequate sleep (i.e. noise or light). The patient's detailed medical history should be reviewed, paying attention to SDB-associated medical conditions, medications, the use of alcohol and evidence of cognitive impairment. If assessment is suggestive of SDB, an overnight recording should be obtained for confirmation of the disorder.

The most common and proven treatment for SDB is continuous positive airway pressure (CPAP). CPAP compliance could be an issue in all age groups, yet clinicians should not assume that older adults will be less compliant simply due to their age. Ayalon et al. [18] reported that patients with mild Alzheimer's disease and SDB used CPAP for an average of 5 h a night and poor CPAP compliance was associated with the presence of depression – not with age, severity of dementia or severity of SDB.

In a review of the literature, Weaver and Chasens [19] concluded that data suggest that in the elderly, CPAP reduces or eliminates apnea and hypopnea; improves sleep

Table 1. Four essential questions required to make the diagnosis of RLS [21]

1.	Do you experience the urge to move your legs (and/or other parts of your body) accompanied or caused by an uncomfortable and/or unpleasant sensation in the body part affected?
2.	Does the urge to move or the uncomfortable/unpleasant feeling start and/or worsen during periods of rest, relaxation or inactivity?
3.	Is the urge to move or uncomfortable/unpleasant feeling partially or totally relieved by movement?
4.	Does the urge to move or the uncomfortable sensation worsen in the evening or at night (as compared to the daytime), or does it only occur in the evening or at night?

architecture; improves daytime sleepiness; improves self-reported symptoms (snoring and gasping); improves motor speed, nonverbal learning and memory; improves vascular resistance, platelet coagulability and other factors affecting cardiac function; and has a positive effect on nocturia, reducing the number of voids per night. The bottom line, therefore, is that if the SDB is associated with clinical symptoms, it should be treated regardless of the age of the patient [20].

Restless Legs Syndrome/Periodic Limb Movements in Sleep

RLS is a condition characterized by leg dysesthesia that occurs when the patient is in a relaxed awake or restful state and, thus, is more common during the evening or at night. Patients typically describe RLS as an uncomfortable sensation in their legs that is accompanied by the urge to move. Movement provides temporary relief of this uncomfortable sensation. Other terms that are used to describe this sensation include: creepy-crawly, electric current, crazy legs, worms moving, ants crawling or pain. Similar to PLMS, the etiology of RLS is unknown but is associated with iron deficiency states (including pregnancy), uremia, peripheral neuropathy and radiculopathy. Diagnosis of RLS is done on the basis of history alone. Table 1 outlines the 4 essential features of RLS, according to the International Restless Legs Syndrome Study Group [21]. Asking the question, 'When you relax in the evening, do you ever have unpleasant, restless feelings in your legs that can be relieved by walking or movement?', could be sufficient for diagnosis.

PLMS, often related to RLS, are characterized by clusters of repetitive leg jerks or kicks during sleep. These leg movements characteristically occur every 20–40 s and recur throughout the night. Each jerk or kick may result in an arousal or a brief awakening which causes sleep fragmentation and might lead to complaints of EDS. Since the patients are not aware of these kicks, the complaints might be wrongly interpreted as insomnia. For assessment, a bed partner might be helpful since they are most likely aware of their partner's excessive movements during the night. Diagnosis of PLMS should be based only on an overnight polysomnogram showing a calculated periodic limb movement index (the number of limb movements per hour of sleep) ≥5. The etiology of PLMS is unknown. In the absence of RLS, there may be little clinical significance to PLMS.

PLMS and RLS are both common in the older adult. The prevalence of both RLS and PLMS increases significantly with age [22].

In all age groups, the recommended treatments for RLS/PLMS are dopamine agonists [23]. Ropinirole and pramipexole are the only drugs that are FDA-approved for RLS, but the off-label use of other dopamine agonists (e.g. carbidopa-levodopa) have also been shown to be effective [23].

Rapid Eye Movement Sleep-Behavior Disorder

RBD is a condition in which the skeletal muscle atonia normally found in REM sleep is absent. Patients with this sleep disorder are often described as 'acting out their dreams'. This disorder is characterized by the display of elaborate movements during REM sleep. These can include kicking, punching, running and/or yelling. The patient's uncontrolled movements are sometimes aggressive and/or violent, and might result in injuries either to the patient himself and/or the patient's bed partner. The etiology of chronic RBD is currently unknown, yet it appears to be strongly related to a number of underlying neurological or neurodegenerative disorders. Approximately 40% of RBD cases are related to such conditions. Some data suggest that RBD may be the first manifestation and/or indication of a neurodegenerative disease [24]. In one study, 50% of those diagnosed with RBD developed Parkinson's disease or Multiple System Atrophy within 3–4 years [25]. RBD is more common in the elderly, with a significantly higher prevalence in older men.

The diagnosis of RBD requires a thorough sleep history which should be conducted in the presence of the patient's bed partner. Recently, a new screening questionnaire was developed and validated [26]. An overnight polysomnography recording which includes video re-

cording is helpful in confirming the disorder. Close attention should be given to the presence of intermittent elevations in muscle tone or limb movements on the electromyelogram channel during REM sleep. This finding is highly suggestive of RBD.

Insomnia

Although insomnia may be a primary sleep disorder, it is often comorbid with chronic medical and psychiatric conditions in the older adult [1].

Insomnia Comorbid with Medical and Psychiatric Illnesses

Insomnia (difficulty falling or staying asleep) is often comorbid with medical and psychiatric illness [2]. Studies examining the prevalence of sleep disturbances in patients with chronic medical diseases have reported that the majority of patients with arthritis, chronic pain and diabetes reported difficulty falling and/or staying asleep. Other health-related diseases that are associated with insomnia include congestive heart failure, cancer, nocturia, shortness of breath due to chronic obstructive pulmonary disease, neurological deficits related to cerebrovascular accidents, and Parkinson's disease. In addition, older adults with multiple medical conditions are more likely to have sleep complaints [1].

Research has recognized that depression and insomnia are closely related to each other; in fact, untreated insomnia may result in depression and the presence of a depressed mood may even predict insomnia [27]. Ohayon and Roth [28] conducted a large cross-sectional survey and found that in 65% of those with major depression, 61% of those with panic disorder, and 44% with generalized anxiety disorder also suffered from insomnia. In a recent study by Perlis et al. [29], elderly subjects with persistent insomnia, particularly women, were at greater risk for the development of depression.

Insomnia Comorbid with Medications

Polypharmacy is increasingly common among older adults. In many cases there is no consideration of the effect of medications on the patients' sleep. Many of the medications that are prescribed for chronic medical and psychiatric conditions can also contribute to, or even cause, insomnia, such as central nervous system stimulants (e.g. modafinil, methylphenidate), antihypertensives (e.g. β-blockers, α-blockers), respiratory medications (e.g. theophylline, albuterol), chemotherapy, decon-

Table 2. Sleep hygiene rules

1. Do not spend too much time in bed
2. Maintain a consistent sleep/wake time
3. Get out of bed if unable to fall asleep
4. Restrict naps to 30 min in the late morning or early afternoon
5. Exercise regularly
6. Spend more time outside, without sunglasses, especially late in the day
7. Increase overall light exposure
8. Eat a light snack (i.e. milk, bread) before bed
9. Avoid caffeine, tobacco and alcohol after lunch
10. Limit liquids in the evening

gestants (e.g. pseudoephedrine), hormones (e.g. corticosteroids, thyroid hormones) or psychotropics (e.g. SSRIs, atypical antidepressants, MAO inhibitors). When possible, stimulating medications and diuretics should be taken earlier in the day and sedating medications should be administered prior to bedtime.

Treatment of Insomnia in the Older Adult

While medications are traditionally used to treat insomnia, recent studies have shown that behavioral treatments are more effective and, thus, recommended as the first-line treatment option. In some instances, a combined approach is appropriate [30].

Behavioral Treatment

The most effective behavioral therapy for insomnia is cognitive behavioral therapy (CBT) [30]. The cognitive portion of CBT deals with misconceptions or unrealistic expectations about sleep (i.e. absolute requirement of 8 h or more of sleep), while the behavioral component involves a combination of sleep restriction therapy, stimulus control therapy, relaxation techniques and good sleep hygiene practices (see table 2). Stimulus control is based on the belief that insomnia may be the result of maladaptive classical conditioning. During CBT, patients are instructed to use the bed strictly for sleeping and not for any other activities such as reading and watching television. Patients are instructed to get out of bed if they fail to fall asleep within 20 min and stay out of bed until they feel sufficiently sleepy. If, upon returning to bed, they fail to fall asleep within 20 min, they have to get out of bed again. This therapy attempts to break the association between the bed and wakefulness. Sleep restriction therapy attempts to limit the time spent in bed to about 15 min beyond the duration of time spent asleep at night. As

Table 3. Ten FDA-approved hypnotics for insomnia

Name	Trade name	Indication	Dose mg	Half-life hours
Flurazepam HCL	Dalmane	Short-term treatment	15 30	47–100
Quazepam	Doral	Short-term treatment	7.5 15	39–73
Estazolam	ProSom	Short-term treatment	0.5 1 2	10–24
Temazepam	Restoril	Short-term treatment	7.5 15 30	3.5–18.4
Triazolam	Halcion	Short-term treatment	0.125 0.25	1.5–5.5
Zaleplon	Sonata	Short-term treatment of sleep onset insomnia	5 10 20	1
Zolpidem	Ambien	Short-term treatment of sleep onset insomnia	5 10	2.5
Zolpidem MR	Ambien CR	Long-term treatment of sleep onset or maintenance insomnia	6.25 12.5	2.8
Eszopiclone	Lunesta	Long-term treatment of sleep onset or maintenance insomnia	1 2 3	6
Ramelteon	Rozerem	Long-term treatment of sleep onset insomnia	8	1–2.6

sleep efficiency improves, the amount of time spent in bed gradually increases.

In an 8-week treatment study of insomnia for older adults, CBT was compared to treatment with temazepam, a combination of CBT plus temazepam, and placebo [30]. Even though all 3 real treatments were more effective than placebo treatment in reducing night wake time immediately after treatment, only the CBT group maintained clinical gains during the follow-up at 3, 12 and 24 months. Even abbreviated sessions of CBT (two 25-min sessions) have been found to be effective in reducing wake time during the night and insomnia symptoms [31]. The 2005 NIH State-of-the-Science Conference on Insomnia [32] concluded that CBT is as effective

as prescription medications for the treatment of chronic insomnia.

Pharmacologic Treatment

Over the years a variety of medications have been used in the treatment of insomnia in the elderly population including antihistamines, antidepressants, anticonvulsants and antipsychotics. The 2005 NIH State-of-the-Science Conference on Insomnia concluded that there is no systematic evidence for the effectiveness of these medications in the treatment of insomnia [32]. The panel raised significant concerns about the risks associated with the use of these medications, stating that the risks outweighed the benefits.

There are 10 medications approved by the FDA for the treatment of insomnia (table 3). The NIH State-of-the-Science Conference on Insomnia concluded that the newer hypnotics are safer and more effective than the older ones [32]. All of the newest hypnotics (eszopiclone, ramelteon, zaleplon, zolpidem and zolpidem MR) have been shown to be safe and effective in older adults.

By combining pharmacologic and behavioral therapies, insomnia patients could gain short-term relief with medications while using this time for learning CBT techniques that may allow for a long-term solution for insomnia.

Sleep in Dementia

Reports suggest that 19–44% of community-dwelling patients with dementia complain about sleep disturbances [33]. These patients experience abnormal nighttime behavior that includes confusion, wandering and agitation along with daytime napping due to EDS. Sleep disturbances add to the caregiver's distress and increase the likelihood of institutionalization.

While dementia could be responsible for the sleep disturbances, other potential causes should be evaluated since patients with dementia may have sleep disturbances associated with medications, circadian rhythm changes, medical illness, depression and the primary sleep disorders previously discussed.

Sleep in the Institutionalized Elderly

Sleep disturbances are very common for institutionalized older adults. Ancoli-Israel et al. [34] found that institutionalized elderly with more severe dementia had more severe SDB compared to those with mild-moderate

or no dementia. Furthermore, those with more severe SDB performed worse on the dementia rating scales, suggesting that more severe SDB is associated with more severe dementia. Older adults with severe dementia who are institutionalized fail to have a full hour during a 24-hour day in which they are completely asleep or awake [35].

The sleep disturbances and the poor quality of sleep that is so widely experienced by institutionalized elderly patients could be caused by environmental factors. Research has shown that nighttime noise and ambient light exposure in nursing homes significantly impact sleep and contribute to sleep disruption [36]. Schochat et al. [8] reported that most of this patient population were exposed to less than 10 min of bright light per day, and those with more light exposure had fewer sleep disruptions. Interventions that focus on restructuring the environment and fostering better sleep hygiene may greatly improve the sleep quality of nursing home patients (table 4) [38]. Bright light therapy has repeatedly been shown to consolidate sleep and strengthen circadian rhythms in institutionalized elderly populations [39].

Consequences of Poor Sleep

Poor sleep may lead to EDS, which results from multiple and recurrent nighttime arousals that cause sleep fragmentation. Other common manifestations of the daytime sleepiness include unintentional napping and falling asleep at inappropriate times during the day. Such excessive sleepiness can cause social and occupational difficulties as well as reduced vigilance. EDS could also lead to cognitive deficits, which may be particularly relevant in those patients with baseline cognitive impairment [40]. Older adults who report problems staying awake during the day should be evaluated for a sleep disorder.

Inadequate sleep is also associated with significant morbidity and mortality in older adults. Patients with sleeping difficulties report decreased quality of life and endorse more symptoms of depression and anxiety when compared to those without sleep difficulties. When compared to matched controls, aged patients with sleep difficulties have slower reaction times and suffer from more cognitive dysfunction such as impaired memory [41]. In addition, older adults who suffer from sleep problems have balance, ambulatory and vision difficulties, even after adjusting for medication use [42]. All of these difficulties result in an increased risk of falling which is a strong predictor for placement in nursing homes or assisted-liv-

Table 4. Tips for improving sleep in the nursing home

1. Determine cause of sleep problem and initiate specific treatment
2. Limit naps to 1 h in the early afternoon
3. Adjust medications
4. Avoid all caffeine
5. Improve environment
   a. Keep the environment dark at night
   b. Keep the environment bright during the day
   c. Keep the environment quiet at night
   d. Match roommates

Modified from Ancoli-Israel et al. [37].

ing environments. In a study of over 3,000 older women, sleeping less than 7 h a night or having a sleep efficiency (defined as the amount of sleep given the amount of time in bed) less than 65% was associated with an increased risk of falls [43].

Sleep problems are also associated with higher rates of mortality. Studies have confirmed that poor sleep efficiency, increased sleep latency and decreased total sleep time are associated with greater risk of mortality, even after controlling for related covariates [44].

Future Research Needs

While much has been learned about sleep in the older adult over the last few decades, there are still questions to be answered. The most pressing question is what effect treatment has on daytime consequences. While the epidemiological studies all support the fact that poor sleep and insomnia put people at risk for serious consequences, there are little data showing that improving sleep reduces the risk. Randomized controlled treatment trials that examine daytime functions are still needed. Nevertheless, when an older adult presents to his or her healthcare professional with symptoms suggestive of poor sleep, treatment is indicated.

Summary

While the need for sleep is likely stable throughout adult life, for many older adults the ability to achieve adequate sleep decreases. Medical conditions, psychiatric

disorders, medication, insomnia, circadian rhythm disturbances and primary sleep disorders can all result in the older adult not getting the sleep they need. Healthy older adults rarely complain about sleep. Older adults who do complain of sleeping difficulties and who also report difficulty staying awake during the day or of feeling unrested after waking up deserve to be evaluated.

Acknowledgments

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