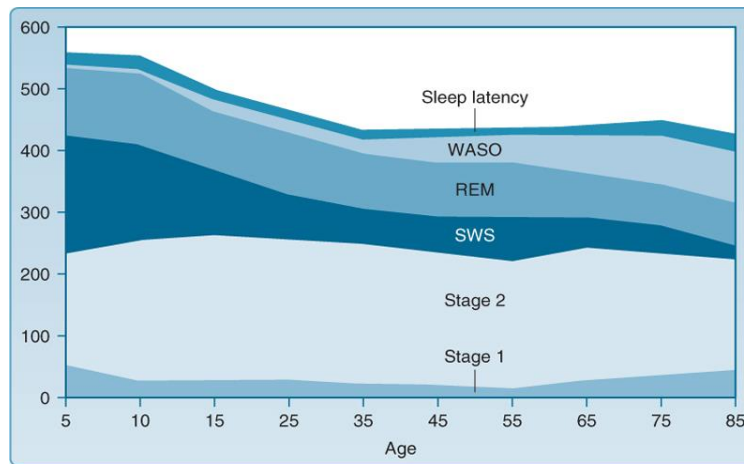


SLEEP AND HEALTHY AGING



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INTRODUCTION

Sleep disorders increase with age, and more than 50% of adults 65 and older have some form of chronic sleep-related complaints, including difficulty falling asleep and maintaining sleep. While our sleep patterns change over time and the prevalence of sleep disorders tends to increase with age, **normal healthy aging does not necessarily mean you will develop insomnia later in life.** There is no change in the absolute need for sleep during adulthood and **much sleep disturbance among the elderly can be attributed to physical and psychiatric illnesses and the medications used to treat them.** Seven to eight hours of sleep is recommended for adults 65+ years and older. However, six to nine hours may be appropriate depending on individual sleep needs.

WHAT CHANGES AS WE AGE?

In Your 50s

- People's bodies may begin to get weaker; sight, hearing and flexibility may decline. Many people experience shortness of breath in activities that previously seemed "easy".
- Women typically go through menopause and in men the prostate starts growing which is why it is important to have regular check-ups with your doctor.

In Your 60s

- Metabolism begins to slow; unless maintained, strength and balance decline.
- In some cases, dependent children have left home and home mortgages have been paid off which may free up time and money for travel, pursuing hobbies or home renovations. In addition, people usually retire which may or may not relieve financial pressure and all these transitions can affect our sleep.

In Your 70s

- Your skin becomes drier and more wrinkled and taste, smell, muscular strength, power and cardiovascular fitness may decline.
- If people neglect their weight training, they lose muscle which can cause issues with posture, pain, loss of mobility and general movement, as well as, the onset of bone and joint injuries.

In Your 80s

- Balance issues may develop due to overall decreased strength i.e. we may lose the ability to regain our balance after tripping. We also lose stamina as our heart and lung function declines.

FACTORS AFFECTING SLEEP AS WE AGE

Sleep Factors

- **Sleep architecture:** this refers to the “distribution of our sleep”. Generally, our sleep becomes more fragmented as we age and there are changes in our “sleep architecture” which may lead to sleep problems. We experience increased light sleep, decreased slow wave or “deep restorative sleep” but fairly stable REM sleep or “dream sleep”.
- **Circadian rhythm:** this rhythm weakens such that we are less alert during the day and less sleepy at nighttime. This is one reason why older people tend to sleep more during the day.
- **Melatonin:** this hormone causes sleepiness and it is secreted earlier in the evening. As a result, older people tend to go to bed earlier and wake up earlier in the morning. Some people may also go to sleep earlier because of boredom if they are less socially active during the evening.
- **Temperature:** we are less able to regulate our temperature and more sensitive to changes as we get older which can disturb sleep.

Social Factors

- **Downsizing:** this often occurs after retirement when people look to simplify their lives by moving to a less expensive home with fewer upkeep costs and rooms to clean. Moving to a full care facility where there may be nighttime light, noise or interruptions are additional considerations.
- **Routine:** after retirement, we can fall out of a routine in the absence of a structured work schedule. Excess napping, too much time spent indoors, sedentary life are other considerations. The reduced ability to perform activities of daily living: i.e. meal preparation can also lead to poor health.
- **Holidays and travel:** we may look to travel to our dream destinations based on what is important to us i.e. hobbies, religion, or ancestry, and we may take longer, more social holidays with friends and family. Sleeping in an unfamiliar environment which may affect sleep.
- **Grief:** feelings of loss, grief and isolation can be experienced from the death or loss of a loved one.

Medical Factors

- **Medications:** the effect of some medications and existing medical conditions may also cause broken sleep which can lessen our restorative sleep and lead to waking unrefreshed in the morning. There is also an increased potential for interactions with sleep medication.
- **Hypertension:** is associated with snoring and obstructive sleep apnea (OSA)
- **Heart burn:** is a cause of sleep problems; the pain also makes it difficult to sleep.
- **Nighttime urinary frequency:** a weaker bladder or benign prostate problems (BPH) means older adults tend to wake up more often, however, it is normal to use the bathroom 1-2 times per night after the age of 65.
- **Menopause:** hot flashes, changes in breathing, and decreasing hormone levels all affect sleep.
- **A new medical condition:** this can require hospitalizations which can further disrupt sleep.
- **Osteoporosis:** one in three women ages 75-85 suffer from this. Calcium, vitamin D, magnesium, vitamin K and boron are key nutrients for strong bones.
- **Other:** psychiatric/cognitive conditions, substance abuse, chronic pain, diabetes mellitus, asthma, immune disorders, Parkinson's disease, and multiple sclerosis among others may impair sleep.

COMMON SLEEP PROBLEMS IN AGING

- **Insomnia:** over 50% of individuals 65 years and older have a least one complaint of a sleep related disturbance
- **Obstructive Sleep Apnea (OSA):** the prevalence in men ages 61-100 is 18.1%. Post-menopausal women not on hormone replacement therapy also have a higher risk.
- **Advanced Sleep Phase Syndrome:** individuals wake up extremely early because they have gone too sleep early

STRATEGIES TO SUPPORT SLEEP AND WELLBEING IN AGING

Routine

- Rise and retire at the same time daily. This strengthens and anchors your circadian sleep process. It is the best way to reset your biological clock for establishing a healthy sleep pattern.

Morning Light

- This stabilizes melatonin secretion at night and strengthens your circadian rhythm so that you will feel more alert during the day.

Physical Activity

- Physical activity enhances mood, cognition and our sense of independence. It also preserves our slow wave (restorative) sleep as we age. Find an enjoyable activity or make it social by joining an exercise class, working out with a personal trainer or a friend. Walking, swimming, playing tennis or golf help increase your heart rate and work your muscles. Always consult your doctor. Start off by doing exercise little and often.
 - **50s:** stretch to maintain flexibility; yoga and Pilates are popular choices. Maintain cardiovascular fitness.
 - **60s:** focus on strength and balance; work on your core as this is key to balance.
 - **70s:** focus on strength, power and posture.
 - **80s:** focus on strength, balance and cardiovascular fitness including breathing exercises.

Pre-sleep Routine

- Start winding down with a pre-sleep routine ideally two hours before bedtime. Engage in calming activities outside the bedroom, in dim lighting. Relaxation techniques are found to increase the perceived quality of sleep among seniors. Get comfortable - older adults can suffer from aches and pains which can keep you awake at night.

Take a Nap

- Consider napping for under 30 minutes at least 7 hours before bedtime. This can decrease daytime sleepiness and increase concentration, alertness, motor performance and mood. Napping also preserves the total amount of sleep you receive as it can compensate for lost or reduced sleep at night.

Nutrition

- **Limit caffeine and alcohol:** these can have a negative impact on sleep.
- **Maintain bone health**
 - **Magnesium:** contributes towards bone hardness. Sources: nuts, whole grains, rye bread, wheat germ, molasses, tofu, dried fruit and green leafy vegetables
 - **Boron:** plays an important role in preventing bone loss (3mg a day). Boron has also been found to increase vitamin D levels often low in the elderly. Sources: fruit, leafy vegetables, nuts and legumes.
 - **Vitamin D:** for a healthy heart and circulation, insulin balance and bone health. Sources: oily wild fish (salmon, mackerel and sardine), eggs, as well as, avocado or olive oils.
 - **Vitamin K:** for bone density. Sources: broccoli, cauliflower, Brussels sprouts, olive oil, cheese, soya beans.
- **Plant estrogens:** important for hormonal health in older women. Sources: ground flaxseeds, soya beans, lentils, chickpeas and azuki beans.
- **Consume apple cider vinegar:** our digestive function declines with age due to reduced levels of stomach acid. This can cause symptoms of bloating and gas. Apple cider vinegar diluted in a small glass of water with meals can be helpful for digestion and help the body absorb minerals such as calcium and magnesium.

Social Strategies

- **Technology:** this can be helpful at this stage in your life to stay in touch with other people, to relax during your pre-sleep routine (use relaxation apps) or for home security. Studies are inconclusive as to whether **blue light** impacts the release of the sleep hormone, melatonin, and interferes with sleep as much as the filter “yellow light”. The link between anxiety and screen exposure, as well as, exposure to other colours of the spectrum may be other factors involved in sleep disruption.
- **Travel:** consider taking a group tour as it relieves the pressure of planning, and it increases your sense of safety.
- **Support:** consider hiring a professional cleaner, personal trainer or physiotherapist. Seek out volunteer agencies that may provide social support services and clubs for mature adults.

Sleep Medication

- There are no ideal sleep medications for seniors due to the potential for drug interactions, side effects and long-term safety concerns including decreased cognition, morning hangover effect, dependence as well as, an increased risk for hip fractures. Chronic hypnotic users also tend to consume more of other medications. Use sleep medication only as prescribed by your physician.

Cognitive Behavioral Therapy for Insomnia (CBT-I)

- **CBT-I is the 1st-line treatment for insomnia, and it is effective for seniors, especially when using sleep restriction and stimulus control measures.** It is used successfully alone or with pharmacotherapy. CBT-I is as effective as medications when used in short term insomnia and it is more effective than medications in long-term sleep quality and outcomes.

REFERENCES

- National Sleep Foundation, Michael V. Vitiello, PhD (December 2009)
- Insomnia Rounds. Canadian Sleep Society. Chronic insomnia statistics. Morin, CM. 2012
- Evidence-based recommendations for the assessment and management of sleep disorders in older persons. JAGS. Bloom, HG. 2009.
- Handicare UK, 5th July 2019 News article,
- American Thoracic Society (ATS)-prevalence of OSA.