

Maintaining Good Sleep Quality with Advancing Age: Why Does it Matter?

Webinar for WHI Participants

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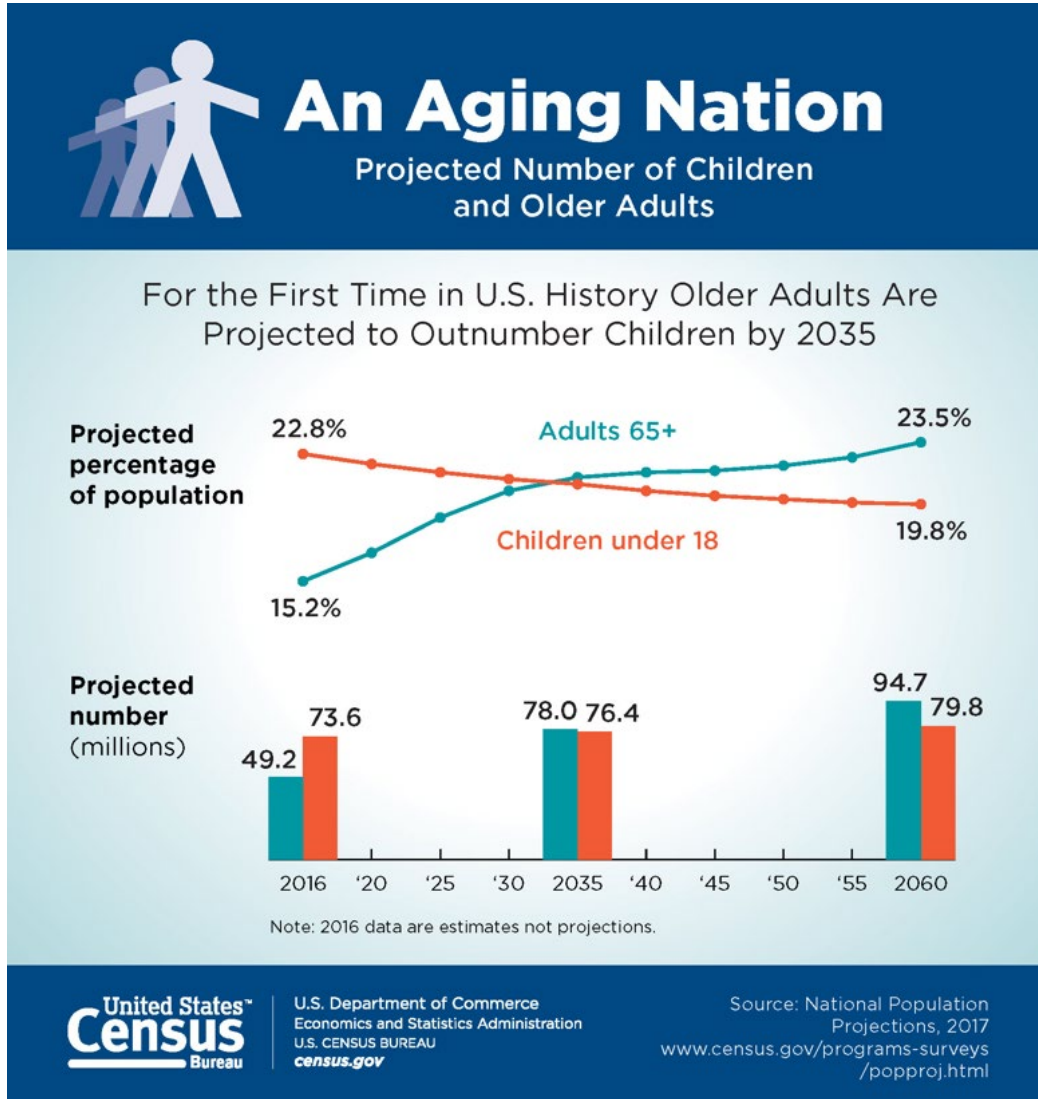
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The U.S. Population is Getting Older



Increased US spending on healthcare

Focus on reducing risks of disease and poor health to improve quality of life and reduce costs

Modifiable health behaviors are a major focus

Sleep: Third Pillar of Health



- Diet and exercise are frequently promoted to improve health
- Importance of sleep has received less attention
 - Poor sleep may accelerate the aging process¹
 - Improving sleep may improve overall health and well-being in older adults, and reduce overall healthcare costs

¹ Cirelli *et al.* 2006. *Proc Natl Acad Sci U S A*, 103(38), 13901-13902

Sleep Across the Lifespan:

In older adults:

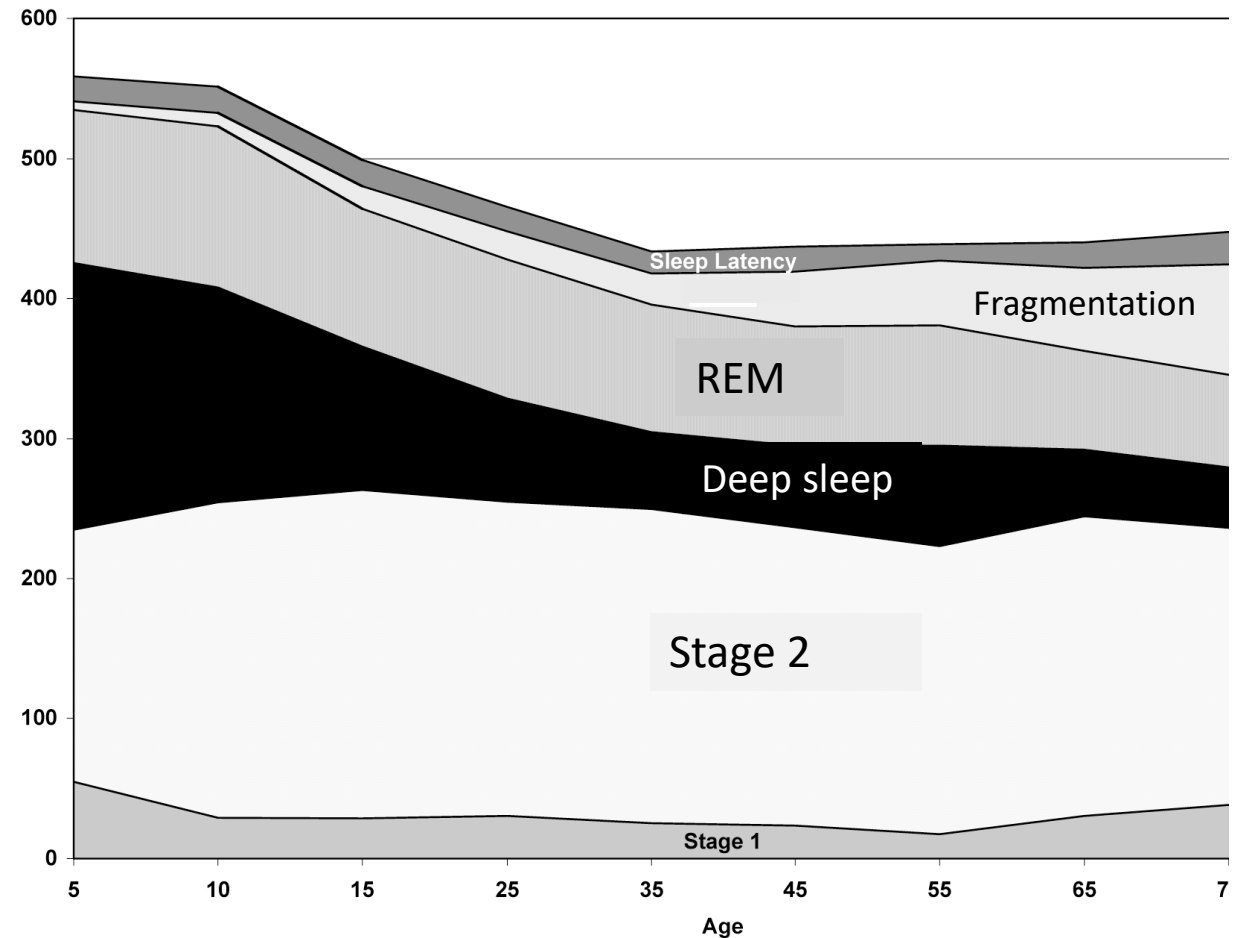
↓ Overall sleep duration, mainly due to reduction in amount of deep sleep

↑ Sleep fragmentation (periods of wake during the night)

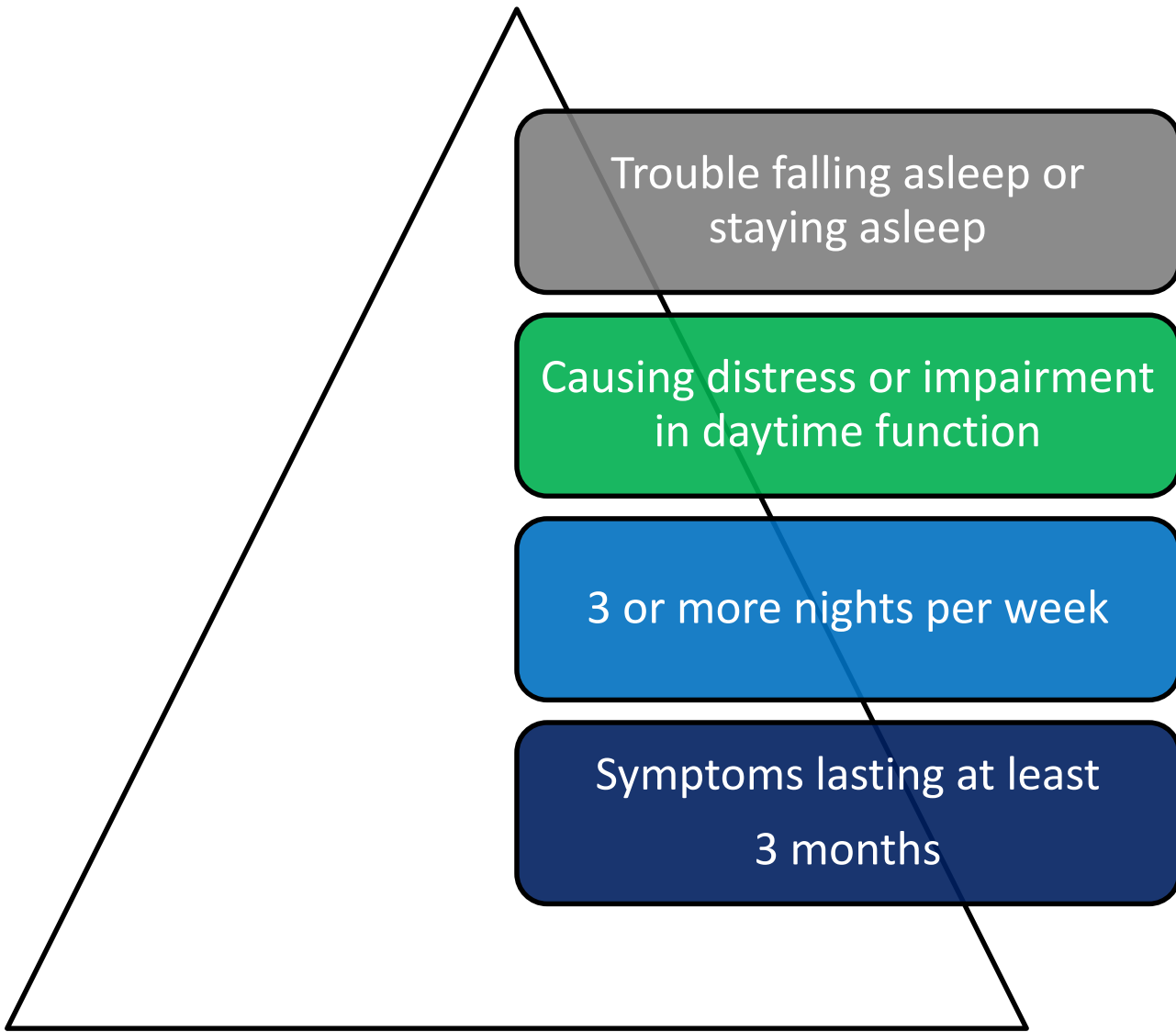
↑ Sleep daytime sleepiness and napping

↑ Sleep disorders such as insomnia and obstructive sleep apnea

Ohayon MM, Carskadon MA, Guilleminault C, Vitiello MV.
Sleep. 2004 Nov;27(7):1255-1273.



Chronic Insomnia



Trouble falling asleep or staying asleep

Causing distress or impairment in daytime function

3 or more nights per week

Symptoms lasting at least 3 months

- More common with advancing age
- More common in women
- At least 1 in 4 older adults report frequent symptoms of insomnia¹
- Effective treatments are available

Factors Contributing to Insomnia or Poor Sleep in Older Adults

Social Factors and Life Transitions ¹	Physical and Mental Health ²
Retirement	Depression
Caregiving and related stress	Chronic pain
Loss of a loved one	Nocturia
Nursing home placement	Medical illness
	Medications
	Dementia
	Disability, functional decline
	Behavioral (physical activity, alcohol, and caffeine)

1. Stone K, Li V. Sleep among older adults. In: Duncan DT, Kawachi I, Redline S, eds. *Social Epidemiology of Sleep*. New York, NY: Oxford University Press, 2019

2. Miner B, Kryger MH. *Sleep Med Clin*. 2017 Mar;12(1):31-38.



Chronic insomnia* brings significant risks for older patients.

** Chronic insomnia is disrupted sleep that occurs at least 3 nights per week and lasts at least 3 months*

Slide courtesy of Daniel J. Buysse.

Mental health

Increased risks of dementia, depression, anxiety

Physical health

Reduced health-related quality of life, as well as increased risks of hypertension, obesity, and diabetes

Safety

Increased risks of falls

Economic

Increased healthcare costs and use of services

Insomnia and Risk of Falls in the Elderly

- Falls occur in more than 1 in 4 older adults each year
- Major cause of fractures and functional impairment
- Insomnia is linked to increased fall risk
 - Some *medications* for insomnia may also increase fall risk in older adults; behavioral treatments are available



Sleep Apnea

- Periodic pauses in breathing during sleep, caused by collapsing/obstruction of the upper airway
- Leads to lower blood oxygen levels and sleep disruption
- Over 50% of older women, and 70% of older men have at least moderate sleep apnea¹
- *Severe* sleep apnea increases risk of cardiovascular disease and dementia/memory loss

1. Ancoli-Israel et al Sleep 1991, 14:486-495

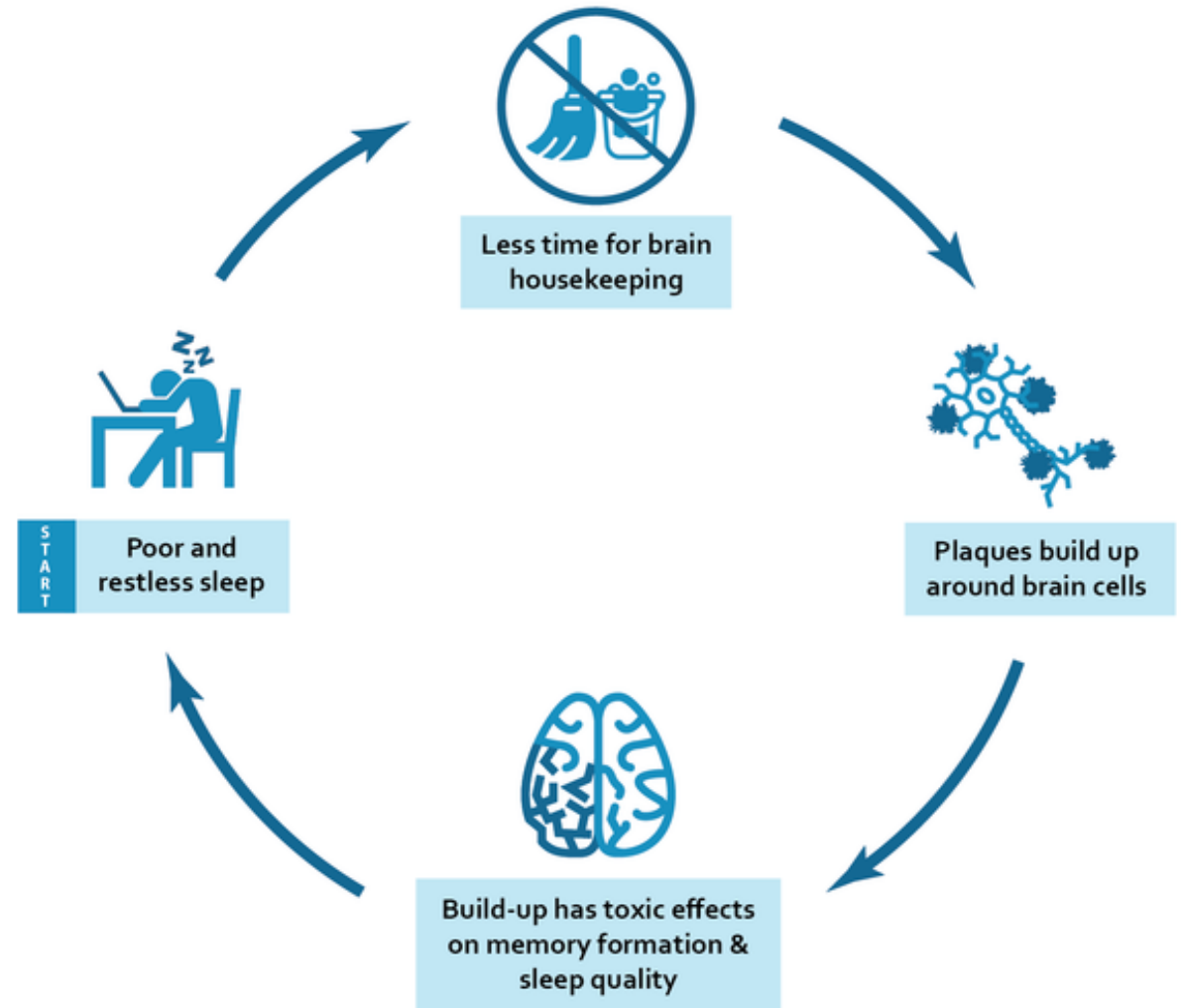
Symptoms of Sleep Apnea

- Daytime sleepiness
- Lack of concentration
- Memory loss
- Snoring
- Waking up choking or gasping
- Waking up with a sore or dry throat
- Headaches after waking up
- Restless sleep
- Mood Changes

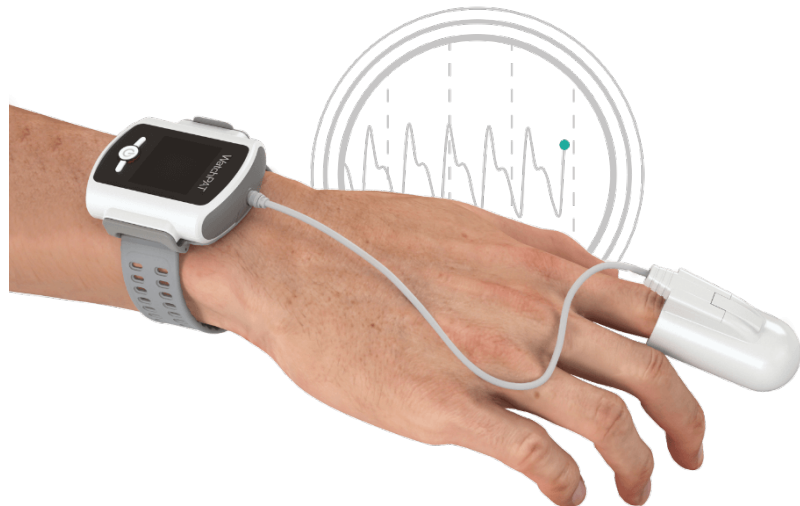


Poor Sleep is Linked to Dementia and Memory Loss

- Sleep plays a role in consolidation of memory
- Sleep deprivation leads to accumulation of Alzheimer-linked proteins in the brain
- Both untreated insomnia symptoms and sleep apnea have been linked to dementia and risk of Alzheimer Disease
- *A vicious cycle: Memory loss and dementia lead to poor sleep, and vice versa*



WHISPER Study



- Sleep measurements collected in about 5000 participants in the Women's Health Initiative
- Actigraph (top) worn for ~4 consecutive days to determine usual sleep-wake patterns
- WatchPAT (bottom) worn for 2 nights for at home testing for sleep apnea
- **Key questions:** how is sleep linked to risks of
 - Dementia
 - Cardiovascular disease
 - Cancer

Sleep in WHISPER: What do the Numbers Say?

Average Nighttime Sleep Time	412 minutes (6.9 hours)
Average percent sleep during in-bed period	85%
Average wake after sleep onset	70 minutes
Average number of apnea events per hour of sleep	11
Percent of women with moderate sleep apnea	17%
Percent of women with severe sleep apnea	5%

Tips for Improving Sleep

Establish a nighttime routine

Get up and go to sleep at the same time

Create a healthy sleep environment

Turn off electronics an hour before bed

Limit caffeine

Exercise

Reduce stress

Avoid large, fatty meals prior to sleeping

Tips for Healthy Sleep

If problems persist despite healthy sleep habits, talk to your doctor to see if treatment is right for you

THANK YOU!!!!!!

