



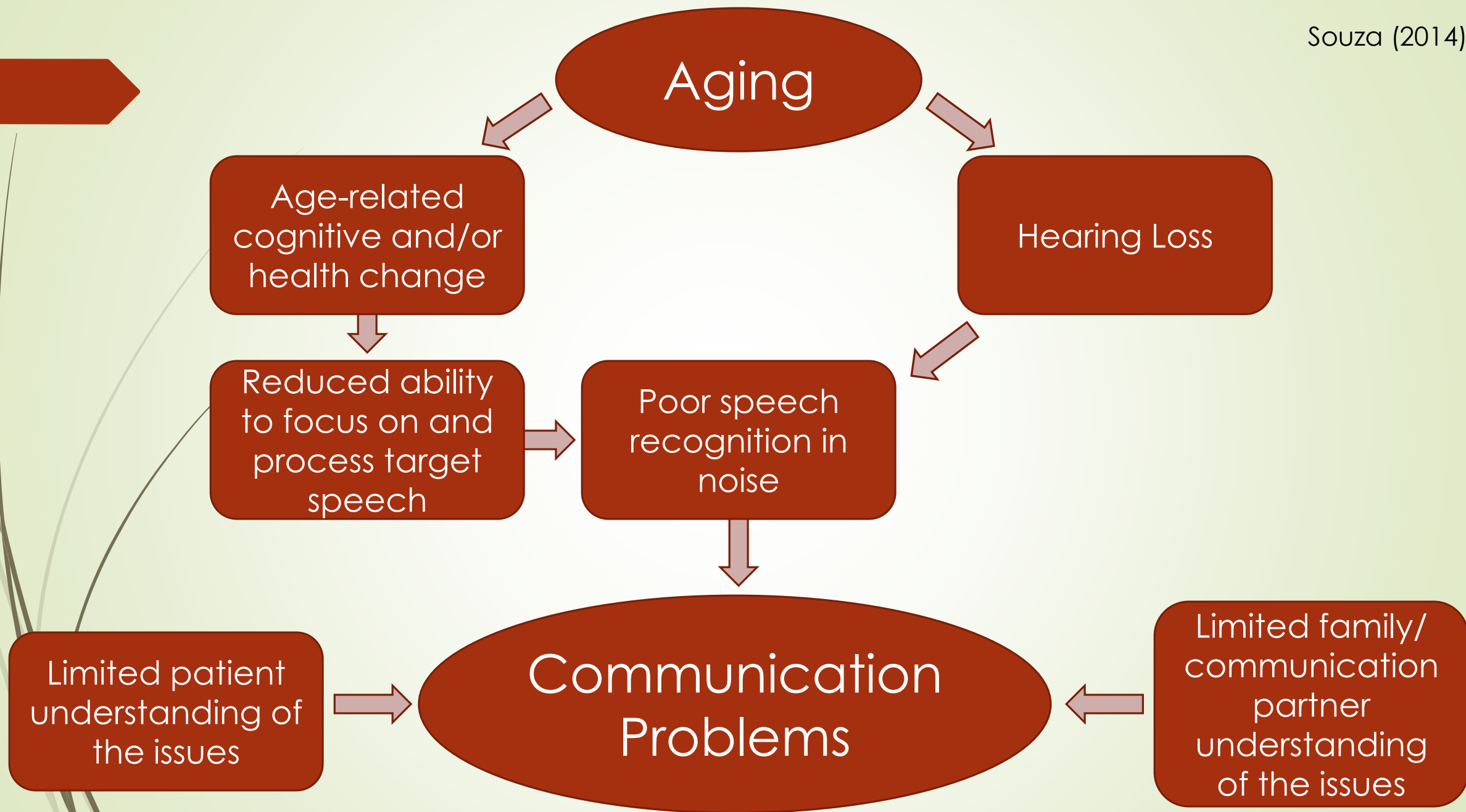
The Importance of Hearing in Healthy Cognitive Aging

Caitlin N. Price, Au.D., Ph.D.

Effective Communication

- Communication touches every part of our lives
- Hearing vital for oral communication



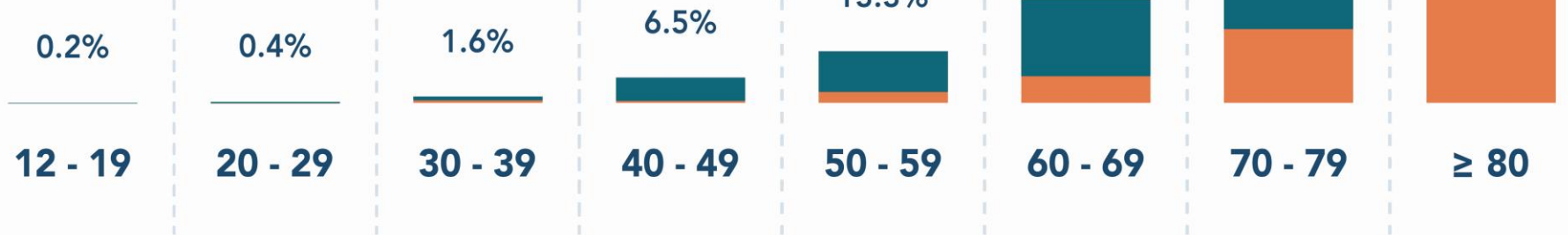


Percentage of Individuals with Hearing Loss by Age & Severity

MILD

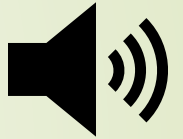
MODERATE+

38.2 Million (14.3%) Americans aged 12 years or older have hearing loss



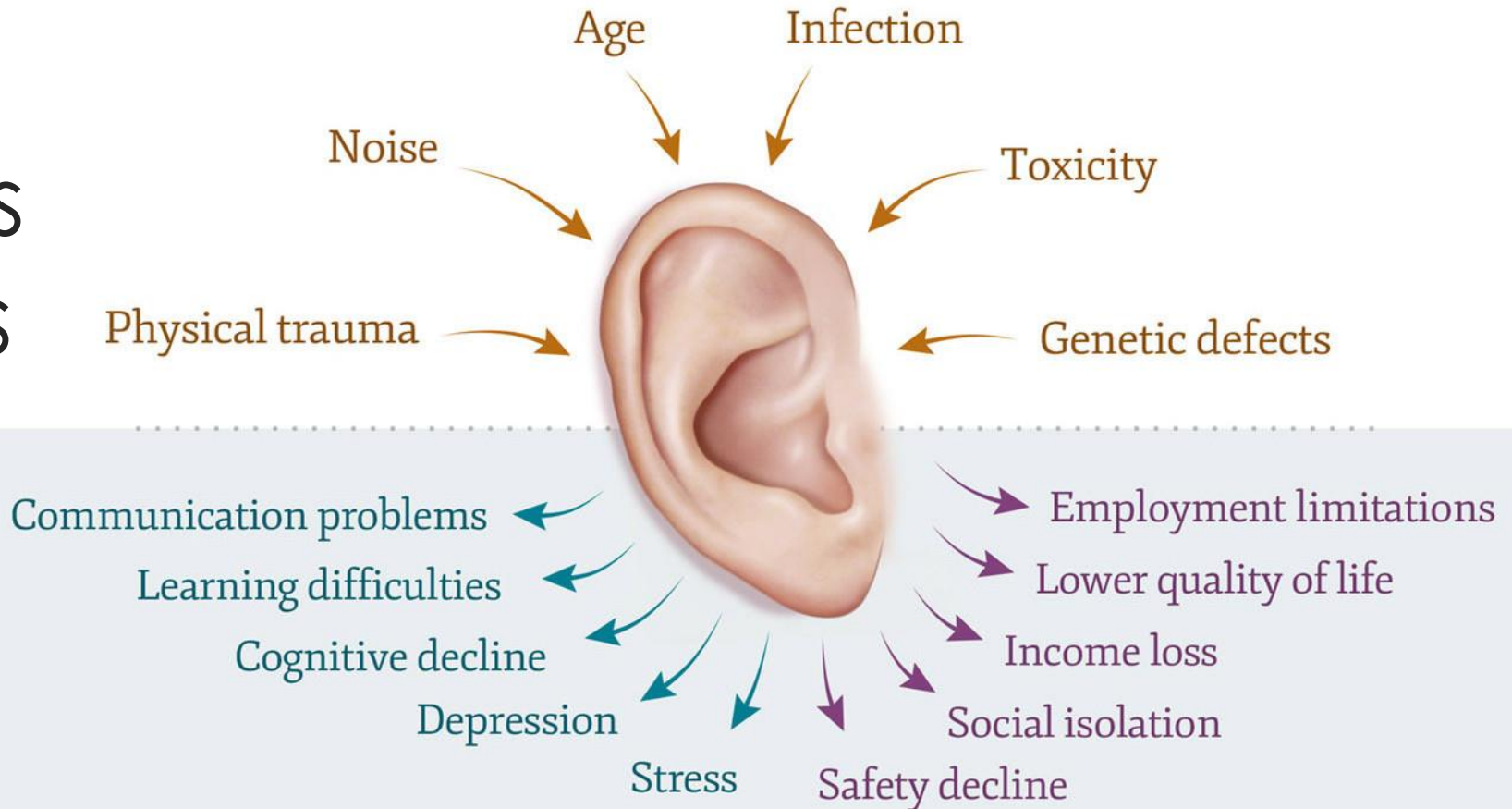
Causes of Hearing Loss

1. Age – strongest predictor
2. Noise exposure
3. Medical conditions, infections, injuries
 - Genetics
 - Health conditions
4. Medication side effects

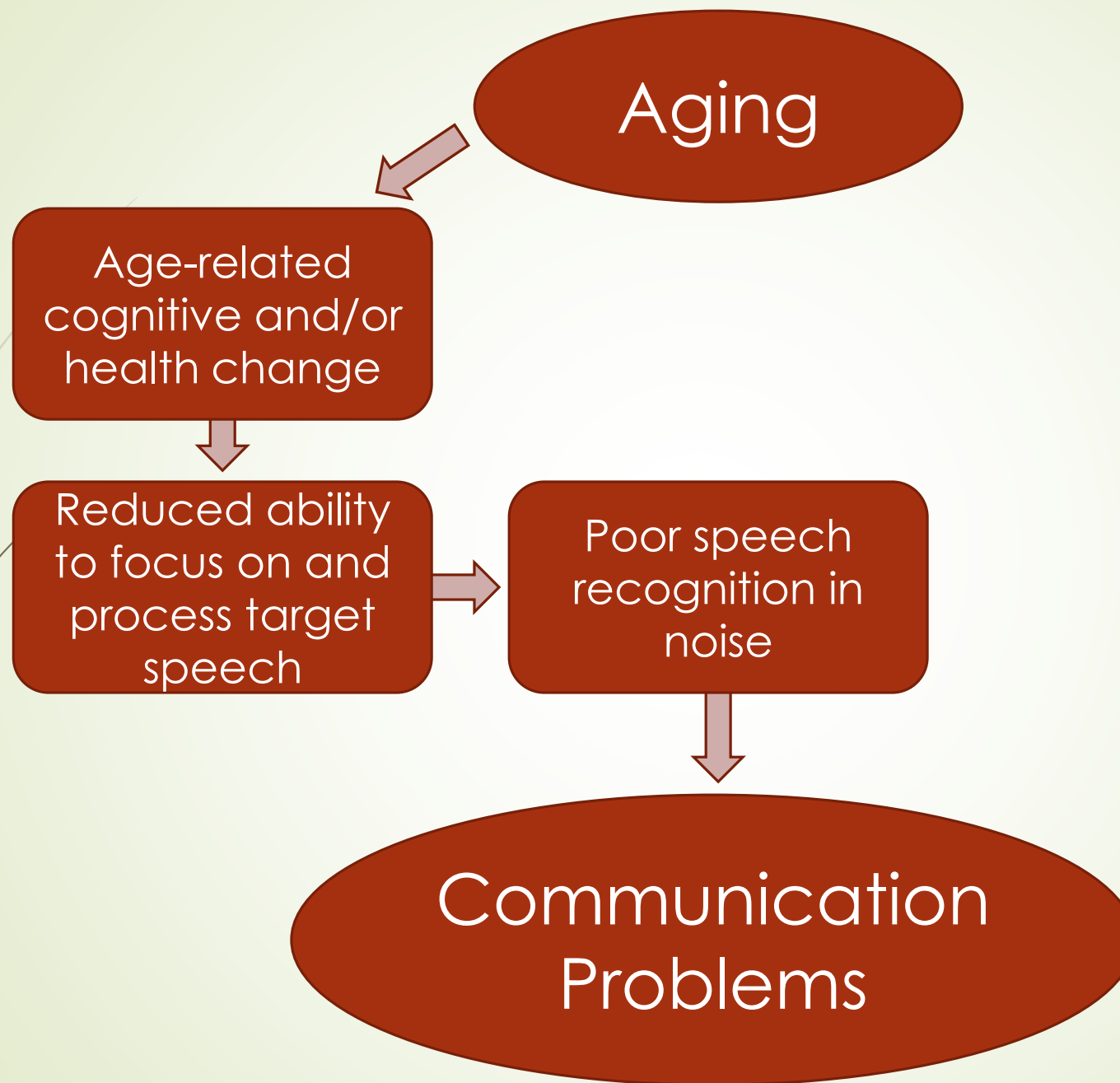


Psychosocial Consequences of Hearing Loss

CAUSES of Hearing Loss

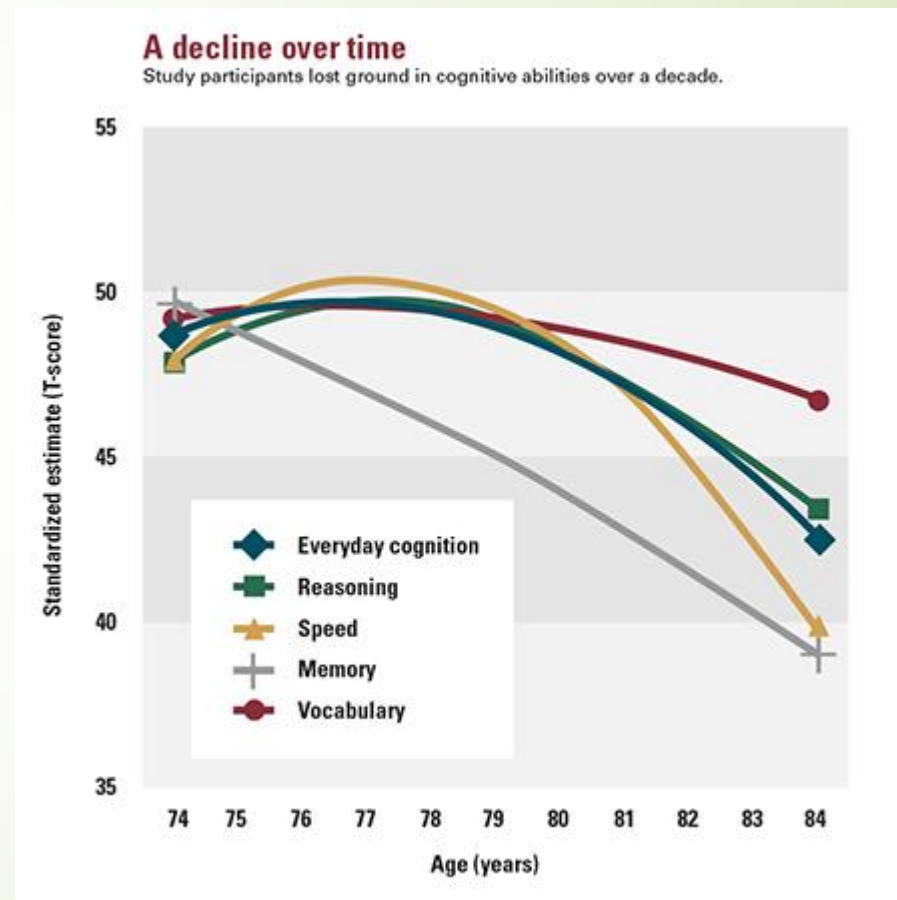


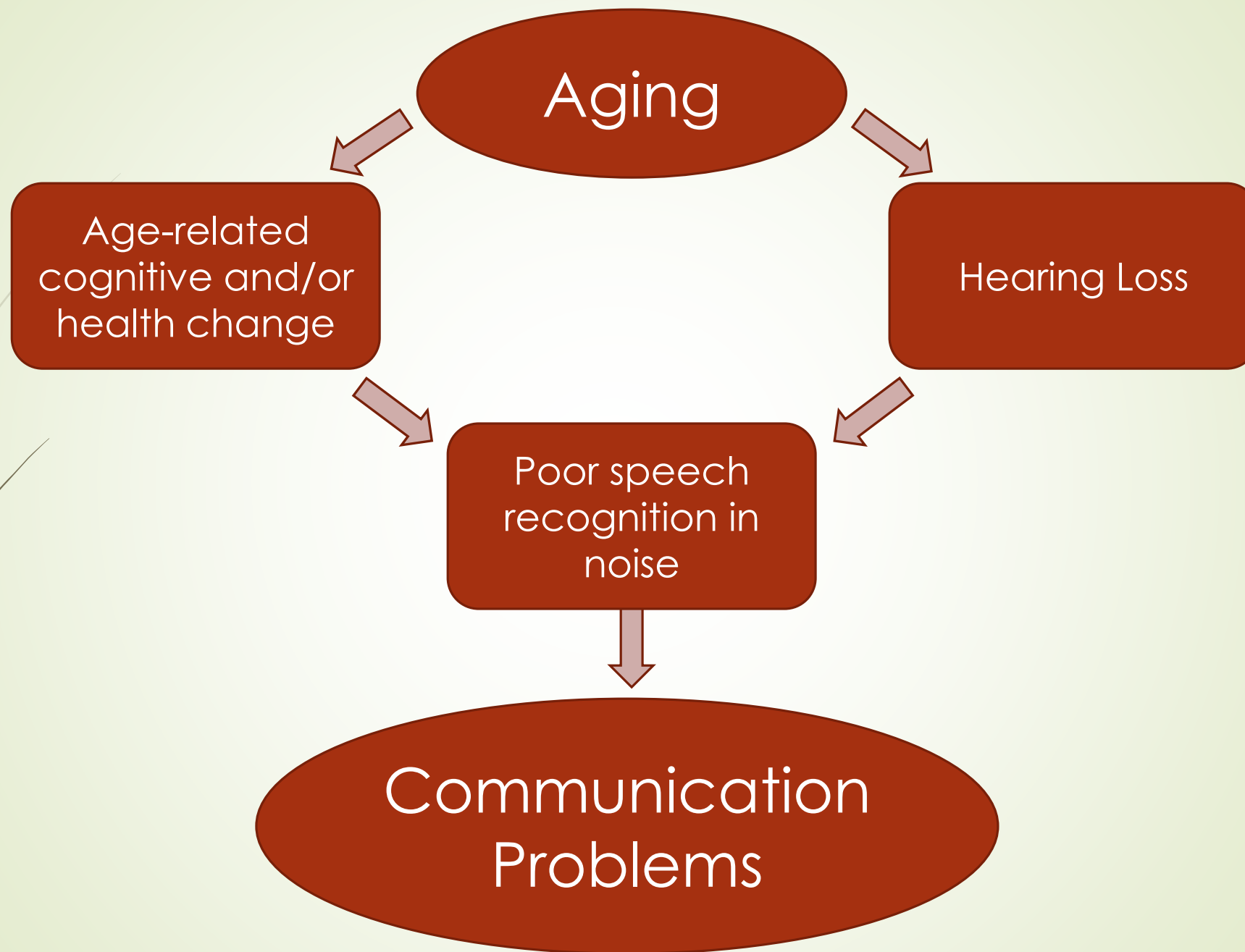
CONSEQUENCES of Hearing Loss



Cognitive Changes in Healthy Aging

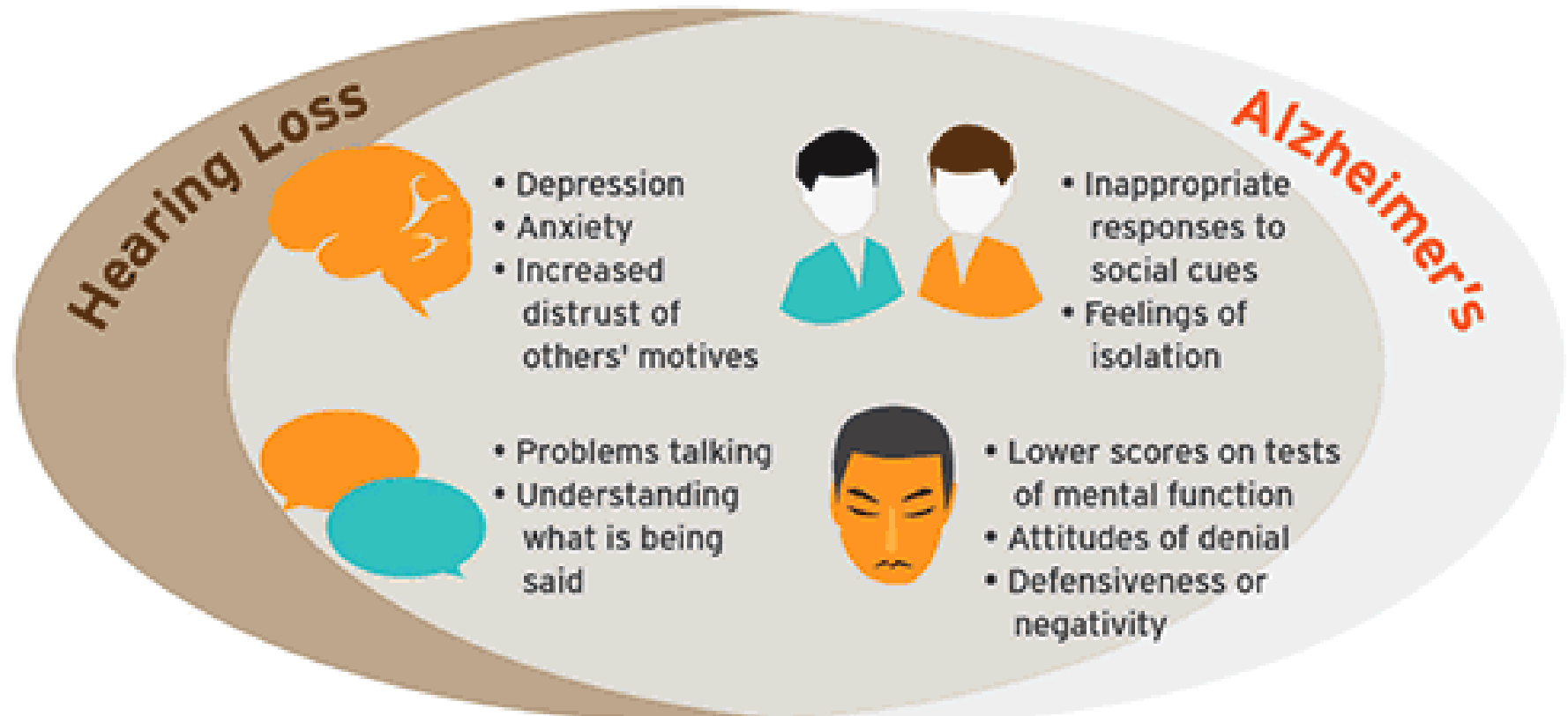
- Age-related declines
 - Processing speed
 - Working memory
 - Executive function





Hearing Loss or Cognitive Decline?

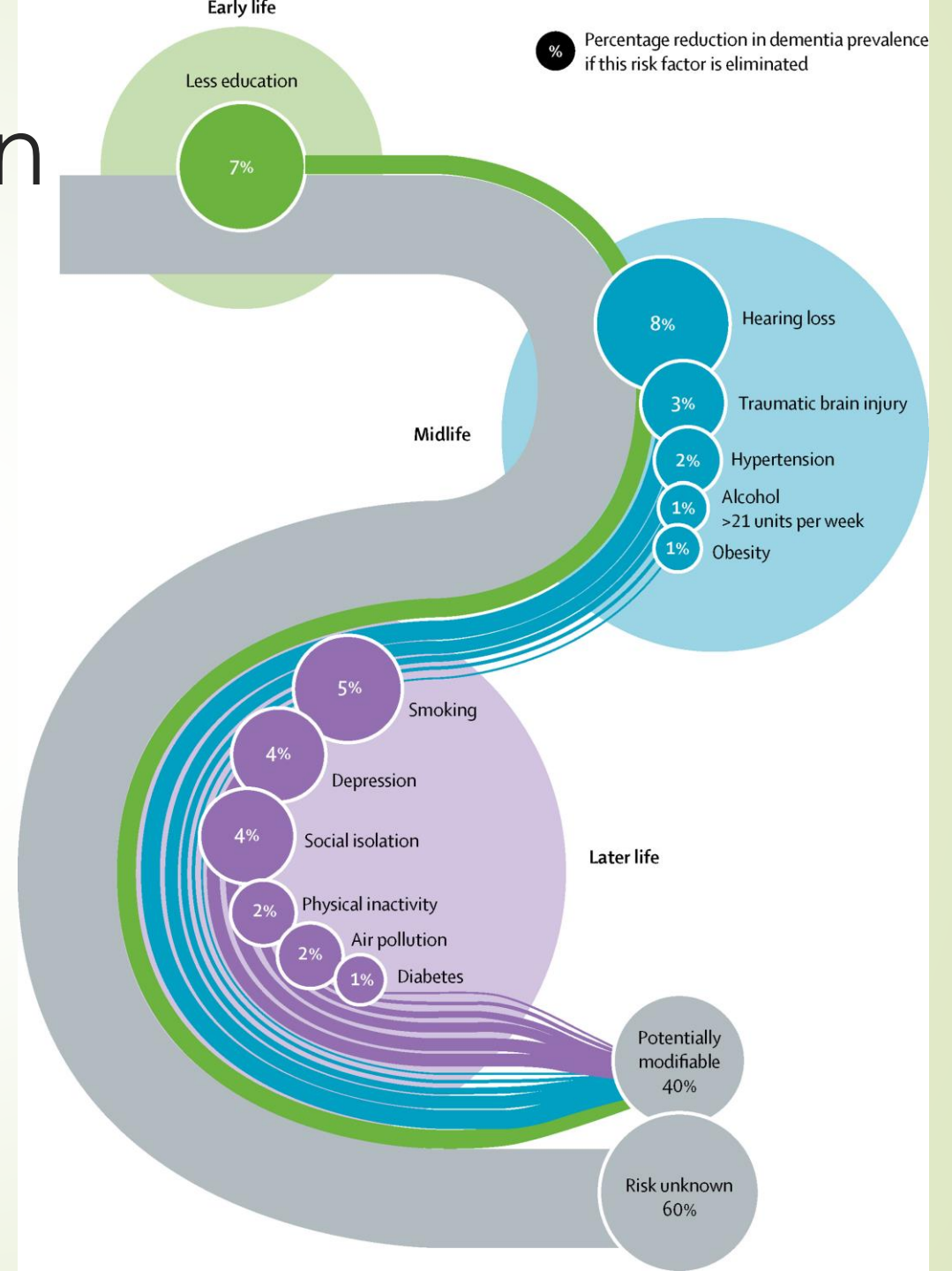
The Most Common Symptoms of Both



Relationship between Hearing Loss and Cognitive Decline

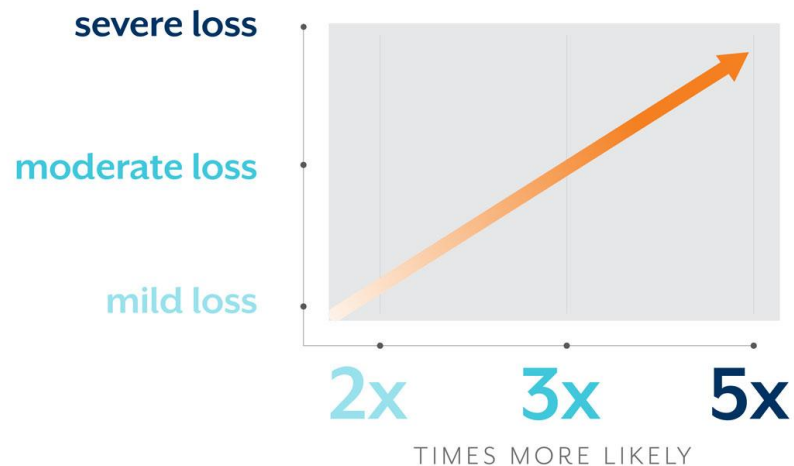
- Hearing loss is the greatest modifiable risk factor for developing cognitive decline

Livingston et al. (2020)



Hearing Loss Increases Risk for Cognitive Decline

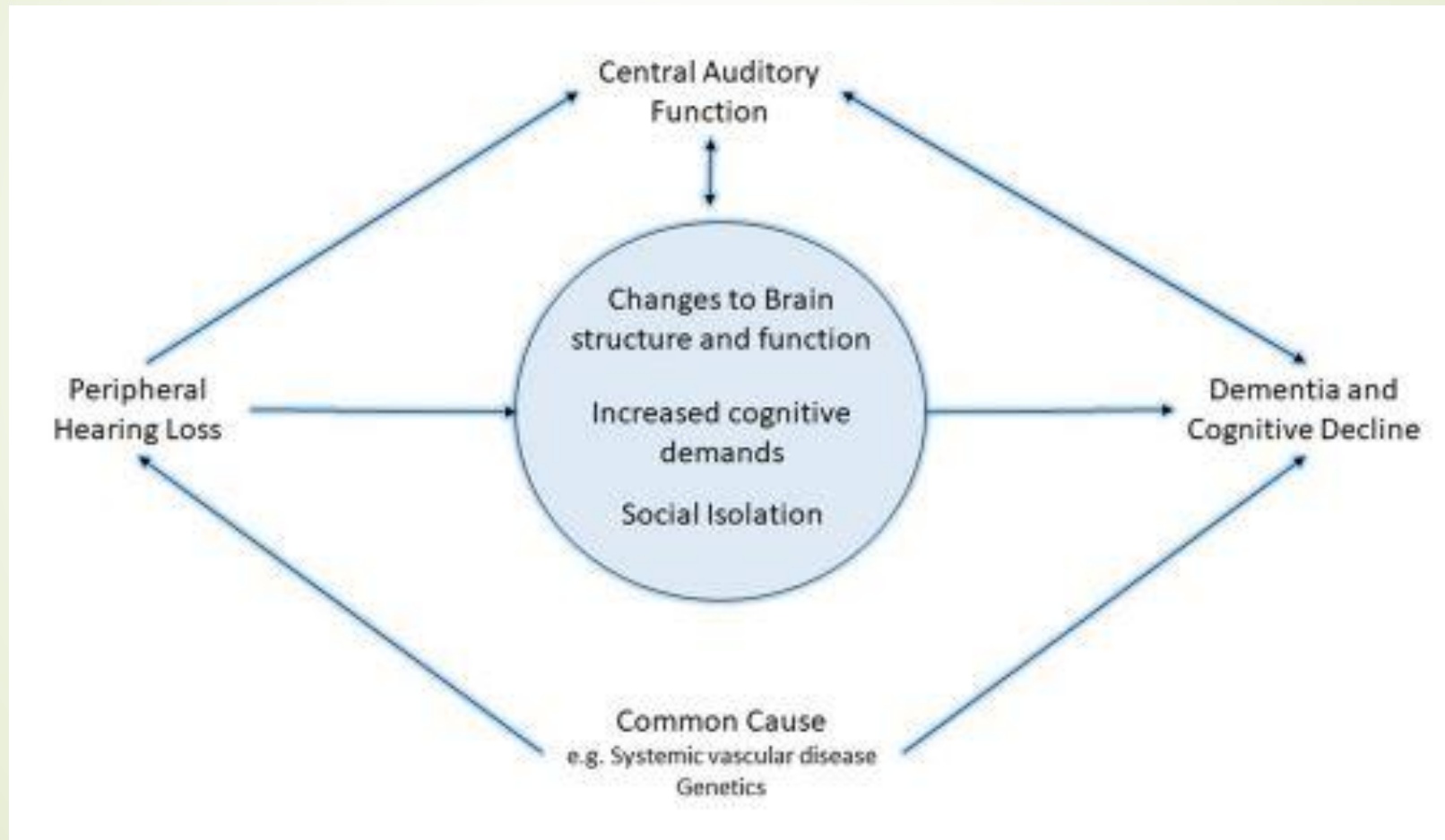
Adults with untreated hearing loss are more likely to develop dementia.



Source: Johns Hopkins Medicine
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Mechanistic Theories





Mechanistic Theories

- ▶ Sensory deprivation hypothesis
 - ▶ Changes in brain structure and function
- ▶ Information degradation hypothesis
 - ▶ Increased cognitive processing to compensate for degraded sensory inputs
- ▶ Common cause
 - ▶ Same underlying mechanism resulting in both hearing and cognitive impairments



Additional Contributing Factors

- Social isolation and loneliness
- Depression
- Decreased physical activity



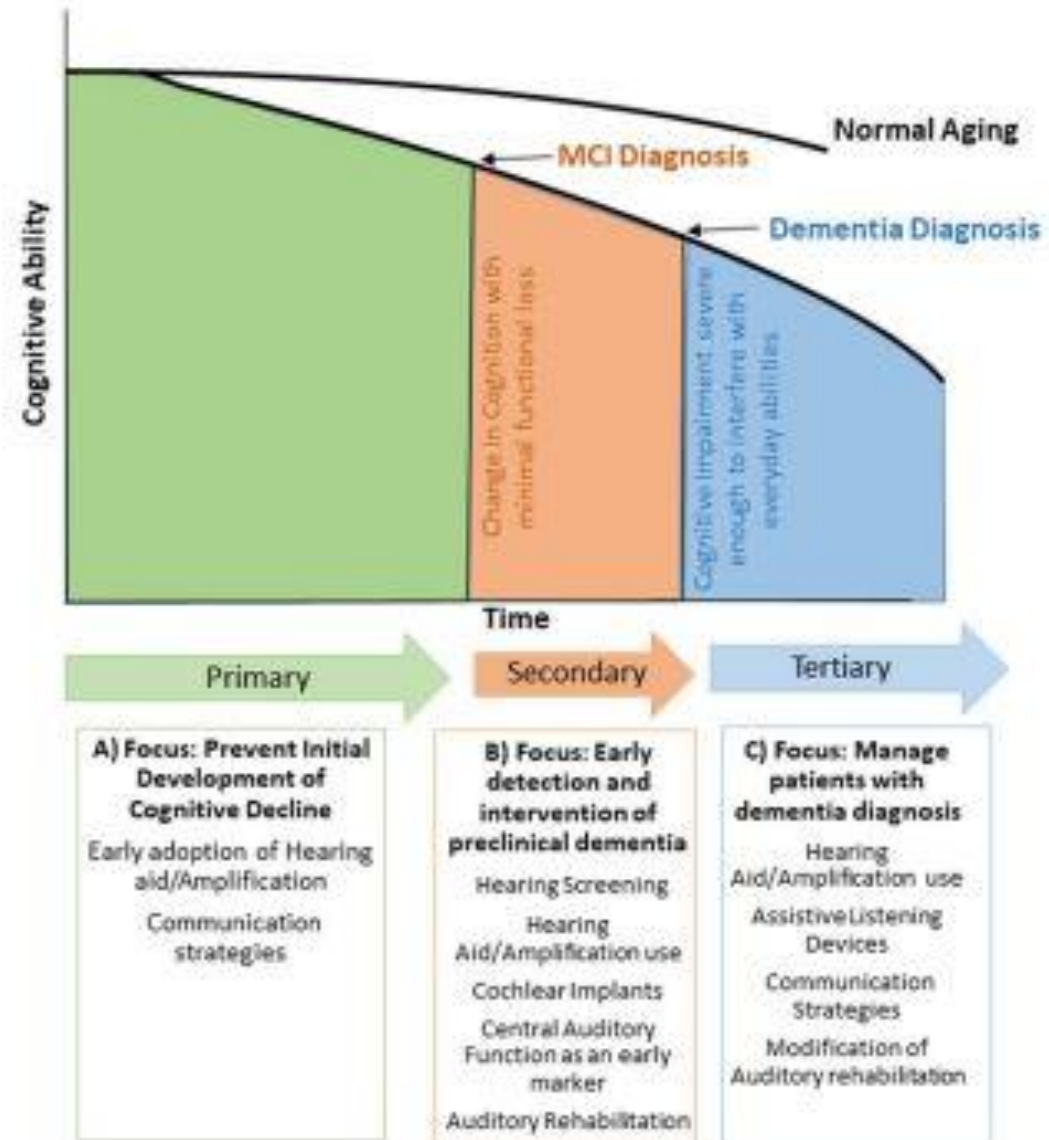
Benefits of Treating Hearing Loss

- Improved communication and overall quality of life
- Reduced cognitive load
- Less social isolation and feelings of loneliness
- Lower rates of depression
- Reduced risk of fall-related injuries



Preventing Cognitive Decline?

- ▶ Treating hearing loss in those with cognitive decline results in:
 - ▶ Communication benefits
 - ▶ Improved dementia-related symptoms
 - ▶ Improved quality of life
- ▶ Whether treatment can prevent dementia or further cognitive decline remains unclear



Hearing loss & dementia

What the research shows



Dementia is **more common** among people with untreated hearing loss.

People with untreated hearing loss tend to develop cognitive decline **earlier** than peers with normal hearing.

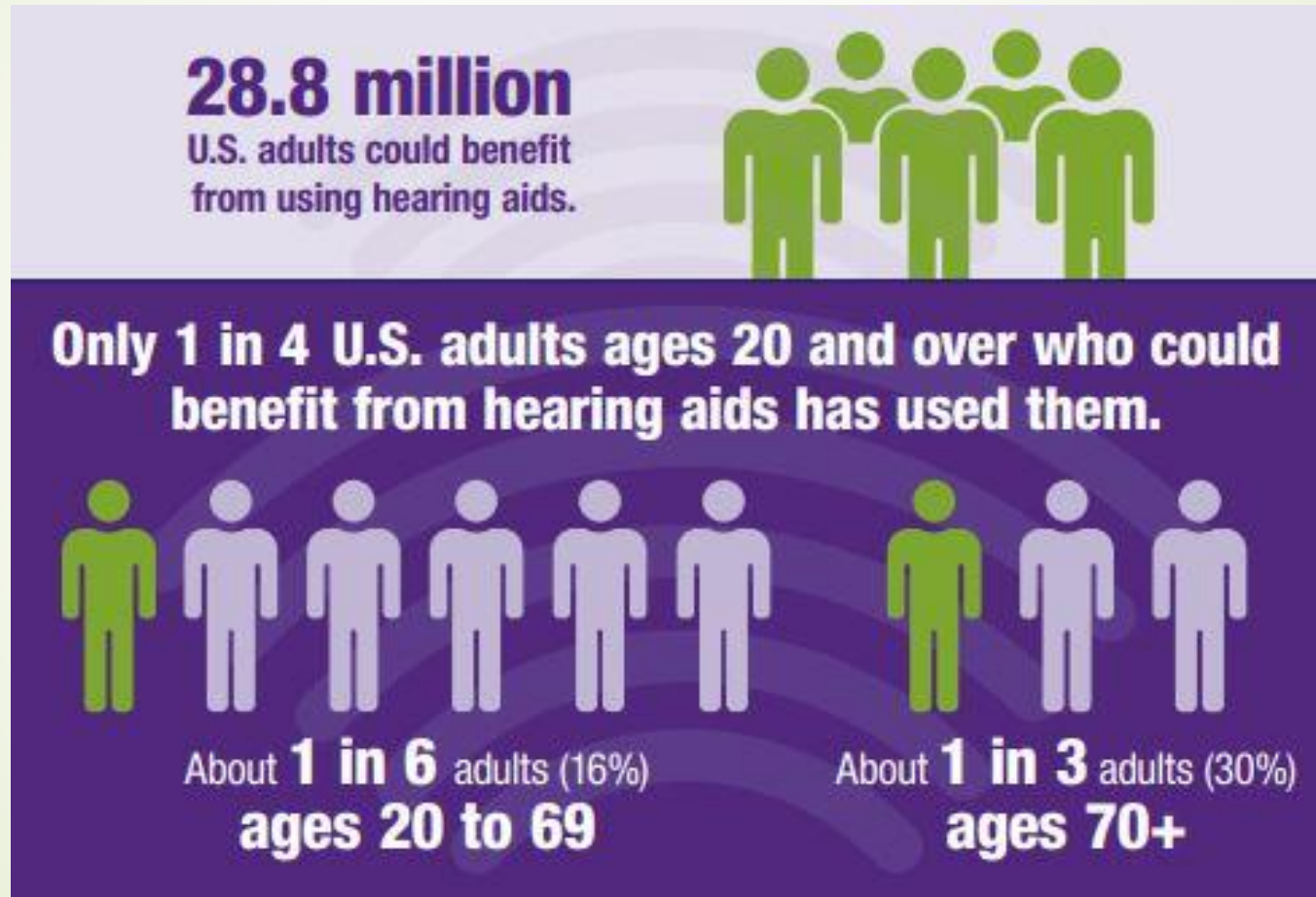
People with untreated hearing loss report **more concerns** about their memory than people with normal hearing.



Healthy Hearing

www.healthyhearing.com

Treating Hearing Loss



Treatment Options

- Hearing aids
 - Improve audibility of speech
- Communication strategies





Updates in Hearing Aid Technology

- Improved speech-in-noise processing
- More natural sound quality
- Fall detection
- Smartphone applications
 - Remote control, tinnitus management
- “Smart” options
- Remote programming available for patients in rural areas

Treatment Options

- Over-the-Counter Hearing Aids (OTCs)
- Personal Sound Amplification Products (PSAPs)
- Assistive listening devices
 - Pocket talkers





When is a referral needed?

Early signs of hearing loss may include:

- ▶ Avoidance of social settings and/or reduced participation in activities
- ▶ Consistent requests for repetition
- ▶ Difficulty understanding speech
 - ▶ In noise
 - ▶ Of high-pitched speakers
 - ▶ On the telephone
- ▶ Hearing others' speech as "mumbled"
- ▶ Increasing the volume on the television and other devices
- ▶ Listening fatigue
- ▶ Perception of "muffled" hearing
- ▶ Tinnitus
- ▶ Trouble hearing consonants
- ▶ Speaking too loudly or too softly



Earlier diagnosis and treatment lead to better outcomes.

ASHA (n.d.)



Referral Resources

- Find a local audiologist
 - www.howsyourhearing.org
 - www.asha.org/profind
- UAMS CHP Hearing Clinic
 - 4021 W. 8th St.
 - Little Rock, AR 72204
 - (501) 320-7300

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