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Aging with (and without) Brain Injury

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Speaker Disclosure

- I have no financial conflicts with the resources, concepts, or interventions I am discussing today

Learning Objectives

1. Understand cognitive changes with typical aging
2. Understand concerns about aging with brain injury
3. State 3-5 behaviors that contribute to healthy cognition as we age

Spoilers for today's presentation...

Every common-sense *cure* you've heard of for healthy aging is **true** no matter if you are aging with (or without) a brain injury ...

- Exercise
- Eat a nutritious diet
- Get good sleep
- Socialize
- Try to manage stress

Why are we here?

With age, thinking skills (*cognition*) change

There are NO exceptions!

These changes begin in late middle age and include:

Slower processing of information

Memory

Word Retrieval

Causes of Dementia

- 60-80% of all dementias are Alzheimer's type
- Alzheimer's is caused by abnormal protein plaques and tangles
- Other causes of dementia include
 - Decreased blood flow – Vascular dementia
 - Loss of brain cells in the frontal and temporal lobes of the brain – Fronto-temporal dementia
 - Build up of proteins in the brain called Lewy Bodies – Lewy Body Dementia

Dementia
is not
a natural part of aging.

What about aging
with a
Brain Injury?

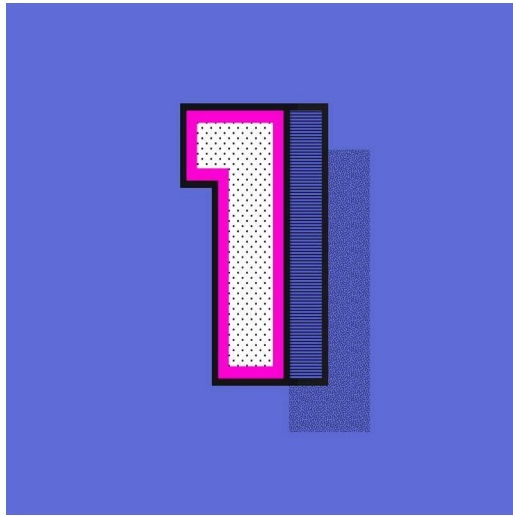


Common cognitive characteristics

Typical Aging	Brain injury	Alzheimer's Disease
Slower processing of information	Attention	Attention
Memory	Slower processing of information	Slower processing of information
Word finding	Memory for new information	Memory for new information
	Word fluency and word finding	Word fluency and word finding
	Executive functions	Executive functions
	Emotional regulation	Emotional regulation



Does Brain Injury cause Dementia?

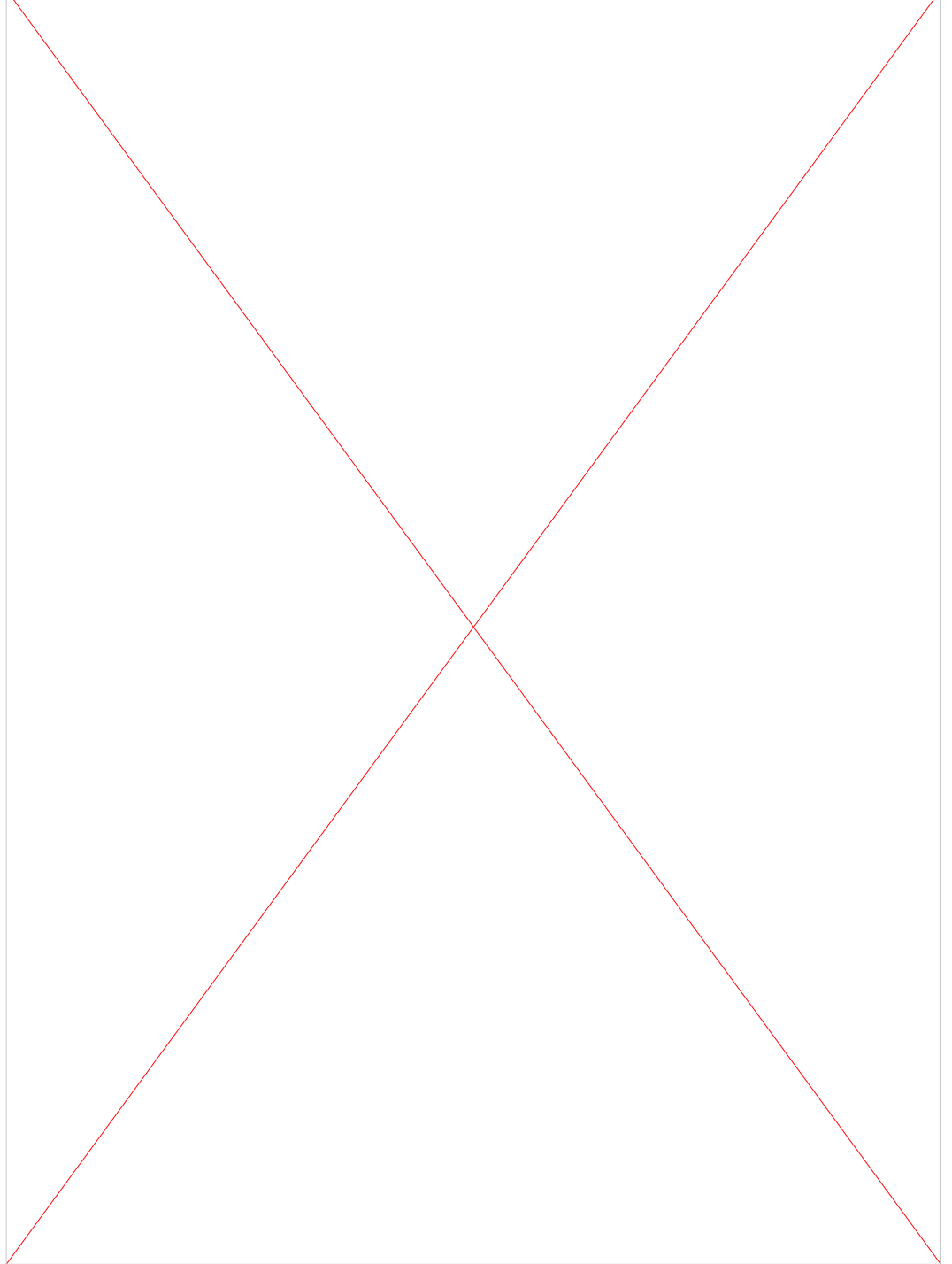


A population at Risk

Statistics and facts

- 2.8 million Americans acquire a brain injury each year
- 11.4 million Americans live with TBI related disability
- Older adults are vulnerable to stroke and falls
- Individuals with TBI have a 4 X higher risk of dementia than individuals without TBI
- The proportion of the U.S. population over 65 years of age is growing
- TBI symptoms in older adults are often missed, or overlap with, or are misdiagnosed as dementia or normal aging

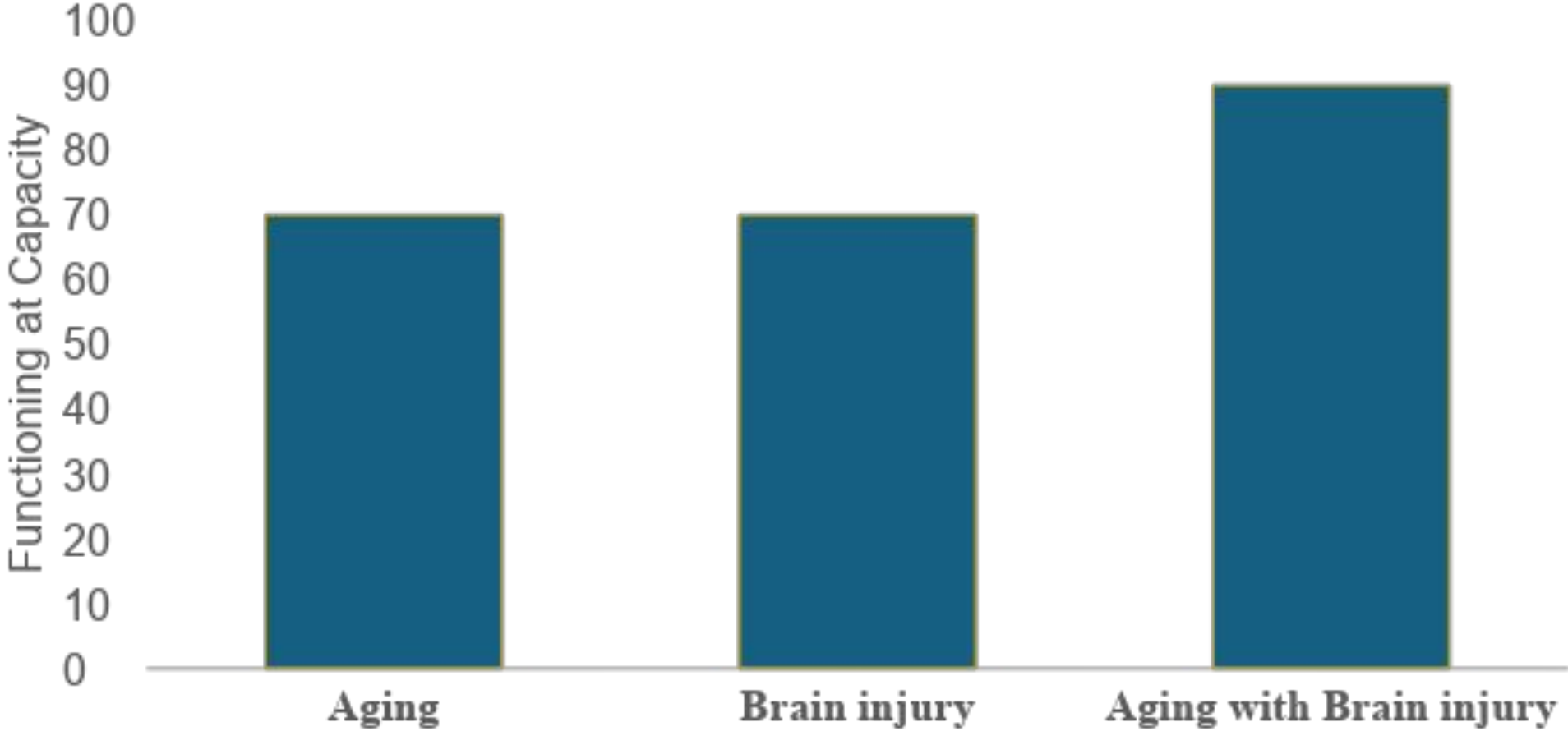
Age does not discriminate



Brain Injury and Aging

For individuals with TBI, the cognitive effects of aging, combined with cognitive effects of brain injury, may result in earlier and faster decline in cognitive functioning compared to individuals without brain injury

Age Related Symptoms





Add Dementia to the picture

Brain injury and aging with Dementia

Alzheimer's Disease is not highly hereditary, although family history is a risk factor. Other risk factors include age, lifestyle, and a gene called APOE

An individual who has a history of brain injury, AND develops Alzheimer's, is likely to have more severe and more rapidly declining cognitive symptoms like word finding and word fluency.

Does Brain Injury Cause Dementia

Brain Injury and risk of Alzheimer's

Amyloid-Beta and Tau are the proteins that cause neuro-degeneration in Alzheimer's

All individuals have these proteins.

For some individuals, these proteins accumulate and cause neuro-degeneration

Scientists are learning that both individuals BI and AD are susceptible to the accumulation of these proteins.

5

Timing

- Neuro-imaging studies have demonstrated that the protein build up is present many years before cognitive symptoms occur
- Individuals may be slowly adapting to brain changes over time without realizing cognitive decline is occurring
- The lesson here is start habits of healthy aging before you start to notice decline



This news seems bad, I'd really rather not talk about it



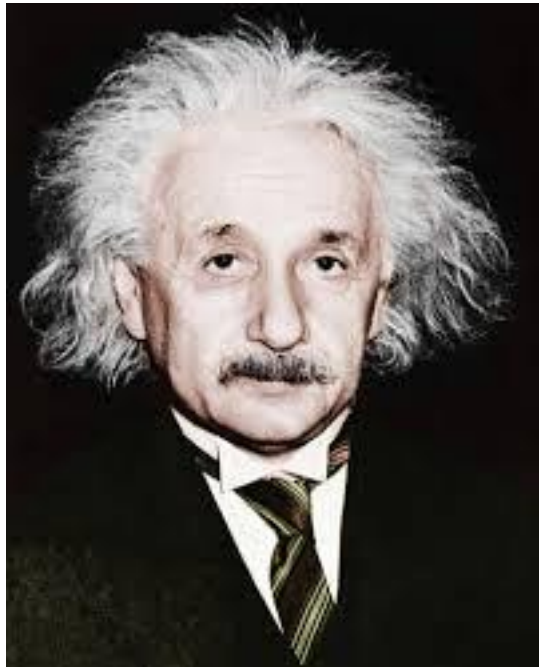
Not all cognitive changes are due to Dementia

- Hearing
- Vision
- Recurrent TBI
- Other medical conditions
- Medication interactions or overmedication
- High stress levels
- Poor sleep
- Depression

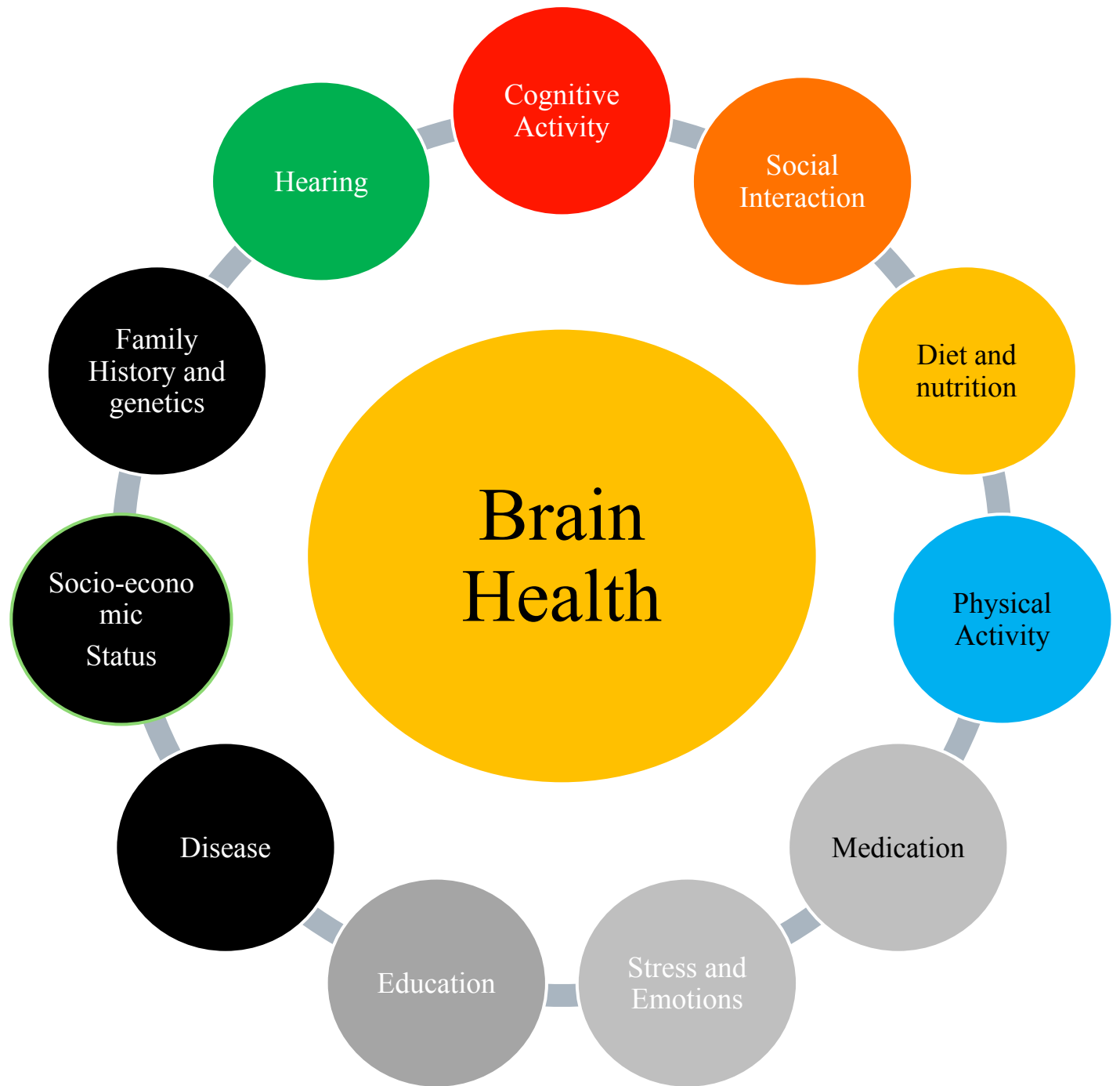
Reasons to talk to your physician about your concerns...

- You might be experiencing memory loss because of something other than dementia and it may be treatable
- There are several types of dementia that have different characteristics and expected outcomes and treatments to manage symptoms
- New medications and treatments are coming out all the time
- You may be eligible for an experimental medication trial
- You may benefit from adding medical professionals to your careteam (e.g. psychology, physical therapy, speech therapy, dietician...etc.)
- Knowledge is power and knowing your medical situation helps you be a part of the decision making

Tips to improve cognition



CHANGE



Check your Hearing

According to 2013 Johns Hopkins Study...

“Older adults with impaired hearing had 30-40% steeper declines in cognitive function than those with normal hearing.”



Think about **Attention**

- **Anticipate** activities that require your attention
 - Cards, noisy restaurants, big social events ...etc.
- **Schedule** cognitively demanding tasks during optimal times of day for you if possible
- **Manage** the environment to optimize attention
 - Turn off the TV during conversations
 - Ask speaker to slow down, repeat
 - Take a trusted friend or family member with you to office visit as a “second pair of eyes and ears”
 - What else?



Question:
Do computer
games and
crossword
puzzles improve
my attention and
memory?

What can I do to improve attention and memory?

- Stay cognitively active
- Learn new things
- Continue to gain experiences
- Socialize



Work on Memory

- PROCEDURAL memories are habits and routines
- They are formed through repetition
- PROCEDURAL memories are the most resistant to change in the human brain

Procedural Memory

You likely learned to perfect these activities through repetition...

- Tying your shoe
- Directions to a familiar place
- Playing the piano
- What else???

Can you *purposefully* build and improve procedural memory?

YES

New PROCEDURAL memories can be developed through conscious repetition and rehearsal



How to build procedural memory

- Be thoughtful – what should be made into a routine (“I always lose my glasses, I can never remember my passwords, I don’t know how to sync my car with my phone....”)
- Be purposeful – take extra time to follow your routine
- Be consistent – don’t quit. Follow your routine
- Make adjustments – if something isn’t working about your routine, make needed changes
- Keep trying

Practice makes...

Procedure

Examples of procedures...

- Establishing a “home” for your gadgets (phone, wallet, keys, glasses, cane, garage door opener...etc.)
- Taking medications at the same times every day (pair it with another activity you already do, like meals)
- Paying bills on the same day of the week
- Learning to use a new remote control, phone, app,etc.
- Set a standing monthly get-together with friends
- Introduce a new exercise into your routine or tack a few minutes on
- Change one thing about your diet

- What else?

Old dog, new tricks →



A word about words

Word finding

- A common complaint of individuals over 50 (it's actually thought to begin as early as in your late 30s, we just don't notice it, or attribute it with age at that time)
- It is typical for individuals who have not had a brain injury
- It is common for individuals who have had a brain injury
- It is frustrating
- There is no known "cure"

Can't come up with the word you want

- Prime by rehearsing people you might see OR a story or anecdote you might tell at a social event
- Use another word
- Describe
- Ask your listener to help you
- Use the alphabet to see if a first letter cue helps
- Let it go and come back to it

(and finally....Yell the word out in the shower when you think of it far too late and no one is around to share your success 😊)

A word about stress

Understand that stress may compete for your attention and interfere with memory and other cognitive functions

Manage stress if you can

- Socialize
- Exercise
- Hobbies/interests
- Meditate
- Counseling
- What else???

Socializing is good for cognition!

- Engages brain connectivity
- Combats isolation
- Social engagement shows both immediate and long term effects of cognitive performance



How to be social

- On-line support groups
- Re-connect with an old friend
- Join an in-person or on-line class
- Volunteer
- What else?



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Curiosity never retires




You knew it, but didn't want to admit it...

- A **healthy diet** and daily exercise is essential to good cognitive health
- A Mediterranean style diet is good for your heart and brain
 - Rich in fruits, vegetables, whole grains, nuts, legumes, and olive oil, with moderate low fat proteins
- There is literally no downside to **daily exercise** and everyone can start somewhere
 - Improves circulation which is good for the heart and brain, helps with weight control, reduces risk of chronic diseases

Can I get therapy for cognitive decline?

Maybe ...

- Speech therapists may be able to assist with cognitive strategy training
- Physical therapists may help with starting an exercise program
- Neuropsychological assessment can help determine cause of cognitive decline
- Have a goal in mind and **speak with your physician**

 Remember there is no silver bullet, no magic cure, improving and maintaining cognitive health takes some time and effort

Age happens to all of us with (or without) brain injury

- Build procedures and routines into your daily schedule
- Practice mindfulness
- Journal
- Exercise
- Eat a nutritious diet
- Get good sleep
- Socialize
- Try to manage stress

Remember, even if you have cognitive issues like poor memory, or attention, or word finding... you are still you! Live your life with as much enjoyment as you can!

Thanks for Attending!

Questions?

