



# Brain Health & Aging

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### Why and how the brain changes as we age:

- As we get older, all parts of the body change, including the brain
- Parts of the brain may shrink, especially areas important to complex mental activities
- Communication between neurons (nerve cells) may reduce
- Blood flow to the brain may decrease
- Inflammation increases
- Brain remains able to adapt to new challenges and tasks
- Not clear why some people's brains age better than others. Cognitive reserve may play a role.

### Signs of brain changes as we age include:

- More challenges with multi-tasking
- Takes longer to complete tasks
- Increased difficulty finding words
- Slight decreases in ability to pay attention
- Harder time finding things used often, such as keys or glasses

# Individuals can still:

- Learn new things (may take longer)
- Create new memories
- Improve vocabulary and language skills

### How Cognitive Function Changes as We Age

	Aspect of cognitive function	<b>Remains stable</b>	Changes
I	ntelligence	<ul><li>"Crystalized" intelligence remains stable</li><li>Knowledge or experience accumulated over time</li></ul>	<ul> <li>"Fluid" intelligence tends to decline</li> <li>Abilities not based on experience</li> <li>Ability to think and react quickly</li> <li>Mental multi-tasking</li> <li>Learning new information</li> </ul>
Г	Memory	<ul> <li>Long-term memory relatively preserved</li> <li>Recalling past events that have been stored over many years</li> </ul>	<ul> <li>Short-term memory more vulnerable to aging</li> <li>Recent memory or the formation of new memories</li> <li>Takes longer to learn new information than before (have to hear / see it more times)</li> </ul>
	Attention	<ul><li>Simple or focused attention remains stable</li><li>For example, the ability to attend to a television program</li></ul>	<ul> <li>Divided attention may be more challenging</li> <li>For example, trying to pay attention to the television and simultaneously talk on the telephone</li> </ul>



# How Cognitive Function Changes as We Age (continued)

Aspect of cognitive function	Remains stable	Changes
Language	Verbal abilities preserved <ul> <li>Including vocabulary</li> </ul>	<ul> <li>Word finding may take longer and be more difficult</li> <li>In conversation</li> <li>Trying to recall names of people and objects</li> <li>Information not lost but more difficult to retrieve</li> </ul>
Reasoning and problem solving	<ul> <li>Traditional ways of approaching solutions are maintained</li> <li>Wisdom of experience in older age - &gt; better approaches to some problems than in some younger individuals.</li> </ul>	New problems take longer to figure out <ul> <li>Problems not encountered during life experience</li> </ul>
Processing speed	Ability to process and perform activities remains	<ul> <li>Processing speed decreases</li> <li>More time needed for brain to take in information and formulate an appropriate response, such as a movement or verbal answer</li> <li>More challenges with complex tasks requiring a lot of quick information processing</li> <li>For example, driving requires the brain to continually notice and process a lot of information and quickly formulate an appropriate response</li> </ul>





Serious problems	Asking the same questions over and over again	Gettii in famili	ng lost ar places	Not being able to follow instructions
with				
memory or	Becoming confused about time, people, and places	Forg how to ma or use the	etting ake change telephone	Difficulties with driving
cognition				
make it hard to do everyday	Nottaking care of yourself	Makir decisi judgmen the	ng poor ons or its a lot of time	Misplacing things often and not being able to find them
things.	Trouble conver forgetting of every	e having a sation or g the names day objects	Changes in ha	n long-held bits



## Risks to Overall Health Are Also Risks for Brain Health

- Smoking
- Drinking too much alcohol
- Undiagnosed or untreated diabetes, heart disease, high blood pressure, other health problems
- Risk of head injury
- Social isolation and little social activity
- Untreated depression
- Poor diet
- Insufficient sleep
- Lack of physical activity



## Treatable Medical Conditions That May Cause Memory Changes

- Vitamin deficiency, such as B12
- Tumors or infections in the brain
- Some thyroid, kidney, liver disorders
- Medication side effects individual or combination of medications, or combined with alcohol
- Insufficient sleep or sleep apnea
- Untreated depression

# Sleep Apnea



#### Short pauses in breathing while sleeping

#### Increases the risk of:

- High blood pressure
- Heart attack
- Heart failure
- Stroke
- Diabetes
- Accidents
- Memory loss

#### Signs include:

- Restless sleep
- Loud snoring (with periods of silence followed by gasps)
- Falling asleep during the day
- Morning headaches
- Trouble concentrating
- Irritability and moodiness
- Forgetfulness

#### Treatment

- Begins with lifestyle changes
- Special devices ordered by doctor may help

### Depression in Older Adults



#### Not a normal part of aging

- Increased risk for older adults
- Often misdiagnosed and undertreated

#### Symptoms – may appear different in older adults

- Last for 2+ weeks
- Feelings of sadness may not be main symptom
- Being more irritable or grumpy than usual
- Tiredness, fatigue or decreased energy
- Difficulty sleeping, early-morning awakening, or oversleeping

#### Other symptoms include

- Lack of motivation or an empty feeling
- Difficulty focusing, remembering, or making decisions
- Loss of interest in activities previously enjoyed
- Eating more or less than usual
- Feeling guilty, helpless worthless or hopeless
- Aches or pains, headaches, cramps, or digestive problems without a clear physical cause and/or that do not ease with treatment
- Having thoughts of harming self call 911 in an emergency

#### Symptoms can overlap with dementia symptoms

- However, with depression it's treatable and memory improves
- Talk with doctor
- Medication side effects may include depression symptoms
- Medication for depression
- Talk therapy with a counselor
- Talk with family or friends about how you are feeling
- Physical exercise

## Mild Cognitive Impairment

More cognitive changes than expected with aging but fewer than dementia	<ul> <li>Compared to others of the same age and education</li> <li>Changes noticeable by family or friends</li> </ul>
Abilities and strengths remain	<ul> <li>Changes are not severe enough to significantly interfere with daily life and usual activities</li> <li>Still able to perform daily activities such as managing the household, medications, and financial matters</li> </ul>
No single cause	<ul> <li>Often develops from the same (but fewer) brain changes as other types of dementia</li> </ul>
Symptoms over time	<ul> <li>May stay the same</li> <li>Higher risk for developing dementia: 10-15% compared to 1-3% of older adults each year</li> </ul>
Changes in cognition include	<ul> <li>Short term memory problems</li> <li>Forgetting things more often, such as going to events or appointments</li> <li>Losing belongings more often</li> <li>Challenges with learning and remembering new information</li> <li>Having more trouble coming up with words</li> <li>Losing the thread of conversations, books or movies</li> <li>Feeling more overwhelmed by making decisions, planning steps to accomplish a task or understanding instructions</li> <li>More impulsive or increasingly poor judgment</li> <li>May also notice: depression, irritability, anxiety, apathy</li> </ul>

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## What Is Dementia?

- General term for symptoms
- Many different causes of physical changes in the brain
- Significant problems with cognitive function
  - Memory
  - Reasoning
  - Problem-solving
  - Controlling emotions
  - Learning new information
  - Language skills
  - Visual perception
  - Attention
  - Personality changes
- Interferes with daily life, activities and relationships





# Alzheimer's Disease





# Vascular Dementia

• Approx. 10% of dementia diagnoses How common is it? • Could be up to half of dementia diagnoses Typical age • Age 60-75 of onset • May appear suddenly • Changes in language • Impaired judgment or ability to make decisions Early symptoms • Difficulty planning or organizing • Changes in movement, such as slow gait or poor balance • Depends on where in the brain the damage occurred **Medication concerns**  Alzheimer's medications often used • Blood vessel blockage or damage causes strokes (or infarcts) or bleeding in the brain • Location, number and size of brain injury determines effects Changes in the brain caused by • Previously known as as multi-infarct or post-stroke dementia • Infarct means a small localized area of dead tissue resulting

from failure of blood supply

# Frontotemporal Dementia (FTD)





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Dementia	with Lewy Bodies
How common is it?	• Approx. 10% to 15% of dementia diagnoses
Typical age of onset	• After age 60
Early symptoms	<ul> <li>Memory loss</li> <li>Changes in movement, such as slowness, gait changes, balance challenges</li> <li>Fluctuating confusion</li> <li>Visual hallucinations (seeing things that aren't really there)</li> <li>Sleep disturbances</li> </ul>
Medication concerns	<ul> <li>Anesthesia, antipsychotic medications may be contraindicated</li> <li>Alzheimer's medications may be used</li> </ul>
Changes in the brain caused by	• Lewy bodies - abnormal aggregations (or clumps) of the protein alpha-synuclein - in the cortex leads to dementia

# **Mixed Dementia**

How common is it?

Early symptoms

Approx. 10% to 15% of dementia diagnoses
Could be up to half of dementia diagnoses

- More than one cause of dementia occurs in the brain at the same time
- Mix of symptoms
- It may not be clear exactly what symptoms are coming from which type of dementia

Most common types

- Alzheimer's Disease & Vascular Dementia
  Alzheimer's Disease & Dementia With Lewy Bodies
- Alzheimer's Disease & Vascular Dementia & Dementia With Lewy Bodies





### What can I do if...

I'm worried about my memory or cognition?

- Make an appointment with your doctor
- Annual Medicare wellness visit includes
   assessment for changes in cognition
- Once you know the cause, you can get the right treatment
- It could be a medical condition and with treatment, the changes in thinking can improve
- If it is something more serious, you will know what is causing it and take the next steps to get help and support



# How Is Dementia Diagnosed?

- Is there an underlying treatable condition?
- Medical history
- Physical exam
- Lab tests
- Cognitive and neuropsychological tests
- Psychiatric evaluation
- Brain scans (CT, MRI, PET)



### What Can I Do to Promote Brain Health?

Take care of overall health

Safe physical activity

Eat healthfully

Have fun & stay socially connected

Brain exercise

Strategies to support new learning

**Consider combining one or more of these!** 



# Take Care of Overall Health

- Regular doctor well-check visits
- Get recommended health screenings
- Help with medication side effects and possible interactions
- Depression screening & treatment, if needed
- Ask about how to improve sleep
- Ask for help with managing health problems like diabetes, high blood pressure, and high cholesterol
- Quit smoking & reduce alcohol consumption

# Safe Physical Activity

### Ask your doctor what is safe for you

- Start small & slow
- Walking or chair exercise may be a good start
- Incorporate aerobic, strength, and stretching when you feel ready
- Work up to 30 minutes on most days

### **Possible benefits**

- May play a role in reducing risk of dementia
- Improve connections among brain cells
- Improve heart health and circulatory system health
- Reduce risk of diabetes and stroke
- Help with depression
- Prevent falls
- Support independence in day to day activities





# Eat Healthfully

Less solid fat, sugar, salt

Low-fat or non-fat dairy products

Lean meats & poultry

Healthy fats – olive oil, nuts, seeds

Fish & seafood

Whole & unprocessed grains

**Fruits** 

Vegetables



# Have Fun and Stay Socially Connected







# **Brain Exercise**

### Qualities

- Learn new things
- Enjoyable and personally relevant
- Challenging but doable

### Ideas to try

- Play games
- Do puzzles
- Read and discuss books or magazines
- Watch an educational video or sporting event and talk about it with a friend or family member
- Go on a virtual tour of a museum

## Strategies to Support New Learning

**Memory tools** 



Calendars, to do lists, notes, pill box

Take more time to actively process new information

**Follow a routine** 

Putting frequently used objects in the same place

**Come up with your own cues and strategies** 



# How to Get Started...

- Choose one thing that you can do to promote brain health
- Think of small steps where it's easy to feel successful
- How can you combine benefits for brain health?
- Consider:
  - Taking a 10-minute walk a few times a week
  - Adding one serving of vegetables each day
  - Making an appointment for a physical exam or well-check
- Write down what you will do and when
- Get support from family & friends
- Notice how you feel when you succeed and celebrate small victories!

## It Can Be Challenging to Get Help...

Difficult to talk about

Lack of insight into own cognitive changes

How will going to the doctor help?

Fear of losing independence

What if I'm diagnosed?

How is getting a diagnosis helpful?



## We at AGE Are Here to Help!

### Answer questions & provide information



Referrals to community resources

Care partner support & education

Small group virtual activities for people living with changes in memory or cognition

"I enjoy being in a group that is not judgmental, where I feel at e and supported, in a beneficial environment. Out in the commun people say, why don't you remember? That doesn't happen her

"l enjoy
exchanging
ideas and
belonging."

"I feel that I'm not alone, there are others facing it too."



"This is a community of understanding and support... comradery."





## THANK YOU! K.C. Lawrence, LMSW **Memory Connections Program Director** klawrence@ageofcentraltx.org 512-45<u>1-4611 x236</u>



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