



Lecture 7

Companion Workbook

**EVIDENCE-BASED
METHODS
FOR IMPROVING
*Your Memory***



The EAR & BRAIN

CONNECTION...

3X

“A lot of people ignore hearing loss, because it's such a slow and insidious process as we age. Even if people feel as if they are not affected, we're showing that it may well be a more serious problem.”

—DR. FRANK LINN, JOHNS HOPKINS MEDICINE

Audiology of the Sandhills



KATE TUOMALA
M.A., CCC-A, F-AAA
Owner/Founder

**For a Hearing
Evaluation & Consultation,
Call Us Today!**

2X

Those with mild hearing loss are **TWICE** as likely to develop dementia.

Those with moderate hearing loss are **THREE TIMES** as likely to develop dementia.

5X

Those with severe hearing loss were nearly **FIVE TIMES** as likely to develop dementia.

1902 N Sandhills Blvd | Suite K | ABERDEEN
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910-969-9005

Welcome to Lecture 7

There is no greater threat to your time, money and hope in the so-called “brain fitness” industry than supplements and games that promise to enhance memory and even stall or reverse neurodegenerative diseases, like dementia. I stand with many other brain scientists that contend that these exaggerated and misleading claims are not based on objective science and prey on your anxiety. In “Lecture 7: Evidence-based Methods for Improving Memory,” you will be given the two most powerful defenses against these threats: education and empowerment.

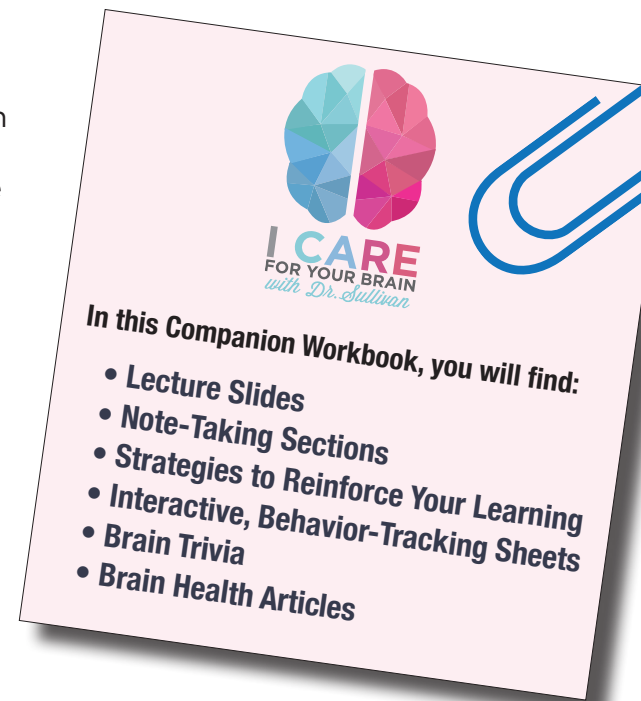
We will start with an in-depth discussion of exactly what memory is and explore the complexities beyond the simple act of remembering. This is the first step in understanding how ineffective one unregulated pill can be up against a powerhouse like the brain.

We will then review the top four memory complaints that are a part of normal aging, which I hope will reassure many of you and reduce that stubborn stereotype that senility is an inevitable part of aging. This knowledge is crucial, because without anxiety, corporations hawking their memory products can no longer use your fear as a marketing tactic to manipulate you.

Evidence-based recommendations that actually work to improve memory are at the heart of this lecture. This is where the empowerment comes in! I will teach you the most scientifically supported strategies to help you actively compensate for what may no longer be effortless. My hope is that after this lecture you will know exactly what to do, and you will confidently pass by those bottles of false hope and promise in the drugstore aisles with a twinkle in your eye that says, “You didn’t trick me!”

Thank you for allowing me the privilege of being here with you. Are you ready? Let’s begin!

Dr. Karen D. Sullivan





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I CARE FOR
YOUR BRAIN
with Dr. Sullivan
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(Cut these out and place on your refrigerator door, mirror or
anywhere you would like to inspire and motivate your positive
lifestyle changes for optimal brain health.)

I CARE FOR YOUR BRAIN

was founded on the belief that successful cognitive aging is more than just brain health. It is a multi-dimensional concept that in addition to being brain-based is also rooted in physical health, social and spiritual connectedness, and vital engagement in life.

It is a state-of-the-art, brain-centric education program for the 50+ crowd delivered in an engaging, easy-to-understand style that is motivating for action!

Through two interactive communities (in-person and online), Neuropsychologist Karen D. Sullivan, PhD, ABPP, provides scientifically-based information on what brain scientists know are the pillars of brain health and evidence-based recommendations in a series of nine lectures. Dr. Sullivan provides you with clear, proven action steps you can take to immediately start to truly care for your brain.

**Sign up online today
at www.ICFYB.com.**

Watch Dr. Sullivan's
Facebook LIVE Mini
Brain Health Lectures



**JOIN our FREE
Facebook
Community Today!**

THINK
like a
**BRAIN
SCIENTIST!**

I CARE
FOR YOUR BRAIN
with Dr. Sullivan

**“Thank you for your
help understanding
my brain health.”**

**What
will you
say?**

Let's get started!

MENTAL STRATEGIES FOR IMPROVING MEMORY

BY KAREN D. SULLIVAN, PHD, ABPP

15 INTERNAL MEMORY SUPPORTS

Remember, in normal aging, a mild decline in attention and rapid recall are expected. You can learn to actively compensate with the internal and external mental strategies discussed during the lecture and these other scientifically proven techniques:

- 1** Make sure your hearing and vision are optimized when you are trying to learn.
- 2** Study new information when rested, well-fed and relaxed.
- 3** Focus intently on the task at hand, and reduce distractions.
- 4** Break learning down into small pieces, and study it periodically throughout the day.
- 5** Paraphrase important information in your own words.
- 6** Visualize the information for multi-sensory processing.
- 7** Talk to yourself aloud as you do something, like putting your keys down on the table.
- 8** Repeat, repeat and repeat to drill new information into memory.
- 9** Add in an emotional element to increase meaning and salience.
- 10** Relate to-be-learned information to an area of your personal expertise.
- 11** Don't panic when you cannot instantly recall something.
- 12** Become an active listener. (See the checklist on Page 57).
- 13** Ask for a clue or a reminder from your listener to spark retrieval.
- 14** Use a checklist for multi-step tasks to keep memory on track.
- 15** Review important information before sleeping for better memory consolidation.



10

EXTERNAL MEMORY SUPPORTS

Use
what works
for you!

1 CALENDAR: Keeping track of appointments and events with a calendar becomes a necessity for most normally aging older adults. The key is to use it consistently. You can opt for a paper one placed in a frequently traveled place in your home, or go digital and use the one built into your smartphone.

2 POST-IT NOTES: Brightly colored post-it notes can help alert you to something important that needs to be done or an appointment you don't want to miss. Put one on the inside of your door as a reminder to do something before you leave the house or while you are out and about.

3 ALARM CLOCKS: Alarm clocks can be a great, free way to remind yourself of an appointment or event, or even to make sure you are drinking enough water.

4 WHITE BOARD: Install a white board in a frequently visited spot in your house to remind yourself about your daily schedule.

5 MEMORY BASKET: Set up a brightly colored basket by your front door and develop the habit of leaving important objects, like your keys, in it for ease of retrieval.

6 PILLBOX: If your medication regimen is complicated or if you have a history of not remembering to take your pills every single day, you would benefit from a pillbox. This can either be a traditional plastic one from the drugstore or an electronic dispenser that sounds a visual or sound alarm when you need to take your pills (MedMinder is a good brand).

7 APPS: If you are a smartphone person, using reminder apps can be a great way to support memory. Many people find these free apps to be helpful: Wunderlist lets you create different lists of to-be-done activities; Evernote lets you set reminders, which appear when you need them; and Knome can help with remembering new people as you can upload pictures and explanations of how you know them.

8 OBJECT LOCATOR: If you spend too much time searching for your wallet, keys or glasses, you might consider an object locator ("Tile" is a good brand). These are small stickers or key rings that attach to items with a tracking device that will beep when you press a corresponding button on either your phone or a base.

9 GPS ROUTE FINDERS: A global position system (GPS) route finder can not only help you pick the quickest route to get to a new place but also provide a back-up in case you find your self unsure about how to get to your destination.

10 ASK A FRIEND/FAMILY MEMBER: Asking a trusted person help you remember something important like a loved one's birthday can help reassure you that you won't forget.

REDUCE Your PAIN for a Better MEMORY

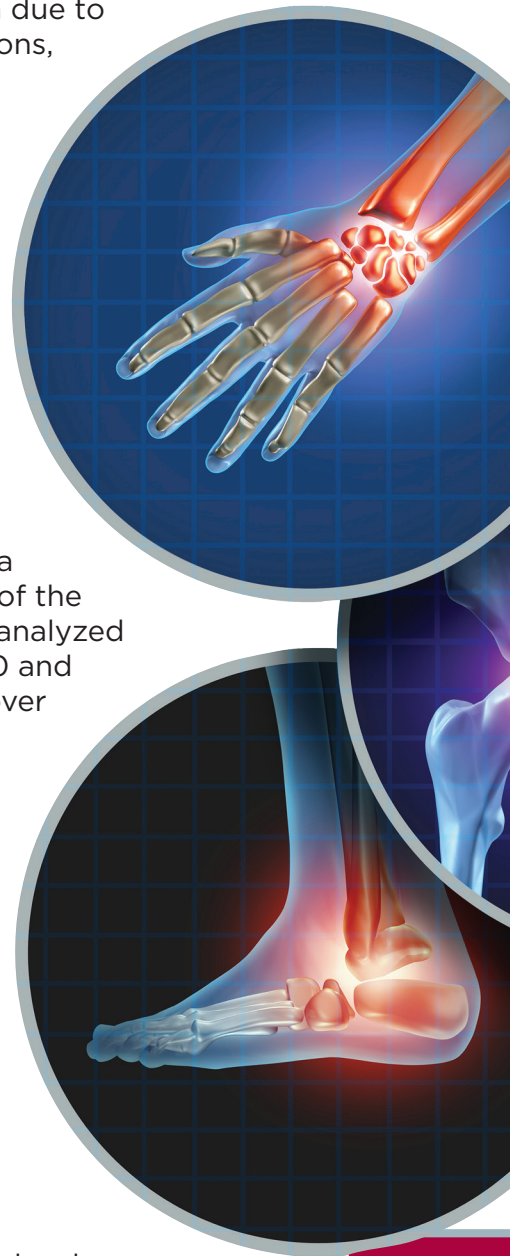
BY
KAREN D.
SULLIVAN,
PHD, ABPP

It is estimated that one in three older adults lives with chronic pain due to common age-related conditions, such as osteoarthritis and peripheral vascular disease. Chronic pain is defined as an unpleasant physical sensation that lasts more than three months and reduces daily functioning and well-being.

In the last few years, neuropsychologists have recommended that the impact of chronic pain should be broadened to include cognitive function, specifically its impact on memory. In 2017, a study published in the *Journal of the American Medical Association* analyzed data from 10,000 adults age 60 and older, living with chronic pain over a 10-year period (Whitlock et al., 2017). Those who reported moderate to severe levels of pain had a more rapid cognitive decline than their counterparts who reported no or mild daily pain levels, as measured by an almost 10 percent drop on standardized memory tests. The increase in memory impairment was not thought to be medication related, as those taking opioid painkillers or anti-inflammatory drugs (i.e. ibuprofen) had nearly the same level of risk.

So, how then does chronic pain impact memory? Neuropsychologists think there are three primary ways.

Pain is Distracting: Pain can be consuming, and the human brain has a limited amount of attentional resources. Most of us can manage about seven active topics in our minds in youth and middle age; however, this number can reduce to five to six once we enter our 60s or 70s. Chronic pain can divert enough of our attention that our ability to learn new information, and consequently, make new memories is impaired.





Pain is Stressful: Pain activates the body's stress-hormone pathway—the hypothalamic-pituitary-adrenal axis—and its release of cortisol, which is a powerful anti-inflammatory endocrine hormone that is designed to rally physiological reserves in short bursts. When pain is chronic, cortisol secretion can become prolonged, leaving our stress response system in the “on” mode. When high levels of cortisol are present in the body, the brain prioritizes fear-based memories for the benefit of survival and at the expense of our ability to make a wide-range of memories. This means not all new experiences are made into memories, and those that do get made are more likely to be negative.

We Lose Sleep: Pain can significantly interfere with sleep quality, particularly in older adults (Magni, Marchetti, Moreschi, Merskey, & Luchini, 1993). Those older than 65 with chronic pain report being highly uncomfortable at night, which results in difficulty staying asleep for long periods throughout the night. Disrupted nighttime sleep causes greater daytime fatigue, reducing our mental acuity and decreasing the deep stages of sleep, particularly REM sleep, which is an established cause of memory dysfunction. During deep sleep, our brain's memory centers—hippocampus and frontal lobes—review the day's events and decide which information should be moved into long-term memory storage.

TYPICAL PAIN RELIEVERS

Last 100 years

- Anti-inflammatory Drugs
- Muscle Relaxants
- Opiates
- Sedatives

Last 30 years

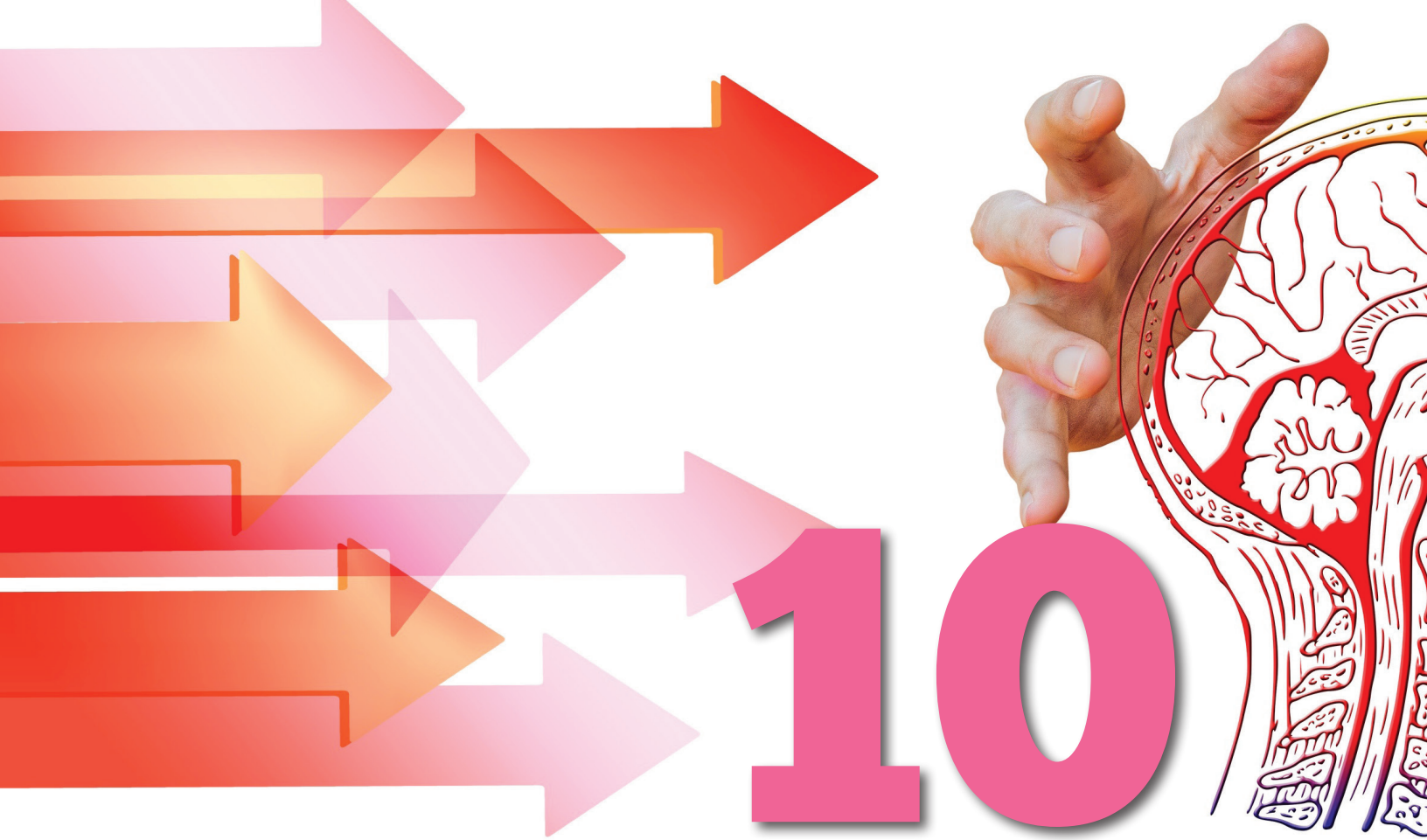
- Epidural Injections
- Exercise
- Hot and Cold Therapy
- Physical Therapy
- TENS Unit
- Topical Rubs

Last 15 years

- Biofeedback
- Cognitive Reframing
- Deep Breathing
- Distraction
- Guided Imagery
- Hypnosis
- Massage Therapy
- Relaxation

REFERENCES:

- Magni, G., Marchetti, M., Moreschi, C., Merskey, H., & Luchini, S.R. (1993). Chronic musculoskeletal pain and depressive symptoms in the National Health and Nutrition Examination. I. Epidemiologic follow-up study. *Pain*, 53(2):163-8.
- Whitlock, E. et al (2017). Association between persistent pain and memory decline and dementia in a longitudinal cohort of elders, *JAMA Internal Medicine*;177(8):1146-1153.



10

THINGS YOU NEED TO KNOW ABOUT CONCUSSION

Concussion is a mild form of traumatic brain injury and common cause of transient memory loss in older adults, most commonly due to a fall. When the head is hit or jolted with substantial force, the brain moves back and forth rapidly in the skull, which can cause a focal or diffuse injury. A concussion occurs when someone briefly loses consciousness (“knocked out,” “blacked out”) or feels acutely confused and/or disoriented (“seeing stars,” feeling like you got your “bell rung”).

Concussions can cause a variety of symptoms, including physical (headache, nausea, dizziness, fatigue), sensory (sensitivity to noise and light), cognitive (confusion, trouble concentrating, slowed thinking, memory loss) and emotional issues (irritability and depression). These symptoms typically resolve within a few weeks, or at most, three months. Keep this list handy to help you best respond to a concussion if you or a loved one should unfortunately sustain one.

1 KNOW WHEN TO SEEK EMERGENCY CARE:

Symptoms that involve a prolonged loss of consciousness/responsiveness, extreme nausea, severe headache, glossy eyes, weakness, vomiting or a significant worsening of symptoms require emergency care, as they may be signs of brain swelling or bleeding, the most serious physical consequences of concussion. Only a physician and a CT scan of the head can rule these out.

2 EFFECT OF BLOOD THINNERS:

Even a minor bump on the head can be dangerous for people taking blood thinners, such as Warfarin (Coumadin) or daily aspirin. Even small bleeds in the brain are concerning. These people should be evaluated in emergency care, even when they do not have any symptoms.



BY KAREN D. SULLIVAN, PHD, ABPP

3 TRAUMA GETS WORSE WITH AGE:

Just like our bones are at risk for more damage following a fall as we age, so are our brains. Recovery may also be slower among older adults and require specialized medical care by providers with expertise in geriatrics.

4 MEMORY SYMPTOMS ARE NORMAL, AT FIRST: Almost everyone with a concussion experiences memory symptoms, including memory lapses before, during or immediately after the event, and difficulty remembering recent information. If these symptoms persist beyond a few weeks, it's time to be evaluated.

5 THE POWER OF REST:

In the first week following a concussion, it is essential to let your body and brain rest. Treat yourself as if you have the flu. Get extra sleep, eat well, avoid significant exertion and gradually return to your daily activities. If symptoms persist beyond three months or worsen at any point, talk to your doctor.

6 THERE ARE NO MEDICINES FOR CONCUSSION: There are no medications to treat the concussion injury, but there are medications to ease the symptoms, like headache, nausea, dizziness or pain, while you recover.

7 TRY TO AVOID A SECOND CONCUSSION WITHIN THE NEXT FEW WEEKS:

Avoid situations that could lead to another concussion before the first one heals. A second concussion can lead to "Second Impact Syndrome," which is a very rare condition, causing rapid and severe brain swelling and often devastating outcomes, including death.

8 FALL PREVENTION:

Use your walker or cane consistently, if your doctor has made the recommendation. Regular cardiovascular exercise helps to maintain balance, muscle tone and pulmonary health, all of which are essential to remaining fall-free in older adulthood. Physical therapy can improve balance and strength, and it is also important to wear sensible shoes with a gripped sole.

9 TALK TO YOUR PRIMARY CARE PHYSICIAN ABOUT YOUR CONCUSSION HISTORY:

In general, a history of multiple concussions, even if spaced over years, can cause serious long-term problems, including chronic headaches, poor balance, poor concentration and an increased risk of developing dementia, so it is imperative to discuss your medical history with your PCP.

10 EVALUATION WITH A CONCUSSION SPECIALIST:

Research tells us that high-quality education about symptoms and what to expect is critical for an optimal recovery.

Lecture 7

EVIDENCE-BASED METHODS FOR IMPROVING *Your Memory*

- Lecture series focused on the brain health of older adults
- Evidence-based information and recommendations
- Supported by science and unbiased clinical expertise
- Motivating you to action!

Slide Presentation Begins



LEARNING TOPICS

- 🧠 Memory is complex
- 🧠 Normal memory changes in the aging brain
- 🧠 The memory market: Buyer beware!
- 🧠 The bottom line on supplements, brain fitness and brain training
- 🧠 I CARE FOR YOUR BRAIN
Recommendations

WHY IS THIS TOPIC IMPORTANT

- In the past 10 years, there have been more than 20 failed drugs for dementia, making prevention and active resistance your best bet to ensure brain health.
- Experts argue that exaggerated or misleading claims “exploit the anxiety of older adults for commercial purposes.”
- So-called “smart drugs” to enhance how the brain works have consistently failed and may be unsafe. Despite this fact, we continue to buy.
- There are things you can do that really help memory and are 100% free!

NOTES

[illegible]

WHY THE DRAMATIC INCREASE IN MEMORY PRODUCTS?

- The number of Americans older than 65 will double over the next 25 years, with an estimated population of 71 million by 2030.
- We are very afraid of dementia. Listen to the language used in the media: “An epidemic looming” and “Dementia time bomb.”
- In a 2007 survey of 1,037 older Americans, memory loss was the No. 1 fear, more so than a fear of being buried alive, fear of snakes, and fear of a terrorist attack. The American Psychological Association has predicted that dementia-related anxiety is on the rise and will become its own clinical disorder.

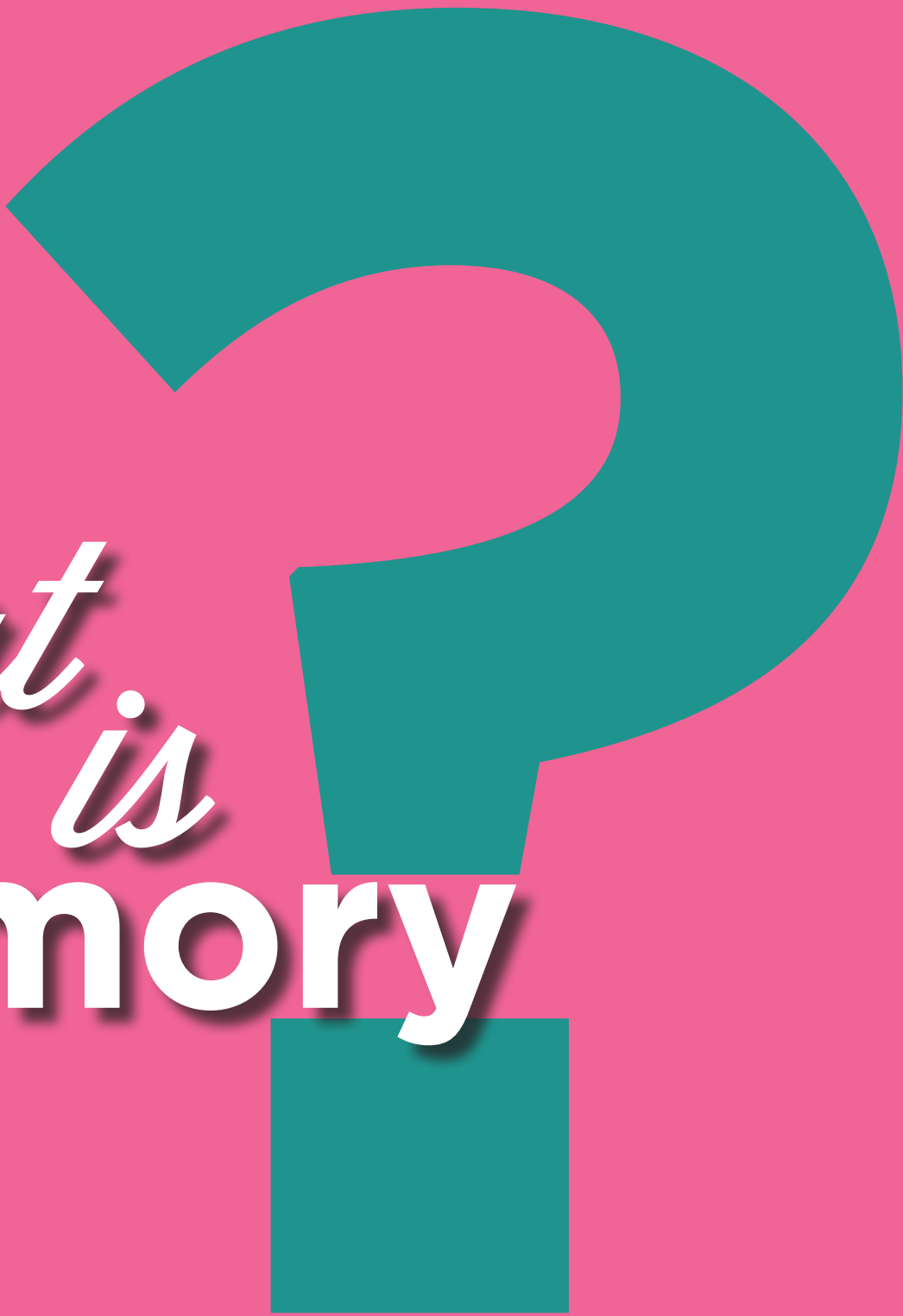
NOTES

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“MEMORY-BOOSTING” SUPPLEMENTS
ARE PART OF A \$140 MILLION DOLLAR
PER YEAR INDUSTRY.

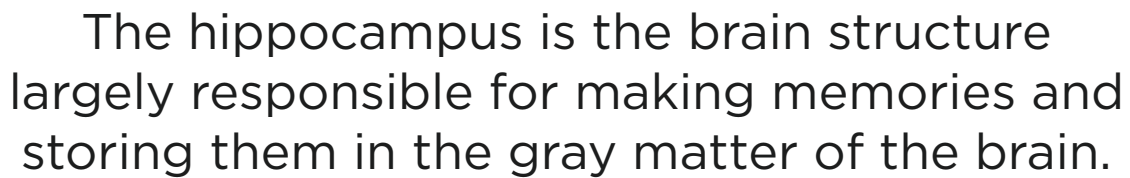
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Increasing knowledge and understanding of what dementia is and what types of (brain) changes are a normal part of aging, as well as teaching compensatory strategies to improve cognition and self-efficacy, is critical to the mental health and well-being of older adults."



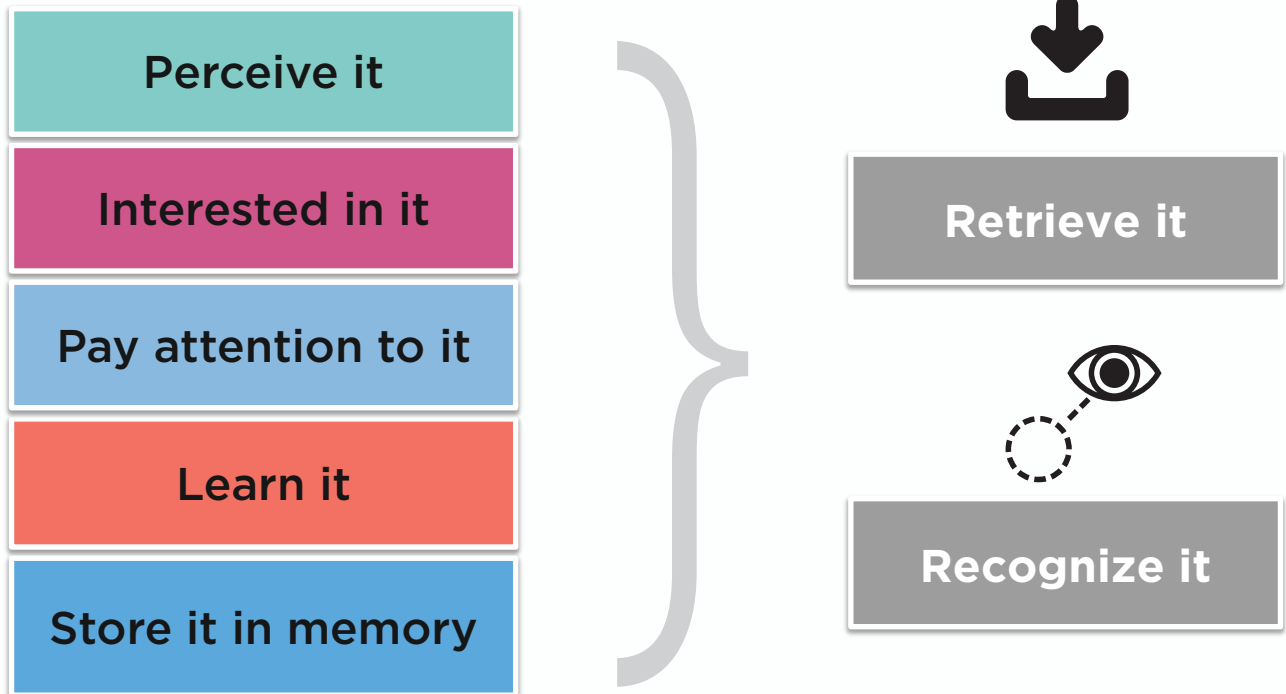
*What
is*
Memory

**The ability to recall
information when we need it.**

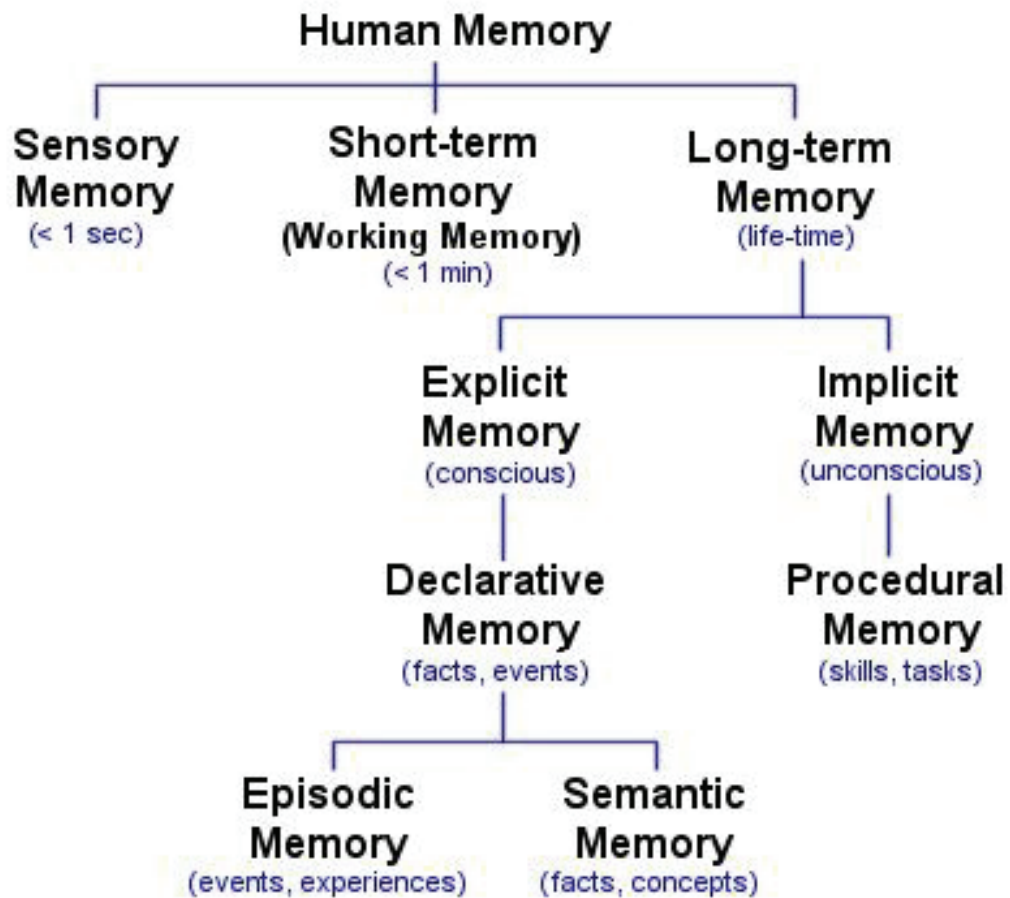


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MEMORY IS COMPLEX



NOTES



NOTES

**Our attention span is limited;
average is seven “slots.”**

[illegible]

Most typical
“NORMAL”
Memory
Complaints
of older adults



A bright, modern kitchen with white cabinetry, a stainless steel oven, and a large window with a view of trees. A wooden dining table is in the foreground.

Courtesy of Aaron Nelson, Ph.D., ABPP

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

A large parking lot filled with many cars, mostly white and silver, parked in rows. The cars are densely packed, and the perspective shows them receding into the distance. The lighting suggests it might be late afternoon or early morning, with long shadows.

Courtesy of Aaron Nelson, Ph.D., ABPP

[illegible]

WHY AM I ALWAYS LOSING THINGS? SYNDROME



Courtesy of Aaron Nelson, Ph.D., ABPP

NOTES

[illegible]

WHAT'S YOUR NAME AGAIN?

DISORDER

The image displays four name tags arranged in a 2x2 grid. Each tag has a distinct color: red (top-left), blue (top-right), green (bottom-left), and purple (bottom-right). The word 'HELLO' is printed in large, bold, white capital letters at the top of each tag. Below it, the phrase 'My name is' is written in a smaller, white, sans-serif font. The bottom half of each tag is a solid white space, intended for a child to write their name. The tags have rounded corners and a slight drop shadow, giving them a three-dimensional appearance.

NOTES

[illegible]

The **MEMORY** Market



\$ MEMORY MEDICATIONS \$

PRESCRIPTIONS	SUPPLEMENTS
<p>For people diagnosed with some types of dementia</p> <p>Increases the amount and duration of action of the brain chemical acetylcholine</p> <p>Donepezil Galantamine Rivastigmine</p> <p>Regulates the activity of glutamate</p> <p>Memantine</p>	<p>Some single ingredients have minor support</p> <p>Limited evidence to support claims of efficacy</p> <p>Too early to predict whether they are safe</p> <p>No current evidence provided by rigorous double-blind placebo-controlled clinical trials that any of these substances can improve memory</p>

NOTES

[illegible]

Supplements for mind and memory:

How good is the evidence

Supplement	Vitamin B6, B12, folic acid	Vitamin E	Vitamin C	Coenzyme Q10	Huperzine A	Ginkgo biloba	Fish oil	Curcumin	Coconut oil
Good evidence that it prevents cognitive decline or dementia	x	x	x	x	x	x	x	x	x
Good evidence that it treats cognitive decline or dementia	x	✓	x	x	x	x	x	x	x

There remains an overall lack of trustworthy evidence from well-designed, scientific clinical trials. The best evidence comes from large randomized clinical trials designed to determine if certain supplements, like vitamin E, prevent or treat age-related mental decline or previously diagnosed Alzheimer's disease (dementia).

Harvard Men's Health Watch, 2012

NOTES



GINKGO BILOBA

In 2015, Americans spent about \$91 million on ginkgo biloba primarily to improve memory (Nutrition Business Journal).

In 2008, the Journal of the American Medical Association followed more than 3,000 people age 75 or older over six years. Half were given 120 mg doses of the herb twice a day, while the others took a placebo = no results.

Bottom line: Ginkgo biloba doesn't appear to decrease dementia.



NOTES

A circular image showing ginger root, ginger powder, and turmeric powder in white spoons on a wooden surface. The image is framed by a circular border with two overlapping red circles on the right side. The ginger root is in the background, and the powders are in the foreground. The turmeric powder is bright yellow, and the ginger powder is light brown. The wooden surface is light-colored with visible grain.

“Findings were often hyped up and incorrectly translated in the media.” –Journal of Medical Chemistry

NOTES

FISH OIL SUPPLEMENTS

Several observational studies have shown a link between higher blood levels of the oil's omega-3 fatty acids and a decreased risk of dementia.

A recent study of 185 seniors aged 80 and older published in the Journal of Alzheimer's Disease found that people who scored better on a 10-minute cognition quiz had higher blood levels of omega-3 fatty acids.

But a 2012 Cochrane Library review of data from three clinical trials with data from 3,536 people over age 60 who took fish-oil supplements for six to 40 months found that they did not improve cognitive function (Sydenham, et al).



Bottom line: Too soon to tell. Ideally, eat fish!

NOTES

[illegible]

COCONUT OIL

Theory: Coconut oil is rich in medium-chain triglycerides, which are metabolized differently than most fats and break down into ketones and used by the brain as “secondary” fuel.

“Treats/prevents Alzheimer’s disease” “Improves brain health”

As of 2017, there is inadequate evidence to suggest that coconut oil is effective for treating any brain condition. No rigorous, large-scale research studies. Not approved by the FDA as a treatment for any kind of ailment.



NOTES

[illegible]



In 2017, the Federal Trade Commission and New York State Attorney General charged the marketers of the dietary supplement Prevacen with making false and unsubstantiated claims that the product improves memory, provides cognitive benefits, and is “clinically shown” to work.

The complaint alleges the marketers relied on a study that failed to show that Prevacen works better than a placebo on any measure of cognitive function.

“The marketers of Prevacen preyed on the fears of older consumers experiencing age-related memory loss, but one critical thing these marketers forgot is that their claims need to be backed up by real scientific evidence.”

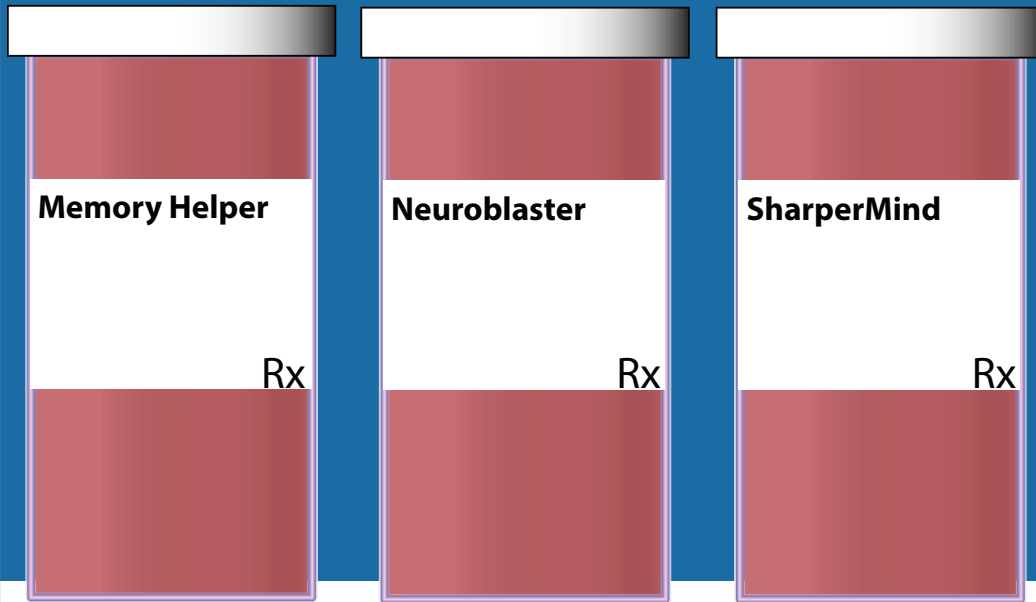
–Director of the FTC’s Bureau of Consumer Protection

“The marketing for Prevacen is a clear-cut fraud.”

–New York Attorney General

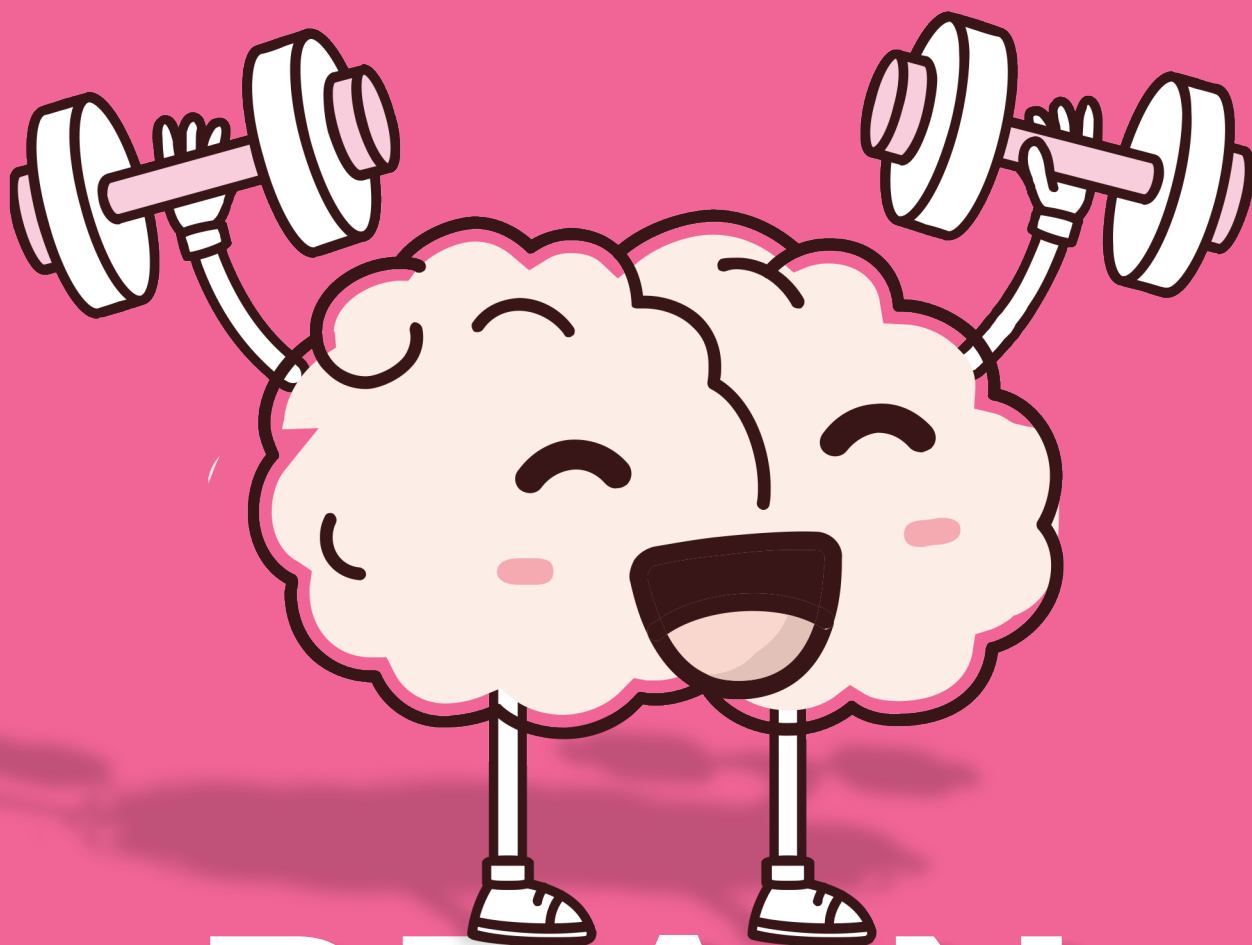
NOTES

ALL THE OTHER ONES...



NOTES

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. On the left side, there is a vertical red margin line. The paper appears to be part of a notebook or a binder, as evidenced by the binding edge on the left. There is no handwriting or other markings on the page.



BRAIN
Fitness

WE ARE LIVING IN THE ERA OF “BRAIN FITNESS”

- Video/computer games, phone apps and hand-held devices promise to enhance brain function and even reverse brain damage.
- An \$8 billion worldwide industry fueled by adults over 60
- Empirical support for the efficacy of brain fitness training programs in meaningfully improving cognition is generally insufficient.



NOTES

[illegible]

“NEUROBICS”

The belief that strenuous games, puzzles and brain teasers encourage the growth of new brain cells and enhance brain health just as aerobic workouts for heart health (Kelly, 2006).

A recent study in Nature evaluated 11,430 participants in a six-week program, found no transfer effects from the training tasks of brain fitness games to more general test performances (Owen, et al., 2010).

Meta-analyses have found no evidence that “brain fitness” intervention actually delays or slows progression to dementia (Papp, et al., 2009).

Bottom line: Brain training programs may marginally improve your ability to play the game, but do they generalize to real life?

NOTES

In 2014, 73 psychologists, cognitive scientists and neuroscientists from around the world wrote an open letter to companies marketing “brain games” stating they are exploiting customers by making “exaggerated and misleading claims” that are not based on sound scientific evidence.



“Our biggest concern here is that older people are making choices – both about how they spend their money and on how they spend their time – based on this kind of information that we feel is not well-grounded. It’s a serious concern, and it can feel like people are being exploited.”

NOTES



In 2016, federal investigators gave a \$50 million penalty for “false advertising” but the fine was suspended with a \$2 million payment because the company “cannot afford to pay.”

“Lumosity preyed on consumers’ fears about age-related cognitive decline, suggesting their games could stave off memory loss, dementia and even Alzheimer’s disease. But Lumosity simply did not have the science to back up its ads.”

**-Director of the Federal Trade Commission
Bureau of Consumer Protection**

Lumosity now says:

“Lumosity is not intended to diagnose, treat, cure or prevent any disease.”

NOTES



I CARE
FOR YOUR BRAIN
with Dr. Sullivan
Recommendations

**YOU CAN
IMPROVE YOUR
MEMORY IF YOU
APPLY THESE
GENERAL
PRINCIPLES
WITH EFFORT,
MOTIVATION
AND PRACTICE.**



NOTES

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. On the left side, there is a vertical margin line, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document. There is no handwriting or other markings on the page.

WEAR YOUR GLASSES AND HEARING AIDS EVERY DAY



WEAR YOUR GLASSES AND HEARING AIDS EVERY DAY



NOTES

TAKE AN INTEREST

Being actively interested means putting effort into what is in front of you.

Don't just receive information, engage with information.

Active listening involves:

- Asking questions and paraphrasing back to the speaker to clarify understanding
- Restrain yourself from reacting or judging what that person is saying
- Don't just wait for your turn to talk



NOTES

[illegible]

NOTES

- Turn off the TV, radio, etc.
- De-clutter a work area
- Are you hungry?
- Are you tired?
- Are you in pain?
- Are you anxious?
- If so, try again later!

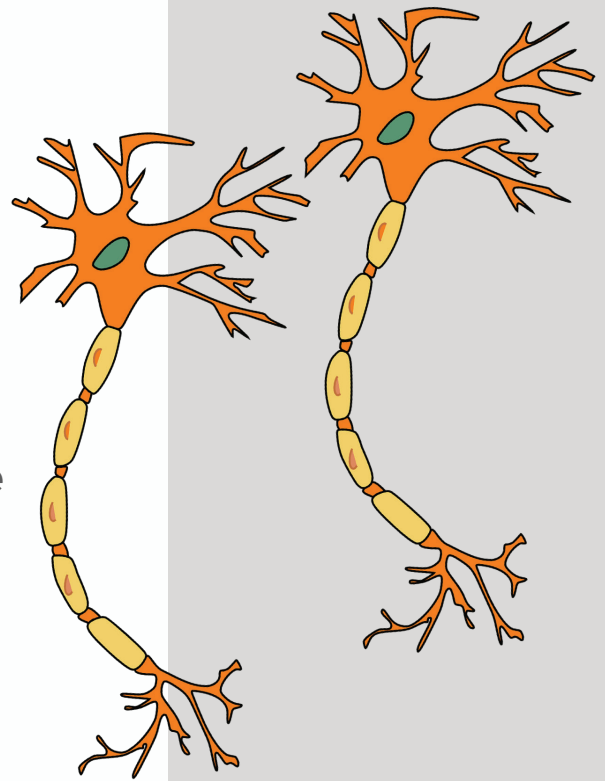
REPEAT INFORMATION AND MAKE CONNECTIONS

Just repeating information will improve your memory!

When you are having important conversations, repeat back what was said to make sure you understood.

Memory is improved when we make connections/associations between information.

The more we elaborate on what we are trying to learn with something we already know or are interested in, the stronger the brain connections.



NOTES

[illegible]

**Set yourself up for memory success every day
with internal and external strategies**

Internal

Strategies that come from within your own mind

Association
First letter method
Clustering

External

Strategies that come from outside yourself

Calendar Alarm

NOTES

[illegible]

THREE INTERNAL MEMORY STRATEGIES

The first letter method allows you to use an easily remembered acronym or abbreviation to help you

- 1) learn a large amount information and
- 2) recall information more readily.

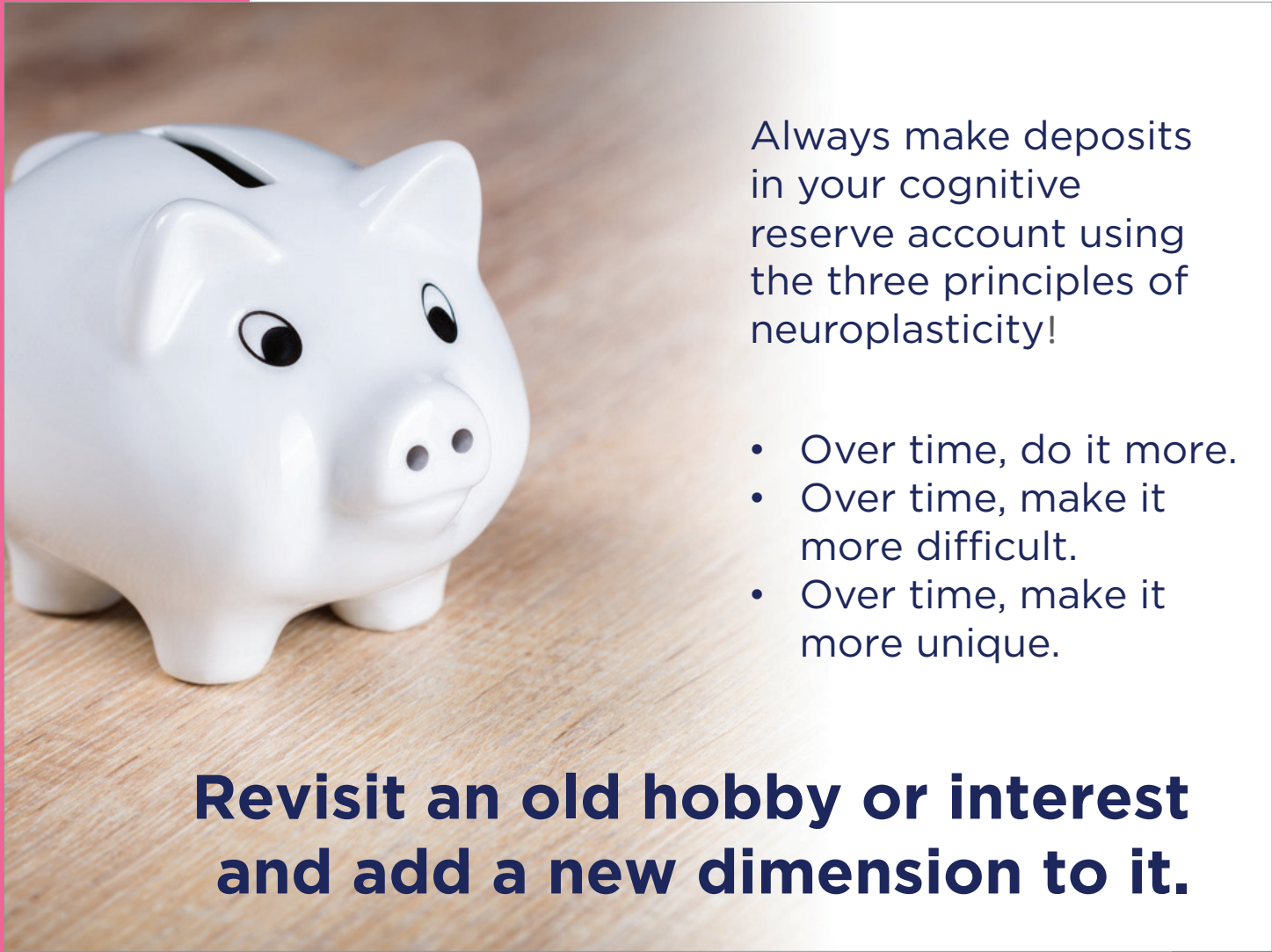
Can't think of word? Go through the alphabet.

Association: Pair a name with an interesting or unique fact.

Clustering: Involves organizing things into like groups. Reduces a large amount of information into easily manageable pieces and again, provides a “hook” when you are trying to recall the information.

NOTES

[illegible]



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GET MOVIN'!

Direct benefits on memory:

- Provides direct fuel to the brain (blood, oxygen and glucose)
- Reduces inflammation and insulin resistance
- Stimulates the release of growth factors in the brain that affect the health of brain cells and the growth of new blood vessels in the brain
- Appears to increase the size of the hippocampus, the brain's memory centers, after regular exercise of moderate intensity over 6-12 months

Indirect benefit on memory:

- Improves mood and sleep
- Reduces stress and anxiety

NOTES

[illegible]




Long-term: Over time, our body produces “stress hormones” that damage the memory centers in the brain.

*Look back over our notes
from Lecture 5!*

[illegible]

CONSIDER THE MIND DIET

Mediterranean Intervention for Neurodegenerative Delay Diet lowered their risk of developing Alzheimer's by as much as 53% in strict followers and 35% in moderate followers (Morris, et al, 2015).

- Green leafy vegetables - every day
 - Other vegetables - at least once a day
 - Nuts - every day
 - Berries - at least twice a week
 - Beans - every other day
 - Whole grains - three times a day
 - Fish - at least once a week
 - Poultry - at least twice a week
 - Olive oil
 - Wine - one glass a day
- 
- A collage of fresh fruits and vegetables, including green apples, broccoli, and cucumbers, arranged in a circular pattern on the right side of the slide.



NOTES

WE ARE WHAT WE THINK!

The way we think about ourselves and our abilities has a significant role in memory

Older adults do better on memory tests (and walk faster!) after they are shown positive words about aging: sage, wisdom, rather than negative words: senile, confused, decline, dementia (*Hausdorff, et al, 1999; Levy, 1996*)


Watch your words! Instead of saying, “I’m too old to remember that,” or “At my age, I’ll never remember that,” say something more positive that gives you control!



NOTES

[illegible]

SNOOZE TO STRENGTHEN MEMORY

- Sleep and memory have a complex relationship.
 - Research has shown that deep sleep plays a crucial role in memory formation, helps strengthen memories we've formed throughout the day, helps to link new memories to earlier ones.
 - Re-play the day to deduce the "learning/survival points."
 - As we age, sleep becomes lighter and more fragmented. Older adults over 60 have a 70% loss of deep sleep compared to young adults (*Walker, et al, 2013*).
- 
- A photograph of an older woman with short, wavy white hair, sleeping peacefully. She is wearing a white long-sleeved shirt and is lying down with her head resting on her hands, which are clasped together. Her eyes are closed, and she has a serene expression. The background is a soft, out-of-focus white, suggesting a bed or a clean, bright environment.



A presentation slide with a pink vertical bar on the left side. The word "NOTES" is written in white, uppercase letters on the pink bar. The rest of the slide is white with horizontal grey lines for writing.

**CONSIDER A
NEUROPSYCHOLOGICAL
EVALUATION**

Review of medical records

In-depth interviews

Paper and pencil testing

Best way to measure how the brain is working

Is it normal aging or something more?

Compare your abilities to your peers and own baseline

Personalized recommendations to improve memory

In-depth interviews

Paper and pencil testing

Best way to measure how the brain is working

Is it normal aging or something more?

Personalized recommendations to improve memory

Personalized recommendations to improve memory


This image shows a blank sheet of white paper with horizontal grey lines. On the far left, there is a solid pink vertical band. The word "NOTES" is written in white, uppercase letters at the top of this pink band.

PRACTICE ACTIVE LISTENING FOR IMPROVED MEMORY



Active listening is a set of skills that can be developed with effort and practice. It results from a conscious decision to fully engage with people and information. Active listening will not only improve your relationships by increasing rapport and trust, but it is also an evidence-based strategy to improve memory. Active listening requires focused attention, which after this lecture, you now know is the bridge to learning and memory.

Review the keys to active listening below and see how you measure up.

	DOING THIS NOW CONSISTENTLY	DOING NOW BUT NOT REGULARLY	NOT DOING/ NEED TO WORK ON
Wear your glasses and hearing aids every day			
Make sure you are listening when you are rested, well fed, hydrated, comfortable and calm			
Prioritize eye contact			
Slow down and listen intently			
Ask questions, and paraphrase back to the speaker what was said			
Accept pauses and short periods of silence without trying to “fill the space”			
When appropriate, share personal experiences that relate to show validation and understanding			
Summarize key points in your mind or to another person			



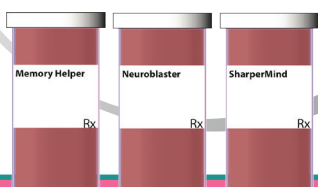
SMALL GROUP DISCUSSION TOPICS

- 1** Discuss your opinion on over-the-counter “memory boosting” supplements before and after this lecture.
- 2** How have you been affected by the four common memory complaints that happen in normal aging: “roomnesia,” “parkingnesia,” losing things and forgetting names?
- 3** Discuss a time when your memory was poor, because you were not paying close attention.
- 4** Do you feel less likely to believe “too good to be true” claims about “smart drugs” following this lecture?
- 5** Which evidence-based memory strategies will you use going forward?

This image shows a full page of blank white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

BUYER BEWARE

Be a More Informed Consumer of Brain Fitness Products



As an older adult, you are a prime target of the brain fitness industry's unscrupulous marketers, and I want you to have your guard up!

Remember, all over-the-counter "medications" and supplements are not evaluated by the Food and Drug Administration and can make unsubstantiated claims without any regulatory oversight. Their "too good to be true" claims are typically based on their own internally generated research and not published in peer-reviewed scientific journals.

I invite you to keep track of the "brain enhancing" products you come across in this tracker below. Evaluate their claims with a critical eye!

"Memory Boosting" PRODUCT

Can You Spot the False Claim or Marketing Ploy?

1	<input type="checkbox"/> Not FDA Approved <input type="checkbox"/> Miracle Results Promised <input type="checkbox"/> Preying On Your Fears	<input type="checkbox"/> Biased Research <input type="checkbox"/> Too Good To Be True Claims <input type="checkbox"/> Other
2		
3		
4		
5		

BRAIN TRIVIA



COMPANION WORKBOOK 7

1. FILL IN THE BLANKS:

In the past 10 years, there have been more than 20 failed drugs for _____.
This means _____ and active _____
is your best bet to ensure brain health.

TRUE OR FALSE:

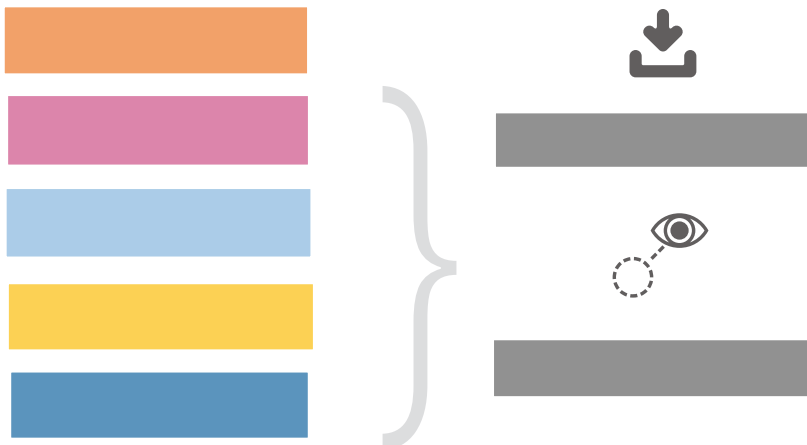
2. _____ Experts argue that exaggerated or misleading claims used to sell brain fitness products “exploit the anxiety of older adults for commercial purposes.”
3. _____ There is nothing you can do to help your memory that is 100 percent free.
4. _____ A survey of 1,037 older Americans, memory loss was the No. 1 fear. The American Psychological Association has predicted that dementia-related anxiety is on the rise and will become its own clinical disorder.

FILL IN THE BLANKS USING THE WORDS BELOW:

hippocampus normal dementia fear 60% memories

5. More than _____ of older adults take at least one supplement.
6. Limited knowledge of _____ remains relatively common among the general public and contributes to the _____ felt by older adults.
7. Increasing knowledge and understanding of what dementia is and what types of changes are a _____ part of aging is critical to the mental health and well-being of older adults.
8. The _____ is the brain structure largely responsible for making _____ and storing them in the gray matter of the brain.

9. FILL IN THE MEMORY CHART BELOW



BRAIN TRIVIA



COMPANION WORKBOOK 7

10. What are two problems that are frequently mistaken as memory problems?

11. List the four most typical “normal” memory complaints of older adults. Circle any that you have experienced.

12. What are some of the concerns that Dr. Sullivan has about memory supplements?

13. TRUE OR FALSE

_____ There is an overall lack of trustworthy evidence from well-designed, scientific clinical trials that support memory supplements.

14. CIRCLE THE SUPPLEMENTS BELOW THAT HELP PREVENT OR DECREASE DEMENTIA:

Ginko Biloba

Memory Helper

Prevagen

15. FILL IN THE BLANKS:

Empirical _____ for the efficacy of brain fitness training programs in meaningfully improving cognition is generally _____.

TRUE OR FALSE:

16. _____ A recent study in Nature evaluated 11,430 participants in a six-week program. The study found no transfer effects from the training tasks of brain fitness games to more general test performances.

17. _____ Meta-analyses have no evidence that “brain fitness” intervention actually delays or slows the progression of dementia.

18. FILL IN THE BLANKS:

You can improve your memory if you apply these general principles with _____, _____ and _____.

19. What are the two components of attention? _____

20. List a few ways you can change your environment to help minimize distractions?

FILL IN THE BLANKS:

21. _____ improves when we make connections/associations between information.
22. When you are having important conversations, _____ back what was said to be sure you understood.
23. Internal memory strategies come from within your own mind. List two internal examples:

- External memory strategies come from outside of yourself. List two external examples:

24. What are the three principles of neuroplasticity?

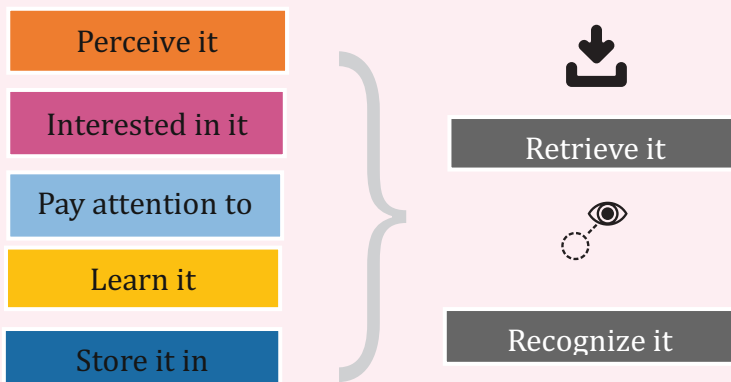
25. List a few of the lifestyle choices that Dr. Sullivan states can help improve memory.

BRAIN TRIVIA ANSWERS



COMPANION WORKBOOK 7

1. dementia; prevention; resistance
2. True
3. False
4. True
5. 60%
6. dementia; fear
7. normal
8. hippocampus; memories
- 9.



10. attention; organization
11. forgetting why you went in a room; forgetting where you parked; losing things; trouble recalling names
12. Some single ingredients have minor support,

limited evidence to support claims of efficacy, too early to predict whether they are safe, no current evidence provided by rigorous double-blind placebo controlled clinical trials that any of these substances can improve memory

13. True
14. None of these supplements have been proven to help reduce or prevent dementia
15. support; insufficient
16. True
17. True
18. effort; motivation; practice
19. focusing; ignoring distractions
20. turn off the TV/radio, de-clutter your work area, wait until later if you are hungry, tired, in pain or anxious
21. memory
22. repeat
23. Internal strategies: Any two of the following: association, first letter method or clustering
External strategies: calendar alerts; alarms
24. over time, do it more; make it more difficult; make it more unique
25. exercise, reduce stress, think positively, consider the MIND Diet, improve sleep habits or consider a neuropsychological evaluation



“

Memory is the
TREASURE HOUSE OF THE MIND
WHEREIN THE MONUMENTS THEREOF
ARE KEPT AND PRESERVED.

”

—THOMAS FULLER

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REPEAT
&
MAKE
CONNECTIONS
to **ENHANCE**
LEARNING



SN **oze** **TO SUPPORT**
MEMORY




Consider a
NEUROPSYCHOLOGICAL
EVALUATION
 if you are concerned
 about memory

I CARE
 FOR YOUR BRAIN
with Dr. Sullivan



+
THINK
POSITIVE!
We are what
we think

I CARE
 FOR YOUR BRAIN
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