

Brain Health: Reducing your Risk for Dementia



JENNIFER STELTER, PsyD, DCS, DCSCT

Owner & CEO at the Dementia Connection Institute

Senior Living & Dementia Care Consultant

Johns Hopkins Author & National Speaker

Clinical Psychologist

Creator of the Dementia Connection Model© &

Dementia Connection Specialist Certification Program

Dementia Connection Specialist Master Trainer

Adjunct Professor

Neuro-testing Evaluator



www.DementiaConnectionInstitute.org

Dementia Connection Institute



Education &
Training



Podcasts &
Publications



Consultation &
Support

Bringing you approaches to care that are non-pharmacological in nature, unique, empowering, and successful, based on the Dementia Connection Model©.

Brain Health: Reducing your Risk for Dementia

Objectives

- Understand what is dementia.
- Identify the risk factors for dementia.
- Distinguish the approaches to lower your risk for dementia.
- Execute a plan to incorporate these approaches into your life or your patients' or loved ones' lives.



Alzheimer's Disease Statistics

- More than 7.2 million Americans currently affected (up by 1M/2024)
- Someone develops Alzheimer's Disease every 33 seconds
- 1 in 3 seniors pass away with a diagnosis of Alzheimer's Disease or another form of dementia
- By 2050 there will be more than 12.7 million Americans with Alzheimer's Disease
- Number 1 diagnosis in seniors
- Nearly 12 million Americans provide unpaid care for a family member or friend with dementia, a contribution to the nation valued at more than \$413 billion.

ALZHEIMER'S DISEASE IS THE ONLY DISEASE IN THE TOP 10 CAUSES OF DEATH THAT CANNOT BE CURED

Healthy Brain



Brain with Alzheimer's



Healthy Brain Severe AD



WHAT IS DEMENTIA?

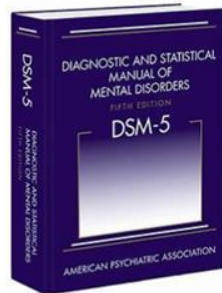
The DSM-5 classifies dementia as a neurocognitive disorder. Dementia may be either a mild or major neurocognitive disorder. Dementia is a broad term for many different types of dementias.

Dementia symptoms are as follows:

The loss of mental functioning that causes deficits in memory, language, learning ability, judgment, and orientation.

****There are over 100 types of dementias!**

There are specific diseases that cause dementia, among them Alzheimer's Disease, which accounts for 2/3 of all dementia cases.



Stages of Dementia

3-Rated Stages

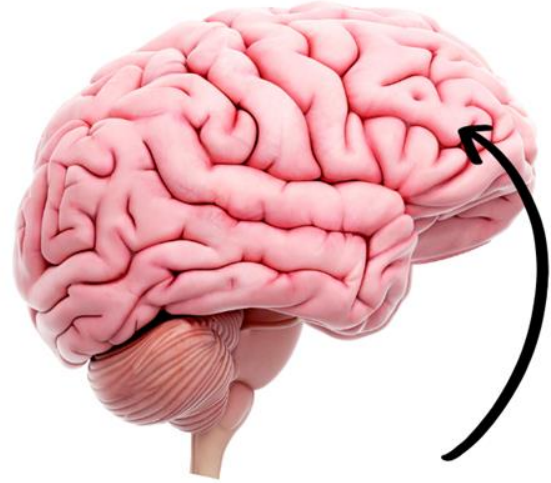
Early
Middle
Late



Early Stage



Temporal lobe: Learning, memory,
and emotions



Frontal lobe: Executive
functioning skills like planning
and problem solving (IADL's)

Middle Stage



Speech: Speaking and understanding meaning



Parietal lobe: Decrease in proprioception - knowing where objects are around them

Middle Stage



Common eyesight issues:
Deterioration of peripheral vision
Onset of macular degeneration
Depth perception issues

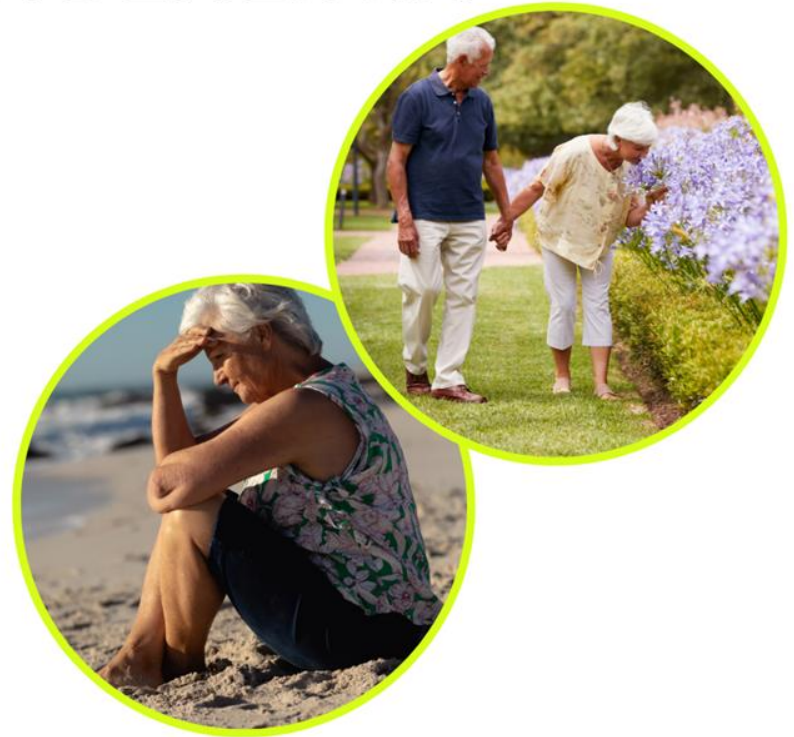
Occipital lobe: Eyesight deterioration

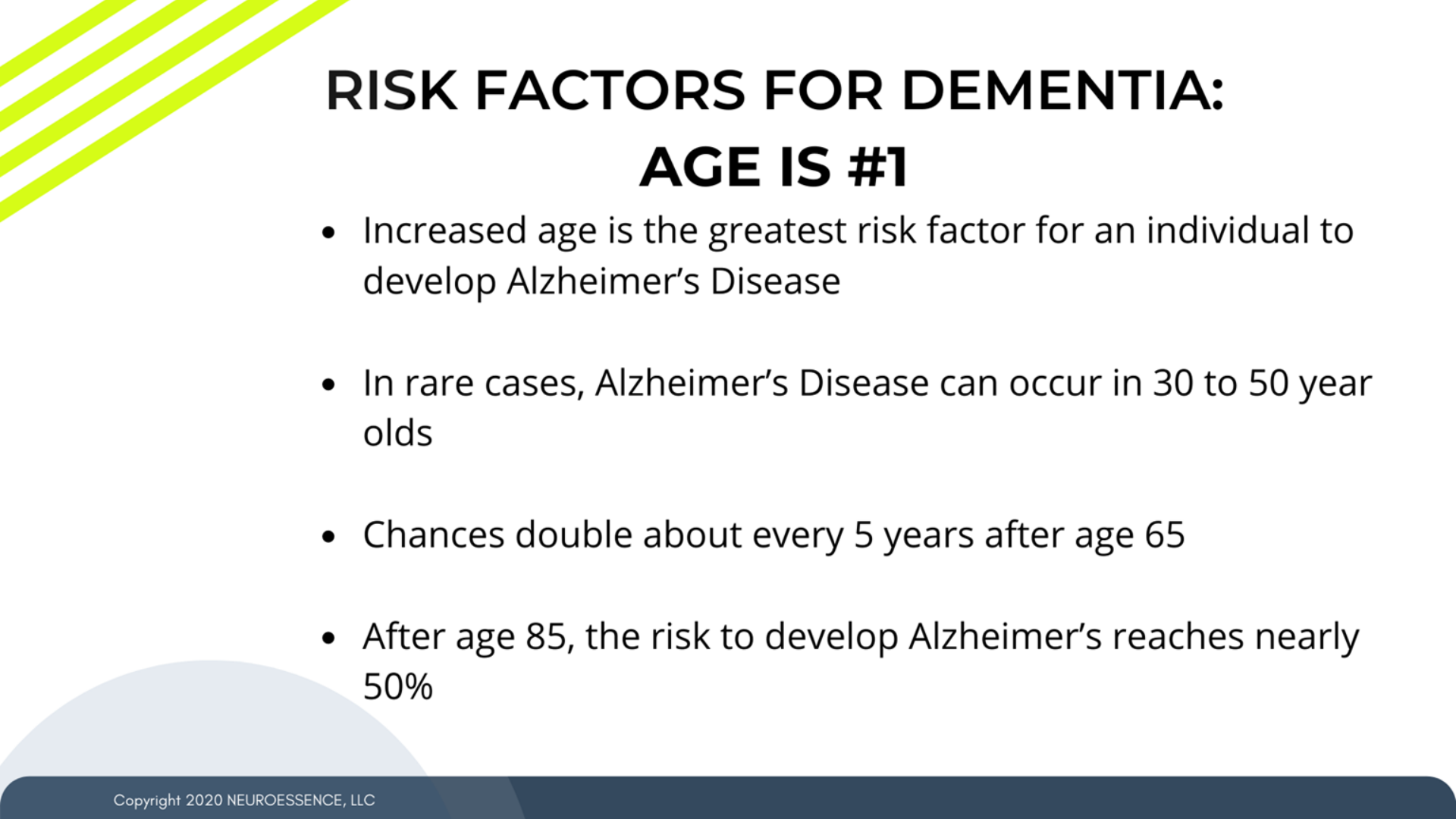
Late Stage



Progression of deterioration in all lobes,
decompensating all ADL skills.

LET'S TALK ABOUT KNOWN RISK FACTORS FOR DEMENTIA





RISK FACTORS FOR DEMENTIA:

AGE IS #1

- Increased age is the greatest risk factor for an individual to develop Alzheimer's Disease
- In rare cases, Alzheimer's Disease can occur in 30 to 50 year olds
- Chances double about every 5 years after age 65
- After age 85, the risk to develop Alzheimer's reaches nearly 50%



RISK FACTORS FOR DEMENTIA: HEREDITY

- Risk is slightly higher if a first degree relative (parent or sibling) has Alzheimer's Disease (AD)
- Apolipoprotein E (APOE e4) gene is correlated to late-onset AD
- 3 genetic mutations are correlated to early onset AD (Genes: PS1, PS2, and APP)
- Researchers now know of 10 genes believed to be associated with AD

OTHER KNOWN RISK FACTORS

- Having a minimal education level
- Smoking
- Excessive alcohol use
- Obesity
- Hypertension/Congestive Heart Failure
- Diabetes, Type II
- COVID
- Sleep Apnea/challenges
- Depression (late life)
- Long term use of psychotropic medications
- Decreased physical activity
- Lack of social engagement
- Environment (exposure to aluminum, pesticides, live near electromagnetic field)
- Traumatic Brain Injury (TBI) or multiple concussions
- Mild Cognitive Impairment (MCI)

STRATEGIES TO LOWER RISK FACTORS

Keeping the mind and body sharp using a multimodal approach...

1. Cognitive Stimulation/Training
2. Tactile Stimulation
3. Exercise/Walking
4. Diet (Mediterranean)
5. Sleep Regulation
6. Social Engagement
7. Use of Essential Oils



*Studies show a multimodal approach is more beneficial than only adopting one approach.

COGNITIVE STIMULATION/TRAINING

EXERCISE YOUR FRONTAL LOBE WITH:

Crossword puzzles

Sudoku

Word searches

Wheel of Fortune/Hangman

Trivia

Solving problems/Geometry

Sorting/Organizing/Categorizing

Project development

Mindfulness/Meditation techniques

Memory techniques

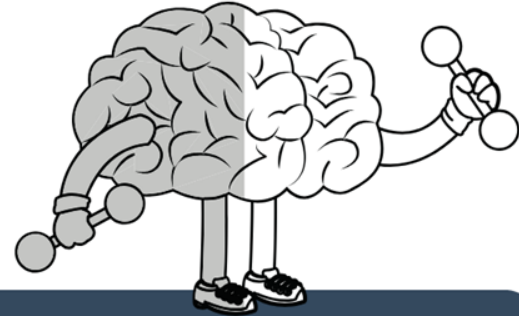
Online computer programs or apps (e.g., Cognifit)



COGNITIVE STIMULATION/TRAINING

ACTIVE Study

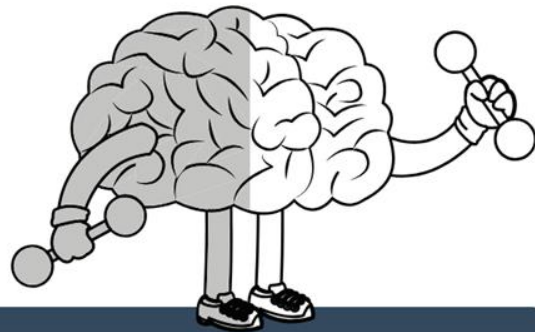
- 2832 participants
- Age >65
- Training consisted of: Memory, reasoning, speed of processing
- Follow-up over 5 years
- Results:
- Cognitive training improved cognitive functioning
- Improvements in higher-level IADLs (e.g., financial management, driving skills, etc.)
- Improvement lasted up to 5 years



COGNITIVE STIMULATION/TRAINING

Follow-up ACTIVE Study over 10 years

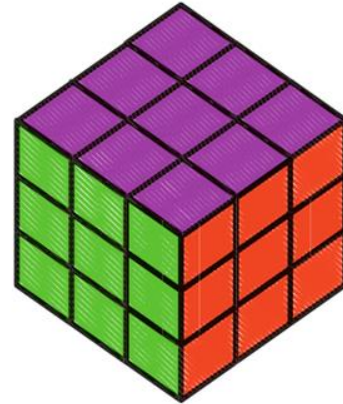
- 44% of original participants in study
- Average age 82
- Continued to see positive effects on cognitive and IADL abilities



COGNITIVE STIMULATION/TRAINING

Other improvements noted in other studies:

Gait
Balance
IADL's
Driving safety



COGNITIVE STIMULATION/TRAINING

RECOMMENDATIONS

30 to 60 minute sessions at a time

3 times per week (most beneficial)



TACTILE STIMULATION

- Knitting/Crocheting/Sewing
- Cooking/Baking
- Building/Making things
- Home-based project/Fixing things
- Gardening
- Drawing/Painting/Coloring
- Cleaning
- Art projects



Plasticity is the brain's ability to develop, rewire itself, or *"to detour around an injured part of the brain to find new ways to perform lost skills...with the right approaches to care, people with dementia can improve neuroplasticity. Doing so can improve their cognitive abilities and slow the progression of their condition."*-Josh Freitas (2015)

TACTILE STIMULATION

- Tactile stimulation not only creates neuroplasticity in the brain but also exercises your frontal lobe by boosting your executive functioning skills!!!

“Creates cognitive reserve in the brain from a process called neuroplasticity. The more cognitive reserve you have, the greater chance your cognition will last longer.”

– Dr. Jennifer Stelter



TACTILE STIMULATION

- Also provides a grounding affect, reduces anxiety and fear, and increases a sense of safety and security.



EXERCISE: CONNECTS MIND, BODY, & SPIRIT

- Rewires the brain (i.e., neuroplasticity)
- Improves hippocampal volume (i.e., organ responsible for memory)
- Assists with spatial awareness and recognition (i.e., proprioception)
- Improves cognitive function
- Promotes emotional expression and social interaction
- Increases serotonin that improves mood
- Positively affects circadian rhythm
- Assists with inflammation and immune function



EXERCISE

Study conducted by the U.S. Department of Health and Human Services showed:

- Strong evidence for decreased risk of falls, depression, heart disease, stroke, high blood pressure, diabetes, and colon and breast cancers
- Strong evidence for improved cognitive function
- Moderate evidence for improved sleep quality





EXERCISE

Recommended by the U.S. Dept. of Health
2.5hrs./week of moderate-intensity aerobic activity OR
1.25hrs./week of vigorous-intensity aerobic activity

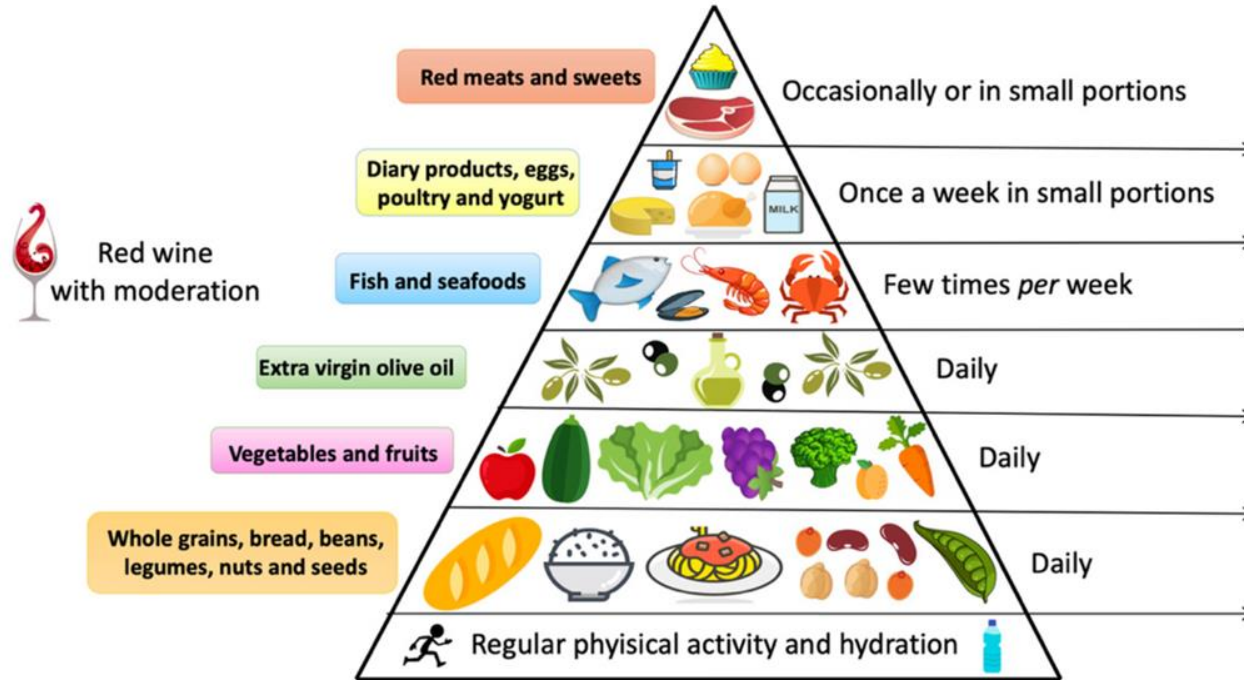
Barreto's, et. al. study included 104,909 aging participants in 20 countries that found that even doing physical activity at low frequencies showed better cognitive function than those doing no physical activity.

Always consult with your physician first before starting any physical activity program.

DIET: MEDITERRANEAN

- The Mediterranean Food Pyramid emphasizes fruits, vegetables, legumes, nuts, seeds, whole grains, fish & seafood*, and extra-virgin olive oil (also known as 'Brain Healthy foods').
- Think plant-based foods.
- Rounding out the meal plan is dairy (yogurt/cheese), poultry, & eggs. Eat these sparingly.
- Rarely consume red meats.
- Eliminate foods with added sugar such as soda, candy, ice cream, sugar, and so forth.
- Eliminate heavily processed food that does not look like food produced by nature.
- Prepare by grilling, baking or broiling options, avoiding fried foods.
- Eliminate use of butter, and prepare with extra-virgin olive oil.

DIET: MEDITERRANEAN



Burckhardt, et. al. found Omega-3 fatty acids show a promising treatment option for dementia, following research that they are helpful in the improvement of brain function.

Always consult with your physician first before starting any new eating pattern.

MIND Diet

Mediterranean-DASH Diet Intervention for Neurodegenerative Delay

- Study out of Rush University in Chicago, IL
- The study findings suggest that the MIND diet (i.e., the Mediterranean diet) substantially slows cognitive decline with age.





SLEEP

1. Obtain 6-8 hours per night.
2. Utilize relaxation strategies, like meditation, deep breathing techniques, and progressive muscle relaxation.
3. Avoid caffeine and sweets after dinner.
4. Limit screen time before bed.

Benefits of Sleep

Dr. Marishka Brown, a sleep expert at NIH

“Sleep is as important for good health as diet and exercise. Good sleep improves your brain performance, mood, and health.”

Not getting enough quality sleep regularly raises the risk of many diseases and disorders - from heart disease and stroke to obesity and dementia.

**Dr. Maiken Nedergaard,
Sleep Specialist at the University of Rochester**

“Sleep helps prepare your brain to learn, remember, and create.”

The drainage system removes some of the proteins linked with Alzheimer’s disease. These toxins were removed twice as fast from the brain during sleep.

Everything from blood vessels to the immune system uses sleep as a time for repair.

SOCIAL ENGAGEMENT

Utilizing all your senses to engage with others keeps those senses strong (called Habilitation). Also, it improves mood through a sense of belonging, acceptance, and love. This includes with humans and pets.



SOCIAL ENGAGEMENT

- A multitude of studies have found that being productive and engaged with others has a positive effect on resilience, health and well-being.
- Studies by Gardner, et al. & Talerico, Evans, and Strumpf showed loneliness and unmet needs for belonging are linked with negative outcomes, like poor sense of self, bad mood, and even aggression.
- Jung, et al. found having a shared sense of social identity with others and being productive has positive consequences on mental health, and more so, Cruwys, et al. showed it reduced loneliness and depression.



OLFACTORY STIMULATION: ESSENTIAL OILS TO SUPPORT THE BRAIN

- Humans perceive volatile chemicals (aromas) through the olfactory system
- Sense of smell plays an important role in the physiological effects of mood, stress, and cognitive function
- Studies have suggested a significant role for olfactory stimulation in the alteration of cognition, mood, and social behavior



WHAT ARE ESSENTIAL OILS?

- Natural aromatic compounds found in plants
- Steam-distilled or cold-pressed extraction
- Powerful, safe benefits often without harmful side effects
- Physiologically active; directly influence the body
- Can be on surface & inside cell because of unique structure (size/characteristics)
- Easily metabolized by the body





UNIQUE CHARACTERISTICS OF ESSENTIAL OILS: CROSS THE CELL MEMBRANE

- Small molecular size
- Lipid Solubility
- Passive diffusion
- Even when physiologically compromised, essential oils can cross the cell membrane

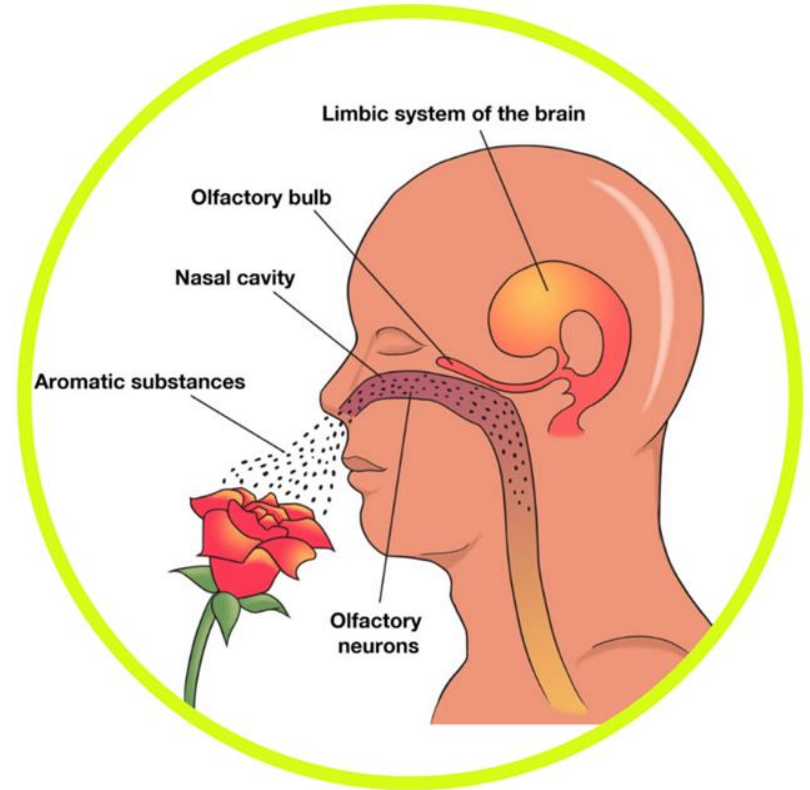
AROMATIC

- Purify the air
- Aid in respiratory function
- Affect the mood; limbic system
- Essential oil molecules, when inhaling them, reach the brain within 22 seconds
- And, at the close of 20 minutes, EVERY cell in the entire body will have been affected!
- Influence amygdala; releases emotional trauma
- Several ways to apply



LIMBIC SYSTEM

Researchers have learned that memory recall at least doubles when a past event is associated with a smell.



TOPICAL

- Apply the oils to the area that is affected
- Dilute with carrier oil
- Apply to pulse points
- When applied topically, within 2 minutes they will be found in the bloodstream
- 5% enters bloodstream



ESSENTIAL OIL SAFETY

- Very safe and gentle without side effects
- Keep out of eyes, ears, and nose
- Dilute with fractionated coconut oil, vitamin-e oil, almond oil (a carrier oil), not water
- Skin sensitivity primary safety issue, always use a carrier oil when using topically
- Sourcing is key



PEPPERMINT FOR THE BRAIN

- Helps to focus senses
- High in monoterpenes
- Can invigorate the lungs
- Promotes mental clarity

PEPPERMINT ESSENTIAL OIL



www.ncbi.nlm.nih.gov/pmc/articles/PMC3612440/

CITRUS FOR THE BRAIN

Improves mood (increases Serotonin) and increases appetite:

- Wild Orange
- Bergamot
- Lemon
- Lime

Improves mood and curbs appetite:

- Grapefruit

BERGAMOT ESSENTIAL OIL



Note: Photosensitive (do not wear topically in the sun)

LAVENDER FOR THE BRAIN

- Improves sleep; increase daytime wakefulness
- With orange oil in evening, improved cognitive function
- Produces EEG patterns characteristic of being comfortable
- Effective adjuvant therapy in combination; better and earlier results
- Evaluation of mood, heart rate, and galvanic skin response, improved anxious feeling and can counteract negative emotion.
- Promotes Balance

LAVENDER ESSENTIAL OIL



www.ncbi.nlm.nih.gov/pmc/articles/PMC3612440/

FRANKINCENSE FOR THE BRAIN

- High in sesquiterpenes
- Can slow and deepen breath
- Can have grounding effect
- Helps to support gut function

FRANKINCENSE ESSENTIAL OIL



www.ncbi.nlm.nih.gov/pmc/articles/PMC3612440/

ROSEMARY FOR THE BRAIN

- Increased concentration and memory
- Can relieve stress
- Can lower cortisol levels
- Paired with lavender/reduces test taking stress
- Can facilitate acetylcholine in brain, allowing nerve cells to communicate more effectively
- Inhalation can improve long-term memory and performance in mental arithmetic by up to 75%

ROSEMARY ESSENTIAL OIL



CEDARWOOD FOR THE BRAIN

A study performed by Brigham Young University found that using cedarwood oil on children could greatly improve their focus and learning capacity.

CEDARWOOD ESSENTIAL OIL

- 34 children that were on the spectrum were given different single oils including vetiver, cedarwood, lavender, and an oil blend.
- Children held up a bottle and took three deep inhalations 3x a day for thirty days.
- At the end of the study subjects retook an EEG and T.O.V.A. test and with both vetiver and cedarwood oil there were significant changes.
- Results showed cedarwood oil inhalation improved focus in children on the spectrum by 65%.



Cedarwood promotes emotional balance/grounding, has a sedative effect, and improved focus

TURMERIC FOR THE BRAIN

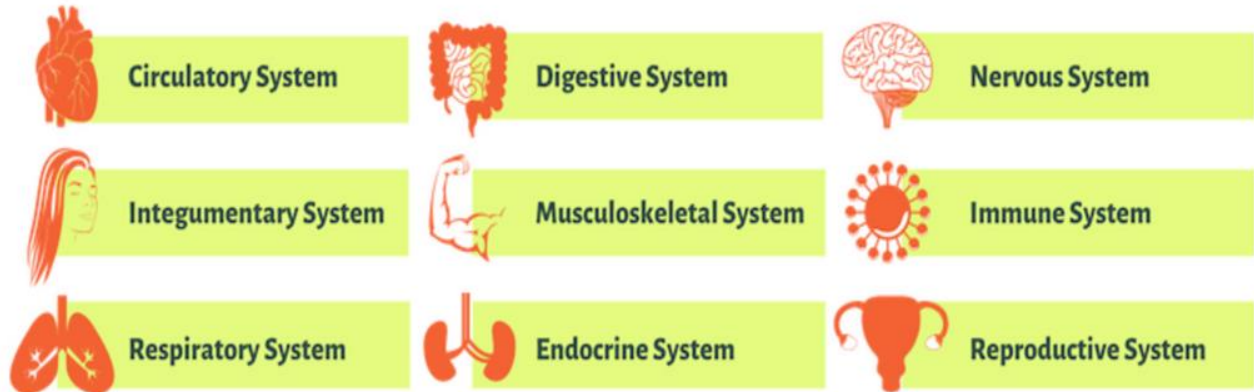
- Oral administration protects neurons & the brain from damage caused during a stroke
- Research suggests that ar-turmerone may slow or reverse neurodegenerative disorders like Dementia, Alzheimer's disease, Parkinson's, and Huntington's by significantly increasing production of neural stem cells (brain stem cells that are essential for the repair and recovery of brain function)

TURMERIC ESSENTIAL OIL



ESSENTIAL OILS AND SO MUCH MORE...

- Essential oils can be a valuable part of a holistic treatment plan
- Each oil has specific uses and functions
- Oils can be used alone or in combinations
- Essential oil uses go beyond relaxation and spa treatments



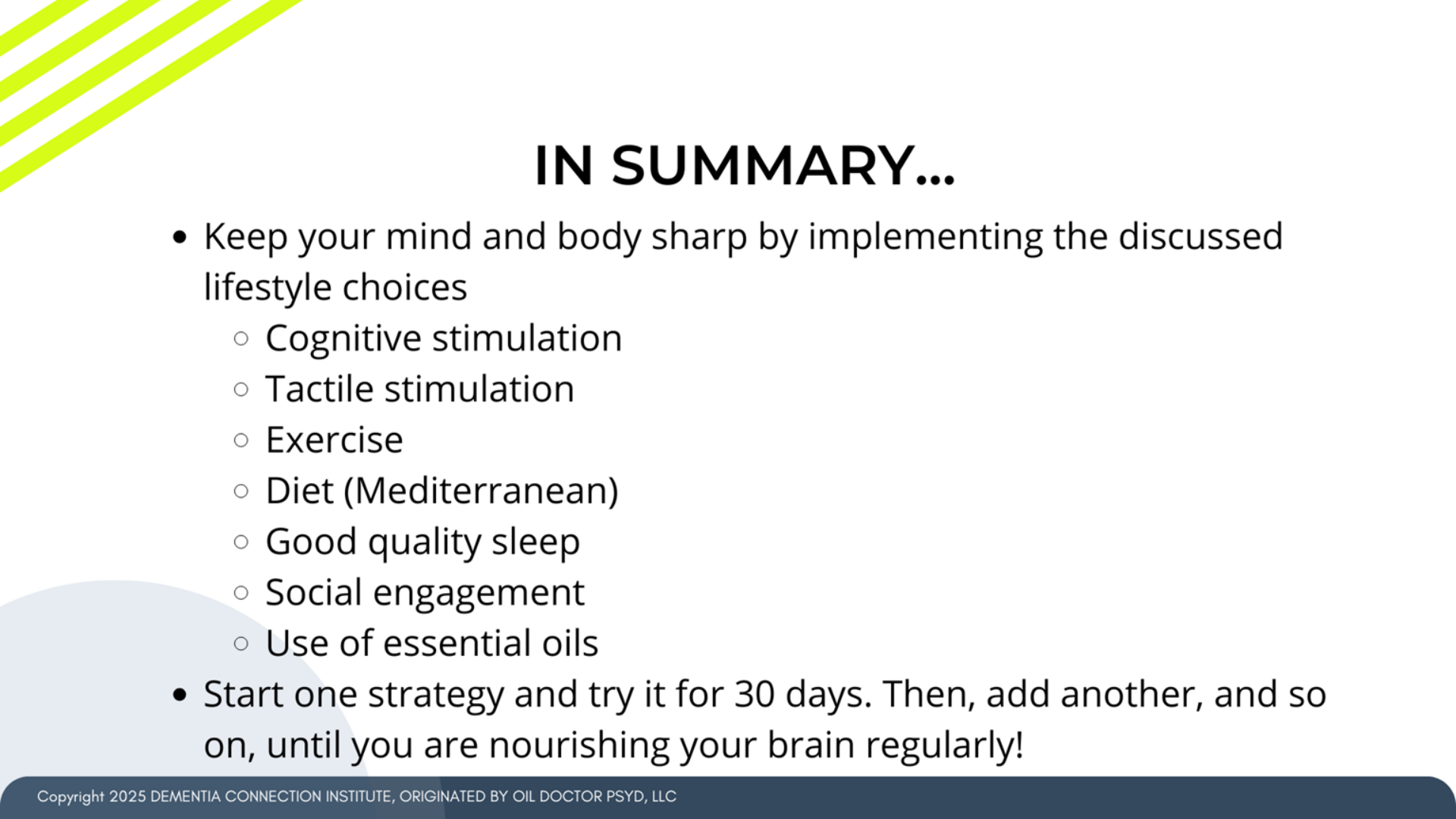
HOW TO IMPLEMENT THESE STRATEGIES...

- Start with one lifestyle choice and do it for 30 days. You can really only master one strategy, one change at a time. Own it and do it! It takes 4-6 weeks to create a habit, even a healthy one!
- Then add another strategy for 30 days, while also keeping the one previous.
- Repeat
- Repeat and so on.
- Before you know it, you'll be nourishing your brain and your body entirely!

“Success is about choosing between what you want now and what you want most!”

- Rachel Hollis

Be INTENTIONAL with your choices!



IN SUMMARY...

- Keep your mind and body sharp by implementing the discussed lifestyle choices
 - Cognitive stimulation
 - Tactile stimulation
 - Exercise
 - Diet (Mediterranean)
 - Good quality sleep
 - Social engagement
 - Use of essential oils
- Start one strategy and try it for 30 days. Then, add another, and so on, until you are nourishing your brain regularly!



Contact Us.

www.DementiaConnectionInstitute.org

Support@DementiaConnectionInstitute.org