

PROMOTING HEALTHY BRAIN AGING IN A TIME OF PANDEMIC

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Objectives for Today's Session

- ▶ Identify challenges to healthy brain aging
- ▶ Identify strategies for lifestyle and health decision-making aligned with aging brain health
- ▶ Consider special challenges to the promotion of healthy brain aging during the time of COVID-19



According to the World Health Organization (WHO)

- ▶ Across the life course, people can improve their own health and well-being by learning about their health and well-being and making informed choices such as being more physically active, improving nutrition, avoiding tobacco, limiting alcohol and being aware of and claiming their rights...They can care for others and the environment and help promote health and well-being in their families, communities, places of education, work and leisure.
- ▶ Promoting health through the life course:

www.who.int/life-course

WHO, 2019



What is Brain Health?

- ▶ Relates to how a person's brain operates across multiple areas of adaptive functioning. The brain is the organ that organizes and coordinates adaptive skills necessary for everyday functioning , longer-term adaptation and survival:

Cognitive Functioning: how we learn, think, remember, plan, organize, problem solve and make decisions

Emotional Functioning: how we recognize and respond to pleasant and unpleasant feelings in ourselves and others

Motor Functioning: your ability to initiate, coordinate and stop movement of your body as the situation warrants (includes balance)

Sensory Functioning: your ability to make sense and respond to visual, auditory, tactile and olfactory stimuli

Brain Aging is a Lifelong Process

- Brain development and aging begins at birth...
- The quality of older adulthood for individuals with disabilities will be influenced by the quality of their childhood, early and middle adulthood
- Begin healthy lifestyle choices as early as possible
- Regular and routine healthcare
- Attention to exercise, nutrition, stress level, relationships, meaningful activity
- Attention to chronic medical conditions which will impact the overall health of the older adults with disabilities

The Good News...



- ▶ Although we do not have a cure for aging related cognitive decline, there is a great deal that we can do to reduce risk of that decline
- ▶ Many of the health conditions and lifestyle choices that put us most at risk for poor health and cognitive and functional decline as we age, are modifiable
- ▶ Healthy aging = healthy brain aging
- ▶ The same things we can do for persons without disability, we can do for persons with disabilities

Factors that can affect Brain Health

- ▶ Genetic make-up
- ▶ Developmental Disorders (many of the persons served have forms of neurological compromise associated with their reason for Lanterman eligibility)
- ▶ Certain medicines, smoking or excessive alcohol intake
- ▶ Diabetes and heart disease
- ▶ Depression
- ▶ Brain injury (sustained through accidents, falls and a history of significant self-injury)
- ▶ Poor diet, insufficient sleep, lack of physical activity, lack of social and mental stimulation
- ▶ COVID-19

Life Expectancy for People with Intellectual Disability

- ✓ Improved access to and treatment of associated physical conditions (e.g., heart defects, epilepsy and status epilepticus).
- ✓ Use of antibiotics (recurrent infections).
- ✓ Development of proactive, holistic and individualized care philosophies within community settings, and decline in large scale institutionalized generic care.
- ✓ Encouragement and supports that provide the opportunity to age in place within the family home.

Aging with Disability

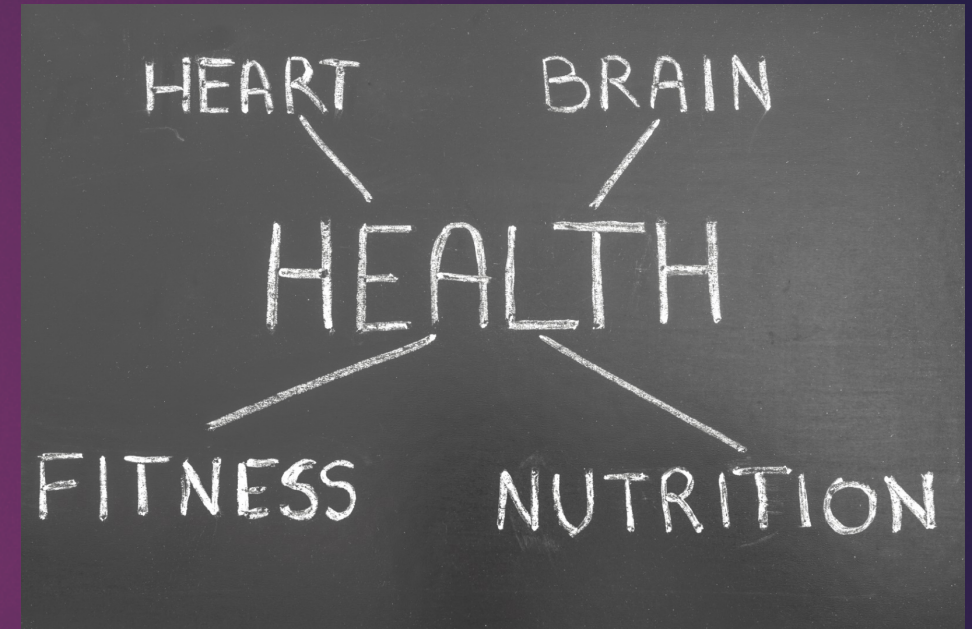
- ▶ Older people with intellectual and developmental disabilities have the same needs as other older people
- ▶ The increasing life expectancy of people with intellectual disability is now an established fact
- ▶ Older people with intellectual disabilities are subject to compound stigmatization for being both **older** and **disabled**
- ▶ Many adults with intellectual and other developmental disabilities remain at home with their families

Normative (Expected) Physical Changes of Aging

- Age-related bone loss
- Progressive loss of muscle mass
- The lens of the eye becomes stiffer and less flexible – affecting the ability to focus on close objects (accommodation)
- Age related change in the ability to detect higher pitches – more noticeable in those age 50+
- Changes in the sense of taste 60+
- Olfaction (i.e., the sense of smell), decrements become more noticeable after age 70+
- Reduction in sensitivity to pain, touch, temperature, proprioception
- Reduction in balance and coordination
- Reduction in short term memory loss, attention, and, retrieval

Modifying Risk Factors

- ▶ Treating co-morbidities
- ▶ Lifestyle choices





Ten Health Risks That Impact Wellness

- ▶ Tobacco use
- ▶ Poorly managed High Blood Pressure (and other chronic conditions)
- ▶ Stressful living
- ▶ Lack of physical activity
- ▶ Overweight/ obesity
- ▶ Poor nutrition
- ▶ Inadequate sleep
- ▶ Falls
- ▶ Loneliness and lack of social connection
- ▶ Lack of mental stimulation



Ten “Healthy” Habits

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1. Stop or significantly reduce tobacco and alcohol use
2. Reduce blood pressure and attend to chronic health issues
3. Manage stress
4. Exercise in moderation
5. Maintain a healthy weight
6. Eat a well-balanced diet
7. Obtain adequate rest
8. Protect against brain injury via falls and self-injury
9. Keep active and engaged by learning new skills or ways to perform old skills, reading, watching educational films and TV
10. Maintain social connection (until end of restrictions, phone, send letters, Zoom, FaceTime, Skype, Go Meet and monitor for loneliness)

Health Maintenance

- ▶ **Wellness check-up**
- ▶ **Immunizations**
- ▶ **Age and gender relevant health screenings:**
 - ❖ diabetes
 - ❖ cholesterol,
 - ❖ Cervical and breast cancer screening for females; prostate exams for males
 - ❖ Colorectal cancer
 - ❖ osteoporosis
 - ❖ depression and suicide risk
 - ❖ cognitive screening for adults with IDD at age 50+ (40+ for persons with Down Syndrome)



Obesity

- ▶ Weight control: Obesity, especially concentrating excess fat in the abdomen, has been linked to increased dementia risk.
- ▶ Obesity has been associated with other risk factors for cognitive decline including heightened risk of diabetes, hypertension, and stroke

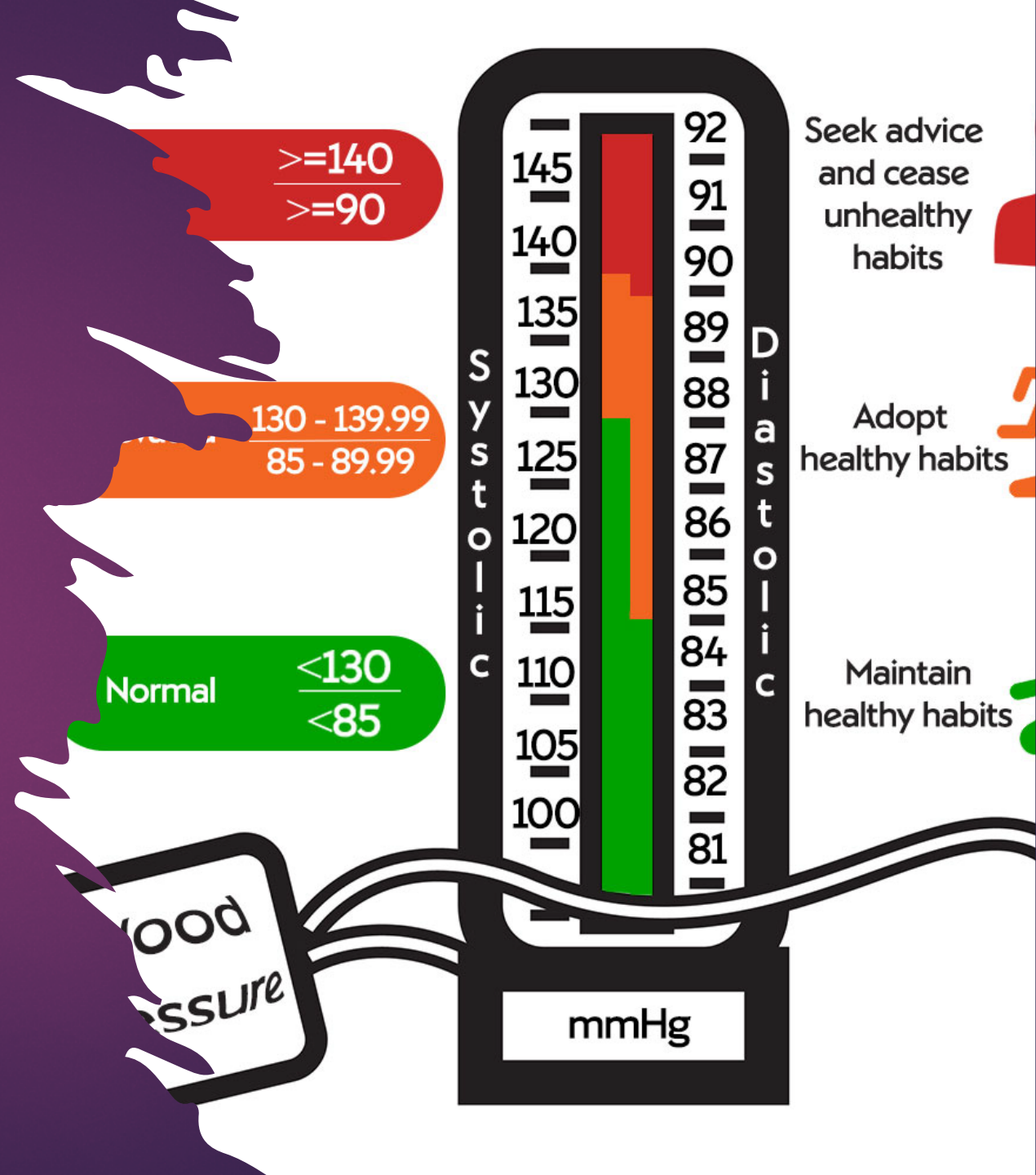


Controlling Blood Pressure

- ▶ Heart health is brain health
- ▶ Brain health is linked to the health of blood vessels that supply the brain. High blood pressure is the most important risk factor for brain blood vessel disease.
- ▶ High blood pressure has been associated with stroke, diffuse white matter disease and silent stroke on MRI brain images and brain examination at autopsy. These in turn have been linked to cognitive decline and dementia. For many reasons treating high blood pressure and keeping it under control is good for the brain!

Improve Blood Pressure

- ▶ High blood pressure in middle age increases the risk of cognitive decline as one ages
- ▶ There are ways to keep blood pressure low, including: keeping weight down, being physically active, limiting alcohol consumption to no more than two drinks per day, finding ways to reduce stress and following a low salt, low fat diet



Additional Risk Factors

- ▶ Tobacco
- ▶ Excessive alcohol consumption
- Excessive drinking is a major risk factor for poor brain health. Drinking should be limited to no more than 2 a day/12 a week and possibly less for females
- Alcohol affects the brain by slowing communication among brain cells



Depression and Aging with a Disability

- ▶ Older adults are at higher risk for depression. Depression is a treatable medical condition that often goes untreated because:
 - ✓ People think depression is a normal part of aging with disabilities (it is not!)
 - ✓ Some people are ashamed to admit they are depressed because they see it as a sign of weakness or a character flaw
 - ✓ Older people report more physical symptoms of depression such as difficulty sleeping and loss of appetite than younger adults
 - ✓ When older adults lose their social supports and become isolated, they may be less likely to independently seek help

Depression: “SIG-E-CAPS”

- ▶ **Sleep** disturbance (insomnia or hypersomnia)
- ▶ **Interests** (anhedonia or loss of interest in usually pleasurable activities)
- ▶ **Guilt** and/or low self-esteem
- ▶ **Energy** (loss of energy, low energy, or fatigue)
- ▶ **Concentration** (poor concentration, forgetfulness)
- ▶ **Appetite** changes (loss of appetite or increased appetite)
- ▶ **Psychomotor** changes (agitation or slowing/retardation)
- ▶ **Suicide** (morbid or suicidal ideation)

The 3D's: the importance of monitoring observed decline

- ▶ Several conditions, other than dementia, are associated with cognitive decline and may mimic dementia
- ▶ It is important, when possible, to rule out other sources of cognitive and functional decline and not assume that observed changes signal dementia
- ▶ We want to differentiate among the **3 D's: dementia, delirium and depression** (previously called “pseudodementia”)
- ▶ Other conditions may alter mental status including psychiatric illness, sensory impairment, and exposure to extreme stressors
- ▶ **Spoiler alert!** More to say about this in future Psychology Corner Trainings when we review **Dementia and IDD** and the use of the **National Task Group Early Detections Screen for Dementia (NTG-EDSD)** www.the-ntg.org

Delirium

- ▶ Delirium is a reversible, confusional state, or a mental disturbance characterized by acute onset, disturbed consciousness, impaired cognition; it is usually traceable to an identifiable underlying medical cause (i.e., medications, infections, sleep disturbance, electrolyte imbalance, etc.)
- ▶ Given the high co-occurrence of medical problems among people with disabilities, delirium can be a problem at any age
- ▶ Delirium is considered a medical emergency: the person who is delirious needs his/her underlying medical condition identified and treated
- ▶ There may be a new version of delirium associated with COVID-19, which has been referred to by some as “brain fog”
- ▶ Delirium is sometimes mistaken for dementia (which does not have an acute onset); when left untreated, delirium can lead to long-term changes in adaptive and cognitive functioning

Prevent Falls

- ▶ Falls can cause a head injury, broken bones, or other harm that triggers gradual or sudden loss of function.
- ▶ To avoid falling, practice balance and strength exercises. Beware that drinking and drugs can affect balance. And be careful: watch for uneven walking surfaces and cords that can trip you. Wear shoes or slippers with good soles. Avoid going barefoot or walking in stocking feet. If you bike or ski, wear a helmet.

Easy Home Modifications TO PREVENT FALLS

Install Handrails
along indoor and outdoor staircases, hallways, and anywhere you feel you need a little extra support.

Use nonslip mats and treads
to help improve traction on bathroom floors, shower, bathtub, outside decks, and outside steps.

Falls are the leading cause of injuries
among older adults, sending more than two million people to the emergency department each year.

Install grab bars
near showers, bathtubs, and toilets. Avoid grab bars that "stick on" to shower tiles with suction, which are less reliable than metal grab bars attached to wall studs.

Many of the fall hazards are right in our own homes, and a few inexpensive changes could lower your fall-risk.

Improve lighting.
Make sure you have adequate lighting in hallways, stairways, and outdoor walkways, and areas in which you're likely to walk in the middle of the night.

Inexpensive fixes.
Remove all floor clutter. Rearrange furniture so that it works well with the flow of traffic. Use double-sided tape to secure the edges of area rugs to the floor, and remove small throw rugs.

Repair steps and flooring.
Repair crumbling outdoor steps, loose wall-to-wall carpeting, and uneven floorboards. Call a handyman to repair stairs or floorboards, or a carpet store to come and tighten wall-to-wall carpeting.

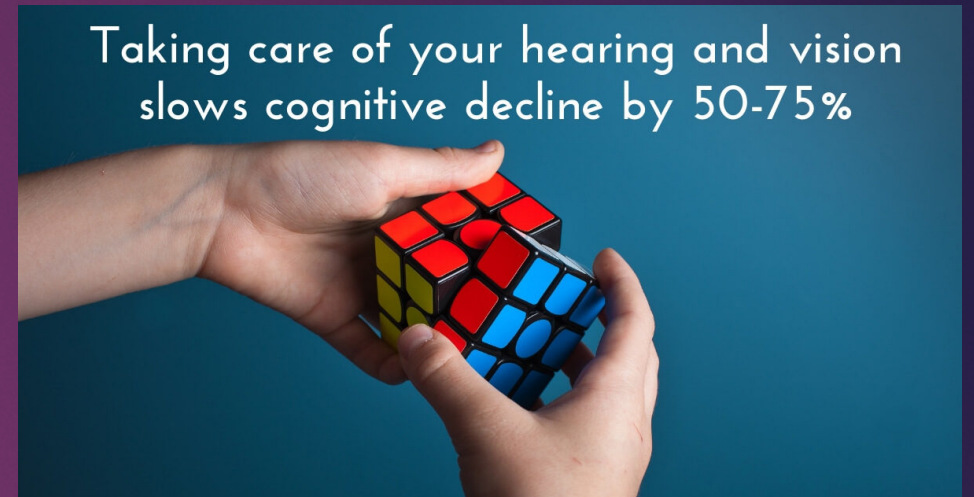
For other strategies and tips to avoid falls, check out "Preventing Falls," the online guide from Harvard Medical School.
www.health.harvard.edu/fall

Monitor individuals with a history of self-injury

- ▶ Self-injury in the form of head-banging, head butting, etc. put persons at risk for brain injury
- ▶ Mild forms of brain injury may be relatively temporary such as concussion
- ▶ Significant forms of brain injury can accelerate cognitive decline
- ▶ There is a form of head injury that has been equated to “Dementia Pugilistica”– this is the type of neurocognitive disorder seen in people who are boxers who have sustained head injury throughout their professional boxing career

Sensory input

- ▶ **Maintaining good hearing and vision**, by correcting or treating losses when possible. Poor hearing or vision reduces older adults' ability to participate in stimulating activities and can lead to social isolation



Neurocognitive Effects of COVID-19

According to preliminary NIMH reports:

- ❖ Even people who have recovered from COVID-19 may experience persistent and long-lasting cognitive consequences
- ❖ People have reported “brain fog” during infection and following recovery from SARS-2, which affects ability to concentrate on work or tasks and maintain attentional focus
- ❖ Individuals who were on ventilators had more significant post-infection deficits
- ❖ COVID may cause damage via encephalitis, stroke or lack of oxygen
- ❖ Difficult to study because we do not know pre-morbid cognitive functioning of people for whom subsequent changes have been observed
- ❖ Concern that this may place people at higher risk for neurocognitive disorders as they age



- ▶ Communication between people with disabilities and primary care providers is essential to maintaining good health
- ▶ See a primary care physician regularly

Work with your PCP

Ask Questions



- ▶ Know about medications or alternative treatments
- ▶ Review and act on health check-ups and health screenings
- ▶ Monitor existing and/or new symptoms
- ▶ Speak up about any concerns or doubts

Exercise and Physical Activity

- ▶ Research has consistently found that staying physically active is a key to preserving brain function. Aerobic exercise seems especially beneficial, and some studies suggest that strength training can also help.
- ▶ Adults should move more than sit throughout the day; 2 ½ to 5 hours a week of moderate intensity activity including muscle strengthening
- ▶ Walking, when feasible, is among the easiest and least expensive ways of adding physical activity to a daily routine
- ▶ <https://www.hhs.gov/fitness/be-active/physical-activity-guidelines-for-americans/index.html>



Physical Activity (cont'd)

- ▶ When older adults cannot be active for 2 ½ hours a week of moderate-intensity aerobic activity because of chronic conditions, they should be as physically active as their abilities and condition allow
- ▶ Adults with chronic conditions or disabilities should do muscle-strengthening
- ▶ When adults with chronic conditions or disabilities are not able to engage in regular exercise, they should engage in physical activity according to their abilities and should avoid inactivity



Never Too Late to Start Exercising!

Exercise is a great way to improve health, physical functioning and well-being. Among the reported benefits:

- ▶ improved strength and mobility
- ▶ improved balance which can help prevent falls
- ▶ improved mood, decreased fatigue, lowered blood pressure and cholesterol
- ▶ improved self-esteem
- ▶ increased clarity of thinking
- ▶ Physical Activity can improve sleep, prevent weight gain and improve bowel and bladder function

Sleep

- ▶ Adult should have 7-9 hours of sleep per night
- ▶ Sleep is a vital indicator of overall health and well-being. We spend up to one-third of our lives asleep, and the overall state of our "sleep health" remains an essential question throughout our lifespan.
- ▶ <https://www.sleepfoundation.org/>





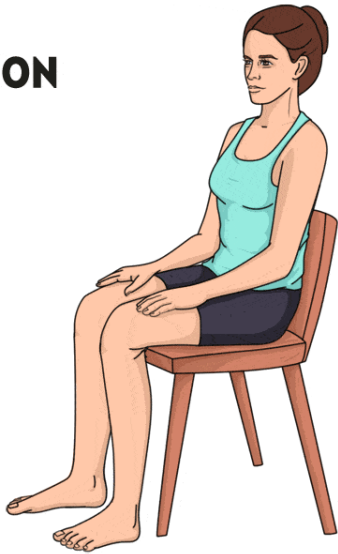
Sleep...



- ▶ Sleep changes occur naturally after age 60. Shifts in hormone and melatonin levels may cause us to take longer to fall asleep, sleep more lightly, and wake up more often during the night
- ▶ Lack of sleep is not to be taken lightly: It depresses our immune systems, affects our daily activities, increases confusion, affects our mood and concentration, and may lead to falls. It's vital to good health as good nutrition, regular exercise, and a positive attitude. So, if someone is not sleeping soundly, that person should consult his/her doctor.
- ▶ Develop a more consistent sleep routine:
 - Go to bed at the same time every night; awake at the same time every morning
 - Fall asleep in the same position
 - Have a cup of warm milk or herbal tea before bedtime
 - Try a warm soak in the tub
- ▶ Address snoring issues

...ZZZ's (cont'd)

PROGRESSIVE MUSCLE RELAXATION



Top10
Home Remedies

- ▶ If snoring is serious it may mean that breathing is interrupted; consider whether sleep apnea might be the cause of sleep problems and talk with a doctor. A C-Pap machine may change the client's life for the better.
- ▶ Try to avoid late night stimulating activities such as eating (especially spicy foods), watching TV, or lively debates with family or friends. Some quiet music or a little reading are better bedtime choices. Try progressive muscle relaxation—systematically tensing and then relaxing all the muscle groups of your body. It's been known to help with insomnia..
- ▶ Skip afternoon naps

- ▶ Move naturally, such as walking, gardening
- ▶ Purpose for waking up each day
- ▶ Routines to deal with stress
- ▶ Stop eating when 80% full and eat smallest meal at end of day
- ▶ Diet includes beans (fava, black, soy and lentil)
- ▶ Drink wine moderately
- ▶ Belong to a faith-based community
- ▶ Put families first
- ▶ Belong to social circles that support healthy behaviors

**Common
Denominators
within the
“Blue Zone”
(places known
for healthy
brain aging)**

THE BEST
BLUE ZONE FOODS
TO
INCREASE LONGEVITY



beans



nuts



fruits & veggies



mushrooms



spinach



sweet potato



whole grains



fish

Food Eaten in the “Blue Zones”

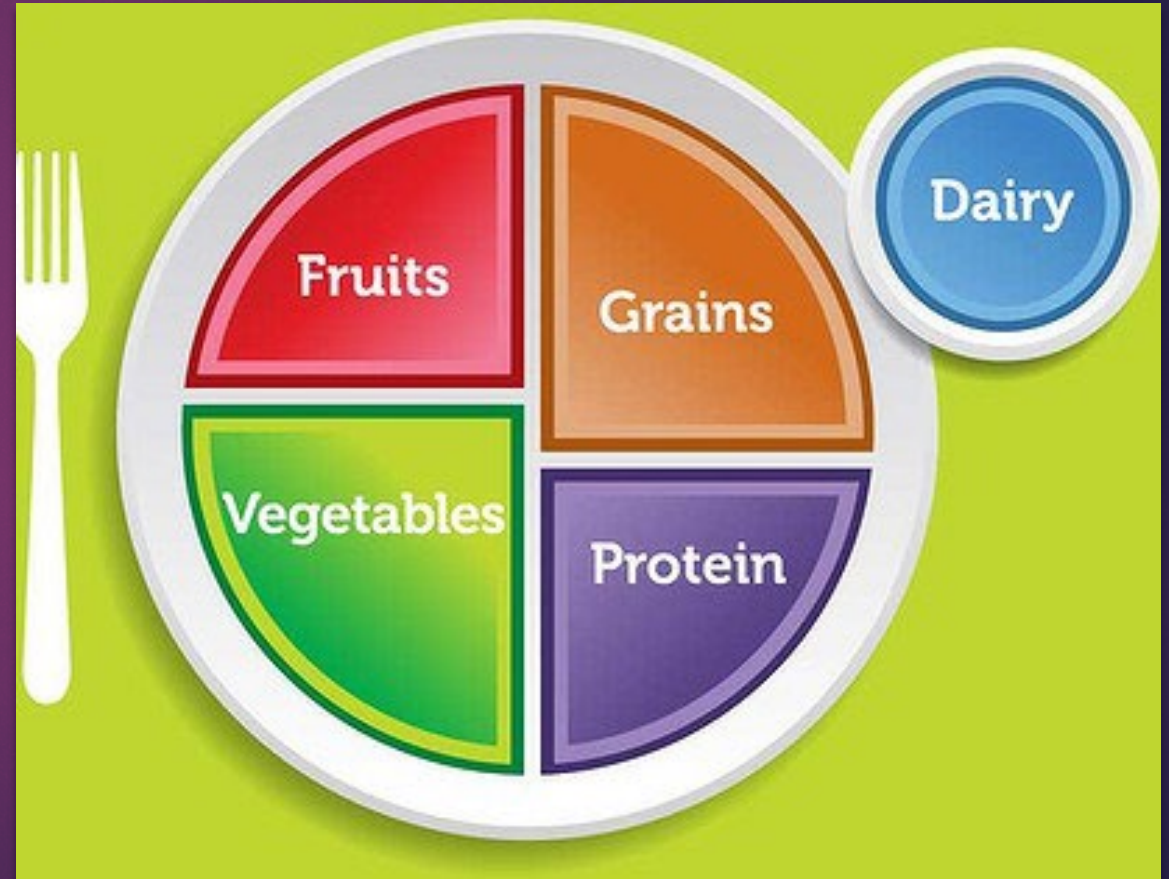
- ▶ Follow the 95:5 rule—eat mostly plants
- ▶ Eat small portions of meat
- ▶ Moderate fish because of pesticides
- ▶ Avoid cow's milk
- ▶ Eat a cup of beans daily
- ▶ Limit sugar; use honey
- ▶ Eat a handful of nuts daily
- ▶ Eat only 100% whole-grain breads
- ▶ Eat whole foods or ones with fewer than five ingredients
- ▶ Drink mostly water

MIND- Mediterranean Intervention for Neurodegenerative Delay

- ▶ Dark chocolate (with at least 85% cocoa)
- ▶ Turmeric
- ▶ Kale
- ▶ Sweet potatoes
- ▶ Berries (blackberry, blueberry, cranberry, raspberry, strawberry)
- ▶ Garbanzo beans
- ▶ Walnuts
- ▶ Fish with omega-3 fatty acids (mackerel, lake trout, herring, wild salmon)
- ▶ Red wine
- ▶ Green tea
- ▶ Nb. Many people combine with **DASH** (***Dietary Approaches to Stop Hypertension***)

Overall Recommendations for Healthy Diet

- ▶ Eat more fruits and vegetables
- ▶ Choose whole grains
- ▶ Consume legumes and nuts
- ▶ Limit sodium, sugar and saturated fats
- ▶ Limit fast food
- ▶ Cook your own meals
- ▶ Learn to read ingredient labels on cans and packaging



Healthier Food and Beverage Choices

- ▶ *Shift from whole milk to low-fat milk for your breakfast cereal*
- ▶ *Shift from soda with added sugars to water during lunch*
- ▶ *Shift from a cream-based pasta dish to one with a lighter sauce and more vegetables for dinner*
- ▶ Healthy eating can prevent chronic diseases like obesity, heart disease, high blood pressure and Type 2 diabetes
- ▶ *You can make small changes to the way you eat with the result that you will have healthier outcomes*





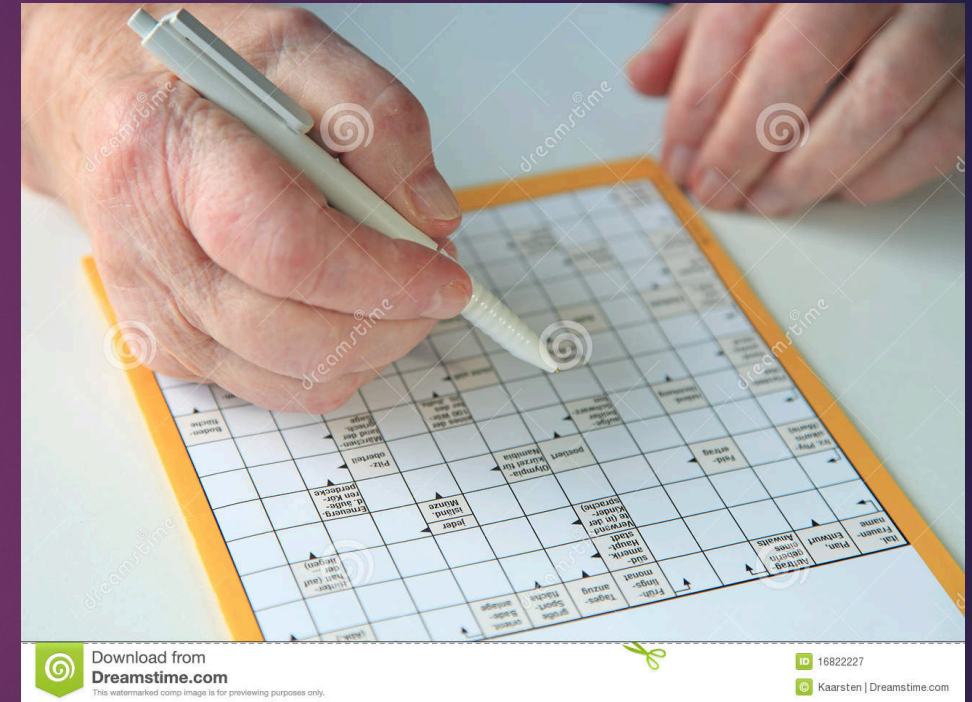
Try Out these Shifts

- ▶ White Bread to Whole- Wheat
- ▶ Fatty cut of meat to Seafood or beans
- ▶ Ice Cream to homemade fruit smoothies
- ▶ Potato chips to unsalted nuts
- ▶ Butter to olive oil

[ChooseMyPlate.gov](https://www.choosemyplate.gov)

Mental Stimulation

- ▶ **Mental activity and lifelong learning.** Staying mentally active can enrich your life, reduce boredom, and confer a sense of purpose and accomplishment—all good for cognitive health.
- ▶ Mental stimulation does not have to be in a classroom/academic setting. You can learn a new hobby, do puzzles, watch an educational television show, learn to play an instrument, learn to sing a new song, learn how to cook a new recipe
- ▶ Some researchers have argued that activities that are mentally stimulating can help people remain more mentally flexible and adaptive and may establish “cognitive reserve,” which serves as a buffer to cognitive decline
- ▶ What opportunities can we provide to persons served during this pandemic?



Social Connection

- ▶ **Staying socially active.** Social activity, and the interpersonal exchanges can help counter depression and help people maintain cognitive abilities
- ▶ Connect with family, friends and communities
- ▶ Counteract loneliness which is a risk factor for cognitive decline
- ▶ What are some of the opportunities that we can create for persons served to remain socially active and connected to friends and relatives?



Learn ways to manage stress

- ▶ Hormones secreted when you're under stress have a stronger effect on older brains, challenging your ability to recover from emotional upset. So, take change slowly and learn ways to cope with anxiety or tension
- ▶ What are some ways to address current stressors related to COVID-19?



Developing Healthy Habits

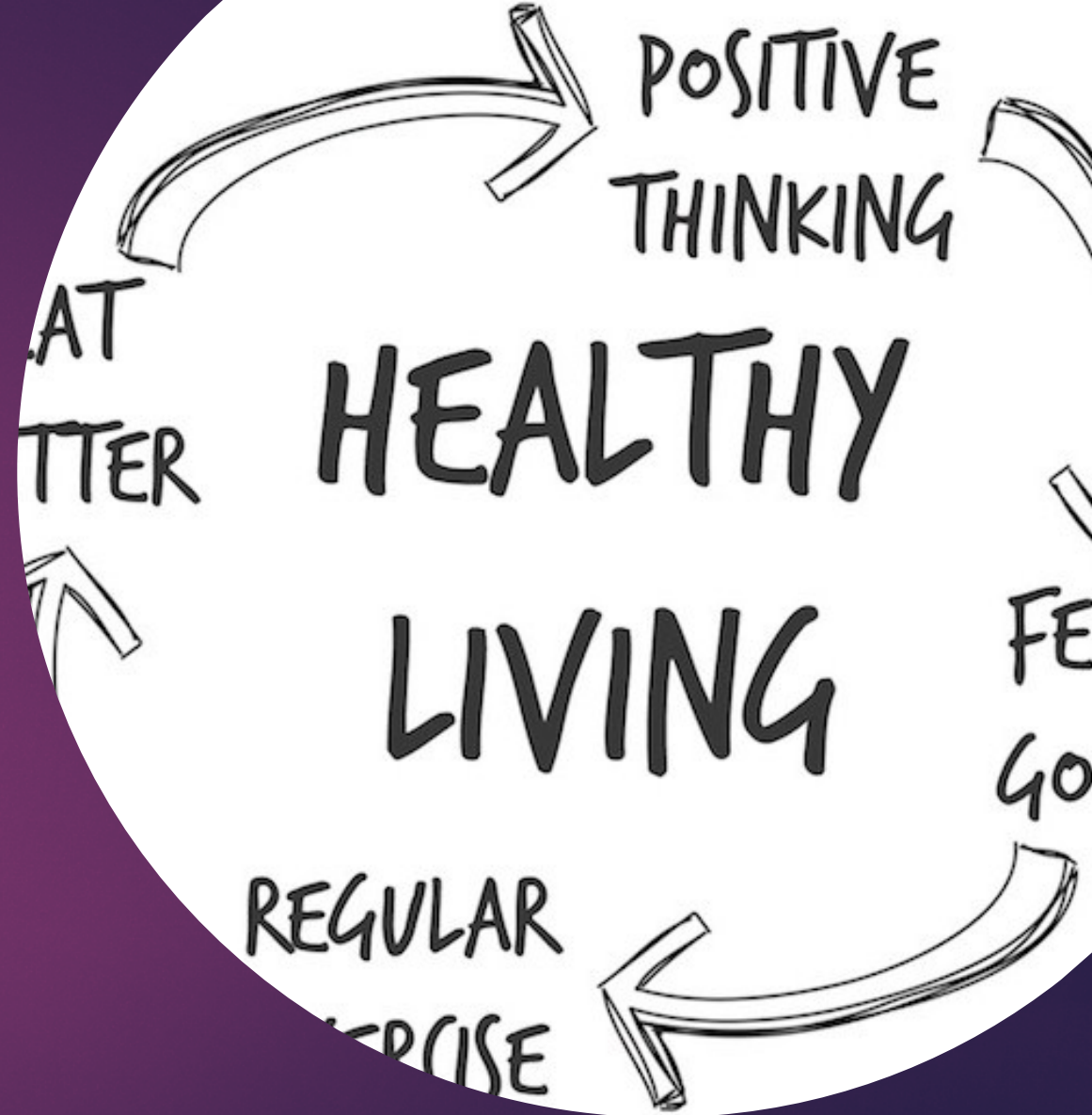
- ▶ It takes at least 6 weeks to develop a new habit
- ▶ Track your behavior and identify patterns (on-track and off-track with your goals)
- ▶ Visualize your future goals to offset the tendency for “delay discounting”
- ▶ Delay discounting= tendency to undervalue long-term benefits in favor of smaller, immediate rewards
- ▶ Have someone to whom you are accountable for change in habits
- ▶ Remember, motivation can vary so don't rely on it for habit change

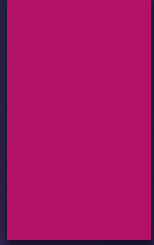


**KEEP
CALM
AND
STAY
ON TRACK**

How Do We Develop and Maintain Healthy Habits?

- ▶ Look at your current patterns of behavior and what triggers unhealthy habits (**awareness**)
- ▶ Make a **plan** that includes small reasonable steps
- ▶ Make your healthy choices the **easy** choices
- ▶ Identify what you need to be **successful**
- ▶ Get **friends and loved ones** involved
- ▶ Plan for **obstacles** including when you are stressed, fatigued, lack motivation to continue healthy lifestyle choices or are tempted by old habits





Where to Start ?

Positively Impact Brain Health.



Cognitive changes of Aging with Disabilities which deserve attention

- ▶ Memory problems that interfere with everyday functioning
- ▶ Problems in orientation to time, place or person (presuming that the person was previously oriented in these spheres)
- ▶ Slowing down in movement, thinking and processing information
- ▶ A coarsening of social behavior
- ▶ Increased impulsivity
- ▶ Difficulty with new learning
- ▶ Change in ability to communicate (impoverishment of communication)
- ▶ Problem pursuing well-learned routines and activities
- ▶ Confusion in familiar places



Know the Warning Signs of Dementia

- ▶ Unexpected memory problems
- ▶ Getting lost or misdirected in a familiar setting
- ▶ Problems with gait or walking
- ▶ New seizures
- ▶ Confusion in familiar situations or with customary tasks at home or at work
- ▶ Changes in personality
- ▶ Difficulty initiating or sustaining social connections with family and friends (when COVID-safe opportunities are available)

Take Home Messages

- ▶ Although there are genetic and unchanging aspects brain functioning , there is much that can be done to promote healthy brain aging
- ▶ There are healthy habits that can be begun early in life that will impact upon brain health during older age
- ▶ Attention to aging with a healthy brain has implications for the overall health, wellbeing and independence of persons served
- ▶ Although there are some modifications we need to make in health promotion activities during this pandemic, activities can and should continue



Training and Supports

- ▶ Train families and staff to recognize signs of increased loneliness, depression or anxiety
- ▶ Help families and staff learn when to refer for professional mental health assistance and support
- ▶ Train families and staff to observe for changes in adaptive functioning
- ▶ Help families and staff learn when to refer for professional assistance and support
- ▶ A good place to begin is by conferring with the person's served health care practitioner

References

- ▶ Edward GA III, Gamez N., Escobedo G Jr., Calderone O and Moreno-Gonzalez, I. (2019) Modifiable Risk Factors for Alzheimer's Disease. *Front.Aging Neurosci.* 11:146.
- ▶ Esralew L, Janicki MP, DiSipio M, et al, Members of the National Task Group Section on Early Detection and Screening. National task group early detection screen for dementia. *NADD Bull.* 2013;16:47–54.
- ▶ Olivari, B. S., Baumgart, M., Lock, S. L., Whiting, C. G., **Taylor, C. A.**, Iskander, J., . . . McGuire, L. C. (2018). CDC Grand Rounds: Promoting Well-Being and Independence in Older Adults. *MMWR. Morbidity and Mortality Weekly Report*, 67(37), 1036-1039. <http://dx.doi.org/10.15585/mmwr.mm6737a4>
- ▶ Olivari BS, French ME, McGuire LC. The Public Health Road Map to Respond to the Growing Dementia Crisis. [*Innovation in Aging, Volume 4\(1\)*](#)
- ▶ Snowden, M., Steinman, L., Carlson, W.L., Mochan, K.N., Abraido-Lanza, A.F., Bryant , L. ... & Anderson, L.A. (2015). Effect of Physical Activity, Social Support and Skills Training on Late-Life Emotional Health: A Systematic Literature Review and Implications for Public Health Research" *Frontiers in Public Health*.
- ▶ Zeilinger EL, Gärtner C, Janicki MP, et al. Practical applications of the NTG-EDSD for screening adults with intellectual disability for dementia: a German-language version feasibility study. *J Intellect Develop Disabil.* 2016;41:42–9.
- ▶ Zeilinger EL, Stichl K.A., Weber G.A. A systematic review on assessment instruments for dementia in persons with intellectual disabilities. *Res. Dev Disabil* 2013;34:3962-77.

Thank you for attending this presentation!

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