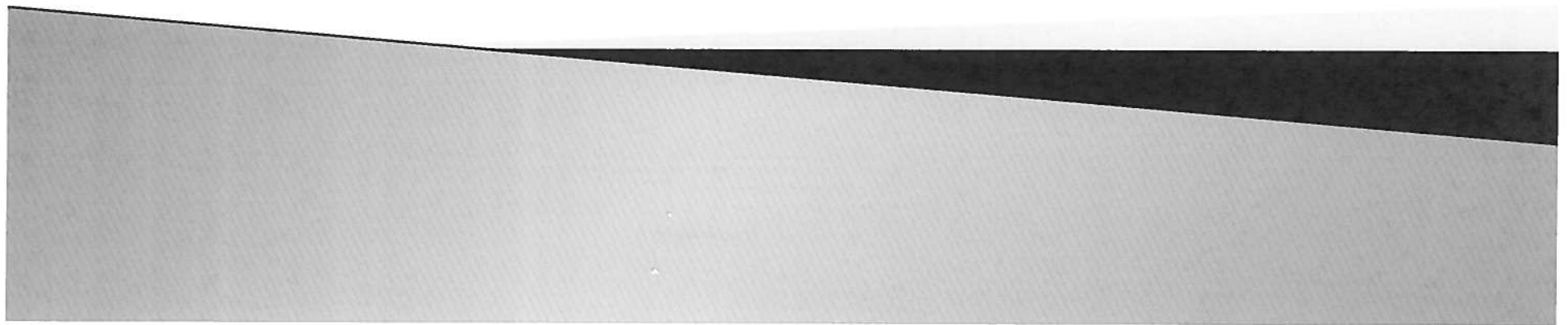


The Role of the Holistic Nurse in Maintaining a Healthy Brain

**Carol Hahn, MSN, RN, CPT, RYT
Wellness and Fitness Nurse**



Objectives

After attending this presentation, the participant will be able to:

- ▶ Discuss 3 brain changes that occur as we age
- ▶ List 4 warning signs of dementia
- ▶ Apply 3 modalities that help enhance brain health as people age



General Changes As We Age

- ▶ Decrease in overall number of cells
 - Cells become larger
 - Less ability to divide and reproduce
- ▶ Increase in amount of fat
- ▶ Reduction in lean body tissue
- ▶ Decrease in body fluid
- ▶ Decrease in resting metabolism
- ▶ Problems conserving water in body



Sensory Organs and Sensation



- ▶ Eyesight changes – Presbyopia
- ▶ Hearing decreases
- ▶ Auditory reaction time increases
- ▶ Decreased sense of smell
- ▶ Reduction in tactile sensation

Psychological Changes

Personality

- ▶ Basic personality remains the same
- ▶ Rigidity more related to physical and mental limitations

Memory

- ▶ Memory for past events is better than recall of more current information



Psychological Changes (cont.)

Intelligence

Basic intelligence
remains same



Learning

May demonstrate less
readiness to learn
Depend more on
previous learning
experiences rather
than experimenting
with new problem
solving techniques

Normal Brain Aging: What is Maintained or Gets Better?

- ▶ Intelligence
- ▶ Ability to learn
- ▶ Working memory
- ▶ Vocabulary
- ▶ Musical and artistic memory



Normal Brain Aging: What is Maintained or Gets Worse?

- ▶ Processing & recalling information
- ▶ Finding the right word
- ▶ Visual & auditory perception
- ▶ Multi-tasking
- ▶ Processing medications
- ▶ Remembering ...

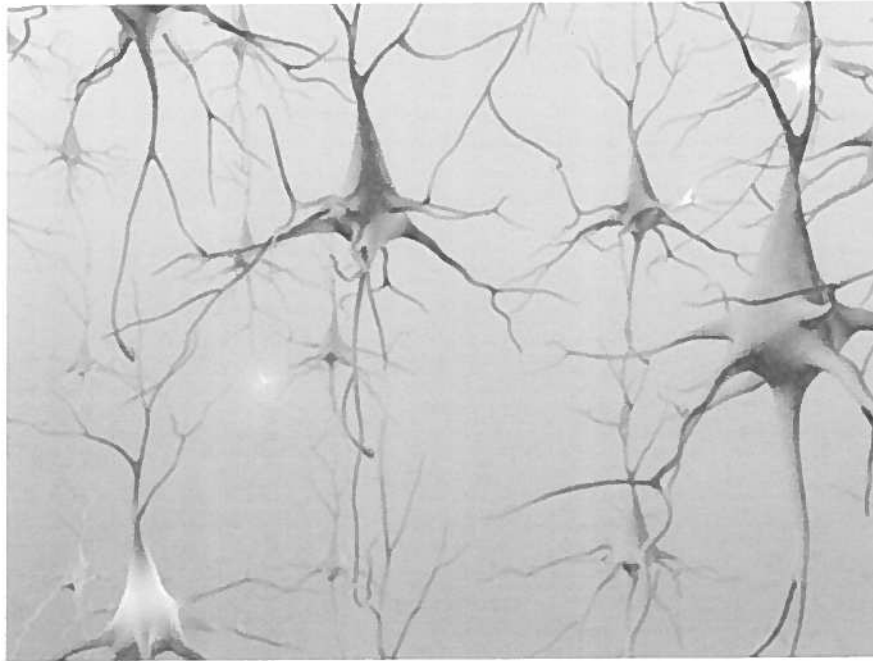


Brain



- ▶ Brain is most powerful organ, yet weighs only about three pounds.
- ▶ Supplied by one of body's richest networks of blood vessels
- ▶ With each heart beat, arteries carry about 20–25% of blood to brain
- ▶ Nourishes brain with oxygen and fuel

Neurons

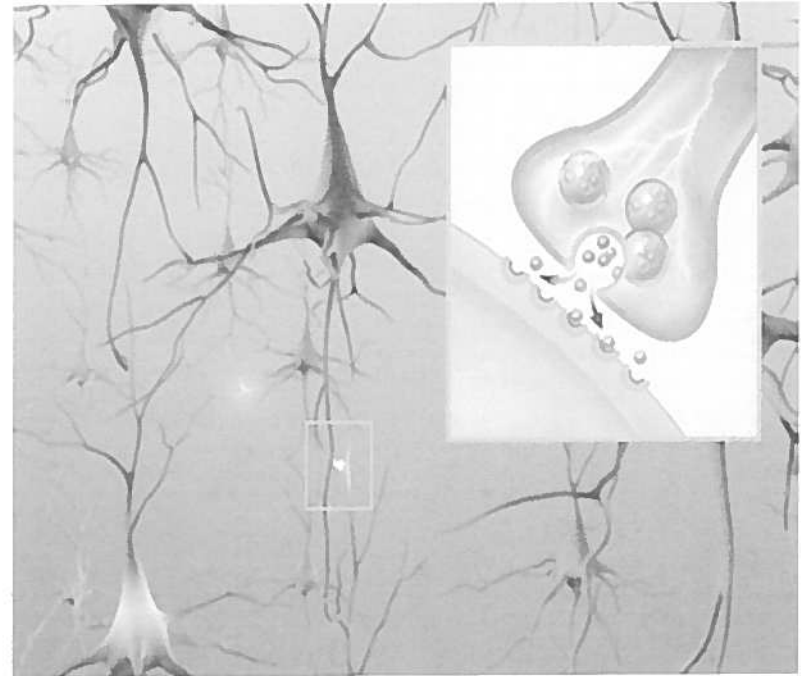


- ▶ Adult brains contains about 100 billion neurons – branches connect at more than 100 trillion points
- ▶ Signals travel through “neuron forest” – form basis of memories, thoughts, and feelings



Cell Signaling

- ▶ Nerve cells connect to one another at synapses
- ▶ When charge reaches synapse, triggers release of tiny bursts of chemicals called neurotransmitters – travel across synapse, carry signals to other cells



Brain Plasticity

- ▶ When we learn new things, brain puts out new neural branches and forms new connections among existing neurons
- ▶ Brain is constantly changing, morphing and rewiring itself
- ▶ Brain is able to change and adapt as a result of experience



Possible Causes Of Memory Loss



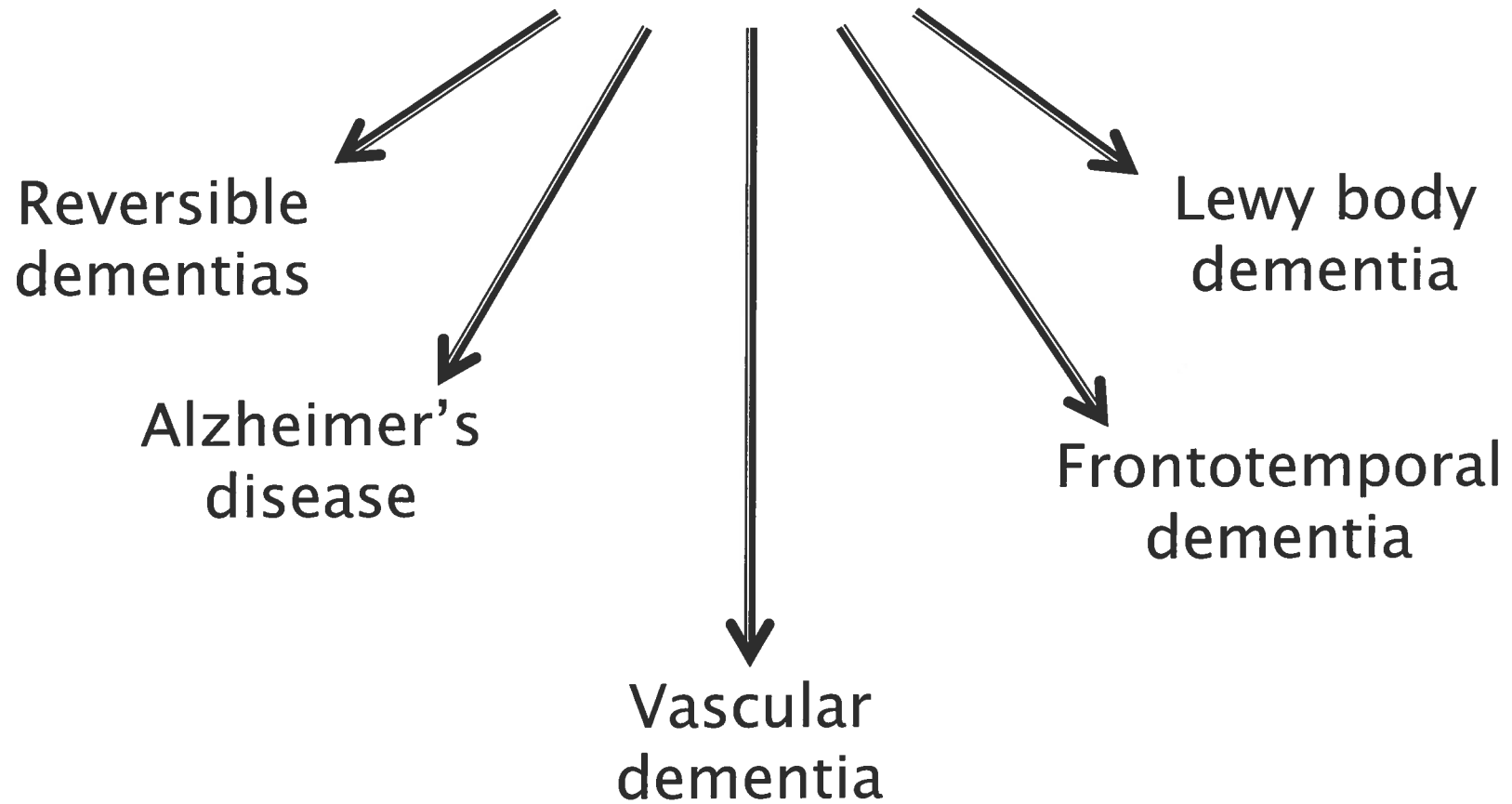
- ▶ Many factors can cause memory loss
- ▶ Some reversible
- ▶ Some more serious
- ▶ Important to get full medical evaluation

Remember:

**Dementia is Not
a Normal Part of
Aging**



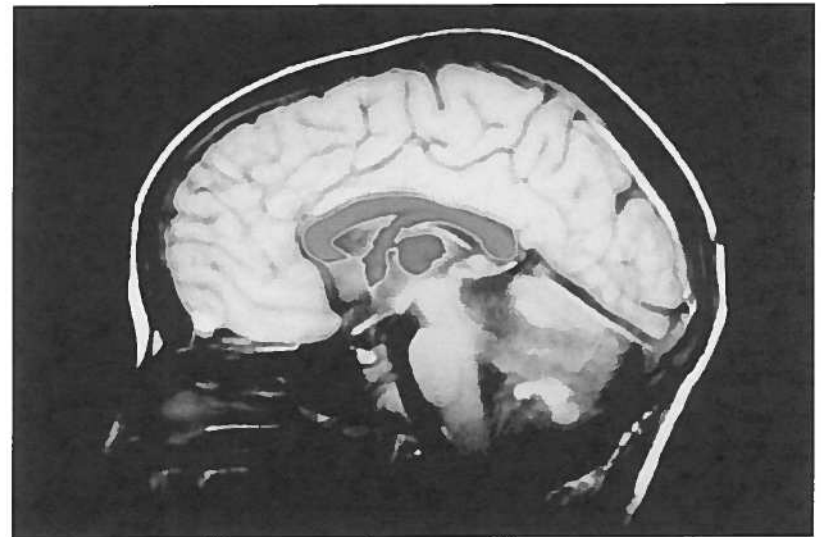
Dementia



What is Dementia?

Loss of memory and other intellectual abilities serious enough to interfere with daily life

Alzheimer's is most common form of dementia – accounts for 70% of all cases

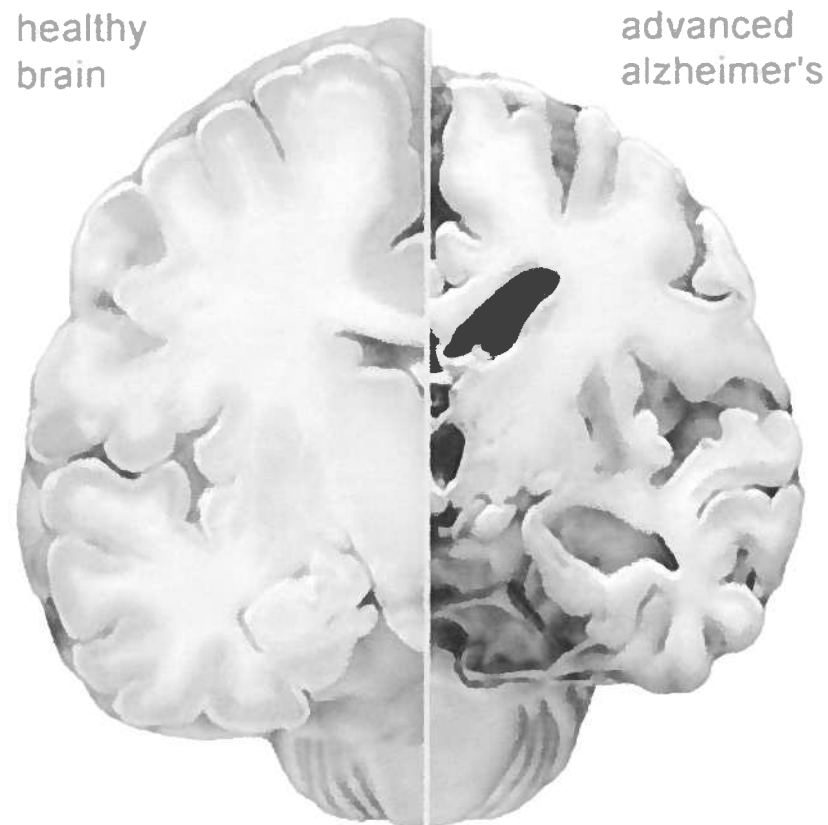


Alzheimer's Disease

- ▶ Progressive brain disorder that gradually destroys brain cells and affects a person's memory, ability to learn, make judgments, communicate, and carry out basic daily activities
- ▶ **Not a normal part of aging**
- ▶ **Progressive, fatal, has no cure**



Brain Changes with Alzheimer's



Facts About Alzheimer's Disease

- ▶ 6th leading cause of death in U.S.
- ▶ 5.2 million Americans live with Alzheimer's
- ▶ Someone develops Alzheimer's every 67 seconds
- ▶ Baby boomers entering age of greatest risk
- ▶ 1 out of 9 over 65; 1 out of 3 over 85
- ▶ Nearly 2/3 are women



10 Warning Signs of Dementia

- ▶ Memory changes that disrupt daily life
- ▶ Challenges in planning or solving problems
- ▶ Difficulty completing familiar tasks at home, work or leisure
- ▶ Confusion with time or place
- ▶ Trouble understanding visual images and spatial relationships



10 Warning Signs of Dementia (cont.)



- ▶ New problems with words in speaking or writing
- ▶ Misplacing things and losing ability to retrace steps
- ▶ Decreased or poor judgment
- ▶ Withdrawal from work or social activities
- ▶ Changes in mood and personality



Risk Factors You Cannot Change



- Age
 - 1 out of 9 over 65 years
 - 1 out of 3 over 85 years
- Family History
 - Familial Alzheimer's – rare genetic mutation
- Genetics
 - Genetic variant (not mutation) APOE-4

Risk Factors You Can Impact

- ▶ Physical Activity and Exercise
- ▶ Stress Reduction
- ▶ Nutrition
- ▶ Social Interaction



Physical Activity and Exercise

- ▶ Benefits of exercise far outweigh the risks in most adults
- ▶ Program of regular exercise improves and maintains physical fitness and health.

Includes:

- Aerobic (cardiovascular)
- Strength (resistance)
- Flexibility
- Balance (neuromotor)



Exercise and Dementia

It's been known that exercise is great preventive medicine, but we generally think in terms of helping decrease risk of:

- ▶ cardiovascular disease
- ▶ diabetes
- ▶ cancer



*****Better cognitive function*****

What's good for the heart is good for the brain!

How Does Exercise Help With Dementia?

- ▶ Increases number of new cells formed in hippocampus
- ▶ Benefits vascular system
 - Brings more blood to brain
 - Decreases high blood pressure
- ▶ May increase levels of chemicals in brain needed to perform mental processes
- ▶ New connections between brain cells
- ▶ Helps preserve brain function



How Does Exercise Help With Dementia? (cont.)



Avoid Head Trauma While
Exercising – Wear a Helmet!!

Adults who are more
physically active:

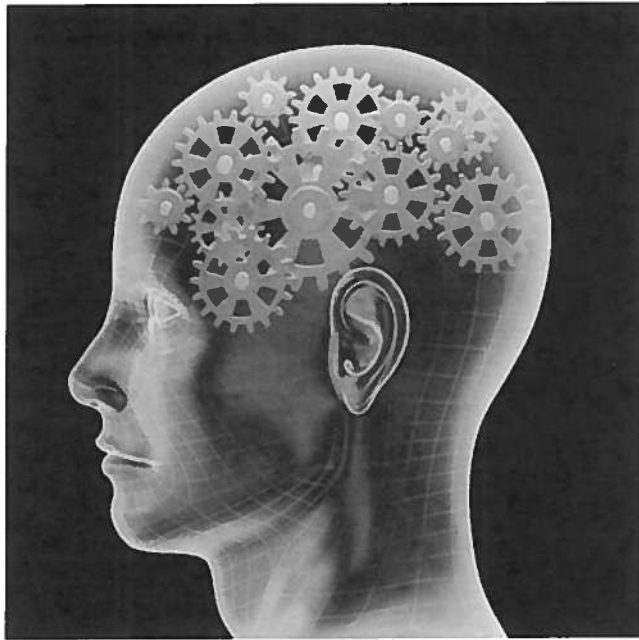
- ▶ Have higher mental processing speed
- ▶ Better at planning, scheduling, and multi-tasking
- ▶ Focus attention better on relevant environmental cues – think about driving

Physical Activity Guidelines

- ▶ 150 minutes per week of moderate intensity exercise
- ▶ Can be accumulated in periods of 10 minutes or longer – for example, 10 minutes, 3 times per day
 - Also helps break up sitting time!
 - Time spent sitting may negate some positive benefits of a daily exercise session



Train Your Brain



- ▶ Information making up memory is stored in many parts of brain
- ▶ To maintain a good memory, you need to train for it
- ▶ More time engaged in various stimulating mental activities, greater delay in mental decline

Train Your Brain (cont.)

Challenge brain with novel tasks to exercise and improve brain function. Activities should:

- ▶ Engage your attention
- ▶ Involve more than one of your senses
- ▶ Break routine activity in unexpected, nontrivial way



Keep Your Brain Active

Stay curious and involved — commit to lifelong learning:

- ▶ Read, write, work crossword or other puzzles
- ▶ Attend lectures and plays
- ▶ Enroll in courses at local adult education center, community college or other community group
- ▶ Play games
- ▶ Garden
- ▶ Try memory exercises



Challenge Your Brain

- ▶ **RED**
 - ▶ **BLUE**
 - ▶ **GREEN**
 - ▶ **YELLOW**
 - ▶ **BLACK**
- **ORANGE**
 - **YELLOW**
 - **BLUE**
 - **BLACK**
 - **GREEN**



Stress Management

- ▶ Stress is body's way of responding to any kind of demand
- ▶ Stress can be good or bad
- ▶ Causes release of chemicals – adrenaline and cortisol
- ▶ Stress can contribute to memory and concentration problems
- ▶ Devote time each day to stress-reduction techniques



Research Study from UCLA

Current study finds practicing yoga every day can:

- ▶ Improve cognitive functioning
- ▶ Lower levels of depression for caregivers
- ▶ Increased telomerase activity – slowed cellular aging

12 minute yogic practice of ancient chanting meditation called Kirtan Kriya. Performed every day at same time for 8 weeks

- Lavretsky, H., et al. (2011).
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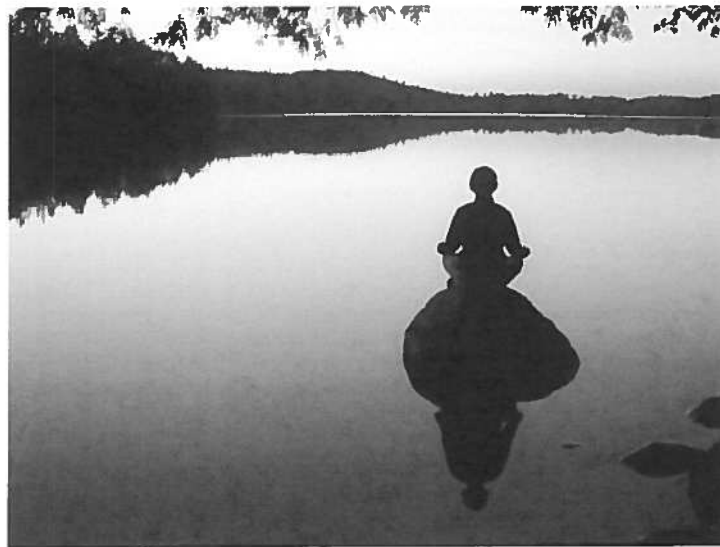
Kirtan Kirya

- ▶ Type of meditation from Kindalini yoga tradition
- ▶ Practiced for thousands of years
- ▶ Sometimes called singing exercise – involves singing sounds along with repetitive finger movements, or mudras
- ▶ Can be adapted to several lengths, but practicing for just 12 minutes a day has been shown to be beneficial



Mantra Meditation

- ▶ Silently repeat a calming word, thought or phrase to prevent distracting thoughts
- ▶ Focus exclusively on mantra to achieve a state of perfect stillness and consciousness



Mantra

Designed to be uplifting. 4 primal sounds:

- ▶ Saa – birth or infinity
- ▶ Taa – life
- ▶ Naa – death or transformation
- ▶ Maa – rebirth

Sounds form “Sat Nam” which means “My Best Self”



Saa



Taa



Naa



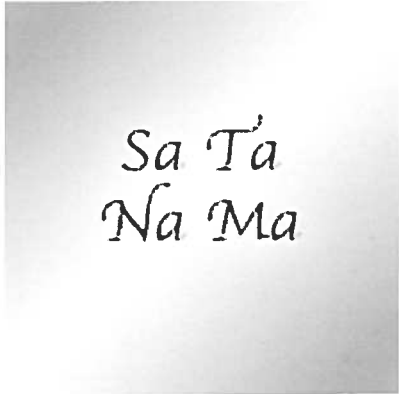
Maa



Mantra (cont.)

12 Minutes Per Day:

- ▶ 2 minutes out loud
- ▶ 2 minutes in a whisper
- ▶ 4 minutes silently
- ▶ 2 minutes in a whisper
- ▶ 2 minutes out loud



*Sa Ta
Na Ma*

Now let's practice . . .

- Alzheimer's Research and Prevention Foundation
<http://www.alzheimersprevention.org/>

Other Ways to Manage Stress

- ▶ Get a good night's sleep. Recharges and cleans brain
- ▶ Minimize multitasking. Balance your life
- ▶ Exercise
- ▶ Take regular breaks
- ▶ Tai Chi and yoga
- ▶ Healthy diet
- ▶ Laugh



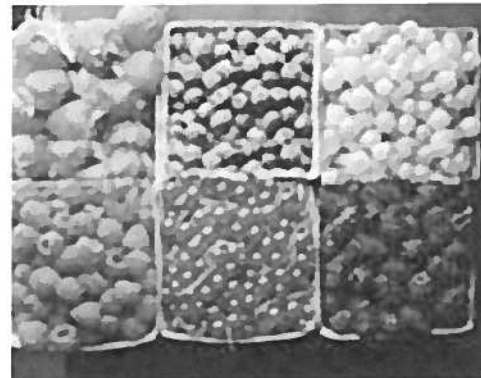
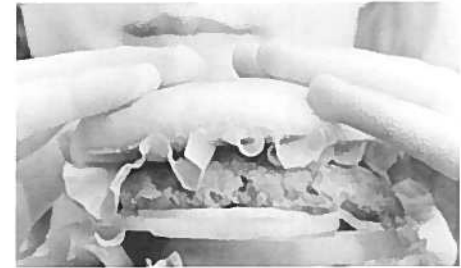
Healthy Nutrition



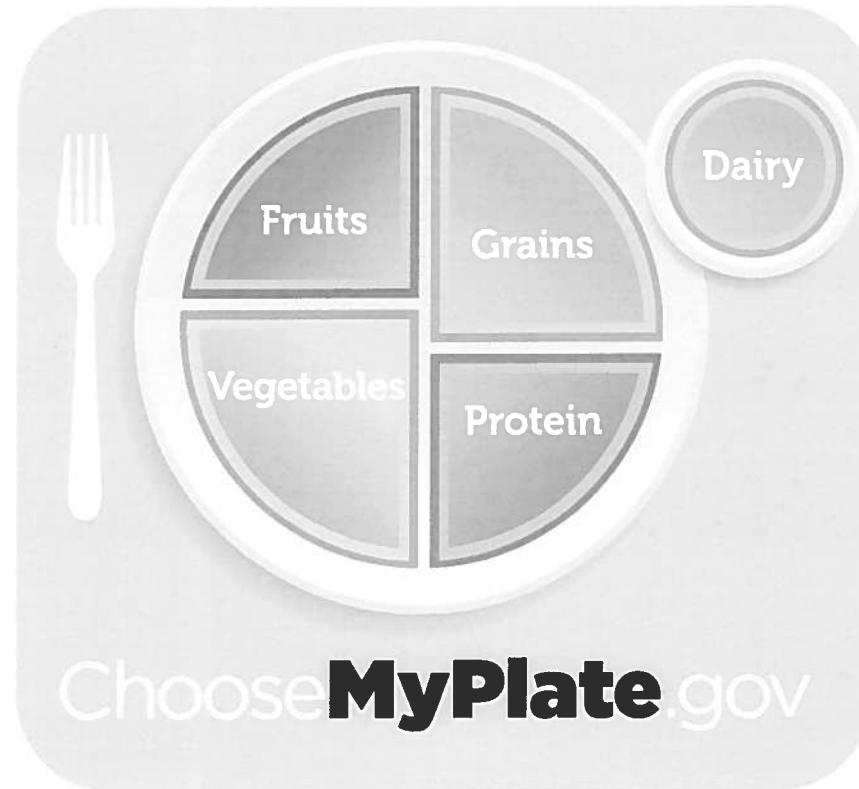
- ▶ Brain needs proper fuel to function well
- ▶ No specific diet – make healthy eating a lifestyle
- ▶ Eating healthy means getting right vitamins and nutrients to nourish all organs and cells of body
- ▶ Stay hydrated

Healthy Nutrition (cont.)

- ▶ Low fat diet
 - Low in trans fats and saturated fats
 - High in “good” fats
- ▶ Lean protein
- ▶ Complex carbohydrates
 - Whole grains
 - Fruits and vegetables
- ▶ Antioxidants



www.choosemyplate.gov



Social Interaction

Stay socially engaged in activities that stimulate mind and body:

- ▶ Stay active in workplace
- ▶ Volunteer in community groups and causes
- ▶ Join bridge clubs, square dancing clubs or other social groups
- ▶ Travel



Objectives Review

After attending this presentation, the participant will be able to:

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Questions




Thank you for your time!

Carol Hahn, MSN, RN, CPT, RYT
Wellness and Fitness Nurse
CarolHahnRN@earthlink.net
CarolHahnRN.com



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