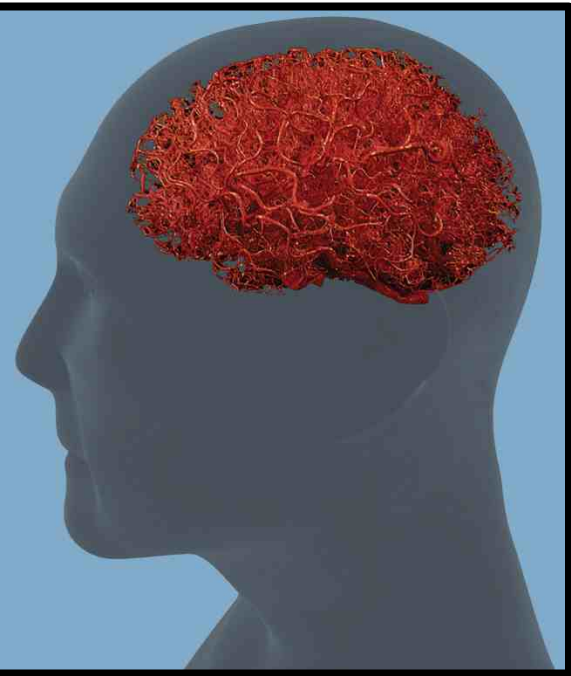


# ALZHEIMER'S DISEASE AND DEMENTIA

## ACUTE CARE 2

NURS 2830



# Learning Objectives

- Define dementia and Alzheimer's disease and 3 stages of AD?
- Define and differentiate between dementia and Alzheimer's
- List at least 5 common symptoms of Alzheimer's
- Describe the changes that occur during the course of Alzheimer's
- Identify at least 3 risk factors associated with Alzheimer's
- Describe the role of caregivers
- Definition of Alzheimer's disease progression
- Differences between dementia, depression, and delirium
- Importance of person centered care and its implementation
- Importance of stress management with family and staff

# Delirium, Depression, and Dementia

- Delirium
  - Acute onset, can be treated
  - Altered state of consciousness
- Depression
  - Gradual onset, can be treated
  - Look for signs, such as low self-esteem
- Dementia
  - Gradual onset, might be treated
  - Memory loss and decline in cognitive function

# ALZHEIMER'S EYE TEST

- Count every “F” in the following text:
  - FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF YEARS....
  - How many “Fs” did you find?

# What Is Dementia?

- ❖ A lot of people experience memory lapses. Some lapses are serious, others are not.
  - ❖ People who present with serious changes in their memory and or personality and behavior may suffer from one of many diseases that result in dementia.
- ❖ The term dementia describes a group of symptoms that are caused by brain dysfunction.



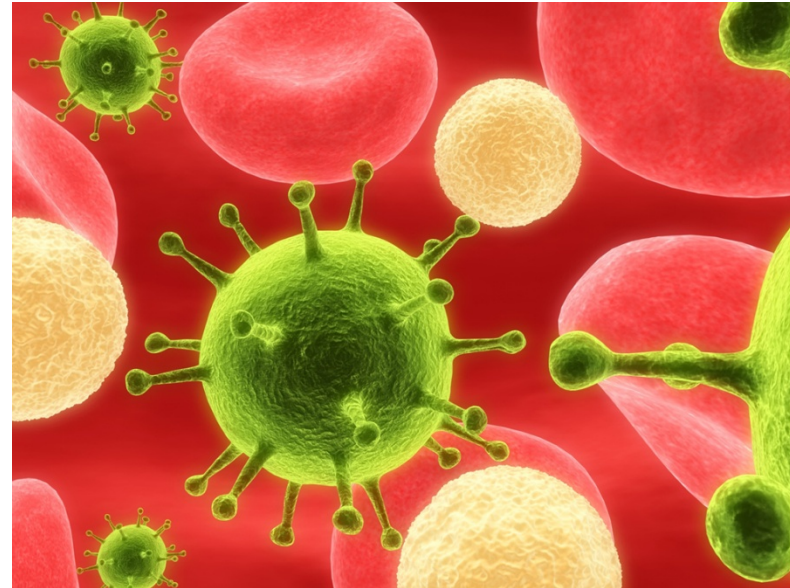
# Dementia Symptoms May Include:

- ❖ Asking the same question repeatedly
- ❖ Getting disoriented about time, people, and places
- ❖ Becoming lost in familiar places
- ❖ Neglecting personal safety, hygiene, and nutrition
- ❖ Being unable to follow directions



# Causes of Dementia

- ❖ People with dementia lose their abilities at different rates.
- ❖ Dementia is caused by many different conditions or diseases.
- ❖ Some of these can be reversed, others cannot be reversed.



# Causes of Dementia



❖ Reversible conditions could be:

- High fever
- Dehydration
- Vitamin deficiency
- Poor nutrition
- Bad reactions to medicine
- Problems with the thyroid gland



# Diseases that can cause Dementia

❖ Parkinson's Disease

❖ Supra Nuclear Palsy

❖ Lewy Body Disease

❖ Alzheimer's Disease

❖ Chronic Alcoholism

❖ Vascular Disease

❖ Pick's Disease

❖ Mixed Disease

# Two Most Common Causes of Dementia

❖ **Alzheimer's disease**

❖ **Multi infarct -dementia  
(vascular dementia)**

❖ These types of dementia are irreversible– they can not be cured.



# Multi Infarct Dementia or Vascular Dementia

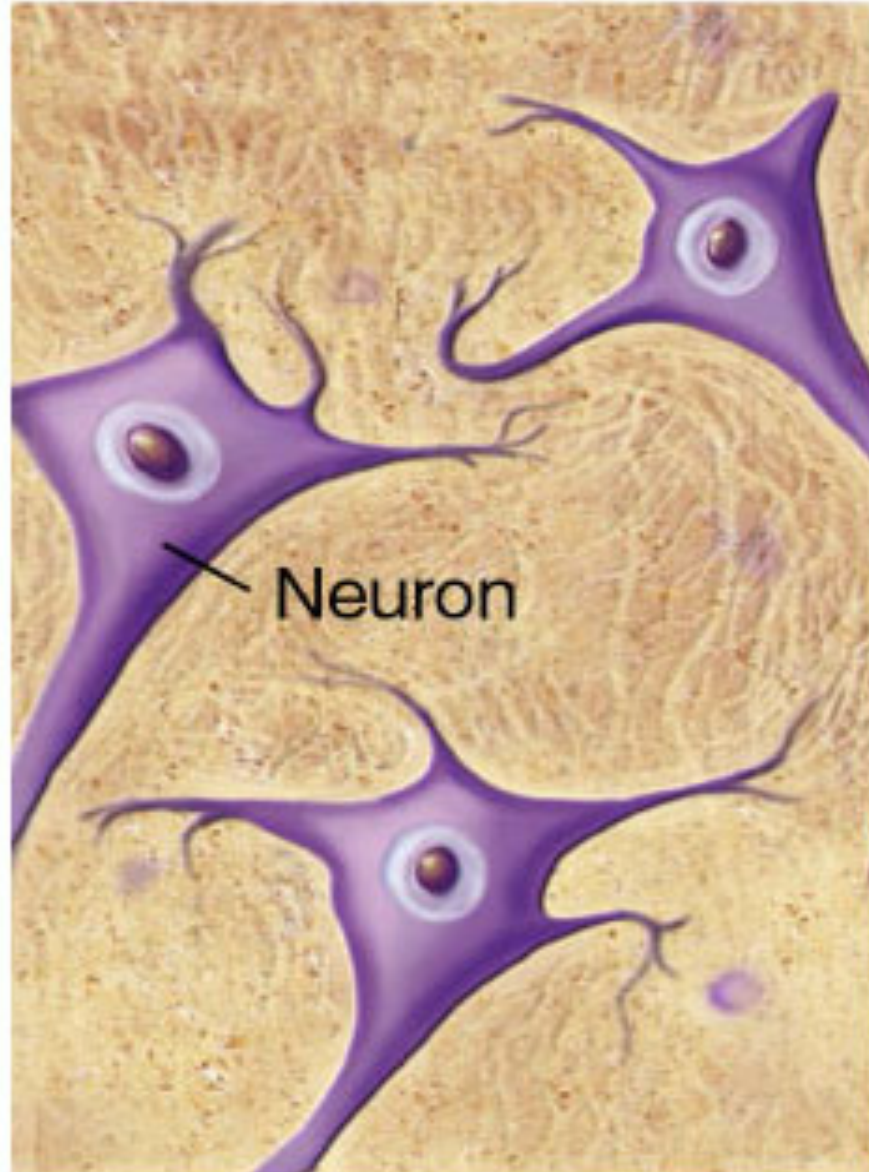


- ❖ In vascular dementia, a series of small strokes or changes in the brain's blood supply may result in the death of the brain tissue.
- ❖ The location in the brain where the small strokes occur determines the seriousness of the problem and the symptoms.
- ❖ Symptoms that begin suddenly may be a sign of this kind of dementia.
- ❖ People with this type of dementia are likely to show signs of improvement or remain stable for long periods of time, then quickly develop new symptoms of more strokes occur.
- ❖ In many folks, high blood pressure is to blame.

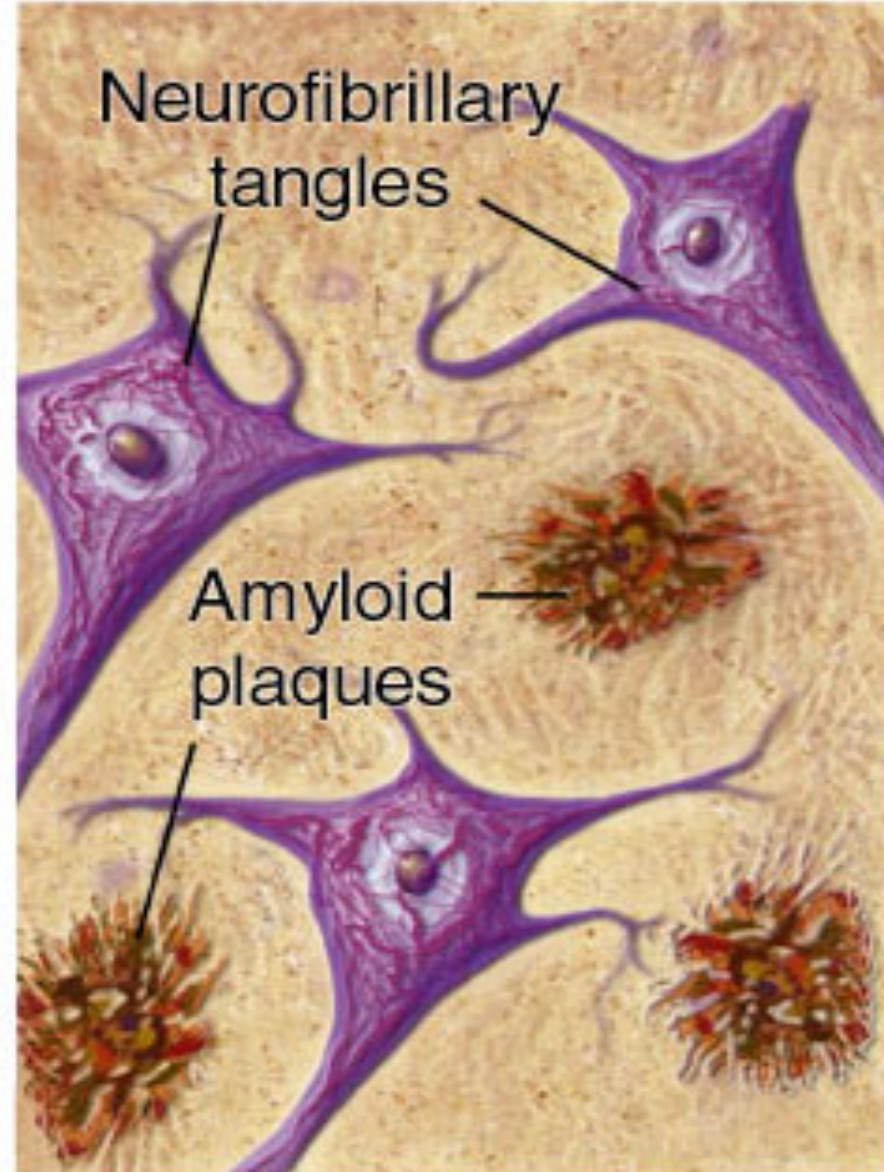
# Alzheimer's Disease?

- ❖ Dementia was first described by a German physician, Alois Alzheimer.
- ❖ Observed in a 51 year old female patient with memory loss, disorientation, and hallucinations.
- ❖ Post mortem, studies characterized senile plaques and neurofibrillary tangles in the cerebral cortex.
- ❖ Senile plaques are extracellular accumulation of beta-amyloid
- ❖ Neurofibrillary tangles are intracellular strands of nerve bundles

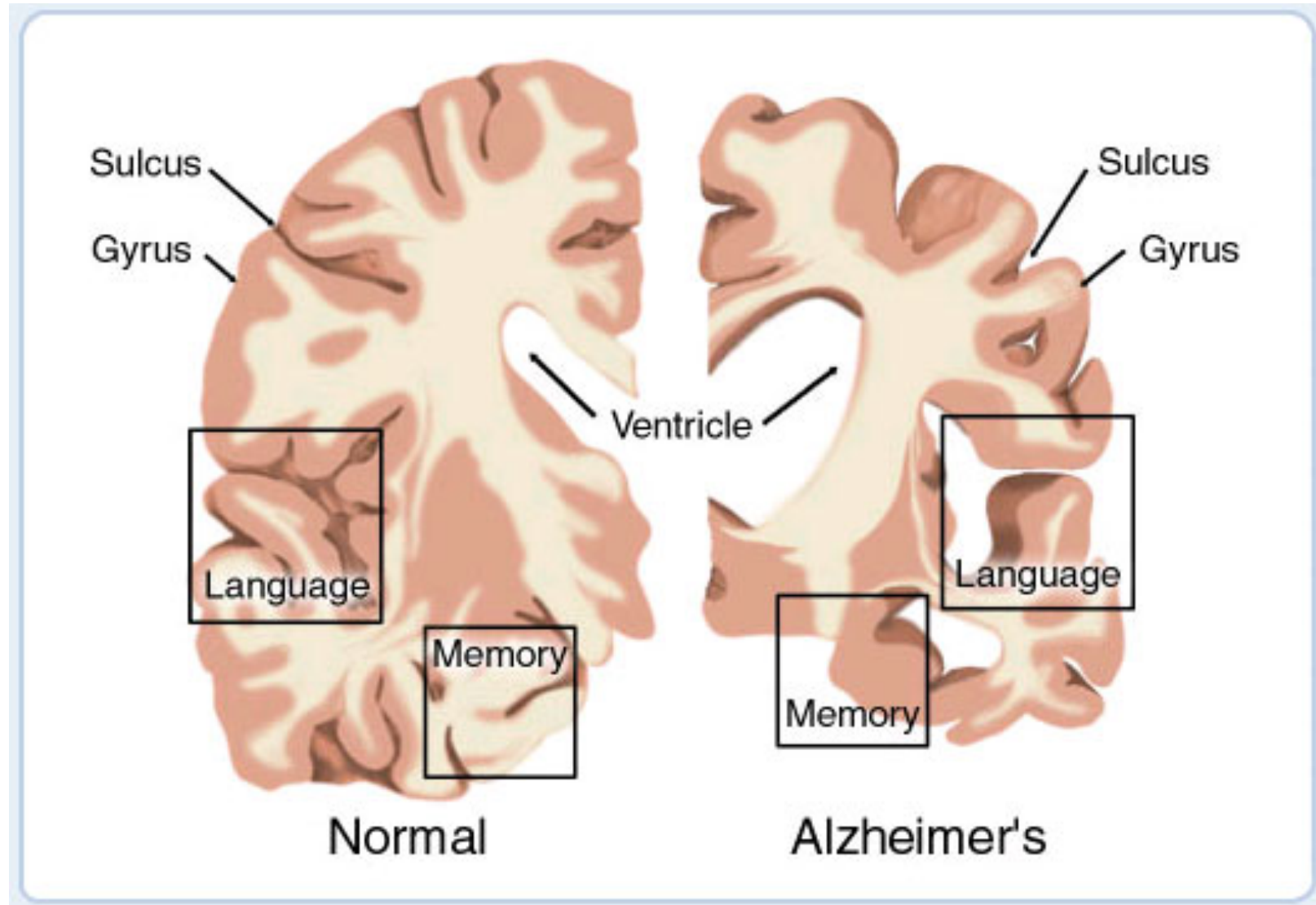
Normal



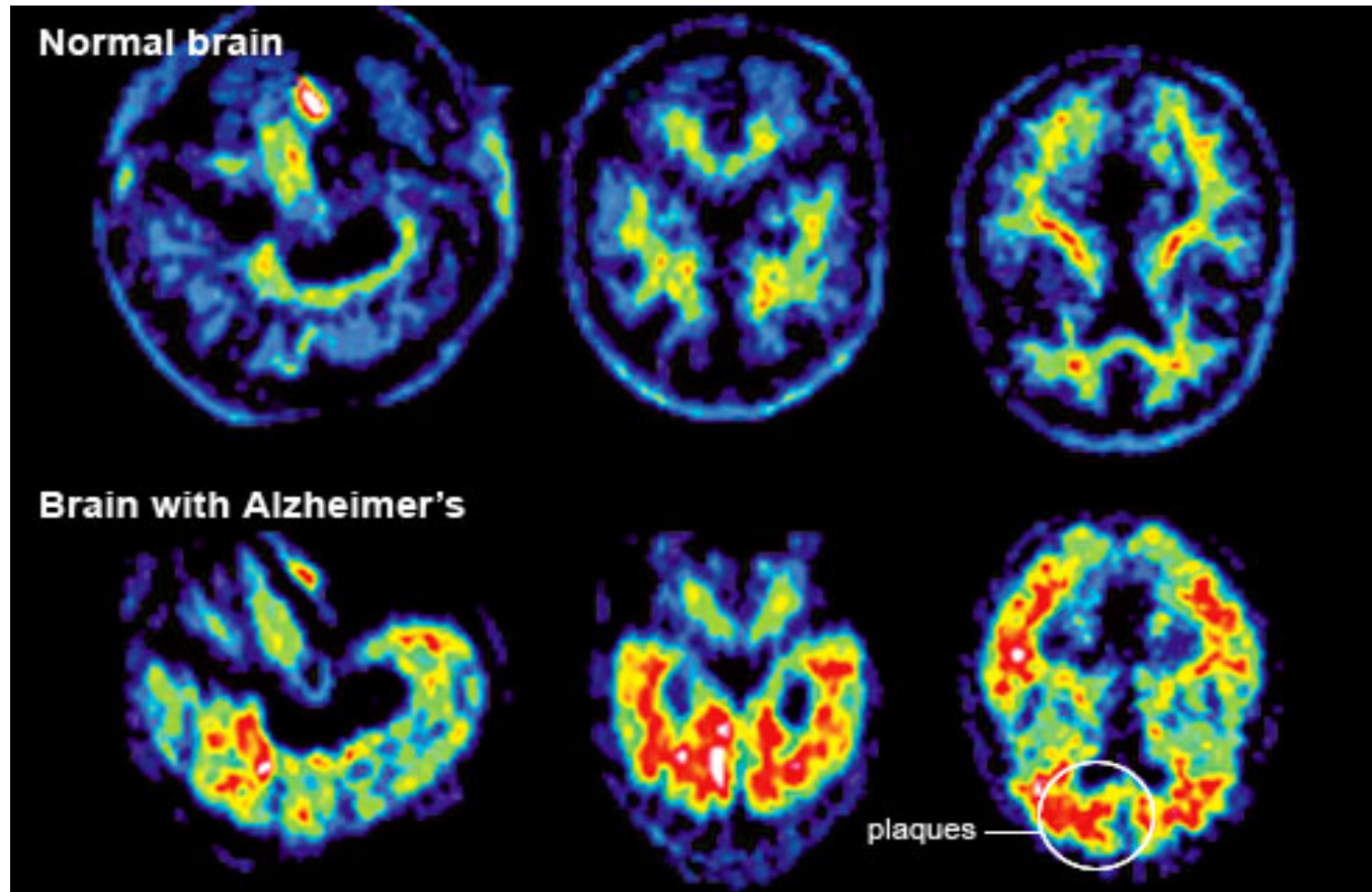
Alzheimer's



# Brain With Alzheimer's Disease



# Brain With Alzheimer's Disease



# Stages of AD - Progressive Deterioration

❖ Mild Cognitive Impairment

❖ Early or Mild

❖ Middle or Moderate

❖ Late or Severe





# Stages of Alzheimer's Disease

## ❖ Mild Cognitive Impairment (MCI)

- Usually only affects memory
- Other cognitive abilities remain intact
- No functional disability

# Symptoms of Early of Mild AD

- ❖ Confusion about the location of familiar places (getting lost begins to occur)

- ❖ Taking longer to accomplish normal daily tasks

- ❖ Trouble handling money and paying bills

- ❖ Poor judgment leading to bad decisions

- ❖ Loss of spontaneity and sense of initiative

- ❖ Mood and personality change, increased anxiety

- ❖ Memory Loss

  - ❖ Short term loss

# Symptoms of Middle or Moderate AD

- ❖ Increasing memory loss and confusion
  - ❖ Short term loss
  - ❖ Long term loss
    - ❖ File cabinet
- ❖ Shortened attention span
  - problems recognizing
  - problems with reading, writing, working with numbers
- ❖ Difficulty organizing thoughts and thinking logically
- ❖ Inability to learn new things or to cope with new or unexpected situations
- ❖ Restlessness, agitation, anxiety, tearfulness, wandering – especially late in the afternoon or at night (sundowning)

# Symptoms of Middle or Moderate AD

- ❖ Repetitive statements or movement, occasional muscle twitches
- ❖ Hallucinations, delusions, suspiciousness or paranoia, irritability
- ❖ Yelling out
- ❖ Loss of impulse control (shown through sloppy table manners, undressing at inappropriate times or places, or vulgar language)
- ❖ Perceptual-motor problems (such as trouble getting out of a chair or setting the table)

# Symptoms of Late or Severe AD

❖ Lack of recognition of family members and loved ones

❖ Inability to communicate in anyway

❖ Weight Loss

❖ Seizures, skin infections, difficulty swallowing

❖ Groaning, moaning, or grunting

❖ Increased sleeping

❖ Lack of bladder and bowel control

# Symptoms of Late or Severe AD

❖ At the end of the disease, most people die from illness, frequently aspiration pneumonia.

❖ The person will breath food or liquids into the lungs.

❖ This type of pneumonia happens when a person is not able to swallow properly.

# Medical Treatment

## ❖ What will treatment do?

- Delay cognitive and functional loss
- Improve behavior symptoms
- Not everyone benefits

## ❖ When to start treatment?

- When cognitive impairment affects daily function
- When behavioral symptoms affect daily function

# Medical Treatment

- ❖ Tendency is to be more aggressive when the individual lives at home or in assisted living.

- ❖ Late stage or severe dementia
  - Benefits are limited at best

- ❖ **Continued decline**

- Sometimes families are unsure of benefits of medications and will want to try without the medications.

- ❖ If medications stop and are then restarted, they may or may not decline with the stop but will not gain prior functional level with the restart of the medications



# End Of Life Decisions

- ❖ Discussions need take place in early stages of the disease if not before.
  - AD
    - Treatment-feeding tubes, hospitalizations, etc.
  - DNR
- ❖ Too often these conversations don't happen within families until the person is in the late stage of the disease, then, one is really honoring the family's directions, not the individual's wishes.

# Care Giver Burden & Stress



❖ “Caregiver”  
is defined as:

A person who cares for the physical, nutritional, social, spiritual and financial needs of a loved one.

# Care Giver Burden & Stress

- ❖ Caring for a person with AD or other dementias is often very difficult and many family or other unpaid caregivers experience high levels of emotional stress and depression as a result.



# Care Giver Burden & Stress

- ❖ Care giving may also have a negative impact on the health, employment, income and financial security of the caregivers.
- ❖ Risk of mortality is greatly increased for the caregiver.



# Social Issues and Alzheimer's

❖ Wandering

❖ Incontinence

❖ Agitation

❖ Aggression

❖ Inappropriate sexual behavior

❖ Insomnia

❖ Help

- Local Alzheimer's Association
- Assisted Living Center- 4 levels of care
- Health Care Center

# Increased Risk Factors for AD

- ❖ Diabetes
- ❖ B12 deficiency
- ❖ Depression
- ❖ Genetics
- ❖ Down's syndrome
- ❖ Head trauma
- ❖ Smoking
- ❖ Low social support
- ❖ Never married



# Treatment of Alzheimer Disease

- Alzheimer Disease and other dementias have always been treatable
- Treatment includes:
  - Identification and treatment of contributing factors
  - Assessment of function and meeting functional needs
  - Memory aids and coping strategies
  - Advance planning
  - Medications

# Function and Safety

- “Safety checklist”
- Driving, risk of fires, wandering, not eating, financial risk, medications, behaviour
- Mobilise family support
- Supplement with Home Care, hired care, other formal services



# Memory aids

- Limited evidence for formal “cognitive rehabilitation”
- Memory books, reminder systems (blister pack medications), automatic bill payment
- Routines are helpful
- “Use it or lose it” - growing evidence that mental stimulation may prevent or postpone decline in memory

# Caregiver Support

- Caregiver may be instrumental in maintaining the person's independence
- Caregiver burden and stress in common
- Caregivers have more health problems than non-caregivers
- Caregiver education, counselling and support shown to improve function and delay need for nursing home

# Medications

- Cognitive enhancers
  - Aim to increase memory, function
  - Do not treat underlying disease
- Behaviour and mood changes
  - Treat complications

# Donepezil (Aricept)

- A cholinesterase inhibitor
- Increase the level of acetylcholine in the brain, a chemical messenger that helps the memory cells talk to each other
- Tested in patients with mild to moderate Alzheimer disease but otherwise healthy
- About 30% of people get stomach upset, vomiting, diarrhea or other side effects

# Reminyl and Exelon

- Exelon (rivastigmine) and Reminyl (Galantamine) are also cholinesterase inhibitors like donepezil
- They have similar benefits, side effects, and cost, but are both taken twice instead of once a day
- Studies in vascular dementia and Lewy Body showed similar benefit as in Alzheimer Disease

# Memantine (Ebixa)

- Licensed in Canada December 2004
- Partial activator of NMDA (N-methyl-D-aspartate) receptor, prevents overstimulation by glutamate, possibly other effects
- Studies show similar degree of benefit in moderate to severe Alzheimer disease (MMSE  $\leq 14$ ) as donepezil , either alone or added to donepezil
- Small benefits to memory, function, behavior
- Less convincing benefit in mild Alzheimer or in vascular or mixed dementia

# Six Pillars of Brain Healthy Lifestyle

## ❖ Brain Healthy Diets

- ❖ Eat across the rainbow- fruit and vegetable
- ❖ Lean Proteins
- ❖ Health fats-Omega 3 fats
- ❖ Treat yourself with a glass of red wine and dark chocolate
- ❖ Green Tea
- ❖ Avoid- red meats, fast and fried foods, packaged and process foods
- ❖ Light to moderate alcohol consumption
- ❖ Supplements
  - ❖ Folic acid, Vit B 12, Vit D, magnesium, and fish oil are believed to help preserve brain health

# Six Pillars of Brain Healthy Lifestyle

## ❖ Regular Exercise

- ❖ Helps reduce stress
- ❖ Boosts Mood
- ❖ Improve circulation-improves memory
- ❖ Increases energy
  - ❖ Aim for 30 minutes 5x per week- anything that gets your rate up
  - ❖ For those over age 65 adding 2-3 strength exercises weekly may cut your risk in half.
  - ❖ Include balance and coordination exercises
  - ❖ Stick with it





# Six Pillars of Brain Healthy Lifestyle

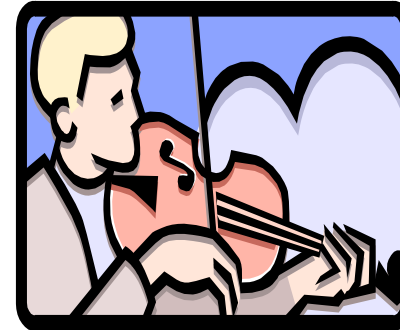
## ❖ Mental Stimulation

### ❖ Learn something new

- ❖ Foreign language
- ❖ Musical instrument
- ❖ Strategy games and riddles
- ❖ Practice memorization
- ❖ Practice the 5 W's- who, what , where, when, why

Acting like a detective keeps the neurons firing

- ❖ Follow the road less traveled
- ❖ The greater the challenge the better



# Six Pillars of Brain Healthy Lifestyle

## ❖ Quality Sleep

### ❖ Establish a regular sleep schedule

- ❖ Reinforces the circadian rhythms. Your brain responds to regularity
- ❖ Be smart about napping
- ❖ Create a relaxing bedtime ritual
- ❖ Quiet the inner chatter

## ❖ Manage Stress

### ❖ Breathe!

### ❖ Schedule daily relaxation activities-make relaxation a priority

### ❖ Nourish the inner peace

- ❖ Regular meditation, prayer, spiritual activities

# Six Pillars of Brain Healthy Lifestyle

## ❖ An Active Social Life

- ❖ Studies show the more connected we are the better we do on memory and cognitive testing.
  - ❖ Volunteer
  - ❖ Join a club or social group
  - ❖ Reach out over the phone
  - ❖ Get to know your neighbors
  - ❖ Make weekly date with a friend
  - ❖ Get out



# Vitamins and Anti-oxidants – B12 and Folate

- To date there has been insufficient evidence that low levels of vitamin B12 in elderly ↑ risk for dementia or that supplements improve performance
- Again, studies looking at folate supplementation have been inconsistent
- In 2014 a group of Oxford University researchers assembled all the best clinical trial data involving 22,000 people and concluded that taking B vitamins and folate doesn't slow mental decline as we age, nor is it likely to prevent AD

# Vitamins and Anti-oxidants- Vitamin D



- Vitamin D – primarily has functions in bone health and metabolism but may also have anti-oxidant and anti-inflammatory properties
- not clear whether Vitamin D deficiency is causally related to cognition
- Early laboratory evidence that Vitamin D receptor may help regulate clearance of A $\beta$  from the brain
- No firm scientific evidence yet that Vitamin D supplementation will have positive effect on cognition



# Vitamins and Anti-oxidants- E,C,A

- Vitamins E, C and beta-carotene (pre-cursor for Vitamin A) – all powerful anti-oxidants
- Epidemiological studies show that low intake ↑ dementia risk but association remains inconsistent
- Multiple clinical trials provide evidence that supplements with these compounds did not alter cognitive outcomes in MCI, AD or healthy elderly but results still debated
- Concern about cardiovascular risk of Vitamin E are likely to prevent further studies of this in AD

# Vitamins and Anti-oxidants- Ginkgo Biloba



- Ginkgo biloba has been studied in trials with mixed results.
- Some studies have suggested it improves cognitive performance in MCI
- Reasonably firm evidence that it does not alter the risk of dementia or improve cognitive performance in healthy elderly
- Potential side-effects of bleeding tendency and drug interactions

# Vitamins and Anti-oxidants- Fish oil



- Omega-3 fatty acids found in fish oil and nuts – thought to be neuroprotective
- Studies have failed to show any improvement in cognition in AD patients
- In elderly without AD – inconclusive evidence that they may slow cognitive decline
- Further large –scale studies needed



# Mediterranean diet

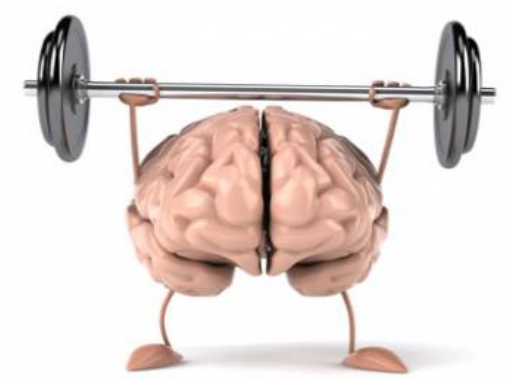


- Diet is rich in fruits, vegetables, olive oil, legumes, whole grains and fish
- Studies have shown that people that closely follow a Mediterranean diet are less likely to have AD than those who don't
- Research suggests that a Mediterranean diet may:
  - slow cognitive decline in older adults
  - reduce the risk of MCI progressing to AD
  - slow the progression of AD and prevent disease-related deaths

# Diet in AD

- A recent study looked at 3 different diets:
  1. Mediterranean diet
  2. DASH diet (designed to treat hypertension – low salt and sugar)
  3. MIND diet (Combination of the above 2 diets)- emphasizes natural plant-based foods, limited saturated fats, encourages consumption of berries and green leafy vegetables (known to specifically benefit brain health)
- Those who strictly followed any of these 3 diets had ↓ risk of AD
- Even modest adoption of MIND diet approach eg. 2 vegetable servings/week, 2 berry servings/week, 1 x fish meal/week → ↓ risk of AD
- Researchers believe making healthy food choices → improved cholesterol and blood sugar levels, better overall vessel health → reduced risk of MCI and AD
- Another theory → Mediterranean diet may help prevent brain tissue loss
- More studies are needed to know to what degree this diet prevents AD or slows cognitive decline





# “Brain Training”

- This is quite broad and can include a range of structured mentally stimulating activities such as:
  - crosswords
  - learning a new language
  - reading a book
  - undertaking further education
- Combining mental, social and physical activity in leisure activities are best for reducing dementia risk
  - dedicated computerised brain training activities → modest effect at improving cognitive performance in healthy older adults
- Can intensive computerised training stop progress of cognitive decline and onset of dementia? studies ongoing

# Physical Activity



- Research into potential for physical exercise to reduce the risk of dementia is continuing
- Still no randomised trials available yet –several studies have found that physical activity in early, mid and later life is associated with ↓ risk of cognitive decline and dementia
- Other studies found people who exercise have slower loss of brain tissue as they age.
- People who exercise regularly are less likely to have vascular disease which ↑'s risk of AD
- Also beneficial in patients that have dementia
- Helps prevent muscle weakness, mobility problems and other health complications associated with inactivity
- Also helps reduce symptoms of stress, anxiety and depression
- 3 types of exercise should be included in the program– sustained aerobic exercise, weight training and flexibility and balance training



# Physical Activity

- If an exercise program is incorporated in the early stages of dementia it is more likely to be maintained as the condition progresses
- Exercise needs to be continued on a regular basis, long term to see benefits on cognition.
- Regular aerobic type exercise confers the most benefit for delaying cognitive decline and slowing brain atrophy

# Insulin Resistance



- Insulin resistance and the way the brain processes insulin may be linked to AD
- Researchers are exploring the role of insulin in the brain and how brain cells use sugar and produce energy
- Researchers have been studying diabetic medications such as pioglitazone which also has potent anti-inflammatory effects

# **GUIDELINES FOR CARE OF THE CONFUSED PATIENT**

- PROVIDE ACTIVITIES TO DISTRACT THE PATIENT FROM INAPPROPRIATE BEHAVIOR
- MAINTAIN A REGULAR ROUTINE
- USE PATIENCE AND UNDERSTANDING
- MAINTAIN A CALM, QUIET ENVIRONMENT
- USE SIMPLE, CLEAR WORDS AND SENTENCES
- GIVE FREQUENT PRAISE AND REASSURANCE
- USE TOUCH AND OTHER FORMS OF NONVERBAL COMMUNICATION
- USE REALITY ORIENTATION

## WANDERING

- KEEP ENVIRONMENT SAFE
- MAKE SURE PATIENT GETS ENOUGH EXERCISE
- DISTRACT THE PERSON TO ANOTHER ACTIVITY





# REALITY ORIENTATION

**Today is**  
**THURSDAY**  
AUGUST 20 1999

**The Season is**  
 **SUMMER**

**The Weather is**  
 **AND HOT**

**The Next Holiday is**  
**LABOR DAY** 

HELPS THE CONFUSED PATIENT  
WITH REALITY BY FREQUENT  
REMINDERS OF :

WHO HE IS

WHERE HE IS

WHAT TIME IT IS

ALWAYS CALL THE PATIENT BY  
NAME AND IDENTIFY YOURSELF

REPEAT THE DATE, TIME, AND  
PLACE TO THE PATIENT  
THROUGHOUT THE DAY.

# **GUIDELINES FOR CARE OF THE AGGRESSIVE/COMBATIVE PATIENT**

- DO NOT RESPOND IN ANGER
- LEAVE AND COME BACK LATER IF POSSIBLE
- BE AWARE OF WARNING SIGNS OF ANGER, SUCH AS MUSCLE TENSION, RESTLESSNESS, PACING, CRYING, AND LOUD SPEECH
- OFFER DISTRACTIONS
- COMMUNICATE AND REASSURE
- BE AWARE OF YOUR NONVERBAL COMMUNICATION
- SIT DOWN, YOU WILL APPEAR LESS THREATENING
- DO NOT TOUCH THE PATIENT WITHOUT HIS PERMISSION

# Person Centered Care

- Person centered care is truly putting the PERSON first
- Characteristics
  - Behaviors are a desire to communicate
  - We must maintain and uphold the value of the person
  - Promote positive health
  - All action is meaningful
- Core psychological needs must be met to provide quality care
  - Love
  - Inclusion
  - Attachment
  - Identity
  - Occupation
  - Comfort

# Implementing Person Centered Care

<b>Recognition</b>	<b>Negotiation</b>	<b>Collaboration/ Facilitation</b>
<b>Play</b>	<b>Timalation</b>	<b>Celebration</b>
<b>Relaxation</b>	<b>Validation</b>	<b>Holding</b>

# Person Centered Care and Families

- Know what families are looking for
  - Kindness and respect
  - Looks are important
  - The extras
- Be sensitive to the emotions family members may be experiencing

# Safety Concerns and Solutions

- Environmental implications of physiological changes
  - Vision, hearing, thermal regulation, tactile sensation, musculoskeletal, balance
- Security
  - People with dementia may not be able to judge unsafe conditions
- Physical supports

# Abuse and Neglect

- Willful infliction of injury, unreasonable confinement, intimidation, or punishment with resulting physical harm or pain, anguish, or deprivation by an individual of goods or services that are necessary to attain or maintain physical, mental, or psychosocial well being
- Physical
- Sexual
- Verbal
- Mental

# Family Feelings

- Denial
- Frustration
- Isolation
- Guilt
- Anger
- Loss/grief
- Letting go



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