Memory Disorders
Alzheimer’s Disease
Psychology 372
Physiological Psychology
Steven E. Meier, Ph.D.

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Aging
- Many Hypotheses
- Mutations and chromosomal changes accumulate with age
- Errors in duplication occur as we age due to damage from environmental causes.
- Genetic program for aging is part of the development process
- Cells can only divide a limited number of times
- Others

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Neurological Changes
- Most people show mild memory and cognitive decreases as they age.
- Reductions in:
  - Visual-Spatial ability
  - Verbal Fluency
  - Overall General Intelligence
  - Speed of Problem Solving
  - Others

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Physiological Changes
- Posture is less erect than younger adults
- Stride length is shorter
- Reflexes are slower
- Sleep less and wake more frequently
  - (REM is also decreased)
- Brain weight may decrease
- Enzymes that synthesize many neurotransmitters decrease
- Others

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Regardless
- Most reductions do not seriously impair your quality of life

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Senile Dementias
- Involves loss of memory and cognition severe enough to interfere with social or occupational functioning
- Must show two things
  - Memory loss
  - Problems in
    - Language
    - Problem solving
    - Judgment
    - Attention
    - Perception
    - Others

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Regardless
- Most reductions do not seriously impair your quality of life
Disorders That Cause Dementias

- Alzheimer's Disease *
- Cerebrovascular Disease *
- Parkinson's Disease
- Alcoholism
- Brain Tumors
- Vitamin Deficiencies
- Thyroid Disease
- Metabolic Disorders
- Other

* Most Common

Alzheimer's Disease

- Most common cause of Dementia
- Affects 7% of people older than 65
- Affects 40% of people older than 80
- Five million people have Alzheimer's disease
- Next 25 years, expected to reach 15 Million
  - Cost will increase too
  - Get a long term care plan
- Most symptoms occur about age 70
- May develop earlier
- May be a family history

Symptoms

- Problems with memory
- Problem solving
- Language problems
- Calculation problems
- Visual Spatial Problems
- Judgment Problems
- Abnormal Behavior
- Some develop Psychotic Symptoms
  - Hallucinations
  - Delusions
  - Others

Prognosis

- In all patient's
- Mental and physical functioning becomes impaired
- No real test available to detect the disease while living. Several under clinical testing.
- Diagnosis usually done at autopsy

Brain Damage Areas

- Neocortex
- Entorhinal area
- Hippocampal formation
- Amygdala
- Anterior Thalamus
- Brain Stem Structures
- Others

Consequences

- Damage to entorhinal cortex, hippocampus, and medial temporal gyrus results in memory loss and attention deficits.
- Damage in limbic cortex, amygdala, thalamus and others result in behavioral and emotional problems
Cell Damage
- Damage to
  - Glutaminergic pyramidal neurons
  - Intemeurons
  - Hippocampal pyramidal neurons
- Cytoskeleton is often damaged
  - Often see neurofibrillary tangles
  - Impairs axonal transport and causes other problems
  - Later the cell dies

Amyloid Deposits
- Often occur in Alzheimer’s patients
- Is a classic marker for the disease
- Occur throughout the brain and in blood vessels as well.

Treatment
- No cure
- Treat symptomatically
- Newer treatments may be more positive

Drugs
- Tacrine (Cognex),
- Donepezil (Aricept)
- Rivastigmine (Exelon)
- Galantamine (Reminiyl)
- Ginkgo Biloba
- All may help symptoms from becoming worse
- Vitamin E appears to delay onset of some symptoms by about 7 months

Others
- Vitamin E appears to delay onset of some symptoms by about 7 months
- Cholinesterase Inhibitors
  - Has a modest effect on delaying symptoms
  - Also helps symptoms from becoming worse
  - May help control some behavioral symptoms
  - Works only for a limited time
  - Are not cures

Conclusion
- Try to identify early
- Get plenty of help and support
- Have a long term care plan in place
- Will impact many of you
- Be Prepared