



Memory Disorders Alzheimer's Disease

Psychology 372

Physiological Psychology

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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 Attention
 - Problem solving Perception
 - Judgment Others

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Disorders That Cause Dementias

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

* Most Common

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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

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Symptoms

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

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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

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Brain Damage Areas

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

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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

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Cell Damage

- Damage to
 - Glutaminergic pyramidal neurons
 - Interneurons
 - Hippocampal pyramidal neurons
- Cytoskeleton is often damaged
 - Often see neurofibrillary tangles
 - Impairs axonal transport and causes other problems
 - Later the cell dies

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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.

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Treatment

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

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Drugs

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

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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

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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

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