

# ALZHEIMER'S DISEASE

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# Walsh Research Institute



- **Nonprofit organization**
- **Expertise in biochemistry & nutrient therapy**
- **Brain Research**
- **Clinical Development**
- **International Physician Training**

# Alzheimers Early History



- Discovered in the late 1800's by researchers in Europe and the USA,
- First clear description published by Dr. Alois Alzheimer in 1906.

# What is Alzheimer's Disease?



- A brain disease that causes problems with memory, thinking, and behavior.
- Slow progressive death of brain cells.
- Median time between diagnosis and death is about seven years.
- Presently considered incurable.

# Features of Alzheimer's Disease



- Severe oxidative stress
- Amyloid plaque and neurofibrillary tangles
- Metal-metabolism disorder
- Elevated toxic metals
- Low levels of metallothionein in ALZ brains.

# Two Types of AD

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## Familial AD (5% of Cases)

- Genetic disorder involving abnormal involving abnormal APP and presenilin proteins,
- Typical onset, ages 40-55.

## Late-Onset AD (95% of Cases)

- Associated with abnormal ApoE proteins,
- Typical onset after age 70.

# Early Warning Signs



- Loss of interest in events & activities
- Reduced mental “sharpness”
- Often called mild cognitive impairment.

# Stage 1: Mild AD



- Striking loss of recent memories, with good recall of older memories,
- Shrinking vocabulary,
- Loss of communication skills,
- Patient may still enjoy life & accomplish basic tasks.

## Stage 2: Moderate AD



- Neuron loss spreads throughout the brain,
- Continued loss of memories.... May not remember grandchildren or other relatives,
- Reading/writing skills gradually disappear,
- Wandering, falling, physical aggression are common problems,
- Long-term care facility eventually required.

# Stage 3: Advanced AD



- Complete dependence on caregivers,
- Loss of speech & response to visitors,
- In final stages, bedridden, incontinent, and unable to feed themselves,
- Death usually from infections, respiratory problems, and not directly from AD.

# AD Risk Factors



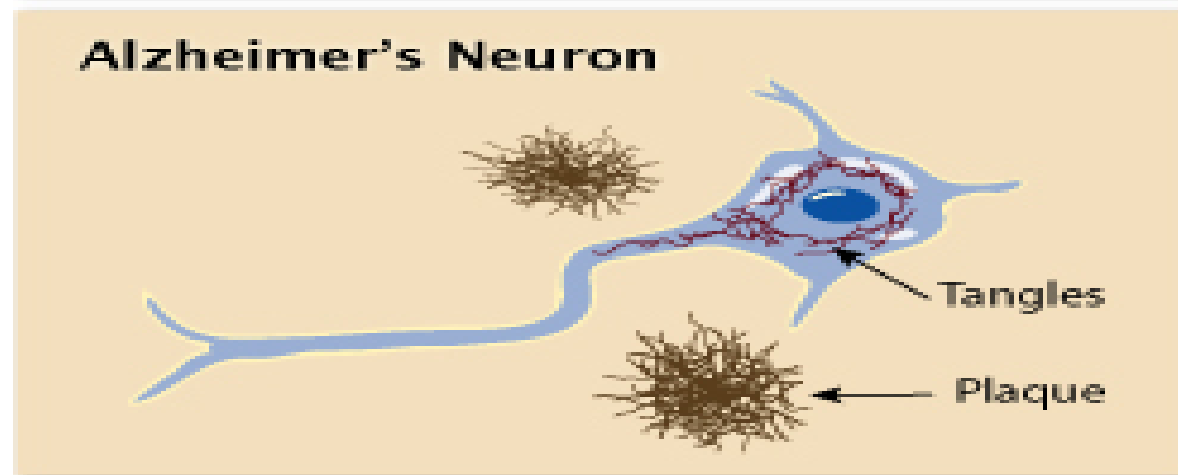
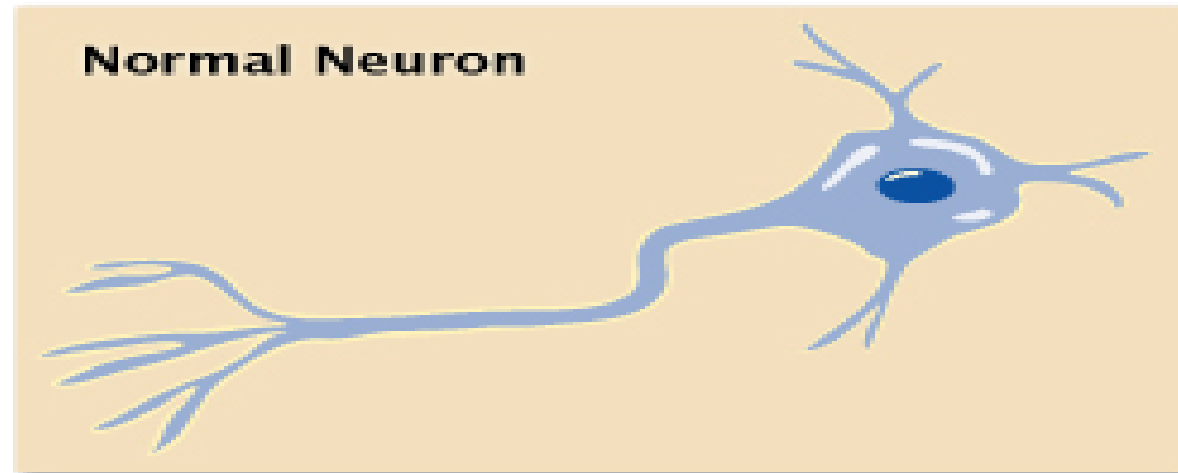
- Age
- Head injury,
- Education level,
- Mental and physical activity,
- Vascular factors,
- Alcohol abuse,
- Toxic metals,
- Poor nutrition.

# Alzheimer Theories



- Loss of Acetylcholine Activity
- Amyloid Plaque Hypothesis
- Tau Hypothesis
- Inflammation Theory
- Oxidative Stress Explanations
- Toxic Metal Causation
- Epigenetics

# AD Plaques and Tangles



# FDA Approved Medications



- Aricept, Exelon, Razadyne increase Ach levels and improve symptoms for 6-12 months, but do not stop relentless destruction of brain cells.
- Namenda (Memantine) regulates glutamate activity in brain – Benefits similar to Ach medications.

# The Case for Metallothionein



- MT proteins protect the brain from metal free radicals,
- Metal free radicals (iron, copper, zinc) enhance formation of beta amyloid plaque in the brain,
- Autopsy studies show MT levels less than 1/3 of normal concentrations in AD brains, compared to MT levels in other elderly persons.

# Metallothionein-Promotion Therapy for Alzheimer's Disease



- Formulation of 22 nutrients that promote synthesis and functioning of MT.
- Zinc loading followed by MT-Promotion.

**Note: *MT-Promotion is aimed at overcoming brain oxidative stress & inflammation, and repair of the blood/brain barrier.***

# Early Clinical Results

## MT Promotion (70 Patients)

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- Most patients reported partial improvement of memory followed by stabilization of condition.
- Several patients have lost the diagnosis of AD after several years.
- Caretaker needed for effective compliance.
- Double-blind, controlled studies needed to measure efficacy.

# Hope for the Future



- Intensive research throughout the world is aimed at causes and mechanisms of Alzheimers.
- When the cause of Alzheimers is identified, effective methods for prevention and treatment will soon follow.

# THANK YOU!



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