Alzheimer’s Disease is the most common cause of Dementia followed by Vascular causes.

The Average life expectancy for Alzheimer’s Disease following diagnosis is 8 years.

Dignity

Give dignity to the patient and their families as they grapple with the terrifying loss of everything and everyone they once knew.

Generation Alzheimer’s

• The disease of the baby boomers
• Ten million baby boomers will develop Alzheimer’s Disease
• One out of eight baby boomers will die with or from Alzheimer’s Disease
• In 2012 estimated 15.4 million caregivers provided 17.5 billion hours in unpaid care worth $216 billion

• An estimated 5.3 million Americans have Alzheimer’s Disease
• Alzheimer’s Disease is the 6th leading cause of death
• Coin toss
Final Data for the Number of Deaths and Their Leading Causes 2013

1. Heart disease: 611,105
2. Cancer: 584,881
3. Chronic lower respiratory diseases: 149,205
4. Stroke (Cerebrovascular Diseases): 130,557
5. Accidents (Unintentional Injuries): 128,978
6. Alzheimer's disease: 84,767

Key Differences in Update:

- To expand beyond memory loss as the first or only major symptom
  - Language, perception and judgment may be the first impairment
- To reflect distinctions and associations between Alzheimer's Dementia and Non-Alzheimer's and disorders that may influence Alzheimer's development

The Spectrum

- **Preclinical**
- **Mild Cognitive Impairment (MCI)**
- **Dementia Due to Alzheimer’s Disease**
  - Mild
  - Moderate
  - Severe

Summary table: Criteria and Guidelines for Alzheimer’s Disease

<table>
<thead>
<tr>
<th>Preclinical (Sperling et al, 2011)</th>
<th>Preclinical criteria incorporates biomarkers / advanced imaging. Measure of Aβ accumulation (CSF Aβ42 and PET imaging with amyloid tracer)</th>
<th>Preclinical criteria established solely for the purpose of research. This is a conceptual model and is not meant to imply that all individuals with early AD pathology will progress to clinical AD dementia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>McI due to AD</td>
<td>Core clinical criteria - clinical and cognitive assessments that establish concern of change in cognition over time; impairment in 1 or more cognitive domains: preservation of independence in functional abilities; not demented, and etiology of MCI consistent with AD, including where relevant, AD genetic factors.</td>
<td>Core clinical criteria can be used in clinical settings. Includes 2 sets of criteria: 1. Core clinical criteria 2. Research criteria - incorporates biomarkers, advanced imaging and evaluation of biochemical changes with probabilistic framework for levels of certainty for McI due to AD.</td>
</tr>
</tbody>
</table>
### Core Clinical Criteria

- Concern About Change In Cognition Relative To Previous Function
- Disproportionate To Age And Education
- Impairment In One Or More Cognitive Domain
  - Language, Perception, Problem Solving, Insight
- Preserved Ability To Function Independently

### Recommendations (SORT C)

- Even subjective complaints of memory loss can lead to a five fold increase risk of development of Alzheimer’s Disease
- 3-19% of 65 or older have MCI
- One half of those with MCI will go on to full dementia after five years
- Early intervention is the only proven measure that improves outcomes

### Screening Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity %</th>
<th>Specificity %</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;WORLD&quot;</td>
<td>85</td>
<td>88</td>
<td>All or none</td>
</tr>
<tr>
<td>Verbal fluency</td>
<td>88</td>
<td>96</td>
<td>Over/under 15</td>
</tr>
<tr>
<td>Mini-Cog</td>
<td>76</td>
<td>89</td>
<td>Over/under 2</td>
</tr>
<tr>
<td>Montreal Cog (MOCA)</td>
<td>100 (for MCI)</td>
<td>87</td>
<td>Over/under 26</td>
</tr>
<tr>
<td>Sweet 16</td>
<td>80</td>
<td>70</td>
<td>Over/under 14</td>
</tr>
</tbody>
</table>

### TWO STEP VISIT

- Quick Screen, Appropriate Labs At Initial Visit
- Return For More Detailed Cognitive Evaluation If Initial Screen Indicates

### Goals Of Care

- Maintain Quality Of Life
- Enhance Cognition/Mood/Behavior
- Foster Safe Environment
- Promote Social Engagement
- Education And Support Of Family – See alz.org
**MEDICATIONS**

- Reversible Acetylcholinesterase Inhibitor
  - Donepezil (Aricept)
  - Galantamine (Razadyne)

- Pseudo Irreversible Inhibitor Acetylcholinesterase
  - Rivastigmine (Exelon)

- Non Competitive Antagonist NMDA Receptor
  - Memantine (Namenda)

**INTEGRATIVE INTERVENTIONS**

- Glutathione
- EFA’s / DHA
- Vitamin E
- CoQ10
- Homocysteine
- Glutamate

**Glutathione**

- Intrinsic fire extinguisher
  - Maintains BOTH the ligand and the voltage gates of the NMDA
  - Maintains vitamins C and E in their reduced (active) form
  - Involved in DNA and protein synthesis and repair
  - Regulates the Nitric oxide cycle

- Where can you get this wonderful stuff
  - D3 increases
  - SAMe and Whey protein
  - NAC
    - Red peppers, garlic, onions, oats, wheat germ, cruciferous (broccoli, cabbage, brussel sprouts)
    - Pork, poultry, eggs, dairy

**EFA’s, Vitamin E, CoQ10**

- EFA’s/DHA
  - Olive oil, flax seeds, walnuts, soy beans, dark greens, spinach, winter squash (butternut), cruciferous, sardines, salmon, cheese

- Vitamin E
  - Supplements only have 1 isoform, 8 in nature
  - Avacado, spinach, sunflower seeds, almonds, shellfish

- CoQ10
  - Fish (trout), eggs, pistachios, strawberries, whole grains
  - Ubiquinol, reduced form, does not require vit E as co-factor

- Homocysteine
- Glutamate, MSG

**FAST**

- Stage 4: Decreased ability to perform complex task
- Stage 5: requires assistance in choosing proper clothing

- **Stage 6:** Decreased ability to dress, bathe and toilet independently
  - a. Difficulty putting clothing on properly
  - b. Unable to bathe properly
  - c. Inability to handle mechanics of toileting
  - d. Urinary incontinence
  - e. Fecal Incontinence

- **Stage 7:** Loss of speech, locomotion and consciousness
  - a. Ability to speak limited (1–3 words a day)
  - b. All intelligible vocabulary lost
  - c. Non-ambulatory
  - d. Unable to sit up independently
  - e. Unable to smile
  - f. Unable to hold head up

**BASIC PRINCIPLES OF CARE**

- Remember that the person is still in there and can still feel insecure or afraid and have hopes and joy
- Don’t argue or explain
- Can precipitate agitation or aggressive behavior
- Problem solving ability is being lost as well as memory
- Loss of judgment is part of the challenge -- it is difficult for them to participate
MILD

- The areas of the Brain formed after age twelve are shutting down. Concentration, abstraction and planning
- New experiences are no longer stored as memory
- Signs Include:
  - Good days and bad days
  - Absentmindedness
  - Forgetfulness, especially common words and names

MODERATE

- Areas of the brain formed from age four or five to age twelve are affected:
  - Language
  - Making sense of the world
  - Self-directed self care
- Signs Include:
  - Disorientation, poor concentration
  - Loss of understanding of normal activities and words – such as the meaning/purpose of groceries
  - Beginning of loss of physical function – bathing or even begin able to adjust the water temperature

Behavioral Management

- **A**: Identify Antecedent. What is triggering event (physical, emotional, interpersonal conflict, disruption in daily routine) → Remove it.
- **B**: Describe Behavior (what occurred, when does it occur, how often, where, how long does it last)
- **C**: Consequences (how do caregivers/you respond to patient)

TREATMENT OF BEHAVIORAL SYMPTOMS

- Behavioral
  - Time out
  - Distraction (music, singing, pet therapy, puzzles)
  - Redirection
- Environmental modification (light, color, sound)
- Medication

SEVERE OR END STAGE

- Areas formed during infancy through toddler are coming unraveled
- Signs:
  - Forgetting how to move
  - Loss of understanding of meaning of touch or sound
  - Complete disruption of ability to perform most basic ADL's (dressing, eating, toileting)

ECOG PERFORMANCE STATUS SCALE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fully active, able to carry on all pre-disease activities without restriction</td>
</tr>
<tr>
<td>2</td>
<td>Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature (e.g., light housework, office work)</td>
</tr>
<tr>
<td>3</td>
<td>Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours</td>
</tr>
<tr>
<td>4</td>
<td>Capable of only limited self-care; confined to bed or chair more than 50% of waking hours</td>
</tr>
<tr>
<td>5</td>
<td>Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair.</td>
</tr>
</tbody>
</table>
Dementia is a spectrum like all other chronic inflammatory conditions.

New Guidelines urge early detection

Screen even mild complaints of cognitive decline

Lifestyle modification changes outcomes

Once definitive diagnosis of AD, use FAST and PFS to track progression to know when to consult Palliative or Hospice care

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