OLLI Course:

Dr Jeffrey N. Keller

Director, Institute for Dementia Research and Prevention
Director, Alzheimer Disease Cooperative Study Site
Edward G. Schlieder/Hibernia National Bank Chair
Professor, Pennington Biomedical Research Center
Few Ground rules:

A. First ~50 minutes for recording, please no questions

B. Please complete the survey form

C. We want to respect everyone’s time including the speakers

D. We want you to come to class and get as much as you can from course (maybe teach others? Better caregiver?)

E. Provide me your feedback

225 763 3190    jeffrey.keller@pbrc.edu
February 24 “What is dementia and what causes dementia?”

March 3  “Physician Perspective for Caregivers”

March 10 “Beginning the Journey with Dementia”

March 17 ‘Let’s talk’: Approaches to Individualized Dementia Patient/Caregiver Relationship

March 24 Daily Caregiving; What you need to know

March 31 “Behavioral Expressions: Overcoming that “B”Word in Dementia”

April 7  “Why a Financial Advisor is an Essential Member of the Care Team”

April 14 Why an Estate Planning Attorney is an Essential Member of the Care Team, Too!”
Questions?
What is dementia and what causes dementia?

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What is dementia?
AD is the major form of dementia in elderly but there are many more:

- Thyroid deficiency
- B12 deficiency
- Depression
- Infection
- Stroke
- Post anesthesia
- Traumatic brain injury
- Hippocampal sclerosis
- Parkinson’s disease with dementia
- Dementia with Lewy Bodies
- Frontotemporal dementia
- Vascular dementia
AD is the major form of dementia in elderly but there are many more:

- Thyroid deficiency (R)
- B12 deficiency (R)
- Depression (R)
- Infection (R)
- Stroke (R)
- Post anesthesia (onset)
- Traumatic brain injury (onset)
- Hippocampal sclerosis (Pathology)
- Parkinson’s disease with dementia (Pathology-Behavior)
- Dementia with Lewy Bodies (Pathology-Behavior)
- Frontotemporal dementia (Pathology-Behavior)
- Vascular dementia (Progression)
What Is Alzheimer’s Disease?

Alzheimer’s
disease

a type of dementia that causes problems with memory, thinking, progressive, degenerative brain risk factor is increasing age,
Alzheimer's disease (initially):
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• Slow/progressive disorder (No sudden onset)
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- Other areas of function affected like ability to make new plans (executive function)
Alzheimer's disease (initially):

- Slow/progressive disorder (No sudden onset)
- Significant enough to affect work and social life
- Loss of ability to learn or remember new things
- Other areas of function affected like ability to make new plans (executive function)
- No psychosis, neurological abnormalities, or other neurological disturbances
How is Alzheimer’s disease diagnosed?
There is no blood test for Alzheimer’s disease.

There is no picture of the brain to show Alzheimer’s disease.
Alzheimer's disease Diagnosis

- Neurological Assessment
- Cognitive Assessment
- MRI
- PET
- Lumbar puncture
- Blood
Alzheimer's disease Diagnosis

• Neurological Assessment: No loss of balance, normal motor control, maintenance of senses, normal reflexes

• Cognitive Assessment: Memory, Executive Function, Attention

• MRI

• PET

• Lumbar puncture

• Blood
Alzheimer's disease Diagnosis

- **Neurological Assessment**: No loss of balance, normal motor control, maintenance of senses, normal reflexes
- **Cognitive Assessment**: Memory, Executive Function, Attention
- **MRI**: Acceptable level infarcts, selected atrophy, no gross pathogenesis
- **PET**
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Alzheimer's disease Diagnosis

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What is the “normal” progression of Alzheimer’s disease?
## Progression of AD

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<thead>
<tr>
<th>Aging</th>
<th>Mild Cognitive Impairment</th>
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### Progression of AD

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<tr>
<td></td>
<td>~5-7 yrs</td>
<td>~1-2 yrs</td>
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### Progression of AD

<table>
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<th>No impairment in ADL’s</th>
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<td>~2 yrs</td>
<td>~3 yrs</td>
</tr>
<tr>
<td><strong>Increasing impairment in ADL’s</strong></td>
<td>Increasingly dropping social, hobby, work activities</td>
<td>Not capable of independent activities</td>
<td>Increasing: psychoses, behavioral disturbances</td>
<td></td>
</tr>
</tbody>
</table>
What causes Alzheimer’s disease?
Alzheimer’s Disease: Risk Factors

- Age
- Female gender
- ApoE-4 genotype
- Hypercholesterolemia
- Hyper-homocysteinemia
- Diabetes
- Head injury
- Psychological stress
- Hypertension
- Smoking

ApoE-4 = apolipoprotein E4.
What is the treatment for Alzheimer’s disease?
<table>
<thead>
<tr>
<th>Drug</th>
<th>Starting Dose</th>
<th>Target Dose</th>
<th>Recommended Titration</th>
<th>&quot;Unique&quot; Issues Pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tacrine</td>
<td>10 mg qid</td>
<td>30 to 40 mg qid</td>
<td>Four months</td>
<td>Hepatic, hepatotoxic, qid dose, questionable drug interactions</td>
</tr>
<tr>
<td>Donepezil</td>
<td>5 mg qd</td>
<td>10 mg qd</td>
<td>One month</td>
<td>Signs of nausea and vomiting, limit ability to increase dose</td>
</tr>
<tr>
<td>Rivastigmine</td>
<td>1.5 mg bid</td>
<td>6 mg bid</td>
<td>Four months</td>
<td>Contraindicated in patients with hepatic or renal disease</td>
</tr>
<tr>
<td>Galantamine</td>
<td>4 mg bid</td>
<td>12 to 16 mg bid</td>
<td>Four months</td>
<td></td>
</tr>
</tbody>
</table>

| Cholinesterase Inhibitors |

**NMDA Receptor Antagonist**

| Memantine       | 5 mg qd       | 10 mg qd      | Four weeks           | Only agent approved for treatment of moderate to severe Alzheimer's disease |

**Adjunct Therapy***

Antidepressants (e.g., SSRIs and mirtazapine)
Antipsychotics (e.g., risperidone, olanzapine, quetiapine) for the treatment of behavioral symptoms

* These agents are typically used off label. Treatment should be started at half the recommended dose and titrated slowly.

qid: four times per day;qd: once daily;bid: twice per day;NMDA: N-methyl-D-aspartate
Need for clinical trials
How common is Alzheimer’s disease now?

Will this change in future years?
~10,000 people a day turn 65 in USA
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<table>
<thead>
<tr>
<th>Age Group</th>
<th>2012</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>23.5</td>
<td>22.4</td>
<td>21.5</td>
</tr>
<tr>
<td>18-64</td>
<td>62.8</td>
<td>57.3</td>
<td>57.6</td>
</tr>
<tr>
<td>&gt; 65</td>
<td>13.7</td>
<td>20.3</td>
<td>20.9</td>
</tr>
</tbody>
</table>

May 2014  US Census Bureau
Alzheimer’s disease is currently 6th leading cause of death.
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The number of people with Alzheimer’s disease is going to explode.
FIGURE 4
PROJECTED NUMBER OF PEOPLE AGE 65 AND OLDER (TOTAL AND BY AGE GROUP) IN THE U.S. POPULATION WITH ALZHEIMER’S DISEASE, 2010 TO 2050

Millions of people with Alzheimer’s

<table>
<thead>
<tr>
<th>Year</th>
<th>Ages 65-74</th>
<th>Ages 75-84</th>
<th>Ages 85+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>4.7</td>
<td>2.3</td>
<td>0.5</td>
</tr>
<tr>
<td>2020</td>
<td>5.8</td>
<td>2.8</td>
<td>0.7</td>
</tr>
<tr>
<td>2030</td>
<td>8.4</td>
<td>3.3</td>
<td>1.5</td>
</tr>
<tr>
<td>2040</td>
<td>11.6</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2050</td>
<td>13.8</td>
<td>4.5</td>
<td>2.5</td>
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Created from data from Hebert et al. [231, 410]
Figure 1. Percent change in age-adjusted death rates for selected causes of death: United States, 2000 and 2010

2014 Costs of Alzheimer's = $214 Billion
Pennington Biomedical Research Center is an Alzheimer’s Disease Cooperative Study Site
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Alzheimer’s Disease Cooperative Study Site
How to get involved?

The mission of the Institute for Dementia Research and Prevention (IDRP) is to improve the quality of life for individuals in Louisiana by generating world class research programs focused on dementia prevention, providing local access to the latest clinical trials for the treatment of dementia, and providing educational opportunities for individuals/families affected by dementia.

To find out more information, schedule a visit, or request an IDRP representative at your event:
Phone: (225) 763-2973 or 1-877-270-8300 | Fax: (225) 763-3290 | Email: dementia@pbrc.edu

Our Research
The IDRP brings together multiple scientific disciplines within the clinical research arena in order to find novel ways of preventing, detecting, and managing dementia in the elderly. Our longitudinal studies provide a platform for the collection of data which identify the most important risk factors for the development of dementia, elucidate novel targets for the design of new therapeutic interventions, and develop new tests for more effective detection and monitoring the earliest stages of dementia.

Participate in a Clinical Trial
The IDRP is committed to providing local access to the latest in clinical trials developed for the treatment of Alzheimer's disease. Our clinical trials include both pharmacological as well as non-pharmacological approaches for the treatment of Alzheimer's disease and the management of complications associated with Alzheimer's disease.

Information & Useful Links
The IDRP routinely conducts public forums and conferences on the topic of dementia with panelists that include world leaders in dementia research. Recordings of these events are available on our website along with useful links to websites providing information on respite, research, and advocacy.

Support the IDRP
In addition to participating in one of our different research opportunities, or enrolling in a clinical trial, there are multiple ways to support the IDRP. If you are interested in helping others learn more about the IDRP, hosting an IDRP presentation, visiting the IDRP, or information on philanthropic support please contact us at (225) 763-2973 or email dementia@pbrc.edu.
Our World Is Rapidly And Dramatically Changing
Our World Is Rapidly And Dramatically Changing

Phone
Our World Is Rapidly And Dramatically Changing
Our World Is Rapidly And Dramatically Changing

- Texting
- Taking/Exchanging Photos
- Internet Searches
- Viral Philanthropy
- FaceBook
- Shopping
- Calendars
- Health Monitoring
A Similar Level Of Change Is Happening With The Aging Of America
Who is going to care for these people?
Right Now

In Louisiana ~90,000 with dementia

Average 2.5 family care providers for each patient

Average care provider 10 hours a week
Right Now

In Louisiana ~90,000 with dementia

Average 2.5 family care providers for each patient

Average care provider 10 hours a week

Nearly 1 in 15 in State actively dealing with AD!
In 2010, there were 7.2 potential caregivers (ages 45-64 or the average age of caregivers) for every person age 80-plus.
In 2030, that caregiver ratio will drop to 4 to 1 and by 2050, when all boomers will be in late life, the ratio becomes less than 3 to 1.
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In 2050, there will be three times as many people age 80-plus as there are today.
Do we have treatments for Alzheimer’s disease?
What are we going to do?
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Alzheimer’s Disease Cooperative Study Site

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How Big Is The Enemy/Battlefield?

What Does The Enemy Look Like?

What Do We Need To Win The War?

What Do We Have Here In Louisiana?
How Big Is The Enemy/Battlefield?
How Big Is The Enemy/Battlefield?

Alzheimer’s disease (AD) Sixth leading cause of death.

Only disease in top 10 without disease modifying medication
FIGURE 5  PERCENTAGE CHANGES IN SELECTED CAUSES OF DEATH (ALL AGES) BETWEEN 2000 AND 2010

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Alzheimer's disease</td>
<td>+68%</td>
</tr>
<tr>
<td>Stroke</td>
<td>-22%</td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>-8%</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>-2%</td>
</tr>
<tr>
<td>Heart disease</td>
<td>-16%</td>
</tr>
<tr>
<td>HIV</td>
<td>-42%</td>
</tr>
</tbody>
</table>

Created from data from the National Center for Health Statistics.113,124
Age is the biggest risk factor for AD

Nearly 8,500 people a day turn 65 so incidence of AD is going to be increasing
Louisiana will have people develop age-related diseases earlier, and people will die from them sooner.
What Does The Enemy Look Like?
What Do We Need To Win The War?
What Do We Have To Fight The War?

• Alzheimer’s Association
  (advocacy, education, research, trial match)

• Alzheimer’s Services of the Capital Area
  (respite, education, support groups)

• Council on Aging
  (programs and advocacy)

• Pennington Biomedical Research Center
  (Institute for Dementia Research and Prevention)

http://www.alz.org
1.800.272.3900

http://www.alzbr.org
(800) 548-1211

acadiacoa1@bellsouth.net
Phone: 337 788 1400
How to get involved?
Aging  Mild Cognitive Impairment  Mild AD  Moderate AD  Severe AD

Prevention
Detection
LABrainS JLDS
Treatment
Clinical Trials
Independence Programs

Coming Soon!