A Road Map to Prevention

Prevention is always better than cure and this also applies to Alzheimer’s disease (AD). Unfortunately, there is no cure for AD, but you can reduce your risk of developing this terrible disease using multiple different strategies. In this booklet, you will learn more about how we age overtime and becoming pro-active in fighting against AD.

How does our brain change overtime as we age?

**Subjective Cognitive Decline (SCD):** When you self-report frequent confusion or memory loss within the past 12 months but it is not apparent on cognitive tests. Although SCD is a risk factor for Alzheimer’s disease and other dementias, many people do not progress to developing these diseases.

**Mild Cognitive Impairment (MCI):** describes the moment when your cognition is between normal again and early signs of dementia. You or your family may have noticed frequent memory lapses, but it does not impair your ability to complete basic tasks such as cooking, driving, or paying the bills. In addition, MCI is a risk factor for Alzheimer’s disease and other forms of dementia but not everyone’s cognition advances into a form of dementia.

**Dementia:** is a term that describes multiple diseases causing significant changes in one’s memory. In comparison to SCD and MCI, dementia does affect a person’s ability to complete daily tasks. Alzheimer’s disease is the most common form of dementia (60-80% of cases) and 5-15% of individuals with MCI progress to dementia.

What are normal changes in memory?

As we age, it is normal to experience some changes in memory. Most older adults experience some type of cognitive change. The following changes are the most common:

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Forgetting names more frequently
Having trouble switching from one subject to another
Requiring effort and time to learn new information

Normal age-related memory loss may result from your brain’s decreased ability to retrieve information. It can take more time to remember or learn new things. Although it might be irritating, these memory changes should not be significant enough to affect your daily living.

What is a senior moment?
A sudden memory lapse such as one of the following:

- Forgetting why you walked into a room
- “Word-finding” difficulty in conversation
- Misplacing items around the house
- Forgetting a bank card PIN number

Experiencing a senior moment does not mean you have Alzheimer’s disease but senior moments frequently occurring is concerning. A neurologist or psychologist can perform multiple tests to determine the cause of your memory problems.

How can you reduce your risk for Alzheimer’s disease?
Steps 1-8 can help decrease your chances of developing Alzheimer’s disease. Please remember it is never too late or early to start incorporating these strategies into your life.

**Step 1. Eat a healthy diet**

**Every Day**
- Whole grains (ex. 100% Whole Wheat bread and brown rice)
- Green leafy vegetables
- Fruits
- Fish
- Beans, lentils, and nuts
- Use Olive Oil

**Eat in moderation**
- Poultry
- Eggs
- Dairy
- Alcohol (wine)

**Avoid**
- Refined sugars-> These sugars are extracted and processed from natural foods to enhance flavor (Example: High Corn Fructose Syrup)
- Red meat-> If eaten, try to purchase leanest option (less saturated fat) and grass-fed as the cows eat a cleaner diet
- Saturated Fats-> are solid at room temperature (ex. butter) which can clog your arteries if eaten in excess
Aside from eating a healthy diet, exercise is extremely beneficial for your brain and heart. Research indicates that 30-60 minutes of aerobic exercise 3-6 times per week can lower your risk of progressing from Mild Cognitive Impairment to dementia.

There are plenty of exercises whether you are mobile or not. Below are some simple exercises:

*Stationary exercises should be performed three times each with 10-15 repetitions
If you are going to maintain a healthy diet and exercise plan, you must do the same for your brain!

**Mobile exercises:** Walking, jogging, running, swimming, and stair climbing.

**Stationary exercises:**
- Hand grip: slowly squeeze a tennis ball and then release
- Toe stands: stand behind a chair and slowly stand on your tiptoes and then lower your heels to the floor
- High knee reach: sit comfortably in a chair and raise your arm and the opposite leg simultaneously (perform on each leg)

3. Staying socially active and mentally fit

Instead of staying isolated, we encourage you to interact with your friends and family through activities such as socializing, playing games, or taking a class together. This can help enhance your memory and processing speed when completing various tasks. Some of our recommendations are below:

- **Puzzles and games:** crosswords, sudoku, jigsaw puzzles, board and card games
- **Reading:** books, newspaper, magazines, surfing the internet for information
- **Learning:** taking art classes, dance classes, continuing education, crafting
- **Socializing:** phone calls with family, visiting with friends, hosting gatherings
- **Community Activities:** volunteering, trying new restaurants, attending concerts

4. Build your Cognitive Reserve

Cognitive reserve is our brain’s ability to use alternative ways to optimally function despite developing a neurological disease. For example, if one connection in the brain is weakened then our brain can either strengthen that connection or create a new one and still receive the desired outcome.

The following factors can contribute to building up and breaking down your cognitive reserve:

**Building up:** Health factors (ex. diet), education, social engagement, and mental fitness

**Breaking down:** Poor health, poor sleep hygiene, poor nutrition, substance abuse, smoking, depression, and anxiety/stress

5. Sleep hygiene

Sleep is often overlooked but it is crucial to your health! It is important to have uninterrupted sleep every night because our brain goes through different stages of sleep to ensure harmful toxins are removed from the brain. If this process is not completed properly, toxins can build up, and you can also experience stress and tiredness.
Unfortunately, we all have stress in our lives. Some may experience more than others but we all should find ways to reduce our stress. If not, it can damage your brain cells, lead to hypertension or heart disease, and many other complications.

Everyone has their own way of handling stress but here are some widely used techniques: Mediating often, excising regularly, getting more sleep, and talking with someone.

### Prescriptions

Medication that are anticholinergic block a chemical message from being sent in the brain which is associated with faster cognitive decline.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Recommended Hours of Sleep</th>
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</thead>
<tbody>
<tr>
<td>18-60 Years</td>
<td>7 or more hours per night</td>
</tr>
<tr>
<td>61-64 Years</td>
<td>7-9 hours</td>
</tr>
<tr>
<td>65 years and older</td>
<td>7-8 hours</td>
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Some habits that can improve your sleep hygiene:

- **Be consistent**: Go to bed at the same time each night and get up at the same time each morning, including on the weekends.
- **Get some exercise**: Being physically active during the day can help you fall asleep more easily at night.
- **Make sure your bedroom** is quiet, dark, relaxing, and at a comfortable temperature.
- **Remove electronic devices**, such as TVs, computers, and smart phones from the bedroom.
- **Avoid** large meals, caffeine, and alcohol before bedtime.
- **Talk to your doctor** if you have insomnia, snoring, fatigue, or excessive daytime sleepiness.

6. **Lower your stress**

Unfortunately, we all have stress in our lives. Some may experience more than others but we all should find ways to reduce our stress. If not, it can damage your brain cells, lead to hypertension or heart disease, and many other complications.

Everyone has their own way of handling stress but here as some widely used techniques: Mediating often, excising regularly, getting more sleep, and talking with someone.

7. **Be aware of some medications and supplements**

Overall, you should **always** meet with your doctor to ensure that your medication is appropriate and brain healthy! Some antihistamines which treat seasonal allergies can cause confused thinking, blurred vision, and dry mouth ex. Benadryl.

Other ingredients to look out for: Diphenhydramine, brompheniramine, chlorpheniramine which are also often included in over the counter allergy medication.

### Recommended Hours of Sleep

- **18-60 Years**: 7 or more hours per night
- **61-64 Years**: 7-9 hours
- **65 years and older**: 7-8 hours

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There are some “common” conditions that can affect not only your cardiovascular system or mental health, but also increase your risk for Alzheimer’s disease. In the chart below, we listed a few conditions and physiologically how they can impair someone’s cognition. In addition, the “action item” are guidelines to help you lower your risk for AD and achieve better health.

### Supplements

Taking the following supplements depending on your cognitive health may have a different effect:

*Other well studied supplements include: Ginkgo biloba, Vitamin D, Folate, Ginseng, etc.

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<th>Medical condition</th>
<th>Physiological response</th>
<th>Action item</th>
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<td>High blood pressure</td>
<td>Reduces blood flow to the brain</td>
<td>Keep below 120/80 mm Hg</td>
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<tr>
<td>High cholesterol</td>
<td>Increases the risk of stroke and may increase amyloid buildup in the brain</td>
<td>Keep below 180 mg/dL</td>
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<tr>
<td>Diabetes</td>
<td>Causes inflammation and disrupts glucose metabolism in the brain</td>
<td>Keep blood sugar between 100 mg/dL and 140 mg/dL</td>
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<tr>
<td>Metabolic syndrome</td>
<td>High blood pressure, excess fat, low HDL cholesterol, and high blood sugar</td>
<td>Keep BMI between 18.5 and 24.9</td>
</tr>
<tr>
<td>Depression</td>
<td>Associated with high cortisol (stress hormone) levels and chronic inflammation in the brain</td>
<td>Meet with your doctor if you are experiencing symptoms</td>
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(!!) Use caution: Many supplements are marketed as “brain-boosters” or “natural cures” but have not been studied for safety or efficacy. Talk to your doctor if you are unsure.
Research participation is critical to finding a cure. Whether or not you have been diagnosed with Alzheimer’s disease or a related dementia, you may be able to participate in research. People participate in research for a variety of reasons. Healthy volunteers and people living with the disease say they participate in clinical trials to help others, contribute to moving the science forward, or receive access to a possible new treatment.

The Massachusetts Alzheimer’s Disease Research Center (MADRC) at Massachusetts general Hospital (MGH) and the Center for Alzheimer Research and Treatment (CART) at Brigham and Women’s Hospital (BWH) offer a variety of different types of studies ranging from observational studies to clinical trials. If you are interested in research participation at either of these centers, you may call (617) -278-0383.

If you are interested in research, please contact either center below to hear about their available studies:

Brigham and Women’s Hospital  Massachusetts General Hospital

Center for Alzheimer Research and Treatment

(617) 732-8085
cart@partners.org

Massachusetts Alzheimer’s Disease Research Center

Help us find a cure for Alzheimer’s disease!

(617) 643-5200

Curriculum Leaders
Dorene Rentz, PsyD
Gad Marshall, MD
Lenore Jackson-Pope, MSM, BSN, CCRP

Content Contributors
Hope Schwartz  Hadley Hustead
Seth Gale, M.D.  Judy Johanson
Joel Salinas, M.D., M.B.A.  Alison Pietras, PA-C
Orett Burke  Jeff Robins, LICSW
Nicole Chan  Christopher Wight, LICSW
Resources for Patient and Caregiver Support

Alzheimer’s Association
The premier source of information for advocacy, research information, support programs, and education.
MA/NH Chapter contact: 617-868-6718
24-hour national Helpline: 1-800-272-3900

The Association for Frontotemporal Degeneration
Research, awareness, support, education, and advocacy for people affected by Frontotemporal Degeneration and their caregivers.
Helpline: 1-866-507-7222

Lewy Body Dementia Association
Provides support through outreach, education, and research to those affected by Lewy body dementias.
Lewy Body Dementia Caregiver Number: 888-204-3054

National Institute on Aging: Alzheimer’s Disease Education and Referral Center (ADEAR)
The latest dementia related news and publications on diagnosis, treatment, care, and research.
Toll-free contact: 1-800-438-4380

Alzheimer’s Foundation of America
Provides direct services and educational resources to patients and caregivers.
National toll-free hotline: 866-232-8484

National Clinical Trial Information
You or a loved one’s participation in research studies will significantly help in the search for more effective treatments for Alzheimer’s Disease and related dementias. The following resources provide information regarding the range of national clinical trials:

National Institute on Aging: Alzheimer’s Disease Education and Referral Center (ADEAR)
Toll-free contact: 1-800-438-4380

Alzheimer’s Association TrialMatch
24-hour Helpline 1-800-272-3900

Alzheimer Prevention Network
alzpreventionnetwork.org

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<tbody>
<tr>
<td>BWH Center for Alzheimer Research &amp; Treatment</td>
<td>(617) 732-8085</td>
</tr>
<tr>
<td>Frontotemporal Disorders Unit</td>
<td>(617) 726-1728</td>
</tr>
<tr>
<td>Lewy Body Dementia Movement Disorder Unit</td>
<td>(617) 726-5532</td>
</tr>
<tr>
<td>Alzheimer’s Clinical &amp; Translational Unit (ACTRU)</td>
<td>(617) 643-2351</td>
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