



Aging with Facts:

Alzheimer's through a year

Harborside Academy Senior to Senior Expedition

2013-2014



January

2014

“Whatever the mind of man can conceive and believe, it can achieve.” –Napoleon Hill

What is Alzheimers?

Alzheimer’s is a type of dementia that causes problems with memory, thinking, and behavior. It is a brain disease that causes a slow decline in memory, thinking and reasoning skills. It is the most common form of dementia. Dementia is not a specific disease, but an overall term that describes a wide range of symptoms (“What is Alzheimer’s”).

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February

2014

“Happiness is not something readymade. It comes from your own actions.” –Dalai Lama

The Discovery of Alzheimer’s

In the year of 1901 a patient by the name of Auguste D. was admitted into a hospital for the mentally ill and epileptic in Frankfurt, Germany. She was 51 years old and exhibited actions such as hiding objects, getting lost in her own home, and screaming absurd things such that people wanted to murder her. Dr. Alois Alzheimer observed Auguste D. and was unable to place her ailment into any known disease category. Dr. Alzheimer continued to observe his patient and found that she confused lines when she read and repeated single syllables when she wrote. Bewildered, Dr. Alzheimer decided to autopsy Auguste D.’s brain. He focused on the outer layer, where the brain’s greater matter is, and is associated with our human intelligence. Dr. Alois Alzheimer discovered shrunken tissue known as brain atrophy, and plaques and tangles. The two most important features of what later became known as Alzheimer’s disease (Snowdon, 2002, p. 46).

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March

2014

“It is not how much you do, but how much love you put in the doing.” —Mother Theresa

The Signs and Symptoms

Ten early signs and symptoms of Alzheimer’s include:

- Memory loss that disrupts daily life
- Challenges in planning or solving problems
- Difficulty completing familiar tasks
- Confusion with time or place
- Trouble understanding visual images and spatial relationships
- Problems with words in speaking or writing
- Misplacing things and losing the ability to retrace steps
- Decreased or poor judgment
- Withdrawal from work or social activities
- Changes in mood and personality

Every individual may experience one or more of these signs in different degrees (“10 Early Signs”).

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April

2014

“There is sacredness in tears. They are not the mark of weakness, but of power. They speak more eloquently of overwhelming grief... and unspeakable love.” —Washington Irving

Risk Factors

Dementia has at least 60 known causes. Some examples include infection from bacterium, a virus, drug side effects, strokes and head trauma (Snowdon, 2002, p. 87).

Scientists know Alzheimer’s involves progressive brain cell failure but the reason the cells fail is not clear. Some risk factors include age. After the age of 65 the risk of Alzheimer’s doubles every five years. Family history also is a risk factor. Research has shown that those with who have family members with Alzheimer’s are more likely to develop the disease. There are two types of genes that effect whether a person develops Alzheimer’s, risk genes and deterministic genes. Risk genes increase the likelihood of developing a disease, but it does not guarantee it will happen. Deterministic genes directly cause the disease, ensuring that anyone who inherits this gene will develop a disorder (“The Search for Alzheimer’s”).

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“The best way to find yourself is to lose yourself in the service of others.” –Mahatma Gandhi

What Parts of the Brain are affected?

Microscopic changes in the brain begin before the first sign of memory loss. The two major pathological features associated with Alzheimer’s are plaques and tangles. It is now believed that tangles first surface in the entorhinal cortex near the base of the skull, which is important for memory. As Alzheimer’s progresses the tangles then move higher and deeper into the brain, affecting the hippocampus important for learning and memory. Lastly, the neocortex is affected when the tangles reach this upper layer at the top of the brain. The neocortex orients us in time, orchestrates the interpretation and expression of language, and sorts through the myriad visual, auditory, and olfactory stimuli from the environment. Plaques are deposits of a protein fragment called beta-amyloid that builds up in the spaces between nerve cells. Scientists believe these plaques and tangles block the communication between nerve cells called neurons causing the neurons to die, which causes the symptoms of Alzheimer’s (Snowdon, 2002, p. 92-93).

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“Compassion brings us to a stop, and for a moment we rise above ourselves.” —Mason Cooley

How is one Diagnosed?

Alzheimer’s is diagnosed through a complete medical assessment. The medical evaluation includes examination of medical history, mental status testing, physical and neurological exam, and tests such as blood tests and brain imaging to rule out other causes of dementia-like symptoms.

The preferred neuroimaging examination for Alzheimer’s is MRI (Magnetic Resonance Imaging). An MRI provides accurate measurement of the volume of the brain especially in the size of the hippocampus related regions. A brain scan with an MRI can provide information for patients who have mild cognitive impairment on their risk of developing Alzheimer’s disease. It is important to be diagnosed early. One has a better chance of benefiting from treatment, lessened anxieties about unknown problems, and gives the patient time to develop a relationship with doctor’s and care partners (“Diagnosis of Alzheimer’s”).

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“A good deed is never lost: he who sows courtesy reaps friendship; and he who plants kindness gathers love.” —Saint Basil

Types and Stages of Alzheimer’s

In 1901 German researchers Heiko and Eva Braak published a study that showed how the location of tangles could be used to define six stages of the disease.

- Stage 0 signifies the absence of tangles
- Stages I-IV map the increasing number and spread of tangles throughout the thinking regions of the brain. (Snowdon, 2002, p. 91)

There are three known types of Alzheimer’s:

- Early-onset: this form of Alzheimer’s occurs when symptoms start to appear before the age of 65, and less than ten percent of all of Alzheimer’s patients have this type.
- Late-onset: The most common form of the disease accounting for about ninety percent of cases and occurs after the age of 65.
- Familial Alzheimer’s disease: known to be inherited. Occurs in less than one percent of patients around the age of forty. (“Types of Alzheimer’s”)

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August

2014

“What lies behind us and what lies before us are tiny matters compared to what lies within us.” - Henry Stanley Haskins

Treatment and Medication

Currently both drug and non-drug treatments may help with both cognitive and behavioral symptoms. Today researchers are looking for new treatments to alter the course of the disease.

- Cholinesterase inhibitors are a drug to treat symptoms in early to moderate stages of Alzheimer’s used to prevent the breakdown of acetylcholine, a chemical messenger important for learning and memory.
- To treat moderate to severe Alzheimer’s a medication called memantine (Namenda) is used to improve memory, attention, reason, language, and the ability to perform simple tasks.
- Vitamin E is an antioxidant that may protect brain cells and tissues from certain kinds of chemical wear and tear. (“Medications for Memory”)

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September

2014

“An obstacle is often a stepping stone.” - Prescott

Tips for Caregivers

Research has shown that caregivers themselves often are at increased risk for depression and illness, especially if they do not receive adequate support from family, friends, and the community.

- Having a plan for getting through the day can help caregivers cope.
- Learn as much as you can about Alzheimer’s disease.
- Help the effected person participate in as many activities as possible.
- Have someone you can talk to.

The most effective caregiver is well informed, prepared, and asks for help and support from all resources that are available. (“Caregiver Guide”)

Here is a website that offers more information about caregiving and support:

Alzheimer’s Association
www.alz.org

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October

2014

“If we treat people as they are, we make them worse. If we treat people as they ought to be, we help them become what they are capable of becoming.” - Johann Wolfgang von Goethe

Protection Against Alzheimer's

Scientists are conducting research to help find if Alzheimer's can be prevented. But there are things that may help one from developing the disease.

- Physical exercise: Evidence shows exercise may directly benefit brain cells by increasing blood and oxygen flow. Also exercise benefits the cardiovascular system.
- Diet: Diet may have the greatest impact on brain health through its effect on heart health. One of the best diets is the Mediterranean diet that includes little red meat, a lot of fruits and vegetables, whole grains, nuts and healthy fats.
- Mental fitness: Studies show maintaining strong social connections and keeping mentally active might lower the risk of cognitive decline with Alzheimer's. (“Prevention and Risk”)

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November

2014

I urge you to please notice when you are happy, and exclaim or murmur or think at some point, “If this isn’t nice, I don’t know what is.” -Kurt Vonnegut

Facts and Statistics

- Alzheimer’s is the sixth leading cause of death in the United States.
- More than five million Americans are living with the disease.
- Nearly 15% of caregivers for people with Alzheimer’s or another dementia are long-distance caregivers.
- In 2012 15.4 million caregivers provided more than 17.5 billion hours of unpaid care valued at 216 billion dollars.
- Today, an American develops Alzheimer’s every 68 seconds.
- Out of pocket expenses for long distance caregivers are nearly twice as much as local caregivers.

(“Alzheimer’s Facts”)

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December

2014

“It is very important to generate a good attitude, a good heart, as much as possible. From this, happiness in both the short term and the long term for both yourself and others will come.” - Dalai Lama

Research

Today, Alzheimer’s is at the forefront of biomedical research. Ninety percent of what we know about Alzheimer’s has been discovered in the last 15 years. In 2003, the Alzheimer’s Association partnered with the National Institute on Aging to begin recruiting participants for the National Alzheimer’s Disease Genetics Study, a federal initiative to collect and bank blood samples from families with several members who developed Alzheimer’s disease late in life. The goal is to identify additional Alzheimer’s risk genes (“The Search for Alzheimer’s”).

Dr. David Snowdon wrote the book [Aging with Grace](#) which describes his research with nuns called the Nun Study. The goal was to collect data about Alzheimer’s disease from a controlled group of women who led very similar lives. Today there are more researchers like him continuing the research of many aspect of the brain to help understand Alzheimer’s disease.

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