Centre County Torch Meeting Minutes October 9, 2024 Ramada Inn State College, PA

President Terry Engelder opened the meeting at 5:45 PM.

Approximately 38 members were in attendance.

Annual dues are currently \$75 a year. Dinner is \$25.

This year's officers: President: Terry Engelder Vice President: Carolyn Wilhelm Recording Secretary: Charles Maxin Treasurer: Peter Jurs Correspondence Secretary and Torch International representative: Art Goldschmidt Webmaster: John Golbeck

Terry Engelder introduced Roger L. Williams and his wife Karen L. Magnuson, this year's recipient of the Renaissance Fund award. This is the 55th year of the award.

Terry Engelder introduced Donna Queenie a former member of the Torch group from Centre County and who recently moved back to the area.

Arthur Goldschmidt and John Golbeck were mentioned in the recent issue of the Torch magazine. They both received Service awards last spring.

Terry Engelder introduced Kevin Alloway for tonight's presentation. Dr Alloway graduated from University of Michigan and completed PhD studies at Indiana University.

Or how to avoid developing dementia.

Dr Alloway reviewed three books for this discussion including **High Octane Brain** by Dr. Michelle Braun, **Keep Sharp** by Sanjay Gupta, MD, **How to Prevent Dementia** by Richard Restak, MD, and **This is your Brain on Food** by Uma Naidoo, MD.

Alzheimer's is the most common cause of dementia. There are many other forms of dementia including frontal and temporal lobe dementia, atherosclerotic dementia, Picks Disease, etc. Alzheimer's disease (AD) is characterized by neurofibrillary tangles and plaques in the brain. The diagnosis was usually made postmortem, after a patient has died. However more recently blood tests can make a diagnosis. Neurofibrillary tangles (NFTs) are abnormal protein aggregates that form inside neurons and are a key feature of Alzheimer's disease. Tau plaques are formed from the precursor proteins that create amyloid. Tau proteins stabilize the microtubules that help transport molecules and nutrients within the brain cells. However neurofibrillary tangles and amyloid plaques interfere with synapses between brain cells causing brain cells to die and atrophy

occurs. Hippocampus and adjacent temporal lobe atrophy develops. Since this area of the brain is involved with speech, a symptom of Alzheimer's disease is word finding difficulty. Of course, Alzheimer's Disease also has many other symptoms resulting from atrophy of the brain.

Risk prevalence is related to the aging process and is present in 3% of patients between 65 and 74 years of age, 17% between 75 and 84 years of age and 32% over the age of 85.

Dr Alloway described 2 neurons connected by a synapse and able to excite each other with neurotransmitter proteins. The definition of neuroplasticity is repeated excitement of the synapse can make the connection stronger and more likely to fire.

The neocortex includes the memory and sensory cortex of the brain. Memory and sensation are mediated by cortical activity and stimulates the temporal lobe creating memories. Short term memories are stored in the hippocampus. If a portion of the hippocampus is removed, short term memory is affected. The hippocampus is the only region of the brain capable of neurogenesis and is capable of storing short term memory.

A feature of Alzheimer's disease is brain atrophy of the of the neocortex and shows widened sulci (the space between brain folds) and shrunken gyri (brain folds) on the surface of the brain. Word finding difficulties are common in AD. Of note the brain represents 2% of the body mass and 20% of the blood flow. We can see blood flow increases with increase of vessel size on PET scanning.

What can we do to reduce the risk of developing Alzheimer disease? What are the lifestyle changes to reduce the risk of Alzheimer's disease?

Number one is regular exercise.

Regular aerobic exercise such as walking and riding a bike reduces the risk as shown in a long-term Scandinavian study. In this longitudinal study (44 years), 191 Swedish women were classified into three groups based on their peak level of cardiovascular capacity while cycling. The results revealed a dose-dependent relationship in which higher levels of fitness were linked to lower levels of dementia. Exercise increases hippocampal growth.

Staying cognitively active helps. Read a book, listen to music or even write music.

Consume healthy food.

The only way to keep your health is to eat what you don't want, drink what you don't like and do what you would rather not- Mark Twain. Dietary changes such as the Mediterranean diet, the DASH diet and the MIND diet (Mediterranean and Dash diet combined) are shown to be helpful. Stay cognitively active (learn), socially active, reduce stress, and sleep well.

Avoid diabetes

Diabetics have a faster rate of cognitive decline, which can lead to dementia. Diabetes weakens blood vessels and this increases the probability of mini strokes. High sugar blood levels make neurons insulin resistant; some physicians refer to Alzheimer disease as diabetes type 3 because Alzheimer disease is linked to an increase in insulin resistance. Research by Rebecca Gottesman at Johns Hopkins indicates that the risk of dementia is greatly increased with diabetes (77% greater risk), smoking (41% greater risk), and hypertension (39% greater risk).

Avoid mini-strokes

Mini-strokes are caused by the occlusion of small blood vessels. Mini-strokes are associated with hypertension, elevated cholesterol, a diet high in saturated fats and elevated blood sugar.

Conclusion.

The person least likely to develop Alzheimer's disease is a non-smoker, non-drinker, and physically active person, free of diabetes and depression with normal body mass, normal cholesterol and mental curiosity.

Charles W Maxin, Recording Secretary 10/9/2024