Alzheimer’s as a “Preventable Disease?”

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What Causes Alzheimer ’s Disease?

The disease process begins years or decades before the first symptoms. Genetic (hereditary) susceptibility and age related brain changes are risk factors. These are compounded by multiple environmental factors including education, nutrition, other diseases, exercise, socialization and stress. As individuals, we have the ability to modify all these factors, except our choice of parents. Meanwhile, environment and lifestyle choices do matter.

Is It Preventable?

If prevention means averting the cascade of brain events leading to deposits of glue like amyloid with resulting inflammation and death of brain tissue, the answer is possibly.

If prevention means delaying the onset of the first clinical symptoms by slowing the formation of the damaging amyloid substance and making brain cells more resilient to injury, the answer is probably.

Why Delaying Onset May Be As Good As Preventing.

The first symptoms occur at an average age of 75 years. Extending the age of onset by just five years would mean that half of the individuals would die of unrelated other causes, never knowing they were on the course for developing Alzheimer’s.

STRATEGIES FOR DELAYING ALZHEIMER’S

Avoid brain injury—particularly concussions

The risk of Alzheimer’s is doubled with a single concussion lasting 60 minutes. The risk increases ten fold when there is a single concussion and the person has the APOE-4 gene.

Prudent behavior

Wearing ski and bicycle helmets; avoiding contact sports, etc. Consider auto crash safety data before purchasing a vehicle. Help prevent falls through leg strengthening exercises and tai chi.

Be screened for Vitamin B12 deficiency.

Vitamin B12 is essential for normal brain cell function. The ability to absorb vitamin B12 from food is lost in about 15% of older individuals. At special risk are strict vegetarians, those with previous stomach resection surgery, and individuals on medicines to reduce stomach acid reflux. If testing shows blood levels below 350, increasingly doctors are starting patients on B12 doses exceeding those in multiple vitamins.

Avoid depression, or treat it aggressively.

New evidence shows depression and stress are associated with prolonged elevations of cortisol hormones knows to have a damaging effect on the brain's vital memory structure, he hippocampus. A bout of major depression in late life is often a sentinel event for coming Alzheimer's.

Avoid strokes, including small silent ones (TIAs)

Because use of cholesterol lowering statin drugs is associated with a 70% Alzheimer's risk reduction, treating even mild cholesterol elevation more aggressively makes sense. Keep blood pressure below 140/90, or 130/85 if you are diabetic. Eating more fruits and vegetables reduces the risk of stroke. Also screen for carotid artery narrowing and heart rhythm irregularity. Daily low strength aspirin is advised if risk factors are present for circulatory disease.

Use alcohol in moderation

Potential risks of alcohol generally still outweigh the putative benefits of a daily drink. If not a drinker, do not start. If currently a drinker, limit yourself to one serving/day, particularly of red wine.

Smoking

Smoking approximately doubles the risk for Alzheimer's. Quit!

Prevent oxidant "rusting" of brain tissue and blood vessels.

Do not take iron unless temporarily correcting a confirmed iron deficiency. A diet plentiful in antioxidants is recommended.

Drugs

Avoid illicit drugs, but particularly the drug Ecstasy, which is directly damaging to memory structures in the brain. Check with your physician about side effects of prescription medicines.

Rid brain of inflammation

Non-steroidal, anti-inflammatory pain relievers, such as ibuprofen, naproxen, etc., may be associated with reduced Alzheimer's. However, these medications can be hazardous with chronic use (effects on stomach, kidney, blood pressure).

SLOW BRAIN AGING

Physical Exercise

For every mile walked per week, there is a 13% less chance of dementia. Adult mice exercising on a running wheel develop twice as many new brain cells in vital memory regions as mice in standard cages. Aging tennis players and runners have faster mental responses than non athletes of the same age. Greatest benefits are on the frontal lobe (executive function) for problem solving and planning.

More Education

Higher education has consistently been associated with maintenance of late life thinking skills.

Social Interaction

Those with little or no social engagements are two and a half times more likely to develop dementia than those with regular social engagements.

Mental Fitness

The risk of Alzheimer's is three times lower in individuals who were intellectually active in their 40's and 50's, e.g. reading, doing puzzles, painting, games. Those with mentally

demanding jobs tend to have reduced Alzheimer's.

NUTRITION

A brain healthy diet seems to be an important component in keeping brain tissue more resilient.

Antioxidant Foods

Prunes, raisins, berries, spinach, brussel sprouts, plums, broccoli, beets, oranges, tea

Lycopene

Tomatoes, watermelon, papaya

Turmeric, Cumin, Curry Powder, Mustard

Special ability to preserve brain cell connection and reduce amyloid plaque

Phosphatidylserine

Fish, green leafy vegetables, soy, rice; essential to the brain cell membrane

Dietary Fats

Eating more polyunsaturated fats reduced Alzheimer's risk; eating more saturated fats increased the risk.

Eating a low fat diet in young and middle age adults resulted in less Alzheimer's later. This is especially true for those with the APOE4 gene.

Omega 3 Fatty Acids slow grain aging. Found in canola and olive oil, salmon, sardines, trout, herring, walnuts, avocados, brazil nuts.

NUTRITIONAL SUPPLEMENTS

Vitamin D appears essential to brain cell health.

Folic Acid is advised, which helps prevent a rise in homocysteine, a protein building block implicated in circulatory disease and Alzheimer's.

Zinc is a common micronutrient which is often deficient in older adults.

Many other studies are ongoing but have not showed consistent results. Always check with your physician as many supplements have side effects that can be detrimental when used in combination with prescription medications and there is a risk of impurities with dietary supplements.