



## NATUROPATHIC WISDOM NOTES

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### Improving Memory and Brain Function

In the book *Preventing Alzheimer's* by Dr. Shankle and Amen the concept of prevention through delay is emphasized. The symptoms of AD (Alzheimer's Disease) begins an average of 30 years before the first symptoms with the accumulation of beta amyloid in the brain tissue. If the onset and progression of dementia is delayed long enough then living a natural life span without dementia is possible. Most are diagnosed four years after their first symptoms appear and by that time they are severely demented.

#### There are several ways that brain cells die:

- 1) formation of chemicals called free radicals
- 2) too much of a neurotransmitter called glutamate
- 3) an accumulation of beta amyloid
- 4) beta amyloid triggers a strong inflammatory response
- 5) a protein called tau, the backbone of the neuron twists abnormally into neurofibrillary tangles.

#### There is now objective data to show the following:

- 1) Certain anti-oxidants including vitamin E, ginkgo biloba, alpha lipoic acid. CoQ10 and vitamin C have significant disease delaying effects.
- 2) Agents that prevent overstimulation by glutamate delays the disease (possibly GABA or memantine).
- 3) Exelon, Reminyl and Aricept help delay AD for 6 months to three or more years, the earlier the treatment starts the better.
- 4) Anti-inflammatories such as curcumin have been shown to reduce amyloid plaque production
- 5) Structured activity programs delay disease progression and institutionalization
- 6) Regular exercise delays disease progression, reduces dementia risk by 50%, increases nerve growth factor which stimulates new brain formation, reduces the risk of diabetes and insulin resistance, lowers cortisol and increases blood circulation to the brain. Start BEFORE the age of 75 because after that it won't help!
- 7) Vitamin D: antimicrobial for brain pathogens
- 8) Stimulation: physical, mental and social bonding

#### Risk Factors:

Hypertension: it is best to keep the blood pressure below 160/90 to reduce the risk of dementia after age 70 by 3.8-4.8 times

Stress increases cortisol, decreases sleep,

Alcohol and tobacco increases risk of VD

Passively watching TV for more than two hours per day

Statin Drugs: lowers CoQ10, USCD 2008 Statin study shows cognitive decline in some.

Diabetes: and insulin resistance increase risk of VD

### DIAGNOSIS

SPECT scans: (Single, Photon, Emission, Computed Tomography) scans are recommended by Dr. Amen because they can identify persons with reduced brain activity before they actually lose brain tissue. These are available through Nuclear Medicine at Comox Hospital where a small amount of radioactive substance is injected into the bloodstream and pictures are taken to evaluate blood flow in the brain. Psychiatrist Dr. Schovanec is supportive.

#### Tests:

CRP elevated over 3.3 correlation with MCD  
IL6 if elevated an indicator of vascular dementia  
Homocysteine: less than 7 according to Dr. Houston.  
Tn Alpha: measure systemic cytokine release from Pathogens such as herpes (anti HSV IgG IgM) E. coli, Candida that can contribute to  
APOE4 gene allele

A physical exam and MRI should be done to rule out brain tumors, hydrocephalus, vascular causes of dementia and other causes of frontal lobe and Lewy body disease. PET scans can also be done. The precision of a PET scan is better but does not make a difference clinically. It costs more and is not reimbursable by many insurers.

Neuropsychological testing: this can be just as accurate as SPECT scans. Tests of vision, hearing, memory and frontal lobe activity are conducted. This and SPECT scans can detect abnormalities of brain function up to four years before dysfunction is detected.

Vascular Dementia (VD): This is a syndrome of insufficient blood flow to brain areas that cause cognitive problems. Caused by hypertension, diabetes, heart disease, stroke, smoking, excessive alcohol, and sedentary lifestyle. Begins at age 50 and accounts for 15-25% of all cases of dementia.

Other causes of dementia: cancer and cancer treatments, head injury, infectious and immunological (chronic fatigue) and alcohol. Disorders affecting nerve cell metabolism: hypothyroidism, lack of B vitamins, depression, blood sugar irregularities, seizures, low estrogen, low testosterone, high or low cortisol. (B12 and B complex normalize homocysteine)

The goal of treatment is treating mild cognitive decline to slow the onset of dementia. This will save costs and stress on the family. Most primary care physicians do not detect mild stages of dementia and by the time dementia is diagnosed they are half way through the average 8 year course of AD.

## TREATMENT

- 1) Exercise: 20-30 minutes per day
- 2) Omega 3 Essential fatty acids: at 2 grams per day slows progress of early stage AD. Limits beta amyloid, reduces neuroinflammation increases brain levels of neurotrophic factor (promotes neuronal cell survival) Greatest benefit at early stages.
- 3) Lipoic acid: this anti-oxidant also raises glutathione in the cell which is the cell's major line of defense against radical damage. It is recommended as prevention and treatment. The R-alpha form is needed in doses of 600-1200mg per day. There is only one study that showed delay of progression of AD.
- 4) B12: Methylcobalamine is a common deficiency caused by the decreased absorption due to the lack of hydrochloric acid with aging. Serum levels not accurate. Taken orally or by injection regularly is useful for neuroprotection. Normalizes homocysteine.
- 5) Vitamin E 1000IU's mixed tocopherols, twice per day was showed in one study to delay progression of AD by one year. Prevents oxidative damage caused by amyloid. It is lipid soluble antioxidant.
- 6) Vitamin C recycles Vitamin E. Take in 1000mg dose twice per day.
- 7) Curcumin: "Fast Relief" one capsule, provides 13 grams of curcumin in the blood. One study showed that 13grams reduced amyloid plaque in the brain.
- 9) Gluten free diet: Gluten increases CRP in the body, the inflammatory response in the body. It is implicated in many neurological diseases including Parkinson's, AD, ALS. It can cause lack of circulation to the brain.
- 10) Acetyl-L-Carnitine: improves cognitive performance in mild AD, improves learning tasks, timed tasks of attention and personal recognition.
- 11) Huperzine A: A meta-analysis in 2008 showed that this natural cholinesterase inhibitor provides significant improvement in cognitive function and activities of daily living with AD. This herb targets the brain better than the medications, lasts 10-12 times longer, and has fewer side effects.
- 12) Rosemary extract: a well known elder herbalist suggested sniffing fresh rosemary during lectures and exams to improve mental function. It is a natural anti-oxidant.
- 13) Phosphatidylserine: enhances neuron membrane function and fluidity, improving glucose brain concentrations, improves communication between brain cells. It is effective for moderate to severe cognitive impairment.
- 14) Citicoline: increases levels of all phospholipids in neural membranes increasing neurotransmitters acetylcholine, dopamine,, norepinephrine and serotonin.
- 15) Bacopa: improves cognitive function, is used in ADHD in children, boosts key antioxidant enzymes in the brain: superoxide dismutase, catalase and glutathione peroxidase.

- 16) Lithium orotate: in low doses this mineral is neuroprotective and helps with mild cognitive decline.
- 17) GABA: new research shows AD have less GABA production in their brains. No caffeine, nicotine, MSG, aspartame.

## DRUG THERAPY

### Cholinesterase Inhibitors

- 1) Exelon: This drug also blocks another enzyme called butyrylcholinesterase (BuChE), that converts amyloid precursor protein into plaques as well as acetylcholinesterase (AChE) This drug is the first choice in treating AD because it blocks both, and is used for moderate to severe AD. Used if Aricept is failing.
- 2) Reminyl: this is the second choice, it does not block BuChE but it binds to nicotine receptors which increases brain activity in general. It has not been proven to block programmed cell death in AD (if it did this would slow AD progression) 11% side effects usually aggression.
- 3) Aricept: most common of the three, once daily dosing, fewer side effects (5 percent), most useful in mild early onset, but used if Exelon or Reminyl not tolerated as it still delays AD progression.
- 4) Apo-Memantine blocks programmed cell death triggered by excessive glutamate release.

## PREVENTION

- 1) Brain games: Lumosity.com, BrainChallenge.com, Bananagrams and learning NEW things stimulates brain growth. Make it fun!
- 2) Ginkgo: benefits far exceed just help to the brain. General tonic for the eye, circulation, anti-aging. (no truth to the myth that it increases bleeding)
- 3) Mitochondrial support: preventing mitochondrial DNA mutations prevents neurological diseases. There are many nutrients that support the mitochondria: lipoic acid, magnesium, acetyl-L-carnitine,
- 4) Mediterranean Diet: Outstanding evidence as preventive of AD and dementia; Diet high in lysine; Avoid barbecuing food because of increase risk of glycosylation of brain tissue.
- 5) Rhodiola: (improves cognition, concentration)
- 6) Angelica (Dong Quai) early research shows promise, increases acetylcholine, slows neuronal cell death.
- 7) Verry Berry: bioflavonoids are anti-inflammatory for the brain.

## Resources

### Caring for Norah (for caretakers)

<http://www.drpincoff.com/healthfullinks/caringfornorah.htm>

### Preventing Alzheimer's by Dr's. Shankle and Amen

**The Better Brain Book, Power Up Your Brain** by Dr. Perlmutter:

### Dr. Pincott's Naturopathic Wisdom Notes

May/June 2006 How Wheat Harms Your Brain

PreventAD.com :Dr. Shankle's questionnaire to detect AD.