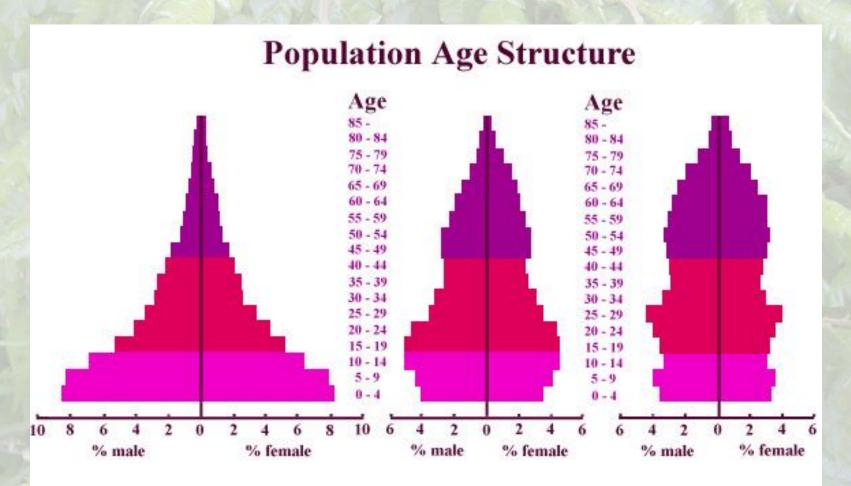
Neurodegenerative Diseases

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As a population changes in age, agerelated neurological diseases increase



1 in 9 people over 65 has Alzheimer's and nearly 1 in 3 over age 85 has it

Why neurological disease in an herbs conference?

- The drugs don't work that well or have serious side effects
- Diet has a significant effect on creating conditions to express the disease, worsening the disease and restoring health
- Herbs can help detoxify
- Symptomatic treatment is safer with herbs
- Herbs bring the rest of the body up to compensate

Focus today on MS and Parkinson's with a little on Alzheimers

- Protocols are adaptable to many neurological diseases
- You need somewhere to start
- An exhaustive class would take years!

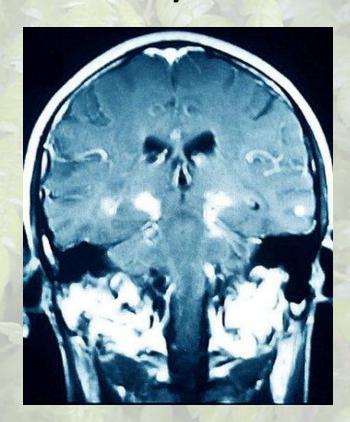
Important Takeaways

- Leaky gut can lead to a leaky blood brain barrier
- Reducing inflammation is key
- Damage from inflammation can be healed
- Micronutrients, from herbs, food and supplements allow increased cellular nutrient transport
- Fat and ketones need to be primary sources of brain energy to reduce glucose damage

Epigenetic effects: Environment meets genetics

- Genetic propensity may be large or small
- Autism's ability to deal with heavy metalscongenital or acquired stimulus
- 10% of Parkinson's is clearly genetic but there may be other genes that contribute
- Nutritional deficits or toxic build-up may allow propensity to flourish via affecting methylation

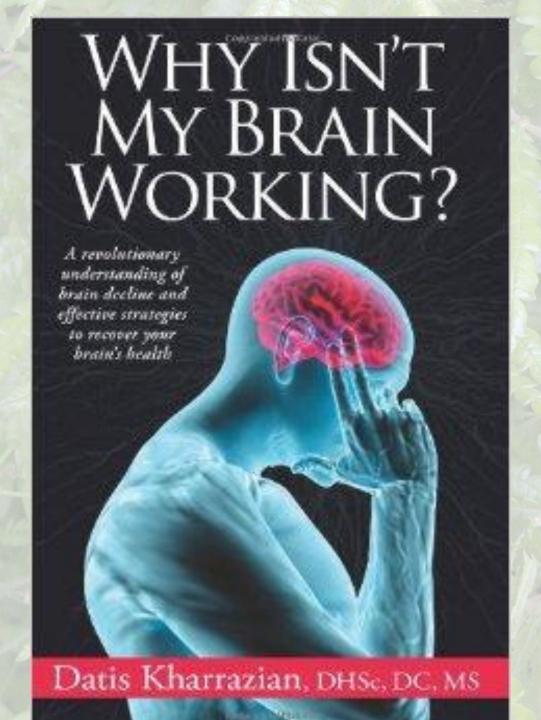
Neurological Disease Usually Involves a Broken, Inflamed Brain, and often a Leaky Gut



Damage to the brain can happen in many ways



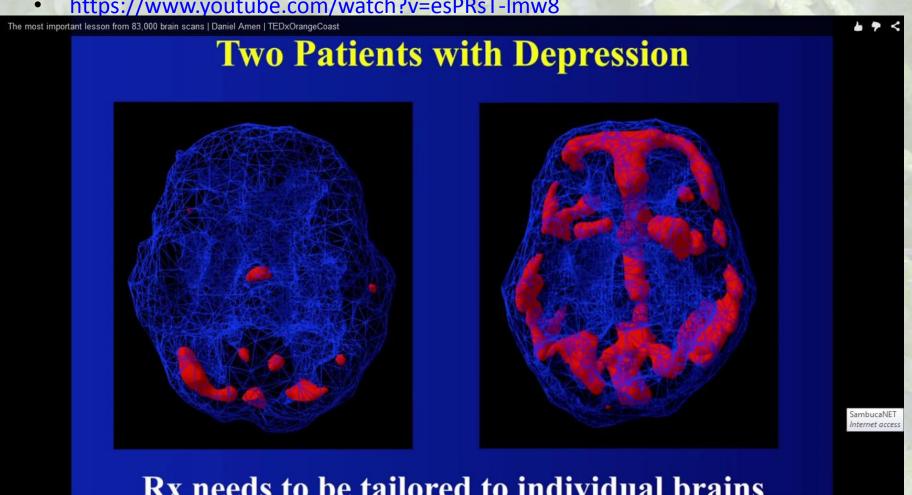
- Genetic
- Epigenetic
- Mitochondrial
- Food allergies
- Nutritional deficits
- Trauma
- Toxins and heavy metals



Datis
 Kharrazian,
 DHSc, DC

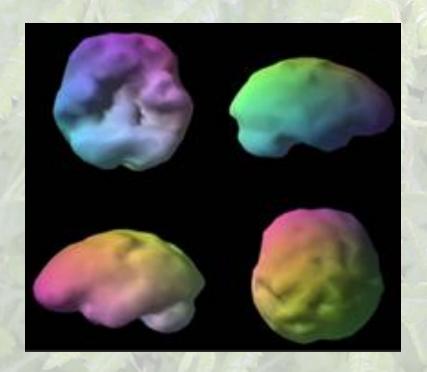
- Psychiatry the only branch of medicine where doctors don't look at the organ being treated
- Daniel Amen TEDx talk uses Spect imagery

https://www.youtube.com/watch?v=esPRsT-lmw8

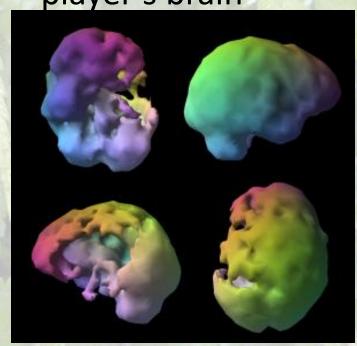


Holes in the scan show areas where blood is not circulating and where tissue has atrophied.

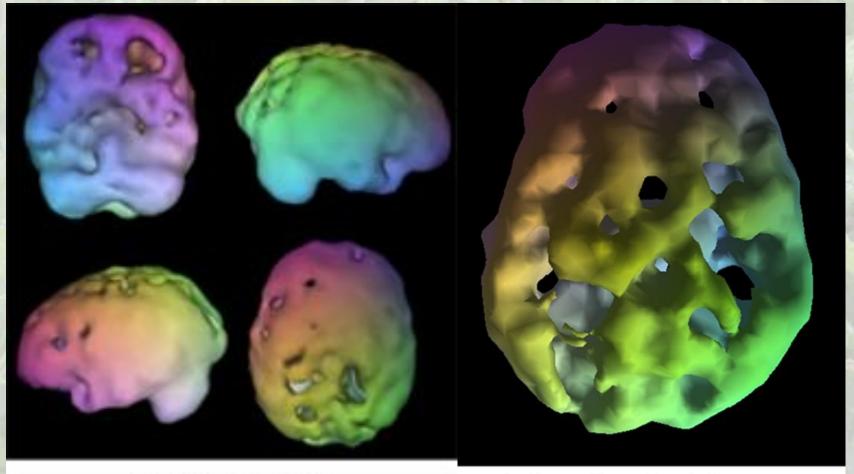
Normal brain



 Traumatized football player's brain



Substance abuse and brain damage



SPECT Image: 25 year-old daily marijuana smoker

Alcohol Abuse SPECT Scan

Brain damage is often reversible



Active drug and alcohol abuse



A year drug and alcohol free

 Diseases like MS, Parkinson's, etc. may have this potential if we find the key

What Does A Brain Need to be Healthy?

- Oxygen via circulation
 - Low blood pressure
 - High blood pressure
 - Transport problems
- Fuel: Glucose or Ketones
 - 30% of body's glucose
 - Insulin resistance or low blood sugar
- Protection from inflammation and trauma
 - Intact Blood Brain Barrier
 - No leaky gut or leaky brain
 - Anti-inflammatory diet
 - Avoid brain trauma
- Stimulation
 - Neurotransmitters

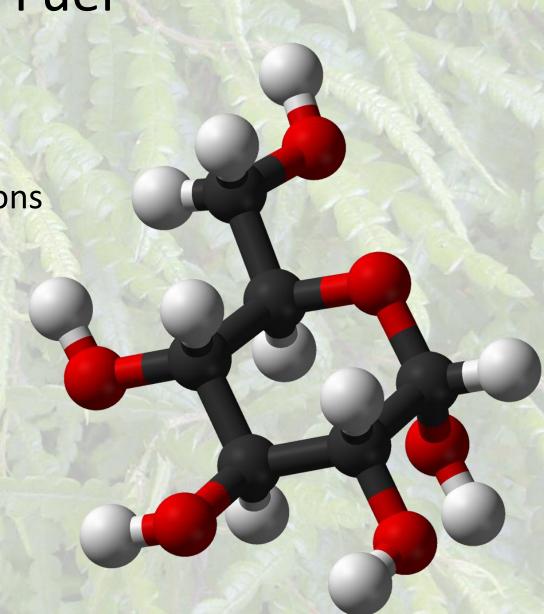


Oxygen is Primary

- Intake: control asthma and phlegm
- Circulation: cold feet, chronic nail fungus, hypotension, low capillary refill, pale tongue and complexion indicate poor circulation
- Do breathing exercises with weight on abdomen
- Aerobics
- Circulatory stimulants: Cayenne, Dan shen (Salvia root), Frankincense
- O2 carriers: Ginkgo, Vinpoceptine (Vinca), Huperizia

Fuel

- Ketones or glucose
- Essential to control blood sugar fluctuations
- Diet below 60 g carbohydrates can induce ketosis (desirable fuel)
- If sleepy after meals, blood sugar is off



Protection

- Avoid head trauma, insufficient recovery from falls, especially before repeat trauma
- Martial arts liniments for recovery
- Avoid heavy metals, plastics, toxins
- If BBB is breached, don't chelate toxins (do GABA test described later)

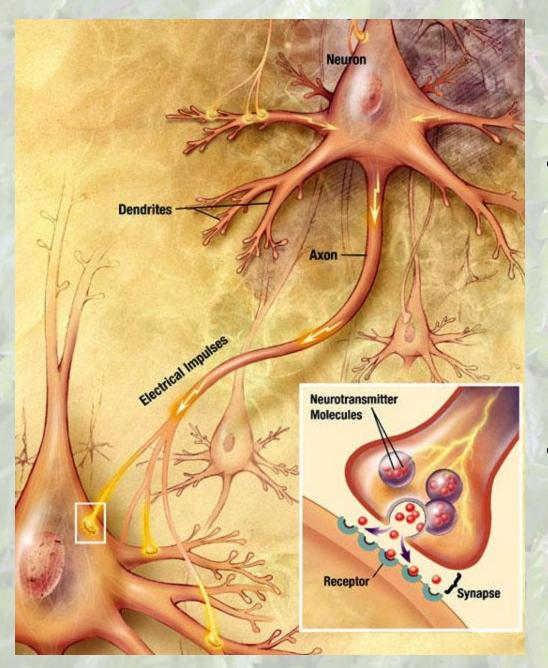
Stimulation

- Neurotransmitters stimulate the brain
- Need nutrients in carriers- trace minerals, Mg
- Inducing neuroplasticity can be positive or negative
- Don't put disabled people in a cocoon- blind kids can climb trees, Parkinson's patients can dance
- New languages, persistence in learning

Nerves are chains of neurons

 Need to keep nerves, myelin sheathes and neurotransmitters intact

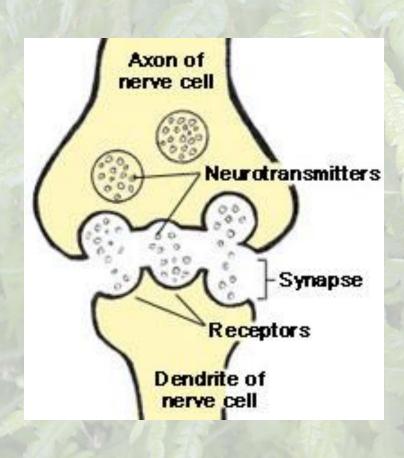




Neuron

- Electrical impulses travel along the neurons making a chain of electrical impulses down the nerves
- These trigger
 neurotransmitter
 release and uptake

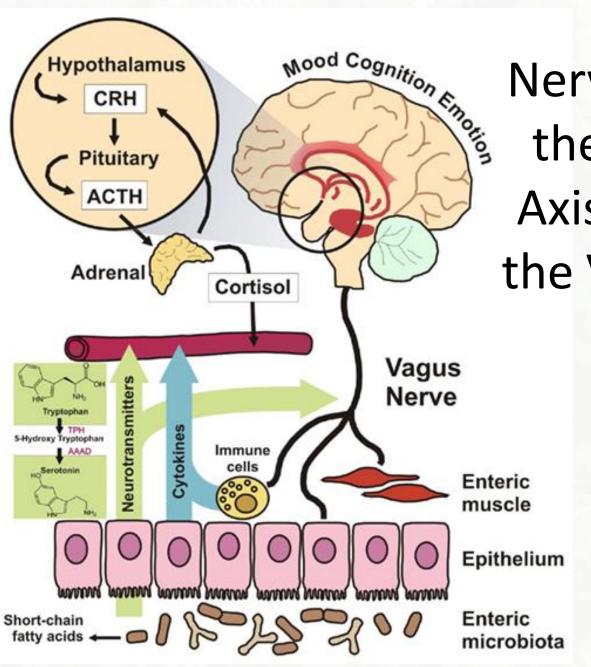
Neurotransmitters



- Dopamine
- Serotonin
- Adrenaline
- Noradrenaline
- Acetylcholine
- Endorphins
- Others

Nerve Problems

 Common symptoms: neuropathy, pain and weakness (which may be intermittent), acute and chronic inflammatory demyelination (MS), missing deep tendon reflexes, neuropathic GI problems (reflux, constipation), fainting, absent or excessive sweating, and temperature dysregulation.



Nerves Connect the Gut-Brain Axis, especially the Vagus Nerve

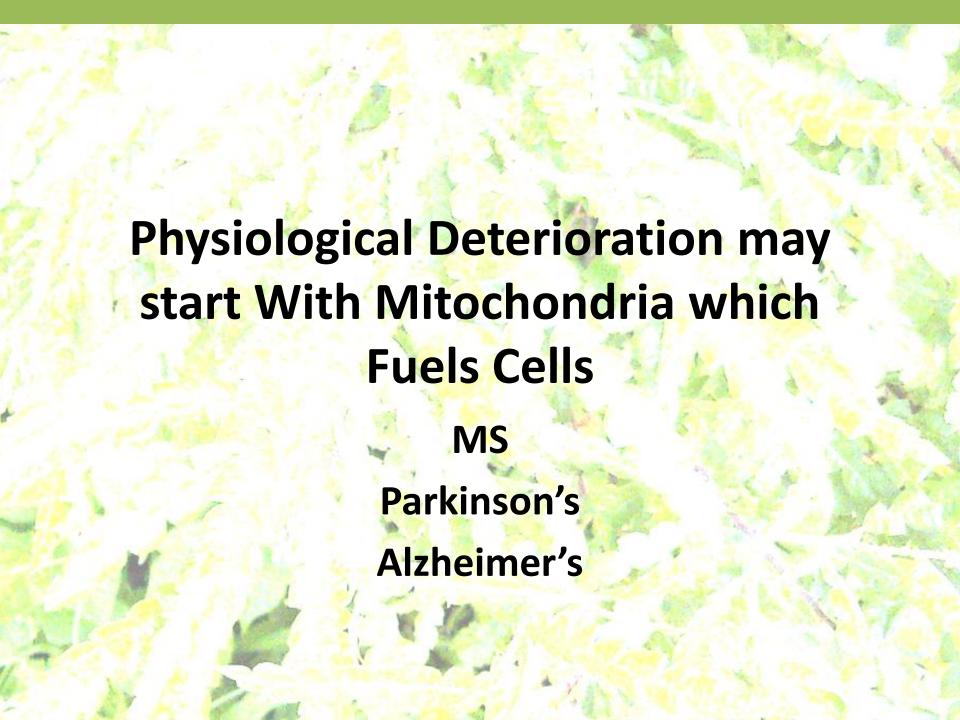
The Vagus Nerve is Key

- The nerve most implicated in the gut/brain axis
- Test with a tongue depressor- Say Ahh. Uvula should rise. If not and with symptoms:
 - Gargle 5 large glasses of water a day, sip by sip
 - Sing loudly (=sprinting)
 - Do tongue push-ups with a tongue depressor (=lifting)
 - Coffee enemas

Vagus Nerve Stimulation

- Vagus nerve stimulation can be turned on easily though a number of breathing and relaxation techniques:
 - Implanted mechanical vagus stimulation
 - Deep/slow belly breathing.
 - 'OM' Chanting
 - Cold water face immersion after exercise
 - Filling the mouth with saliva and submerging your tongue to trigger a hyper-relaxing vagal response.

http://www.turningpointnutrition.ca



Many Neurological Diseases begin with mitochondrial dysfunction

15 Pounds of Mitochondria

Adults possess approximately 10 million billion mitochondria, which corresponds to approximately 10% of our body weight!

Evans, Joseph (2013-02-28). The Secret Life of Mitochondria (Kindle Locations 138-139). Smashwords, Inc., Kindle Edition.

Mitochondrial Diseases

 Disturbances in mitochondrial metabolism are now known to play a role not only in rare childhood diseases, but have also been implicated in aging and many common diseases including heart disease, diabetes, Parkinson disease, MS and Alzheimers.

Making Enough Mitochondria

- Mitochondria increase the number of proteins that a cell can evolve, inherit and express by four to six orders of magnitude.
- Nature. 2010 Oct 21;467(7318):929-34. www.drbonci.com
- Too much food stimulates a breakdown in mitochondria and stops oxygen consumption and ATP synthesis (energy)
- Low food intake increases mitochondrial size, reduces breakdown and increases mitochondrial respiration and ATP production.

Four things to help mitochondrial health

- Calorie restriction or intermittent fasting
- Cure nutrient deficiencies
- Dietary polyphenols
- Endurance exercise (not anaerobic which makes muscles but not many more mitochondria)

Foods with Dietary Phenols Help Mitochondria

 Naturally occurring dietary polyphenols, such as resveratrol, curcumin, quercetin, and catechins, have antioxidant and antiinflammatory properties



Carbohydrate Scarcity & Mitochondria

- When carbohydrates are limited, the mitochondrial metabolism moves to burn stored fats to survive periods of carbohydrate deprivation. Mitochondrion. 10(1): 12-31
- The ketone body in a starving man or Atkin's follower, displaces glucose as the predominating fuel for the brain, decreasing the need for glucose synthesis in the liver (and kidney) and accordingly spares its precursor, muscle-derived amino acids.

Trans Am Clin Climatol Assoc. 2003; 114: 149–163

Ketone based energy

- Benign slow burning of ketones (vs uncontrolled ketoacidosis) instead of glucose
- Low carb diets: Atkins, Epilepsy diet: The ketogenic-antiketogenic ratio of the epilepsy diet is usually 4:1. (1)
- Calorie restriction by fasting also elevates ketones (2)
- Added dietary ketones may be useful (3)
- "Practical Guide and Dietary Management of Children with Seizures Using the Ketogenic Diet " <u>E. MARION MIKE</u>, B.S., M.S., Head Dietitian Am J Clin Nutr December 1965 vol. 17 no. 6 399-409
- 2. <u>Perspectives on the metabolic management of epilepsy through dietary reduction of glucose and elevation of ketone bodies (pages 529–537)</u> Amanda E. Greene, Mariana T. Todorova and Thomas N. Seyfried/
- 3. Maynard SD, Gelblum J. Retrospective cohort study of the efficacy of caprylic triglyceride in patients with mild-to-moderate alzheimer's disease. Neuropsychiatric Disease and Treatment. 2013;9:1619-1627. doi:10.2147/NDT.S52331.

Gluten sensitivity can affect mitochondria

 in 2002, Dr. Marios Hadjivassiliou found that when the cause of a neurological disease is unknown (not due to trauma or genetics), the percentage of those patients with elevated antibodies to gluten is 57%. For many different neurological conditions, a contributing factor may be that the immune system is responding to gluten and fighting gluten.

 "The bowel is the point of contact of gluten within our bodies. But, it affects systemic circulating antibodies, blood, various other immunological responses that may involve cells. There is no reason why those cannot be a manifesting elsewhere in the human body. And such patients can manifest exclusively with neurological problems. "

Dr. Marios Hadjivassiliou

Gluten is the Major Disruptor of the Neurological System

- In the gluten-sensitive the immune system tags gluten to attack it with antibodies
- Gluten is structurally similar to nervous system tissue so the immune system tags both those tissues and gluten for attack
- Gluten also triggers zonulin to open tight junctions in both the intestines and blood brain barrier

Gluten and associated allergens

- Made up of gliandins (proteins) and agglutinin (glue)
- Test for alpha, omega and gamma gliandins
- Deamidated gliadin (food additive)
- Wheat germ agglutinin -lectin
- Gluteomorphin -opiod
- Prodynorphin -opiod
- Also transglutaminase antibodies: TG2, TG3 and TG6
- In Cyrex Labs these are in the Wheat/Gluten Proteome Sensitivity and Autiommunity Panel
- Red compounds the only part of normal gluten test

Autoimmune and other issues

- Transglutaminase antibodies represent autoimmune disease
 - TG2- villous atrophy, destruction of gut wall
 - TG3- skin outbreaks like dermatitis herpeptiformis
 - TG6- neurological control
- Also other lectins, opiods and FODMAPs

Microbial Effects: We are walking microbial colonies in a human superstructure

- Microbial health reduces inflammation and infection
- Reduces gluten sensitivity
- Protects the vagus nerve
- Affects neurodegenerative disease

MICROBIOME THE HUMAN 600+ Bacteria, fungi, and viruses outnumber human cells in the body by a factor of 10 to one. The microbes synthesize key nutrients, fend off pathogens and impact everything from weight gain to perhaps even brain development. The Human Microbiome Project is doing a census of the microbes in the mouth, pharynx and and sequencing the genomes of many. respiratory system include: The total body count is not in but it's **■** Streptococcus viridans believed over 1,000 different ■ Neisseria sicca species live in and on the body. ■ Candida albicans ■ Streptococcus salivarius **SPECIES 1,000** SPECIES in the stomach include: -■ Helicobacter pylori ■ Streptococcus thermophilus in the skin include: 500-1,000 ■ Pityrosporum ovale ■ Staphylococcus epidermidis ■ Corynebacterium jeikeium ■ Trichosporon ■ Staphylococcus haemolyticus **SPECIES** in the intestines include: -■ Lactobacillus casei **SPECIES** ■ Lactobacillus reuteri ■ Lactobacillus gasseri in the urogenital ■ Escherichia coli tract include: ■ Bacteroides fragilis ■ Bacteroides thetaiotaomicron ■ Ureaplasma parvum ■ Lactobacillus rhamnosus ■ Corynebacterium aurimucosum Clostridium difficile SOURCES: NATIONAL INSTITUTES OF HEALTH, SCIENTIFIC AMERICAN: HUMAN MICROBIOME PROJECT Dean Tweed • POSTMEDIA NEWS / IMAGE: Fotolia

Probiotic Organisms

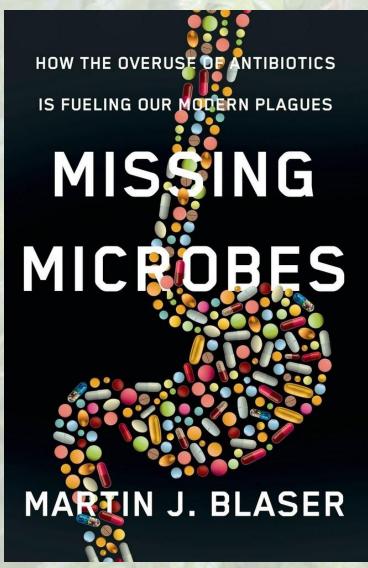
 Beneficial bacteria be 80-90% of your immune function. By lining every square inch of your intestinal tract, they not only provide a barrier to entry for microorganisms that arrive with your food, they also directly kill many pathogens such as bad bacteria, viruses, fungi, parasites, and yeast.



First days of life important for gut colonization

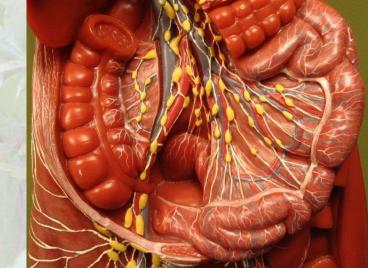
- According to the study in Neurogastroenterology
 & Motility:
 - "differences in [prudent] behavior were accompanied by alterations in the expression levels of several genes in the germ-free mice. ... Bacteria colonize the gut in the days following birth, during a sensitive period of brain development, and apparently influence behavior by inducing changes in the expression of certain genes."
- Blaser recommends vaginal swiping at C-sections

Missing Microbes



- Vaginal swipe for C-sections
- Nursing provides 90% bifidobacteria balance vs. bottle's bacteriodes and clostridial bacteria
- Avoid antibiotics
- Eat fermented foods
- Soil based bacteria on food or herbs- not always helpful
- Probiotic families differ
- Low contact tribes have low bifidobacteria but much more diversity

- Microbes also function as immunomodulators and produce a number of immune factors such as lactoferrin that directly boost your immune function as well as a number of B vitamins that offer nutritional support for your immune system.
- And finally, it is estimated that some 70% of your immune system cells reside within your colon in a layer of lymphoid tissue just below the surface epithelial cells
- http://www.jonbarron.org/article/anatomy-small-intestine



Mesenteric lymphoid tissues →

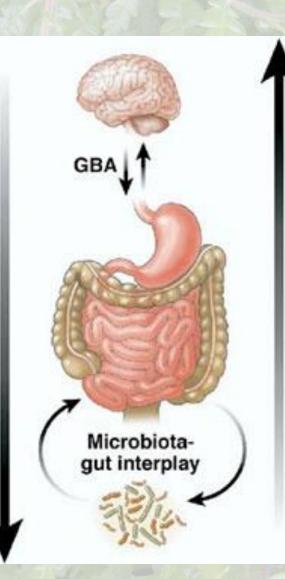
Gut Brain Axis w Microbiota

The ability of the brain to influence the intestinal microbiota

Perturbation of normal habitat via stress-induced changes in gastrointestinal:

- Physiology
- Epithelial function
- Mucin production
- EE cell function
- Motility

Release of neurotransmitters



The ability of the microbiota to influence brain and behavior

Activation of neural afferent circuits to the brain

> Activation of mucosal immune responses

Production of metabolites that directly influence the CNS

Healing a Leaky Gut

- Remove offending foods- GAPS, Paleo
- L-glutamine- regeneration of villi
- Licorice or DGL licorice
- Aloe leaf (no green- fresh better)
- Marshmallow root powder in applesauce
- Slippery elm powder the same way
- MSM for liver/gut issues and inflammation-pine
- German chamomile for rapid wound healing
- Marigold flowers (tagetes)

Advanced Leaky Gut

- Pau d'arco with heavy yeast
- Uva ursi- astringent, antimicrobial
- Garlic (raw)
- Olive leaf extract
- Berberine-rich herbs: coptis, Oregon grape, berberis, yerba mansa, yellowroot, goldenseal
- Undecylenic acid (castor oil)
- Caprylic acid (coconut) with yeast overgrowth
- Oregano, black seed or thyme for infections
- Wormwood and black walnut with known appropriate parasites – no universal "antiparasite herbs"

Causes for a Leaky BBB (blood brain barrier)

- Leaky Gut
- Chronic stress
- Elevated glucose and diabetes
- Chronic exposures to toxins
- Vitamin B deficiency raising homocystiene levels

- Poor diet
- Alcohol
- Low antioxidants
- Systemic inflammation
- Trauma

GABA

The GABA Challenge test involves taking a neuropeptide called GABA that is naturally made in every cell of your body. The key bit of information that we are using is that it acts locally only. It does not travel from the kidney to the brain, and it doesn't cross the blood brain barrier.

The neuropeptides that work in the brain are GABA, serotonin, dopamine, etc. GABA is the only inhibitory chemical (it's like the brake pedal). All the others are excitatory or stimulating to the nervous system.

When you take a drug that stimulates GABA in the brain, you tend to slow down, get tired, feel sluggish, lose fine coordination. Alcohol and Valium are probably the most famous GABA stimulators.

BUT, taking the protein directly shouldn't do this. Alcohol crosses the blood brain barrier, GABA does not. When we take GABA internally, WE SHOULD NOT FEEL ANYTHING. There should not be a slowing, intoxication, or incoordination feeling at all. There should be no brain effect at all.

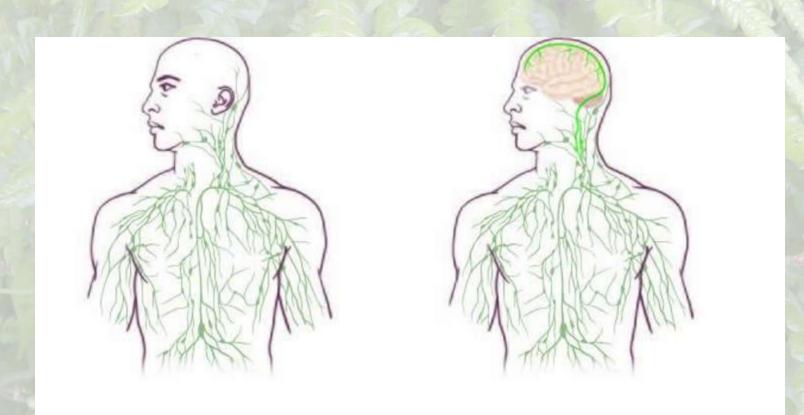
GABA test for leaky BBB

- INSTRUCTIONS
- About 1-2 hours after dinner, on a night that you have nothing planned, take 2 GABA capsules.
- Go about your business
- Notice any unusual slowing down type feelings, ranging from drunken to lethargy, or simply slowed down.
- Notice any excitation, agitation, or other stimulation such as feeling wired, which will happen in approximately 20% of the cases of compromised BBB. Most will feel inhibited
- Go to bed. If you are slowed, it will be gone by the morning. (If you feel hung over in the morning, the process of neurodegeneration is more advanced, and requires significant attention.
- ANY change, excitation or inhibition is a positive test for damage to the Blood Brain Barrier.

Healing Leaky Brain

- The same as for leaky gut since a"fire in the gut equals fire in the brain."
- Zinc
- Chinese Kidney tonics the brain is the Sea of Marrow
- Bone broths or gelatin. Marrow bone
- DHA

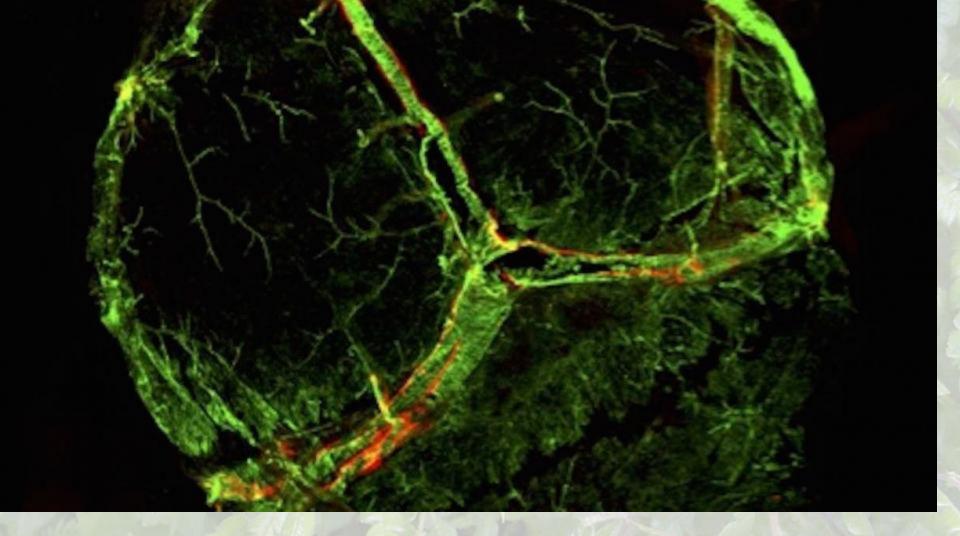
The brain's lymphatic system has been very recently discovered



Credit: Courtesy of the University of Virginia

- There is some kind of relationship between the brain and the immune system. Abnormal immune activity was reported in schizophrenia in the 1930s. Numerous mental and neurologic illnesses are known or thought to have an immune component.
- Kipnis' group at UVA identified a tangible, anatomical structure facilitating this relationship which suggests that the brain is not as separate as it was once thought to be

- Some MS results from autoimmune activity in response to an infection in the CNS and CSF. Antigens from the infections may find their way to the cervical lymph nodes via the meningeal lymphatic vessels, inciting the immune response that causes MS symptoms.
- Alzheimer's is thought to be caused by the build up and transmission of a protein called amyloid in the brain. It may be that the amyloid isn't being cleared properly via these lymphatic vessels, and that somehow improving their patency might help rid the brain of the pathologic protein.



- Photo Credit: University of Virginia
- The newly-discovered lymphatic vessels, shown in red, were almost invisible behind the larger blood vessels, shown in green.

Multiple Sclerosis



Multiple Sclerosis

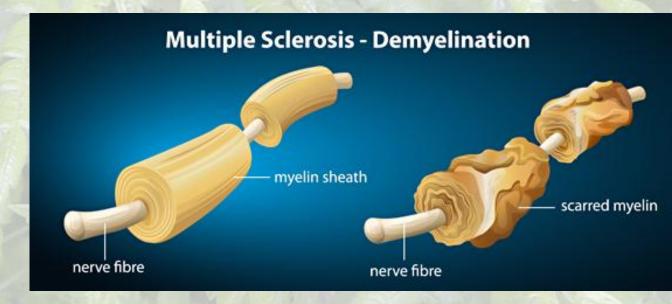
- Affects 350,000 people
- Deteriorating and progressive
- Infective trigger
- Symptoms may include muscle weakness, trouble with coordination and balance, vision problems, thinking and memory issues, and sensations such as numbness, prickling, or "pins and needles."

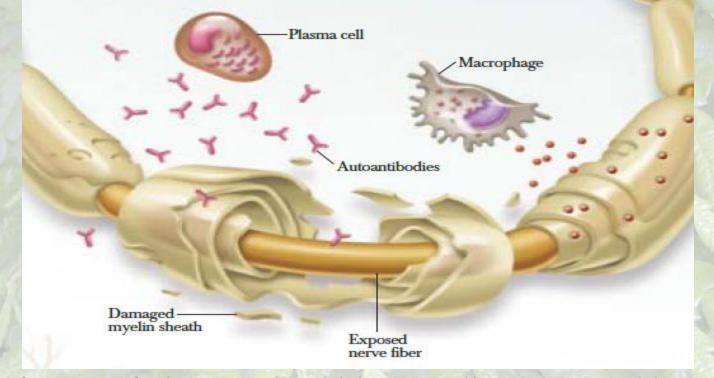


- A fatty material known as myelin covers the axon of the nerve, protecting and insulating the axon much like the rubber over an electric cord.
- Myelin is made of up lipids (fats) and proteins. In addition to protecting the axon, it also helps nerve signals travel quickly from one part of the body to another, or to the brain.

MS attacks myelin, breaking it down and interrupting

nerve signals, like an electrical short.

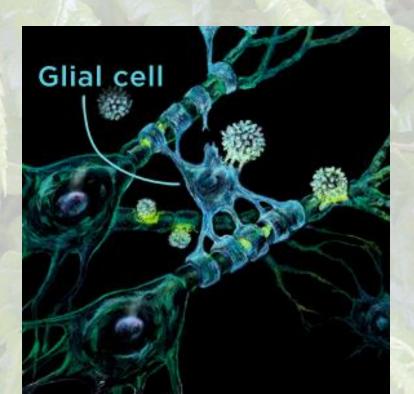




- Infection-fighting white blood cells, triggered by some unknown force, enter the CNS and attack the nerve cells. They damage the sheaths and cause scarring
- A latent virus when activated may cause the inflammation. A genetic trigger or an immune system malfunction may also be to blame. Whatever the spark, the white blood cells go on the offensive.

- During a period of inflammation, attacking white blood cells can also kill glial cells. Glial cells surround nerve cells and provide support and insulation between them.
- Glial cells also keep nerve cells healthy and produce new myelin when it is damaged.
- If glial cells are killed, they are less able to keep up with repair.

 Glial cells have lymphatic tubes (glymph) so loss leads to toxin build-up



- Sclerosis means "scarring", and people with MS develop multiple areas of scar tissue in response to the nerve damage. Depending on where the damage occurs, symptoms may include problems with muscle control, balance, vision, or speech.
- Herbal treatment for scars using internal herbs may help

- An MS episode or period of inflammatory activity can last anywhere from a few days to several months. In between, the patient usually experiences "remission" with no symptoms. During this time, the nerves will try to repair themselves, and may form new pathways to get around the damaged nerve cells. Remission can last from months to years.
- There is no known cure for MS besides perhaps stem cell implantation. However, current therapies can slow the disease and help control symptoms.

Where does damage occur? What symptoms?

- loss of balance
- muscle spasms
- weakness
- tremors
- bowel and bladder problems
- eye problems
- hearing loss
- facial pain
- brain issues such as memory loss
- sexual issues
- problems with speech and swallowing



MS Herbal Targets

Symptoms

- Latent infections
- Nerve sheath building
- Glial protection
- Eyes
- Thyroid
- Circulation
- Cooling Heat
- Scar tissue
- Pain

Consider

- Indigo, berberis
- Bone broths, good fats
- St John's Wort
- Bilberry
- Ashwaganda
- Turmeric
- Coptis
- Frankincense
- Kava

MS and Diet

Terry Wahls: eating to feed your mitochondria



 Not only for MS: trace minerals, phytochemicals, now basically Paleo with tons of vegetables

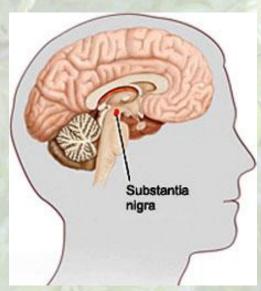
- She discovered that three nutrients in particular are essential for proper mitochondrial function:
 - Animal-based omega-3 fat
 - Creatine
 - Coenzyme Q10 (CoQ10), or better the reduced version known as ubiquinol
- Just by adding those three to her diet, her decline began to slow. But she wasn't improving, so she continued sleuthing through the medical research in search for an answer. When she discovered the Institute for Functional Medicine, Dr. Wahl began to find more clues.

First she started with nutrients

- Myelin is an insulating, waxy substance that sheathes the nerves in your central nervous system. Your myelin also needs specific nutrients to function properly, such as:
 - Vitamin B1
 - Vitamin B9
 - Vitamin B12
 - Animal-based omega-3 fat
 - lodine
- Furthermore, the neurotransmitters in your brain need sulfur and B6 for optimal functioning, preferably methylated.
- Eventually she started using foods and symptoms reversed

Whals Protocol

- 9 cups of vegetables each day including brightly colored vegetables, leafy greens and sulfur-rich onions/garlic.
 - Green drinks, overnight infusions, kale chips, spirulina and sea vegetables
 - Hiding veggies in sauces, sides
- Has stopped including gluten
- Grass fed organic meats, organ meat, deep sea fish, game
- Colorful low-sugar fruit
- Nuts and coconut
- Also add Vitamin D- 40% less in MS, using old lower D levels
- No junk like aspartame, no MSG



Parkinson's Disease





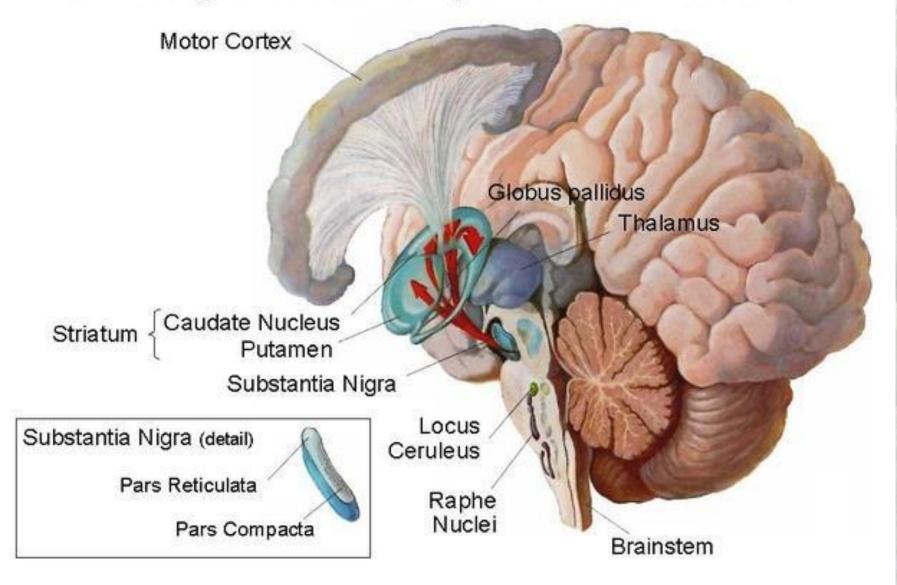
Parkinson's Disease

- Parkinson's disease is chronic disorder of the nervous system.
- It affects about one million people. Each year, 50,000 to 60,000 new cases occur in the United States

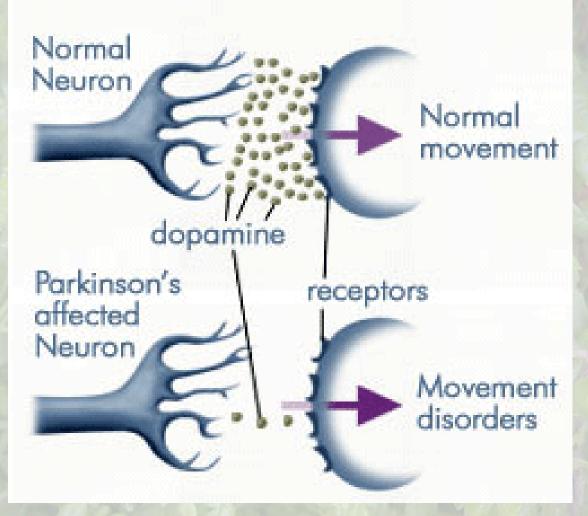


- This disease isn't fatal, but it can cause debilitating symptoms that impact everyday movement and mobility.
- Hallmark symptoms of this disease include tremors, gait, and balance problems.
- These symptoms develop because the brain's ability to communicate is damaged

Brain Regions Affected by Parkinson's Disease



Dopamine levels in a normal and a Parkinson's affected neuron.

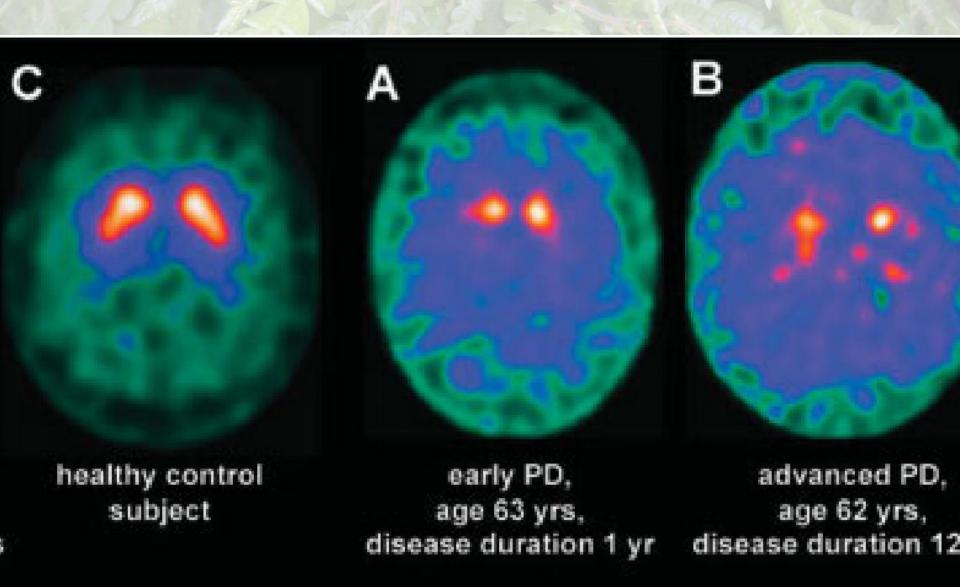


Loss of Dopamine

Dopamine is a neurotransmitter, or chemical, that helps communicate messages between different sections of the brain. The cells that produce dopamine are damaged in people with Parkinson's disease.

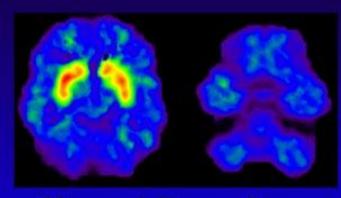
The brain is unable to send and receive messages without enough dopamine, and transmission is disrupted. This affects the body's ability to coordinate movement and can cause walking and balance problems.

Parkinson's Progression

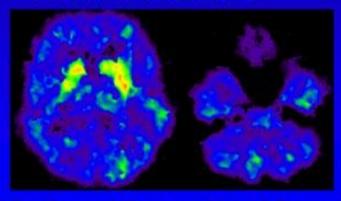


Meth recovery as clue in PD

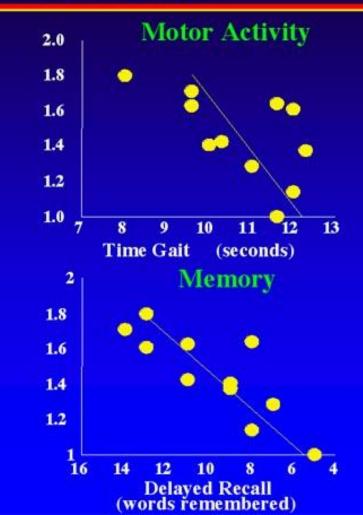
Figure 1. Dopamine Transporters in Methamphetamine Abusers



Normal Control

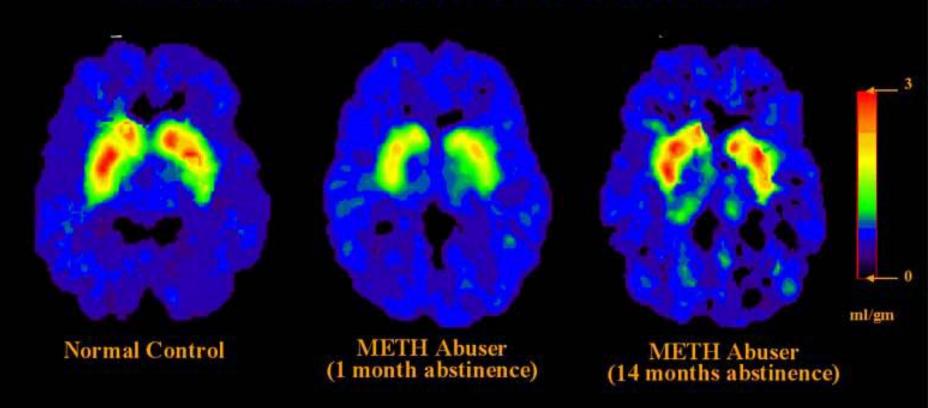


Methamphetamine Abuser



p < 0.0002

Figure 2. Partial Recovery of Brain Dopamine Transporters in Methamphetamine (METH) Abuser After Protracted Abstinence



Source: Volkow, ND et al., Journal of Neuroscience 21, 9414-9418, 2001.

Are they comparable?

- Meth users have similar gait, slowness and tremors
- Meth uses up dopamine in "rush"
- Abstinence, cognitive behavioral therapy, planning strategies, 12 step groups, meditation allow brain changes

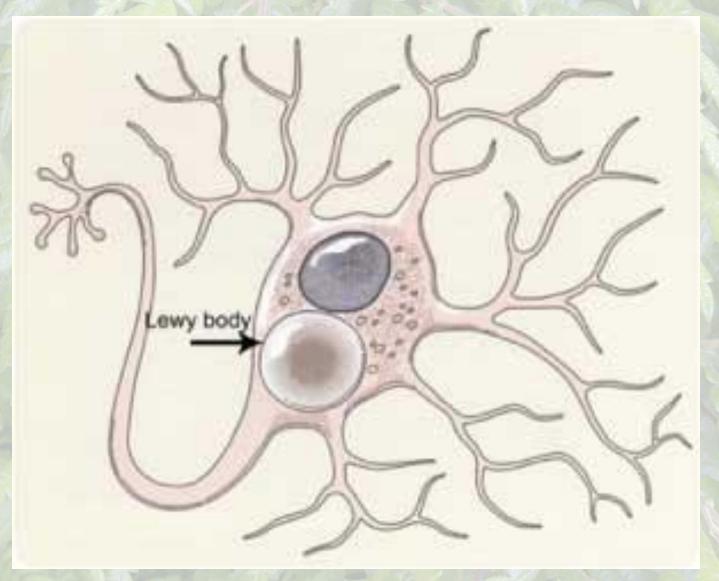
- PD gait, slowness and tremors
- Parkinson's produces less dopamine due to damage in substantia nigra
- Requires conservation of dopamine with meditation, planning therapy, brain training, adaptogens but also more production

Lewy Bodies

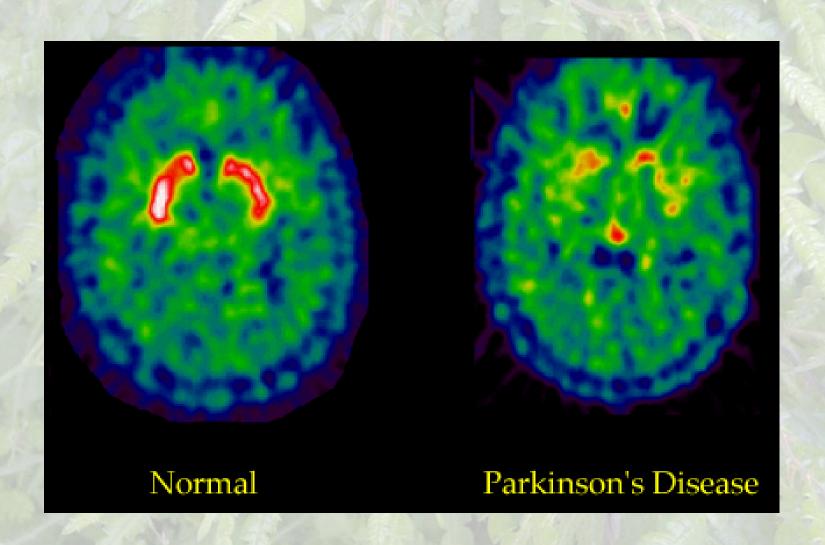
 Lewy bodies are abnormal clumps of proteins found in the brainstem of people with Parkinson's. Lewy bodies contain alpha syneuclin, a protein that cells are unable to break down. Lewy bodies surround cells in the brain, interrupting the way the brain is able to function.

 Over time, clusters of Lewy bodies cause the brain to degenerate, causing motor coordination and dementia.

A kind of stagnation (blockage)



Look at reduced blood flow



Genetic and Epigenetic Causes

- Around 15 to 25 percent of people with Parkinson's have a relative affected by the disease.
- Someone with a first-degree relative (a parent or sibling) who has Parkinson's is at a 4 to 9 times greater risk of developing Parkinson's than someone with no relatives affected by the disease.

- There are 28 gene expressions associated with PD
- So how does genetics factor into Parkinson's in some families? Through the mutation of genes or expression of telomeres that are responsible for producing dopamine and certain proteins essential for brain function.
- Genetics is not destiny

Parkinson's Disease Foundation

Other Causes

- Most cases of Parkinson's disease occur in people over age 60. Younger people rarely have the disease.
- Researchers believe that the brain and dopamine function begin to decline as the body ages. This makes a person more susceptible to Parkinson's.

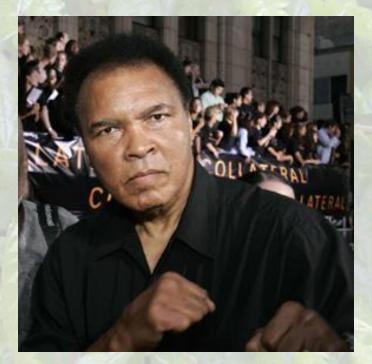
 Gender also plays a role in Parkinson's. The disease more often affects men, with men one-and-a-half times more likely to develop Parkinson's than women



Occupational hazards

Parkinson's disease
 occurs more frequently
 in people who have jobs
 in welding, agriculture,
 and industrial work with
 exposure to toxic
 chemicals.

 Football players, boxers and soldiers have higher incidences of Parkinson's due to trauma.



Toxins and Parkinson's

- According to the Parkinson's Disease Foundation, exposure to certain chemicals have been linked to Parkinson's disease, including:
 - insecticides
 - herbicides
 - fungicides
 - Agent Orange

- Living in rural areas, drinking well water, and consuming manganese has also been linked to Parkinson's.
- However, not everyone exposed to these environmental factors develops Parkinson's. A combination of genetics and environmental factors cause Parkinson's.





Tremors, Dementia, Stiffness, Qrug induced recklessness





Symptoms of Parkinson's

Balance issues

Micrographia





Parkinson's Herbal Targets

Symptoms

- Tremors
- Tight muscle spasms
- Memory
- Constipation
- Nerve deterioration
- Circulation
- Dehydration
- Sleep
- Pain

Consider

- Indigo, berberis
- Kava
- Tulsi, Ginkgo
- Bone broths, Flax seeds
- St John's Wort
- Frankincense
- Rhemannia
- Suan zao ren
- Jamaica dogwood

Leaky gut and Parkinson's

- Parkinson's disease sufferers have different microbiota than do healthy counterparts. The more *Enterobacteriaceae* they had, the more severe the symptoms.
- A lack of *Prevotellaceae* bacteria in Parkinson's sufferers could mean these bacteria have a property which protects their host from the disease. Or it could merely indicate that intestinal dysfunction is part of the Parkinson's pathology.

Helsingin yliopisto (University of Helsinki)



50% to 80% of patients with Parkinson's disease have abnormal glucose tolerance

- We do not know if it is causal (50% of adults over 50 have abnormal blood sugar)
- Diabetics with Parkinson's have a longer time before complications set in than non-diabetics
- But that may be because they control blood sugar
- Driver JA, Smith A, Buring JE, Gaziano JM, Kurth T, Logroscino G. Prospective Cohort Study of Type 2 Diabetes and the Risk of Parkinson's Disease. *Diabetes Care*. 2008;31(10):2003-2005. doi:10.2337/dc08-0688.
- November 2012 review in Experimental
 Gerontology reported that people with diabetes have
 double the risk of developing dementia.
- Not good for dementia

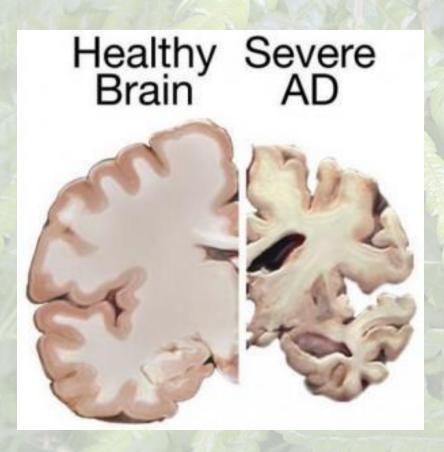
Alzheimer's Disease

- One in eight people 65
 and older have this
 devastating form of
 dementia.
- Alzheimer's disease causes 50% to 60% of all dementias.



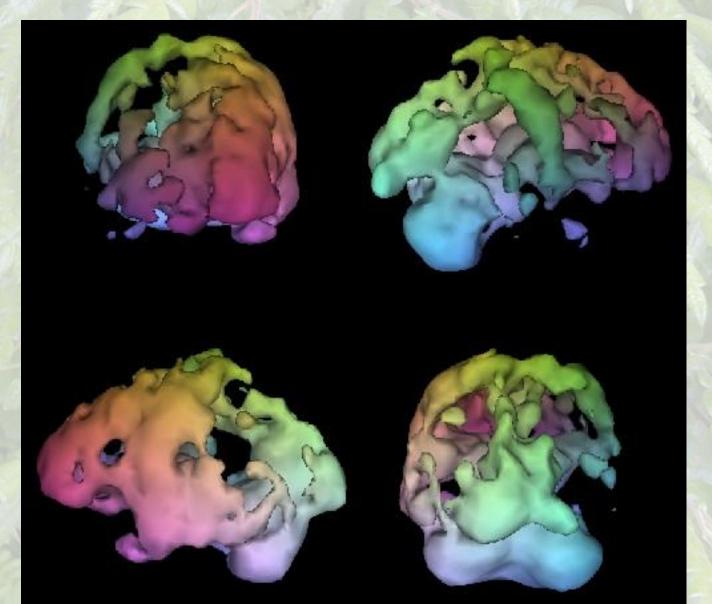
Two nervous system
 diseases, once
 incorrectly diagnosed as
 Alzheimer's, are
 emerging as major
 causes of dementia:
 Lewy body disease and
 Pick's disease.

Alzheimer's Disease: Stagnation leading to Deficiency

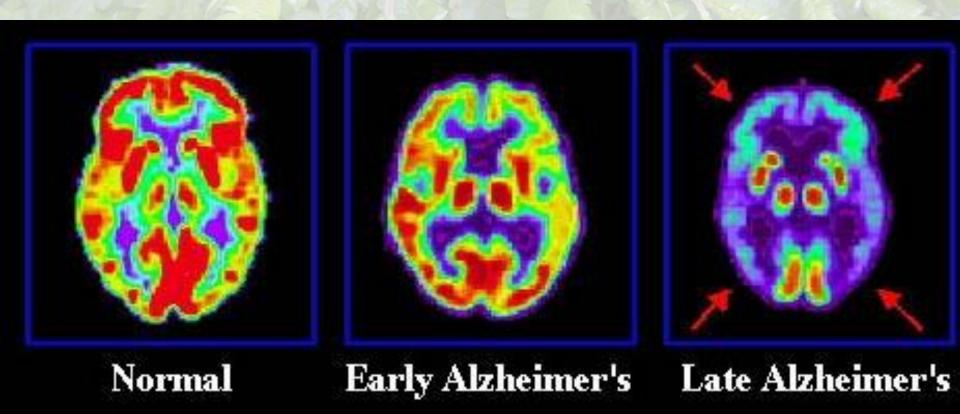


- Two brain changes form in the brains of patients with Alzheimer's – neurofibrillary tangles and beta-amyloid plaques.
 - Tangles inside the cells.
 - Plaques build up in the spaces between nerve cells.
- The two combine to block communication between nerve cells and disrupt the processes needed for survival.

Alzheimer's Brains Atrophy



Progressive



Diagnostic test we can do

- Put a tablespoon of peanut butter in a spoon
- Have patient occlude one nostril
- Measure the distance from nostril where patient can smell the PB
- Do the other side after 2 minutes

- If the left nostril is impaired, needing to be 10 cm closer, suggests Alzheimer's
- The ability to smell is associated with the first cranial nerve and is often one of the first things to be affected in cognitive decline
- http://articles.mercola.com/sites/articles/arc hive/2013/11/07/peanut-butter-coconut-oilalzheimers-detection.aspx

Alzheimer's: Type 3 diabetes

 Type 2 diabetes is known to increase the risk for Alzheimer's disease. Recent research has found that insulin resistance also develops in the brains of patients with Alzheimer's, which scientists sometimes call "brain diabetes." This brain insulin signaling deficit results in learning and memory disability and could potentially be known as Type 3 Diabetes.

Brain Diabetes

- Brain levels of insulin and insulin receptors are lower in AD and insulin signaling impairments have been documented in animal and human postmortem analysis.
- Researchers suggest that stimulating glucagon-like peptide 1 receptors may represent a promising new pharmaceutical approach to curing AD.

One, (Byetta, Exenatide's) uses are being expanded to AD. How about our

herbs?



Blood sugar regulating herbs

- Cinnamon
- Blueberry leaf
- Cocoa extract
- Coffee
- Berberis
- Bitter melon
- Prickly pear
- Gymnema might not be the best



 Most of these are not tested for Alzheimer's but I might include them in a formula. None that increase insulin resistance.

Diet and AD

- Low carbohydrate ketogenic diet because the brain becomes less able to use glucose to produce energy
- The breakdown of fat cells to ketones which fuel the brain without glucose may cause some reversals or prevent deterioration
- Coconut oil has shown reversals in AD
 https://www.youtube.com/watch?v=_9INyTTXfR0
 - Can add ketones: coconut oil, MCT oil, special shakes (Axona-\$200 for a pack of 3 shakes)

Supplements for AD

- Astaxanthin is a potent natural antioxidant pigment found in krill. Fat-soluble so crosses the blood-brain barrier. A study in Forum Nutr April 2009 found it may help prevent neurodegeneration associated with oxidative stress, and nourish the brain. Neutralizes free radicals without being destroyed or becoming pro-oxidant itself. It's unique shape allows it to precisely fit into a cell membrane and span its entire width so astaxanthin can intercept potentially damaging molecules before they can damage your cells.
- Alpha lipoic acid in the form of R-ALA: can stabilize cognitive functions among Alzheimer's patients and may slow the progression of the disease.

- Vitamin B12: A small Finnish study in the journal Neurology found that people who consume foods rich in B12 may reduce their risk of Alzheimer's in their later years. For each unit increase in the marker of vitamin B12, the risk of developing Alzheimer's was reduced by two percent. Sublingual methylcobalamin is preferable.
- Magnesium L-Theronate and transdermal mg. There is some preliminary research strongly suggesting a decrease in Alzheimer symptoms with increased levels of magnesium in the brain.
- Vitamin D reduces inflammation. Keep blood between 50-100 ng/ml

Lifestyle changes

More difficult to maintain as the disease progresses

 Intermittent fasting to burn fat rather than glucose in the brain

Exercise

Keep fasting insulin levels below 3

Blood sugar below 105



Herbs to treat different manifestations

- Leaky gut herbs: Marshmallow
- Hormonal regulators: Black cohosh
- Anti-inflammatory herbs: Berberis
- Circulatory stimulants: Cinnamon
- Growth stimulants: Turmeric
- Pain herbs: Frankincense
- Mental stimulants: Ginkgo
- Oxygenators: Huperizia
- Toxin reducers: Ground ivy
- Psychogenic: Ayahuasca

Constitutional and Drug Issues

- Yin deficiency: dry people need fats, gelatin and herbs that moisten
- Yang deficiency: cold people need warming herbs like red ginseng
- People on L-dopa may need laxative herbs
- People with movement disorders need herbs in a form that is easy to take

Ashwaganda



Nightshade

Ashwagandha, also known as winter cherry, is a powerful adaptogen that can significantly reduce stress related conditions such as adrenal fatigue, adrenal exhaustion, and heart and kidney problems. Ashwagandha is a rich source of minerals including zinc, iron, calcium, magnesium, vanadium, copper, and cobalt.

Bacopa monniere

- In Ayurveda used as a nerve tonic and to improve cognitive ability.
- Contains potent alkaloids, antioxidants, saponins and flavonoids, nervine actions.
- A study on animals with induced Alzheimer's found the extract improved impaired memories and mitigated neuron degeneration in the hippocampus, the part of the brain involved with long-term memory.



 January 2010 issue of the "Journal of Ethnopharmacology"

Berberis, Goldenseal and Coptis

- Berberine
- Cool inflammation
- Inhibit microglial activation, a critical component of inflammatory responses in neurodegenerative diseases.
- Upsets efflux pumps in pathogenic bacteria



California poppy



- Yang insomnia with anxiety
- Antispasmodic to the large intestine
- Rich in vitamins A, C, and E as well as calcium and magnesium.
- Sedative properties make it highly beneficial for relieving anxiety, stress, panic attacks, insomnia, hypertension, colic and bedwetting in children.
- It is also useful for behavioral disorders such as OCD, Bipolar disorder, Alzheimer's, ADD, and ADHD.

Black cohosh

- Stagnant depression
- Menopausal or andropausal depression
- Restriction of activities due to PD, MS, Alzheimers
- Nervous system depressant and sedative with antiinflammatory effects.
- Its active ingredient appears to bind to estrogen receptor sites, so it may cause hormonal activity



Cacao

- Cacao beans contain flavonoids, a type of antioxidant compound.
- Anthocyanidin, is especially high in cacao beans, along with catechins and epicatechins.
- Proanthocyanidin compounds can help decrease oxidation of LDL.
- Phenethylamine is the "feel good" neurotransmitter
- Flavanols are the main flavonoid found in cacao. In addition to having antioxidant qualities, research shows that flavanols lower blood pressure, improving blood flow to the brain and heart, and making blood platelets less sticky and able to clot.
- Processing can reduce flavanols in chocolate



Centella

- Centella or Gotu kola is a rejuvenative nervine used for nervous disorders, epilepsy, senility and premature aging.
- A brain tonic said to aid intelligence and memory. It strengthens the adrenals and is alterative.
- Used to combat stress and depression, increase libido and improve reflexes.
- Also indicated for chronic venous insufficiency, scars, scleroderma, wound healing, rheumatism and high blood pressure



Coffea

- Reduces both the incidence and severity of Parkinson's
- Caffeine a positive factor
- Coffee enemas or suppositories for glutathione
- Magnesium mugger or source of Mg?



Cordyceps

- Selected for its use as a strong adaptogen affecting the Chinese Kidney functions including aging and memory
- Protects brain against oxidative damage
- Anti-inflammatory
- Protects against cerebral ischemia

Mycelial form is fine



Favas and Mucuna beans

- First check for favaism,

 a genetic aversion to
 fava. G6pd test.
- If on L-Dopa, you are adding to your dose and could overdo it
- Interacts with MAOIs
- Mucuna is stronger



Fava Beans

- Fava beans contain L-dopa.
- Dr. Weil says you would need the equivalent of a 16ounce can - to get an effective dose.
- The pods are a richer source than the bean and can be tinctured.
- Blended frozen pods and beans were given at 100-200g doses, equivalent to 25-50g Cardiodopa in one study and worked sooner and longer, equivalently.

 Aunt Bean makes a tincture from 1c mashed sprouted fava beans in ¾ cup brandy and doses according to the PD finger tapping test. ½-1 dropper



Mucuna puriens

- Mucuna has long been used as a treatment for Parkinson's disease in Ayurveda.
- Mucuna is a natural source of Ldopa (Levodopa) which is converted to dopamine in the brain.
- A 2004 study compared the standard dose of L-dopa to a powdered preparation made from mucuna seeds. Mucuna had a more rapid onset against Parkinson's symptoms and its positive effects were longer lasting than those of L-dopa.
- ½-1 fresh bean per dose to start
- The British research was published in the December, 2004, issue of the *Journal of Neurology, Neurosurgery & Psychiatry*.



Frankincense and Myrrh

- Move blood to dispel pain
- Anti-infective
- Moves blood, relaxes cramped, spastic, or rigid muscles
- Used internally or externally



Gambir (Gou teng; Uncis uncaria)

- Related to but different than cat's claw
- Often paired with gastrodia or armarillis fungus
- Liver yang rising





German Chamomile

- Chamomile is useful for anxiety induced GI symptoms such as nervous diarrhea, nervous stomach, and bowel spasms (use it with Catnip, Hops, or Valerian)
- It is also of benefit for GI tract disease due to its antiinflammatory and antispasmodic activity.





Ginkgo

- Ginkgo is the best studied herb for cognitive decline
- The recent popularity
 of Ginkgo biloba can be
 attributed, in part, to a
 study published by JAMA
 in 1997. This investigation
 reported that Ginkgo
 biloba appeared to be an
 effective treatment for
 cognitive issues in the
 elderly
- While certain chemical components of Ginkgo biloba act as antioxidants, others act to inhibit platelet-activating factor (PAF). PAF is a compound involved in blood clotting and inflammation, and so inhibiting it could reduce inflammation.
- It reduces stagnation in TCM terms

Ginkgo and MS

- A 1992 study of 10 people with MS, 80% of people using Ginkgo biloba saw improvement. A much larger, better-designed 1995 study found that Ginkgo biloba was not effective for treating acute MS attacks.
- For slowing down the disease process of MS, Ginkgo biloba does not appear to be effective in the short-term.
 Long-term effectiveness is unknown
- Some preliminary work has suggested Ginkgo biloba may help with MS-associated cognitive problems.



Ginseng

- American ginseng probably the bestnot as hot and generates fluids but Chinese red and white ginseng will work and, often, Jiaogulan
- Effects of Panax ginseng in
 Neurodegenerative Diseases
 by <u>lk-</u>
 Hyun Cho show effects of PD, MS,
 Huntington's and Alzheimer's . Full text
- Inhibits cellular aptosis, detoxifies, prevents oxidative damage, dendrite loss, anti-inflammatory, increases AD mini-mental exam scores, reduces inflammatory cytokines in MS



Ginseng in Parkinson's

- Panax ginseng is neuroprotective in a novel progressive model of Parkinson's disease
- Oral administration of this extract significantly reduced dopaminergic cell loss, microgliosis, and accumulation of α-synuclein aggregates
- Effects of Panax ginseng in Neurodegenerative Diseases
- Inhibits cytotoxicity, increases cell signaling, may slow the progress of PD



Green tea

- Contains polyphenols like flavonoids and catechins, which function as antioxidants like Epigallocatechin gallate (EGCG)
- Caffeine blocks an inhibitory neurotransmitter called Adenosine so it increases the firing of neurons and the concentration of dopamine and norepinephrine
- L-theanine is able to cross the blood-brain barrier and increases the activity of the inhibitory neurotransmitter GABA, which has anti-anxiety effects. It also increases dopamine and the production of alpha waves in the brain

Catechin compounds in green tea have protective effects on neurons, potentially lowering the risk of Alzheimer's and Parkinson's



Kava Kava

- Effective for chronic muscle tension & spasms (liver wind), i.e. fibromyalgia, Parkinson's, stiff neck
- Relieves pain especially
 Gl and GU pain
- Anti-anxieity
- Local anesthetic



Milk Thistle

- Liver damage due to hepatotoxic chemicals, viruses, alcohol or drugs
- Increases Phase I liver detoxification, increases hepatic glutathione stores, and enhances cellular regeneration of the liver



Papaya

- Papaya contains enzymes that induce glutathione S-transferase. Papaya latex contains at least four cysteine endopeptidases and other constituents including hydrolase inhibitors and lipase.
- It has rather high levels of potassium and significant levels of calcium and magnesium. Vitamin C, Vitamin A, folate and niacin.
- Avoid irradiated papayas to get the enzymatic effect.

Fermented papaya was used by Pope John for PD and may be more enzymatically active



Rhodiola

- Stimulating adaptogen
- For chronic stress, depression, fatigue, and immune depletion from overwork or excessive exercise.
- For Alzheimer's (use it with Ginkgo, Rosemary, and Bacopa)
- For head trauma with tulsi



Scullcap

- Nervine indicated for stressinduced spasms, tics, or tremors
- Useful for back and neck spasms, ADHD, Parkinson's Disease (it helps to control the tremors), fibromyalgia, tardive dyskinesia, mild Tourette's syndrome, mild OCD, and TMJ spasms
- Anxiety in deficient people
- For insomnia caused by muscle tension



Scute

- Baicalin
- Wogonin
- Cools inflammation
- Inhibits microglial activation, a critical component of inflammatory responses in neurodegenerative diseases.



Scorpions, centipedes, snakes and liver

- Chinese medicine
- Use toxin to treat toxin
- Eat liver to dispel liver wind





- High in absorbable vitamin A
- Great source of EPA and DHA
- Contains all the B vitamins
- Very high in vitamin B12
- High in absorbable iron
- Contains trace minerals
- High in an "Anti-Fatigue Factor"
- A traditional "Sacred Food"

Learn more: EmpoweredSustenance.com/Liver

St. John's Wort

- Depression is a feature of most neurological disease
- At least 15 different mechanisms for treating depression
- Mild to moderate depression (melancholia) with a sour disposition and a sour stomach.
- Nerve pain or nerve injuries of the spinal cord, fingers, and head trauma injuries.

May balance favas & mucuna



Tobacco

- Epidemiological studies have reported that cigarette smoking increases the risk of developing multiple sclerosis and accelerates its progression.
- The opposite happens with Parkinson's. It isn't just nicotine isolates.



Caffeine and Nicotine in Parkinson's

- Caffeinated coffee and tobacco use strongly prevents PD
- Caffeinated coffee and nicotine reduces progression of PD
- Variable conclusions
- Stronger association with men
- Caffeine can improve motor manifestations of disease like gait freezes and tremor

- Multiple roles for nicotine in Parkinson's disease
- Protects against nigrostriatal damage, dyskinesias from L.Dopa.
- Needn't be smoked



Turmeric

- Curcumin exhibits
 antioxidant, anti inflammatory and anti cancer properties, crosses
 the blood-brain barrier and
 is neuroprotective in
 neurological disorders.
- Several studies in different experimental models of PD strongly support the clinical application of curcumin in PD.
- Other constituents than curcumin- whole root

- Neuroprotective agent for αsynuclein-linked Parkinsonism
- <u>Curcumin: a potential</u>

 neuroprotective agent in

 Parkinson's disease



Valerian

- Best for aesthenic types who have trouble sleeping
- Contrary reactions in some, especially with dry root
- Valeriana amurensis
 improves Amyloid-beta 1-42
 induced cognitive deficit by
 enhancing cerebral
 cholinergic function and
 protecting the brain
 neurons from apoptosis in
 mice.

- Insomnia with anxiety, with a pale face and tongue.
- Stress related GI symptoms-IBS, nervous diarrhea, stress induced constipation



Vocagna africanis

- An African rainforest tree
- Can shield cellular DNA damage from oxidative stress, which can result in age-related deterioration of the nervous system (e.g., Alzheimer's disease, Parkinson's disease)
- Anti-inflammatory properties, as inflammation plays a key role in dozens of health problems ranging from heart disease to arthritis and nervous system disorders like MS

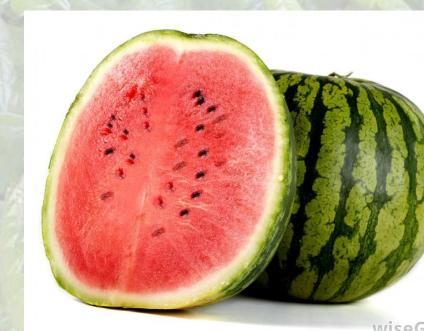
- Ability to prevent the accumulation of beta-amyloid peptides in neurons, a key feature of Alzheimer's disease
- Psychoactive use similar to iboga
- http://www.emaxhealth.com/1275/african-plant-may-helpaging-brains-alzheimer-s



Watermelon

- High levels of glutathione, fluid and electrolytes, all helpful for Parkinson's
- To use or make glutathione we need water which is abundant in watermelon. If we are dehydrated we may not make as much glutathione as we could.
- Citrulline in white skin increases arginine and ornithine in urea acid cycle

 Medicinal for Summer heat in TCM which provides fluids, regulates urination and jaundice- it is used in hepatitis treatment



Ayahuasca

- Banisteriopsis bark, is combined with chacruna leaves
 (*Psychotria viridis*) to brew a hallucinogenic beverage called ayahuasca. Banisteriopsis contains the alkaloids harmine, harmaline and tetrahydroharmine, which are MAOIs, similar to MAOI antidepressants.
- Researchers say MAO inhibition by alkaloids in ayahuasca and the antioxidant action of epicatechin and procyanidine provide protection against the neurodegenerative effects of Parkinson's disease.

- Best from stems and bark of mature plants
- Apparently effectiveness requires repeated use (being stoned)



Dr. Christopher's Ear and Nerve Formula.

- Traditional western nerve formula
- Blue cohosh, black cohosh and blue vervain are specific for nourishing and rebuilding the nerves in the motor-nerve area in the medulla and upper cervical areas.
- Skullcap for rebuilding the spinal cord.

- Lobelia is an antispasmodic herb that also acts as a catalyst for the others.
- Together these herbs have the power to help rebuild a shattered motor nervous system and spinal cord, allowing the body to work much better on many levels.

Well-researched Vitamins

- Hardy's Daily Essential Nutrients and Truehope's EMPowerplus Advanced vitamins use micronized minerals and chelation as well as cofactor balance.
- Over 20 years of research on anxiety, depression, bipolar, autism, ADHD and anecdotal evidence for other neurological conditions





Glutathione

- Direct oral supplementation uses 3% of amount taken.
 Liposomal delivery better
- https://www.youtube.com/ watch?v=NMHN3IQjtTY
 shows how to make a liposomal form that allows your body to make it from herbs and precursors with instructions and supplies at http://www.livingherbalfar macy.com/liposomalglutathione/ l

 IV glutathione works well but is short lived

GLUTATHIONE BENEFITS

- Increases energy
- Slows down the aging process
- · Reduces muscle & joint discomfort
- Strengthens immune system
- Detoxifies the liver & cells
- Improves mental focus & clarity
- Improves quality of sleep
- Reduces the effects of stress
- Improves the skin
- Athletic performance & recovery



* These statements have not been evaluated by the Food and Drug Administration.
This product is not intended to diagnose, treat, cure or prevent any disease.

Magahol, a Topical Magnesium Tincture

- 7 oz vodka
- 4 oz magnesium chloride flakes
- Stir until dissolved
- Penetrates better than magnesium oil
- Can spray or rub on



Non Herbal Approach: Increasing Neuroplasticity

- New language, physical activity like dance
- Meditation- long term induces greater gamma wave state
- Learning impulse control as a child (or later)
- Allow person to negotiate difficult tasks
- Can be negative: shoot 'em up video games

Handle the difficult while it is still easy.

Handle the big while it is still small.

Difficult tasks begin with what is easy.

Great accomplishments begin with what is small.

Therefore, the wise never strive for the great and thus achieve greatness.

Lao Tzu

Approach to Treatment

- Look at tongue and listen to pulse
- Determine if person is hot or cold
- Is condition primarily excess or deficient?
- Compare with brain lobe symptoms
- Rule out exterior causes unless long term
- Analyze food diary
- Look up side effects of medications

Start with the basics

- Nutrition- address leaky gut and leaky brain
- Diet and allergies
- Sleep
- Exercise
- Mental growth
- Toxins
- Other sources of inflammation



Approach to Treatment

- Heal the leaky gut and blood brain barrier first
- Dietary treatment of root cause
 - Paleo type diet clean, low carb, plant based
 - Allergens removed (Cyrex labs, GAPS, usual suspects)
 - High minerals, colorful plant source foods, good fats, grass-fed meat
- Marshmallow or slippery elm and glutamine

Toxin Removal after

- Testing a good idea (stool, urine) for heavy metals and plastics, pesticides, etc.
- DMSA prescription strength and iv EDTA or glutathione or Vitamin C for heavy metals
- No chelation if BBB is leaky
- Olestra: synthetic fat for synthetic toxins
- Far infrared sauna with dry brush massage

- Can make detox suppositories or retention enema- coffee, glutathione, EDTA, pycogenol
- Raw garlic, malic acid, chlorella, clean seaweed
- Ground ivy for lead "painter's colic"
- Cilantro doesn't chelate –herban legend
- Alterative and laxative herbs
- Probiotics

Look at symptomatic (branch) treatment

- Sleep herbs: lavender, suan zao ren (zysiphus), passionflower, hops according to pattern
- Pain herbs: Frankincense, myrrh, corydalis, willow, meadowsweet, turmeric, dit dat jiao external formula, transdermal magnesium oil or MagAhol
- Immunomodulating Adaptogens:
 Ashwaganda, turmeric, rhodiola, eluthero,
 American ginseng. Astragalus stimulates some

eg: Strengthen Spleen, digestion, elimination

- Bitters with meals
- Marshmallow, aloe vera, bone broth and slippery elm for inflamed GI or GU tracts
- Prebiotics: jicama, garlic, sunchokes, resistant starch
- Fu ling, medicinal mushrooms to drain dampness
- Food stagnation herbs: hawthorn berries, probiotic foods
- Yellow roots for stomach inflammation (berberis, goldenseal, coptis, yellowroot, scute, etc.)
- Very short term laxatives until first bowel movement (rhubarb, aloe ferox, senna, buckthorn)
- Bulking laxatives (plantain seed, flax seed, chia), coffee and magnesium or vitamin C thereafter

Cognitive and neuroprotective

- Ginkgo, gotu kola, bacopa, huperiza for brain function
- Tulsi, Chayawanprash for brain fog
- Decocted oat seeds and straw for nerves 1c/qt
- St. Johnswort, black cohosh, lavender, magnesium and fish oil for depression types
- Possibly psychoactive herbs: cannabis, ayahusca, vocagna, but may be hard on brain

Other symptoms

- Hormonal regulators: Actea (Cimicifuga), vitex, licorice
- Circulatory stimulants: cinnamon, cayenne, frankincense, myrrh, guggulu, long cooked rhubarb root

Supplements needed

- Vitamin D, until tests between 50-100 ng/ml
- Co-factors for D: Vit A, boron, magnesium, fat
- Hardy or Truehope micronized vitamins, minerals
- Magnesium- transdermal and 800 mg internal
- Fish or cod liver oil in addition to diet, preferably fermented
- Trace mineral concentrate unless seaweeds, organic kale and nettles prominent in diet

Sample formula: Parkinson's w/o medication, phlegm pattern

Initial treatment: Detoxify with ground ivy.
 Chlorella, grape seed extract and coconut oil in shakes. EDTA capsules and coffee enemas or suppositories. Transdermal magnesium.

 Overnight infusion of nettles. Ketogenic diet.

Maintenance tincture:

- Mucuna -25 parts for dopamine, anti-inflammatory
- Ginkgo -15 parts for cognition, neuroprotection
- Panax ginseng -10 parts for stamina, HPA axis
- Turmeric -15 parts for circulation, anti-inflammatory, adaptogen
- Berberis- 8 parts as anti-inflammatory, drains dampness
- Tulsi -5 parts for mind fog, adaptogen
- Fu ling -5 parts to drain dampness
- Dan shen- 5 parts for neuroprotection and circulation
- Pipalli -4 parts for penetration
- Cordyceps -4 parts for Kidney jing, adaptogen, memory
- Licorice 4 parts to harmonize, hormonally balance

References not cited in text

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- Analysis of African plant reveals possible treatment for aging brain <u>http://www.salk.edu/news/pressrelease_details.php?press_id=204_0</u>
- Two Exciting Alzheimer's Advances: A Novel Early Detection Test
 Using Peanut Butter, and a Study Evaluating Coconut Oil
 http://articles.mercola.com/sites/articles/archive/2013/11/07/peanut-butter-coconut-oil-alzheimers-detection.aspx
- Alzheimer's Must Watch Dr Mary Newport Coconut Oil MTC's https://www.youtube.com/watch?v=9|NyTTXfR0

- Effects of *Panax ginseng* in Neurodegenerative Disease http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3659610/
- Caffeine Intake, Smoking, and Risk of Parkinson Disease in Men and Womem http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3370885/
- Caffeine and Progression of Parkinson Disease
 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3056438/
- Neuroprotection by caffeine: Time course and role of its metabolites in the MPTP model of Parkinson Disease http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2849921/
- Multiple roles for nicotine in Parkinson's disease http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815339/
- <u>Cigarette smoking and the incidence of Parkinson's disease in two prospective studies</u>
 http://www.ncbi.nlm.nih.gov/pubmed/11761476

- How to make liposomal glutathione video https://www.youtube.com/watch?v=NMHN3IQjtTY
- Motor effects of broad beans (Vicia faba) in Parkinson's disease http://www.ncbi.nlm.nih.gov/pubmed/24352104
- Aunt Bean on Fava Tincturing http://www.favabeans.parkinsonsrecovery.com/natural%20ldopa.pdf
- Erythropoietin improves neurobehavior by reducing dopaminergic neuron loss in a 6-hydroxydopamine-induced rat model http://www.ncbi.nlm.nih.gov/pubmed/24939444
- Getting Through the Blood Brain Barrier
 http://www.acupuncturebrooklyn.com/alternative-health/getting-through-the-blood-brain-barrier
- Gut microbiota are related to Parkinson's disease and clinical phenotype. Movement Disorders, 2014; DOI: 10.1002/mds.26069