Neurodegenerative conditions have a number of contributing factors but all of these causes are thought to produce “OXIDATIVE STRESS” or “BIOLOGICAL SMOKE” in the brain and spinal cord. I like the term biological smoke since it helps explain the actual meaning of oxidative stress much better. My analogy is that of a bonfire of leaves in the fall. When the pile of leaves is set on fire there is an initial bright and hot fire with very little smoke. This is efficient burning, combustion and production of heat energy from the available fuel (leaves). When enough leaves are thrown on the brightly burning fire to put it out, the fire is replaced by lots of smoke and flying cinders. This is inefficient combustion (burning) which produces toxic smoke and cinders (which you all know if you have ever breathed a little of that smoke). In the human body, glucose is burned by the machinery of the mitochondria very efficiently and this usually produces energy (ATP) to be used by the cell for its energy requirements and water and carbon dioxide as waste products. When these mitochondrial machines do not get enough oxygen, biological
smoke is produced, and much less energy (ATP) is produced. This loss of ATP causes fatigue and the accumulation of toxic byproducts of metabolism since the body does not have the energy to detoxify all of these poisons. This is the fundamental problem with aging and different diseases since these all cause problems with the burning of glucose (sugar) and less energy is produced than was possible when you were younger or healthier.

Neurodegenerative conditions like Multiple Sclerosis, Amyotrophic Lateral Sclerosis, Parkinson’s, Alzheimer’s, progressive supranuclear palsy, Frontotemporal dementia, Multiple System Atrophy and Age Related Macular Degeneration all have hypoxia as a contributing cause. This lack of oxygen can be due to large obstructing atherosclerotic deposits in the supplying arteries or to disruption of the smaller blood vessels due to chronic damage to their inner linings (the endothelium). Endothelial damage is usually due to high cholesterol, triglycerides, glucose, and high blood pressure. In all of these cases, the lack of oxygen produces biological smoke which damages the different cells of the brain and spinal cord. Often though, studies are done and little to no large blood vessel damage is found and it is in these cases that toxic microparticles are apt to be found as the contributing cause of the Neurodegenerative processes since these damage the functioning of the very smallest of blood vessels—the capillaries.

One of the problems we as scientists and physicians have when investigating a person with a neurodegenerative disease is that there is no commercial lab test for blood circulating microparticles.

Toxic microparticles come from all infections, heavy metals, neurotoxins, endotoxins, allergens, antigens, chemicals, minerals, plastics, dying cells and other poisons. Here is an extensive compilation of Nanomaterials and nanoparticles. https://arxiv.org/ftp/arxiv/papers/0801/0801.3280.pdf

The most significant clue that I have come across over the years to explain the degenerative changes that are occurring in neurodegeneration was the recent internet discussion of our July 20, 1969 moon walk anniversary. As part of that discussion a short story on the last man on the moon Gene Cernan was published in which his reaction to Moon Dust was described. https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1002/2017GH000125

This was of great interest to me because it went against everything we were taught about the cause of allergies. Allergies have been always thought to be due to proteins and these had to have a molecular weight greater than 10,000 to have an allergic effect. Since there are no proteins or peptides on the moon, the fact that Gene Cernan had an allergy attack as he took off his moon suit told us that there is something else that can cause serious “allergic” problems for humans. These “allergic” reactions are due to silica nanoparticles getting into his system and becoming “eaten” by certain cells of his lungs and respiratory tract. These silica nanoparticles form in our processed foods as a result of boiling water that
comes in contact with the silica in our foods and processing equipment and the bottles and containers we use to store and transport these drinks and foods. These nano particles and other very small toxic molecules are being “eaten” by the mast cells and pericytes and these toxic very small particles are causing premature senescence of the mast cells and pericytes and these oxidative stressors so damage these cell’s membranes that they contract and decrease the blood supply to your brain and spinal cord.

These allergy producing cells are called MAST cells and PERICYTES and recent studies have found that these form a structure called the “NEUROVASCULAR UNIT”.

![Diagram of brain capillary and neurovascular unit](image)

structures are the pericytes that surround the capillary that contains “Blood”
BBB= blood brain barrier which is leaking because it has been damaged by any number of noxious agents.

![NORMAL BRAIN MICROVESSEL](image)

![PREMATURE MICROVASCULAR AGING](image)

This structure also includes a capillary and these three types of cells (endothelial cells, pericytes and mast cells) control the blood flow to the tissues of your body. When these MAST CELLS and PERICYTES are damaged, they release toxic GELATINASES (protein digesting enzymes) which digest the cell barriers between your outside and inside. These barriers include your gut inner lining which then becomes LEAKY and is the reason why you have a leaky gut. This leaky gut allows ENDOTOXINS and other intestinal toxins to enter into your gut wall and then pass into your body which cause most of the chronic changes that are occurring to you. If you are of a scientific bent and have the time, put endotoxins and any term that you have heard associated with ALS such as TDP-43 (thought to be the cause since it is the most common poison found in the spinal cord of ALS patients) into google and read about how endotoxins contribute to or cause virtually all of the changes that are occurring.

Now one of the main reasons that endotoxins and other toxins are causing the problems relates to PERICYTES. These cells are found surrounding the capillaries of your body and when injured allow calcium molecules to enter which cause the pericyte to contract and that contraction shrinks the capillary by up to 50% and this causes the loss of blood flow to the spinal cord. A loss of blood flow and oxygen creates poorly food burning mitochondria which release “BIOLOGICAL SMOKE” as a result = FREE RADICALS. Think of how leaves burn in your back yard in the fall. With enough air the fire burns bright and there is no smoke. Put more leaves on and the fire goes out and lots of smoke and cinders occur! As the calcium accumulates in the pericyte, the pericyte becomes “STIFFER” and this cellular stiffness is directly correlated with the aging process. As you know all of the degenerative brain and spinal cord diseases are associated with the aging process and now it has been discovered that the pericyte is the
most critical and the most common cell that is affected by oxidative stress (free radicals) and toxins and these toxic agents cause the premature aging and death of these pericytes. Alzheimer’s has now been found to have PERICYTE loss as the first sign of its beginning.

One treatment is to eat purple foods especially the purple skins of grapes =ANTHOCYANINS. These can be taken as a supplement as well.
These are the more common Bacteria, viruses, fungi (Candida) that are involved with neurodegeneration. Recently we have noticed that Bacteroides fragilis is associated with these problems but so far the only antibiotic that works for that is Black Seed oil.
The treatment for all of this is simple and complicated all at once. First one must identify and clean the body and brain and spinal cord of all toxins possible. Mercury, lead, Manganese and Calcium are the most common metal toxins and then a variety of bacteria, viruses, and other microbes need to be removed or their toxic substances blunted or absorbed and removed in some fashion. These toxins injure the cell walls of blood vessels, the glial cells and the neurons of the spinal cord and brain. Since there are 10,000 molecules of calcium outside of every cell in the body as compared to one molecule on the inside of your cells – when the cell membrane in damaged calcium rushes into the cell. As Calcium enters into blood vessel walls, the glial cells and the neurons of the brain, the calcium interferes with their mitochondrial production of energy. This loss of energy usually occurs slowly as the calcium seeps into the brain cells as a result of the different toxins that are damaging the various cell membranes. Removal of this calcium from these tissues can often result in significant improvement in the person’s neurodegenerative condition- whether it is Alzheimer’s, Primary Progressive Aphasia, Parkinson’s, ALS, Motor Neuron disease, MS, Autism, etc. since this frees up the mitochondria from CALCIUM POISONING.
The pericyte’s loss is a problem since it secretes VEGF =vascular endothelial growth factor and this controls the formation of and maintenance of our smallest blood vessels. The reason why people with ALS have little VEGF in their spinal cord is most likely because of the loss of these cells (pericytes) and their secretions.

We can repair these pericytes by giving lots of stem cells and especially stem cells that have been converted into pericytes. We now can do this in our lab and given all of the above we present this
program to maximize the number of healthy pericytes that we can give to you. Since these pericytes are in the spinal cord and once injured they cause a POST-CAPILLARY LEAK of red blood cells whenever there is an episode of hypoxia or there are inflammatory cells in the blood. This leak of red blood cells puts red blood cells into the spinal cord and intestinal lining which then break down and release iron from hemoglobin. This free iron undergoes a chemical reaction with oxygen to form free radicals and this then causes or at least contributes to the degeneration and death of the motor neurons.

As part of your therapy we will be attempting to fix the problem with the aging pericytes and also attempt to remove the small iron deposits found in your spinal cord, your muscles and your intestinal tract. Most of this therapy will be done through your diet and supplements we design for you to take but intravenous chelation will be used prior to your stem cell therapy since this helps remove the iron that is causing the ALS degenerative changes.
There are many ways to approach these problems and everyone has their own circumstances. Because of the variety of people and the amount of time, energy and money they have, we offer a variety of programs from the all-inclusive 3-4 week program down to a one day stem cell infusion protocol.
Diet:
All plants, no animal foods or products i.e. no dairy, no chicken, no fish, no beef, no turkey, no sheep. No lamb, etc.

Frozen black grapes, beets, frozen blue berries, broccoli florets, brussel sprouts, cauliflower, cranberries, pomegranate juice or powder (Dr. Tony’s Pomegranate powder) avocado,--all of the above can be put in your vitamix and blended together for a smoothie. The supplements mentioned below can be added as well or you can buy the raw powders from www.bulksupplements.com

beans, brown rice, lentils. Avoid any foods that cause any sort of intestinal or abdominal discomfort. Make nut milks at home rather than commercial products. Lots of extra virgin Olive oil. Avoid all saturated fats, dairy, sugars.

Supplements:
Magnesium Beta Hydroxybutyrate ½ to 1 teaspoon three times or more per day. This helps keep the bowels moving and acts an anti-inflammatory. Order from www.bulksupplements.com

Saffron Life Extension Macuguard 1-2 cap three times per day

EGCG- 500 mg every 8 hours

Niacinamide 500 mg one cap three times per day (at same time as resveratrol)

Resveratrol Life extension optimized – one cap three times per day

Genistein 500 mg three times per day

Cod Liver oil 1 teaspoon three times per day (Artic Natural)

Poly probiotic powder by Pure encapsulations. Follow label directions

Vitamin B-100 one capsule in the AM

Luteolin/rutin mix capsules one cap three times per day (from Dr S)

Coenzyme Q10 200 mg three times per day

MitoQ 5 mg every 12 hours

Mixed all natural tocopherols (AC Grace 400 mg twice a day)

Vitamin E succinate 400 mg twice a day.

Use melatonin 3-30 mg at bedtime (no light while sleeping)

Theanine 200 mg at bedtime or any time for muscle spasticity. Can take 1-4 caps at a time. These stimulate stem cells to grow as well

Vitamin D3 5000 units per day

Vitamin A 50,000 units per day

Vitamin K2 Mk4 5 mg Carlson. Take two in AM and two in pm. Helps pull the calcium out of the motor neurons and makes your bones stronger.

Curcumin liposomal one cap three times per day

Methylcobalamin 20 mg subcutaneous injections every day or every other day or once a week- decide on how they make you feel.