Dr. Smith Live

Energy Medicine: The New Frontier

December 4, 2025

Topic: What's the common denominator of all degenerative diseases?

- **Learn key factors that contribute to degenerative disease.**
- **Three ways to improve your health to prevent degenerative diseases.**
- **Specific supplements to combat degenerative diseases.**

With Co-Host Patricia Sihlanick

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When: November 6, 2025 at 07:00 PM Eastern Time (US and Canada)

Register in advance for this meeting:

https://us06web.zoom.us/meeting/register/lIlvlLDVTmqCi5Yc577q3w

After registering, you will receive a confirmation email containing information about joining the meeting.

Key Factors Regarding Mitochondria

- The mitochondria is a unique intracellular structure that produces 95% of the cellular energy and plays a critical role in protecting the cell from oxidative stress.
- Mitochondrial DNA is inherited from the mother only.
- Mitochondrial dysfunction plays a central role in nearly every degenerative disease.
- Red blood cells are the only cell type that do not contain mitochondria.
- Muscles contain the highest mitochondrial content of any tissue in your body.
- Chronic disuse of muscle, sedentary behavior and aging each independently result in a decline in mitochondrial content and function, leading to the production of free radicals and cell death.
- The standard American diet, sedentary lifestyle, and ubiquitous amount of toxins in our society make today`s generation far more susceptible for mitochondrial dysfunction than ever before.
- T3 acts on the nucleus to influence the expression of genes involved in the regulation of cellular metabolism and mitochondria function.
- Once inside the cells, thyroxine must be converted to T3 and utilized in the mitochondria. Potassium plays a role in sensitizing the mitochondria to thyroid hormone.

- Fluorides in drinking water, bromine and chlorides found in bleaches used to make white flour are powerful inhibitors of thyroid hormone utilization. They interfere with iodine metabolism. Substances in soy and in raw cabbage, cauliflower and broccoli also inhibit thyroid hormone utilization.
- Manganese deficiency can reduce thyroid activity. Manganese is required for T4 production. Manganese deficiency or biounavailability are very common today.
- Adrenal exhaustion causes manganese to become biounavailable.
- Cadmium toxicity or zinc deficiency can cause thyroid hormone to be ineffective in stimulating energy production.
- Vitamins C and B-complex, for instance, tend to enhance thyroid activity.
- In heart muscle cells about 40% of the cytoplasmic space is taken up by mitochondria. In liver cells the figure is about 20-25% with 1000 to 2000 mitochondria per cell. Your organs need energy to function properly, and that energy is produced by the mitochondria in each cell.
- In this process of producing energy, mitochondria produce waste products. In mitochondria these are called reactive oxygen species (ROSs) and include ‘free radicals’.
- ROSs can damage Mitochondrial DNA. There is no exception and since it is located so close to the energy converters it can be heavily attacked, sometimes mutating ten times faster than nuclear DNA in an ordinary cell.
- These mutations are the source of mitochondrial disease that can affect areas of high energy demand such as brain,

muscles, central nervous system and the eye. People suffering from Parkinson's or Alzheimer's disease have a much higher mitochondrial mutation rate than do healthy people and so the functioning of mitochondria may be implicated in these diseases.

- Many commonly used drugs damage the mitochondria: acetaminophen (Tylenol), antibiotics, aspirin, AZT, cocaine, indomethacin, L-DOPA, NSAIDs, and statin drugs (Lipitor and Crestor). Reduced energy ultimately translates into an acid terrain which lowers oxygen levels, damages DNA and initiates cancer.
- Mitochondria play quite a large part in determining when a cell will die by ordinary cell death (necrosis) or programmed cell death (apoptosis).
- Mitochondria are also thought to influence which eggs in a woman should be released during ovulation and which should be destroyed by programmed cell death (apoptosis).
- French and Japanese centenarians appear to have advantageous mutations in their mitochondrial DNA. In the French the variant was found in 14% of the centenarians compared with 7% of the whole population. 62% of the Japanese centenarians had advantageous mitochondrial DNA compared with 45% of the general population.

Note: 1. **Cellular energy production**

Mitochondria generate ATP through oxidative phosphorylation.
A mutation might:

- Increase efficiency of ATP production
- Reduce heat loss

- Improve performance under certain stresses (e.g., cold temperatures, low oxygen)

2. Adaptation to environment

Some mtDNA mutations have been linked to population-level adaptations, such as:

- **Cold climates:** Mutations that *reduce* ATP efficiency but *increase heat production* can help survival in cold environments.
- **High altitude:** Mutations that modulate oxygen usage efficiency.

3. Metabolic flexibility

Some mutations alter how mitochondria use fat or carbohydrates, potentially providing an advantage depending on diet or resource availability.

- Mitochondria convert oxygen, and the sugar, fat and protein from foods to useable energy.
- Mitochondrial stability is enhanced through heavy consumption of anti-oxidants and trace minerals. This can be accomplished with the generous use of lemon/ lime, pink salts, turmeric, rosemary, ginger, oregano, cinnamon, cloves, & cilantro in meals, soups, salads, and drinks.
- Great mitochondrial boosting nutrients include Vitamin D, Folate (B9), Pyridoxine (B6), Vitamin B12, Zinc, CoQ10, and trace minerals. Vitamin D levels should be between 60-100 ng/ml.
- Three ways you can improve mitochondrial function and enhance energy and wellness:

    a. **Eat less.** Animal studies involving a range of species prove that caloric restriction extends lifespan, and population studies suggest that this holds true for humans as well.

When you cut back on food consumption, fewer demands are made on your mitochondria, and production of damaging free radicals declines. This not only enhances mitochondrial efficiency, but also turns on SIRT1 genes, which encode proteins that boost cellular function. The result? Better health and a longer life.

b. **Exercise more.** The stress of physical exercise tunes up existing mitochondria and activates biochemical pathways that stimulate the production of new ones, a phenomenon known as **mitochondrial biogenesis.** Studies of endurance athletes reveal that their muscles have exceptionally high concentrations of mitochondria. Simply engaging in consistent, moderate aerobic activity stimulates your muscle cells to make this adaptation to increased energy demands.

c. **Take nutritional supplements that mimic the positive effects of exercise and caloric restriction.** One of them is resveratrol, which activates the specific genes that stimulate mitochondrial function and biogenesis. As a result, resveratrol has been shown to protect against cardiovascular and neurodegenerative diseases, enhance antioxidant status, reduce inflammation, and, in animals, extend lifespan and retard age-related deterioration. The suggested dose is 100-250 mg per day.

Another useful supplement is **L-arginine**, an amino acid that is the primary precursor of nitric oxide (NO)—one of several biochemical pathways that are powered up by exercise. In

addition to its protective effects on the mitochondria, NO is a very powerful vasodilator. It relaxes the arteries, enhances vascular health, improves blood flow, and even boosts sexual function. The suggested dose of L-arginine is 1,000–2,000 mg a day.

Alpha lipoic acid (also called lipoic acid or ALA) is also important for promoting mitochondrial biogenesis. Good for general antioxidant support and to treat and prevent neuropathy and other diabetic complications. ALA also helps with blood sugar and weight control because it stimulates glucose uptake and increases the burning of fatty acids. I recommend 600–1,200 mg of ALA daily.

Coenzyme Q10 (CoQ10), an antioxidant present in all cells and particularly concentrated in the mitochondria. CoQ10 participates in the production of adenosine triphosphate (ATP)—the high-energy packets that fuel our minds and bodies—as part of the electron transport chain and also protects the mitochondria against free-radical damage.

Note: Statin drugs lower the CoQ10 levels with **disastrous effects on the heart, liver, and brain.**

Magnesium optimizes mitochondrial function. The evidence is clear: if you want to optimize your mitochondrial function, metabolism, and reduce your risk for type 2 diabetes and cardiovascular disease. Magnesium also plays a role in your body's detoxification processes and therefore is important for helping to prevent damage from environmental chemicals, heavy metals, and other toxins. The muscle tissue of people with type 2 diabetes has been extensively studied, revealing gross defects in mitochondrial number and function.

Even glutathione, your body's most powerful antioxidant that has even been called "the master antioxidant," requires magnesium for its synthesis. Eating processed food is a primary risk factor for magnesium deficiency. Magnesium is also lost through stress and lack of sleep, alcohol consumption, and prescription drug use (especially diuretics, statins, fluoride and fluoride-containing drugs such as fluoroquinolone antibiotics). Moxifloxacin,Gatifloxacin, and Gemifloxacin (4th generation)