

Neuroprotective nutritional strategies for people with Parkinson's disease

We know that Parkinson's disease (PD) is a result of decreased Dopamine production due to neuronal degeneration in the substantia nigra in the brain, resulting in a wide array of symptoms ranging from tremor, rigidity, impaired balance to insomnia and difficulty swallowing, to name just a few. One way to think about Parkinson's disease is to look at it through the lens of increased oxidative stress and a decline in antioxidant function which contributes to neurodegeneration.

Oxidative stress occurs in all humans as part of our bodies basic metabolic processes, which create free radicals as a byproduct. Antioxidants neutralize these free radicals and keep our body in balance. When our system gets out of balance and we have more free radicals than antioxidant capabilities, our body is in a state of oxidative stress which can contribute to a number of chronic health issues and diseases due to increased inflammation.

One way to fight inflammation is to increase your antioxidant intake. What are dietary sources of antioxidants? Increasing your fruit and vegetable intake and eating a wide range of foods will increase your antioxidant levels. Consuming dark, leafy greens such as spinach and broccoli will provide Vitamin C, E and A. **Vitamin C** is a very powerful oxidant which is abundant in tomatoes, sweet potatoes, green and red peppers as well as oranges. **Vitamin E** is found in nuts (particularly almonds and hazelnuts). **Vitamin A** is found in eggs as well as many of the orange and yellow vegetables such as carrots, peppers and mango. **Coenzyme Q10 (also known as ubiquinone)** is produced by the body, and acts as an antioxidant. CoQ10 is necessary for mitochondrial function which powers our metabolic cellular energy system. CoQ10 levels are often low in people with PD and requires some supplementation. CoQ10 is found in a wide variety of foods including liver, pork, chicken and spinach, oranges, sardines and lentils.

Antioxidants can be taken as a supplement form but I would caution against taking high levels of antioxidant supplements alone, as a body is happiest when it is in balance (or homeostasis). If people cannot get enough vitamin C in their diet, I will suggest a good supplement containing 500-1000mg of vitamin C daily and CoQ10 is often a recommended supplement specifically in people with PD in dosages ranging from 200 mg up to 100 mg daily. Always start with a lower dosage with supplements for one week and increase from there.

Another antioxidant that provides a number of essential minerals and is known for its antioxidant and anti-inflammatory capabilities is **curcumin**, which is extracted from the turmeric plant (*Curcuma longa*). Curcumin can be added as a spice to your foods or it can be taken as a supplement. A 200 mg curcumin supplement can be taken twice daily and should be labeled as a rhizome extract in order for the body to absorb it better. There are many curcumin supplements on the market, and as with any supplement, you want a good quality one that has been third-party tested and verified. Not all supplements are equal and often labels are misleading or the contents are not in

the best form to be absorbed by the body. Keep in mind that even natural products can cause side effects in certain individuals including GI issues, headaches and rashes.

I also recommend increasing **Polyunsaturated Fatty Acid (PUFA, also known as an omega-3 fatty acids)** in the diet as well. PUFA's, particularly **Docosahexaenoic acid (DHA)** is very important for brain and cognitive function and reducing inflammation. DHA is found in fatty fishes such as salmon, sardines, oysters and cod. I do think that a good Omega-3 fatty acid supplement is worth taking for both cardiovascular and neurological health, making sure that the DHA dosage is at least 800-1,000 mg daily. One note of caution is that individuals on blood thinning medications should not take Omega-3 fatty acids as they are a natural anticoagulant. Always check with your doctor if you have questions.

The key to getting a wide range and more complete intake of nutrients in your diet is variety. Often we get into a habit of eating the same thing or the same vegetables over the course of the week, so even if you are eating well, you are likely missing out on some key nutrients. I am not a fan of strict or restrictive diets unless medically necessary and I believe the key is moderation and almost all of us can improve our fruit and vegetable intake. Think outside your usual rotation of foods and pick one of two new foods with antioxidants or DHA to add into your diet weekly. It is not important to eat a perfect diet every day, but think about what you are eating over the course of the week. As always, check with your healthcare provider if you have questions about starting a new supplement as these are general recommendations and every individual has different needs and factors to consider.

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