Managing Parkinson’s Disease Symptoms with Omega-3 Fatty Acid Supplementation

Eicosapentaenoic Acid (EPA) AND Docosahexaenoic Acid (DHA) play important roles in neuroprotection, systemic signaling pathways and resolving inflammation within the body. DHA particularly is important for successful aging and memory. A consequence of PD is the death of dopamine-containing neurons of the substantia nigra pars compacta due to ROS overproduction, mitochondrial dysfunction and the upregulation of inflammatory pathways. Recent animal model studies have shown that in large doses, DHA inhibits the proinflammatory gene COX-2 thus protecting dopaminergic neurons. In additional animal studies, DHA decreased levadopa-induced dyskinesias. (Bazan, Molina, & Gordon, 2011)

Major Depression is often seen in PD patients. A recent study looked at the effect of fish oil on depression and measured the results using the Montgomery–Asberg Rating Scale (MADRS), the Clinical Global Impressions Scale (CGI) and Beck Depression Inventory (BECK). Thirty-one patients were divided into two groups, one group was given fish oil and the other group given mineral oil for 3 months. The two groups were then divided based on those taking antidepressant medication and those not taking it. Of the patients taking fish oil, with or without antidepressant use, an improvement in MADRS and CGI scores and an improvement in depressive symptoms were seen in comparison to the patients taking mineral oil supplements.

Both studies offer hope of a safe and effective treatment of PD symptoms (Bazan, Molina, & Gordon, 2011; Da Silva, Munhoz, Alvarez, Malnalkido, Kiss, Andreatini, & Ferraz, 2008).

Improving Motor Performance in PD Patients with a Normoproteic Protein-Distributed Vegan Diet

Nutrition seems to be directly linked to increasing PD risk, especially with respect to high dietary intakes of animal protein and fat. Therefore, it is believed that diets rich in plants may decrease this risk. However, can a diet rich in plants improve already existing PD symptoms such as motor dysfunction?

In a pilot study conducted by Baroni Et al. in 2011, the effects of a normoproteic protein-distributed plant-food menu (PFD) were examined in comparison to that of its omnivorous counterparts. Twenty-five patients were given a normoproteic (protein calories10–15% of total calories or about 0.8–1.0 g/kg/day), protein distribution (main protein intake concentrated in the evening meal so as not to disrupt bioavailability of Levadopa) diet. Of these patients, 12 were given a vegan diet and 13 were given an omnivorous diet. After 4 weeks, symptoms such as mental ability, motor performance and mood were measured according to the Unified Parkinson’s Disease Rating Scale. Among patients eating a vegan diet, results showed an overall improvement in symptoms and disease state but a significant improvement was seen particularly in motor performance.

This result suggests that without limiting food amount, a diet consisting of only plant protein sources may improve motor performance in PD patients due to a lower, yet adequate, protein intake. A lower protein intake is believed to increase the bioavailability of Levadopa. By reducing competition between Levadopa and dietary amino acids, large neutral amino acids are available to carry Levadopa across the blood brain barrier and readily convert it to dopamine. Additionally, a diet rich in fiber can aid in relieving constipation, another symptom common in PD patients. Moreover it was hypothesized that high plant intake results in high intake of bioactives that have neuroprotective properties, thus protecting cells from oxidative stress and neurotoxicity.

Globally, people following a mainly plant-food diet have the lowest prevalence of PD and now this offers hope to those living with this disease. (Baroni, Bonetto, Tessan, Goldin, Cenci, Magnanini, & Zuliani, 2011)

Other Complementary & Alternative Medicine Options

Increase Phytochemical & Mitochondrial Stabilizers
(Natural Standard, 2012)
• CoQ10 and Vitamin E
• Vitamin D
• Magnesium
• Alpha lipoic acid

Acupuncture
May reactivate neural activity in the basal ganglia, substantia nigra, thalamus, putamen, and caudate by stimulating acupuncture point GB34 (Medical News Today, 2012).

Massage Therapy
PD patients experience improved daily functioning, sleep quality, and decreased stress hormone levels (Institute for Integrative Healthcare, 2007).
Neuroprotective Spices
(Ramaswamy, Gupta, Kim, Reuter, & Aggarwal, 2011)

For centuries, cultures throughout the world have used spices for more than just exciting their palates. Many spices may also have anti-inflammatory, antioxidant and neuroprotective properties. A characteristic of PD is the presence of intracellular Lewy bodies that are made up of aggregates of a presynaptic protein called alpha-synuclein. The presence of these aggregates cause symptoms such as dysphagia, depression, and cognitive impairment. Spices such as curcumin have been shown to reduce aggregate formation. Additionally, it may protect against 6-hydroxydopamine-induced neuronal toxicity and death by restoring mitochondrial membrane potential and increasing endogenous antioxidants, thereby reducing intracellular reactive oxygen species and neurotoxicity. (Ramaswamy, et al., 2011)

Roasted Cumin & Chickpea Salad (Treehugger, 2013)

Ingredients
3/4 teaspoon cumin
2 tablespoon lime-juice
1/2 teaspoon salt
1/4 teaspoon pepper
2 tablespoon extra-virgin olive oil
1/2 small red onion, chopped
1 celery rib, sliced
1 medium tomato, seeded and chopped
1 can (16 oz) chickpeas, rinsed and drained

Procedure
1. Heat a dry 8-in. skillet over medium heat. Add cumin and toast 1 minute or until spice is fragrant. Remove from heat.
2. In a small bowl, whisk lime-juice, salt, pepper and toasted cumin until combined. Slowly add oil, whisking until blended.
3. Place onion in a large bowl and pour in dressing. Place celery, tomato and chickpeas on top of onion without mixing. Cover and refrigerate 15 minutes.
4. Toss to combine before eating. Enjoy!

Resources