

Nutrition and Parkinson's Disease It's All About Balance

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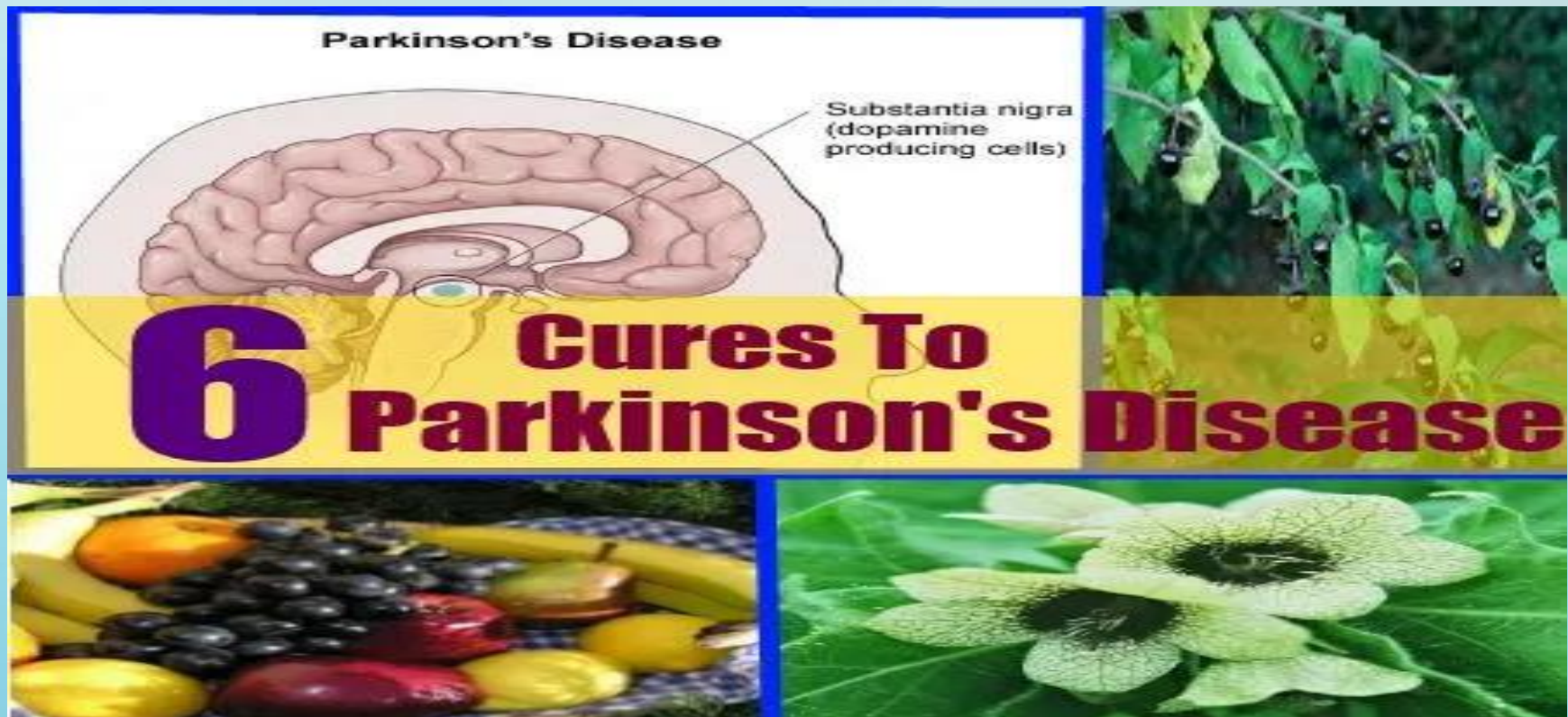
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Nutrition and Parkinson's Disease

- Special Diets – are they helpful?
- Supplements
- Can diet and nutrition be helpful with Parkinson's symptoms?
- Can diet and nutrition be helpful with side effects from medications?
- Nutrition complications related to Parkinson's Disease

Can a Diet “Cure” Parkinson’s?

Many claims of “cures”; no cure has yet been found.



Mediterranean Diet & Lifestyle



Mediterranean Diet

- ✓ Increased intake of fish and seafood
- ✓ Use of olive oil instead
- ✓ Turmeric
- ✓ Rosemary
- ✓ Focus on Fruits and Vegetables
- ✓ Multigrain breads and cereals
- ✓ Decreased consumption of red meats, chicken, turkey

- Phytochemicals
- Antioxidants
- Carotenoids and beta-carotene

Some researchers feel that consumption of a Mediterranean diet may be neuroprotective and may slow the progression of the disease

Principles of Mediterranean Lifestyle

- Focus on plant based foods
- Use healthy fats like olive oil and canola oil
- Use herbs and spices
- Moderate use of red meat
- Eat fish & poultry at least twice per week
- Whole grains and pastas
- Fresh fruits and vegetables
- Nuts
- Low fat dairy products
- Red wine in moderation and with meals
- Exercise

Phytochemicals and Antioxidants

- Fruits and vegetables provide many antioxidants, including vitamins, A, C & E and riboflavin
- Carotenoids and Beta – carotene High color foods
- Act on free radicals – these are toxins that disrupt the work of the cells in our bodies .
- Phytochemicals and Antioxidants help the cells in the body to operate more efficiently. These inactivate or “capture” the free radicals.



Foods with strong antioxidant properties

- Berries
- Pomegranate
- Cranberries
- Grapes
- Yellow and dark green leafy vegetables
- Dark Chocolate
- Red wine
- Green tea

Omega 3 fatty acids:

- ❖ Salmon
- ❖ Halibut
- ❖ Herring
- ❖ Mackerel
- ❖ Sardines
- ❖ Tuna
- ❖ Walnuts
- ❖ Almonds

Berries!!

Study done in mice

- farnesol (natural compound found in berries) has antioxidant properties
- PD mice models fed a farnesol diet had improvements in strength and coordination
- Doubled the # of healthy dopamine producing neurons
- 50% more of a protective protein in brain
- Study needs to be replicated in clinical trials





Ketogenic Diet

One study completed in people – in Samoa

Five people followed strict Keto diet (90% fat, 2% CHO, 8% protein)
28 days on diet

Improvement in motor symptoms

Placebo effect could not be ruled out

Ketogenic Diet and Paleo Diet

Permitted Foods:

- ✓ Meat & Eggs – free range only
- ✓ Monosaturated fats, omega- 3 fats, saturated fats (coconut oil, olive oil)
- ✓ Non-starchy Vegetables (leafy greens, cruciferous)
- ✓ Low carbohydrate Fruits (coconut, avocado, berries)
- ✓ Nuts/Seeds
- ✓ Whole Dairy Products (if not lactose intolerant)
- ✓ Water, Tea, Coffee

Ketogenic Diet and Paleo Diet

Foods to Avoid:

- Grains, Processed Carbohydrates (Bread, Cereal, Rice)
- Sugar & Sugary Drinks (No Desserts, Sodas)
- Farm Raised Poultry and Fish
- Processed Oils, Trans Fats, Omega-6 fats
- White Potatoes, Legumes
- Artificial Sweeteners, Artificial Coloring
- Low Fat, Low Calorie, Low Carb, Lite, Diet

Will a ketogenic or Paleo diet help?

- ❖ Both are very high protein, lower carbohydrate, high fat diets
- ❖ Initial stages of ketogenic diet allows no carbs
- ❖ Diet puts body into “ketosis”. The brain utilizes only glucose and ketone bodies for fuel. When in ketosis, the body enters a stressed state, and the liver works overtime to break down protein to produce ketone bodies and glucose.

Will a ketogenic or Paleo diet help?

- ❖ Theory is that the liver could break down alpha-synuclein – which is a proven culprit in the development and progression of PD. Less alpha synuclein could slow the progression of PD.
- ❖ Another theory is that ketone bodies are more efficient for the brain – thereby making the cells in the brain more able to fight against inflammatory agents, toxins, and alpha-synuclein

Ketogenic/Paleo Diet Analysis

PROS

- *May* be neuroprotective
- *May* slow progression of disease
- *May* reduce presence and impact of alpha synuclein in brain
- In one anecdotal study, five participants reported improvement in motor symptoms after 28 days on very strict ketogenic diet

CONS

- Difficult to follow
- Can become monotonous
- Could worsen symptoms of constipation and/or diarrhea
- Deficient in some B vitamins, Vitamin C, and some minerals
- Long term, could be harmful to liver and/or kidneys
- Much more research is necessary

Intermittent Fasting Theory

Requires fasting 16-18 hours per day or fasting for 24 hours every other day

Appears to impact at a mitochondrial level and may be helpful in those with certain genetic causes of PD

Improvement in alpha synuclein burden on brain; reduced neurodegeneration; improved insulin sensitivity.

Protection against autonomic dysfunction as well as cognitive and motor decline

Clinical trials need to be done to validate these theories



There are no bad foods . .



*but some choices
are better than
others*



MODERATION

vitamins



Vitamins

- B vitamins (thiamin, riboflavin, niacin, pantothenic acid, pyridoxine, biotin and cyanocobalamin) are necessary for metabolism, healthy nervous system.
- B6 (pyridoxine) may reduce the risk of developing PD. However, mega doses of B6 (greater than 50 mg) can reduce the absorption of levodopa.
- Vitamins A, C and E are antioxidants. Vitamin C may be neuroprotective, but over-supplementing is dangerous. Data on vitamin E is inconclusive; vitamins A & E are fat soluble and can cause harm if taken in excess.
- Serum levels of Vitamin D may be lower in PwP. Important for bone health. Check with your doctor to determine the need to supplement.

More about Vitamins

- Vitamins work synergistically
- Best to obtain from the foods that we eat
- A good & reputable multiple vitamin with minerals (to include calcium) is sufficient
- Supplementation with individual vitamins can be hazardous, may not be useful, and can be expensive. Supplements are not regulated and may not be what they appear to be
- Calcium and vitamin D are important for bone health – may need to supplement if osteopenia or osteoporosis is present. Check with your doctor or dietitian

Other Items

- **Fava Beans** – natural source of levodopa; however, the concentration, quality and availability is inconsistent
- **Turmeric** – may be neuroprotective and is an anti-inflammatory; found in mustard, curry
- **Rosemary**- may be neuroprotective
- **Soy** – contains genistein; proved to be neuroprotective in rats. More studies required.
- **Caffeine** appears to be neuroprotective in men and postmenopausal women
- **Tea** may delay onset of PD symptoms and may be neuroprotective
- **Alcohol** – red wine appears to be neuroprotective. Low to moderate intake of beer may reduce risk for PD; higher intake of beer increases risk

H. Pylori

- H. Pylori is a type of bacteria commonly found in the stomach
- 50% of population have H. Pylori; 100% in 3rd world countries
- H. Pylori associated with ulcers, some types of colon cancer
- Easily treated with a regimen of antibiotics
- Decreases absorption of carbidopa-levodopa and can impact motor fluctuations (more *off time*)
- May be a link between presence of H. Pylori and Parkinson's disease but more studies are indicated

Parkinson's Medications and Food

Protein and Carbidopa-Levodopa

- ❖ Levodopa competes with dietary protein for absorption
- ❖ 30% of PwP have no interaction between levodopa and protein, however
- ❖ Many physicians advise to avoid taking dose of Carbidopa-Levodopa with high protein meals
- ❖ Take on an empty stomach 30 to 60 minutes prior to protein containing meal or 1-2 hours after a meal or snack containing protein
- ❖ Many need a carbohydrate containing snack with dose to reduce nausea

MAOI-B Inhibitors

- Generally no issue with nutrition or food
- However, MAOI-A inhibitors contain tyramine and, in rare cases, may cause potentially dangerous hypertension when taken with these foods: aged cheeses, sauerkraut and kimchi, soybean products, cured or fermented meats, red wine, and tap beer
- MAOI –B inhibitors do not generally interact with foods; you would need to eat a wheel of brie with a case of red wine to run the risk of an interaction

Loss of Smell & Loss or Changes in Taste

Hyposmia

- Precedes other symptoms
- Prevalence of 90%
- Thought to be related to alpha synuclein in the olfactory bulb
- Affects quality of life

Aguesia

- Close link between senses of smell and taste
- Can lead to weight loss, malnutrition and depression
- Use marinades and dry rubs

Nutrition Related Issues with Parkinson's

Constipation – may be one of the first symptoms of PD

- Increase fiber in diet (i.e. Mediterranean diet)
- Assure that you are well hydrated
- Exercise, exercise, exercise
- May consider a fiber supplement



Irritable Bowel Syndrome

- Occurs in ~25% of people with Parkinson's disease (IBS-D, IBS-C)
- 70% of people with PD have constipation
- Symptoms of IBS include pain/discomfort, bloating, diarrhea and/or constipation, urgency
- Lifestyle changes to aid with symptoms:
 - ✓ Mediterranean diet
 - ✓ Limit or avoid dairy products if you are lactose intolerant
 - ✓ Limit high fat and high sugar foods
 - ✓ Stay hydrated
 - ✓ Exercise
 - ✓ Mindfulness; reduce stress in your life

Nausea

May occur as a side effect of medications

Talk to your movement disorder specialist about alternatives

Take medications with foods containing carbohydrates

Ginger

Small frequent meals instead of large meals

Try yogurt or peppermint tea

Lightheadedness and Dizziness

Parkinson's Disease affects the autonomic nervous system; this can impact blood pressure.

Neurogenic Orthostatic Hypotension

Pause before sitting up and before standing

Stay well hydrated; add salt to diet

Stay well hydrated

Consider small frequent meals

Talk to your movement disorder specialist to review your medications (i.e. antihypertensive meds, others)

Medications available for treatment of NOH

Sleep Issues

Insomnia

Delay in falling asleep

Inability to return to sleep

Awakening too early

REM Sleep Behavior Disorder

Vivid Dreams

Acting Out Dreams

Sleep Apnea

Daytime Sleepiness



Fatigue

- Small frequent meals
- Adequate hydration
- Balanced, healthy meals
- Caffeine but only until 3pm
- Chocolate as an energy booster
- Exercise
- Naps are okay!



Weight Management and Malnutrition

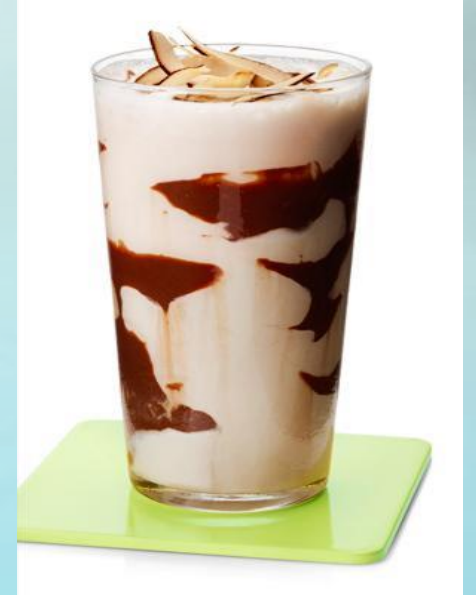
As many as 30% of people with mild or moderate Parkinson's disease are at risk for malnutrition

Cause of malnutrition is multifactorial:

- 1) decreased appetite related to depression, constipation, nausea, apathy
- 2) tremor may increase calorie requirements and/or inhibit ability to eat adequately
- 3) dyskinesia can increase calorie requirements and make meals difficult to eat
- 4) dysphagia – difficulty swallowing – usually causes decreased intake

Tips for weight management and improved nutrition status

- Small frequent meals
- Easy to eat foods
- Flavorful foods
- Add sauces and gravies
- Consider supplements
- Milkshakes, 5 scoops of ice cream!!



Weight Gain

Can occur with use of certain medications: dopamine agonists, etc., antidepressants

Common after DBS surgery. Thought to be related to decreased energy expenditure with reduction in tremor and dyskinesias. Weight gain up to 20# is common.

Again, moderation; if weight loss or maintenance is desired, limit portion sizes and limit high calorie foods

Exercise, exercise, exercise!!

Dysphagia (difficulty with swallowing)

- Caused by rigidity, weakness, bradykinesia (slowness of movement) – all related to Parkinson's disease
- Ask for a consult with a Speech & Language Pathologist (Speech Therapist)
- Be proactive – strengthen vocal cords before there's an issue: Tremble Clefs, LSVT-LOUD, Speak Out (Parkinson's Voice Project)
- May require modification of food consistencies – pureed foods, no mixed foods, thickened liquids
- May require enteral (tube) feedings if severe. Placement of a gastrostomy tube is an option
- Risks of dysphagia, if untreated, include weight loss, malnutrition, and aspiration pneumonia.

Questions?



