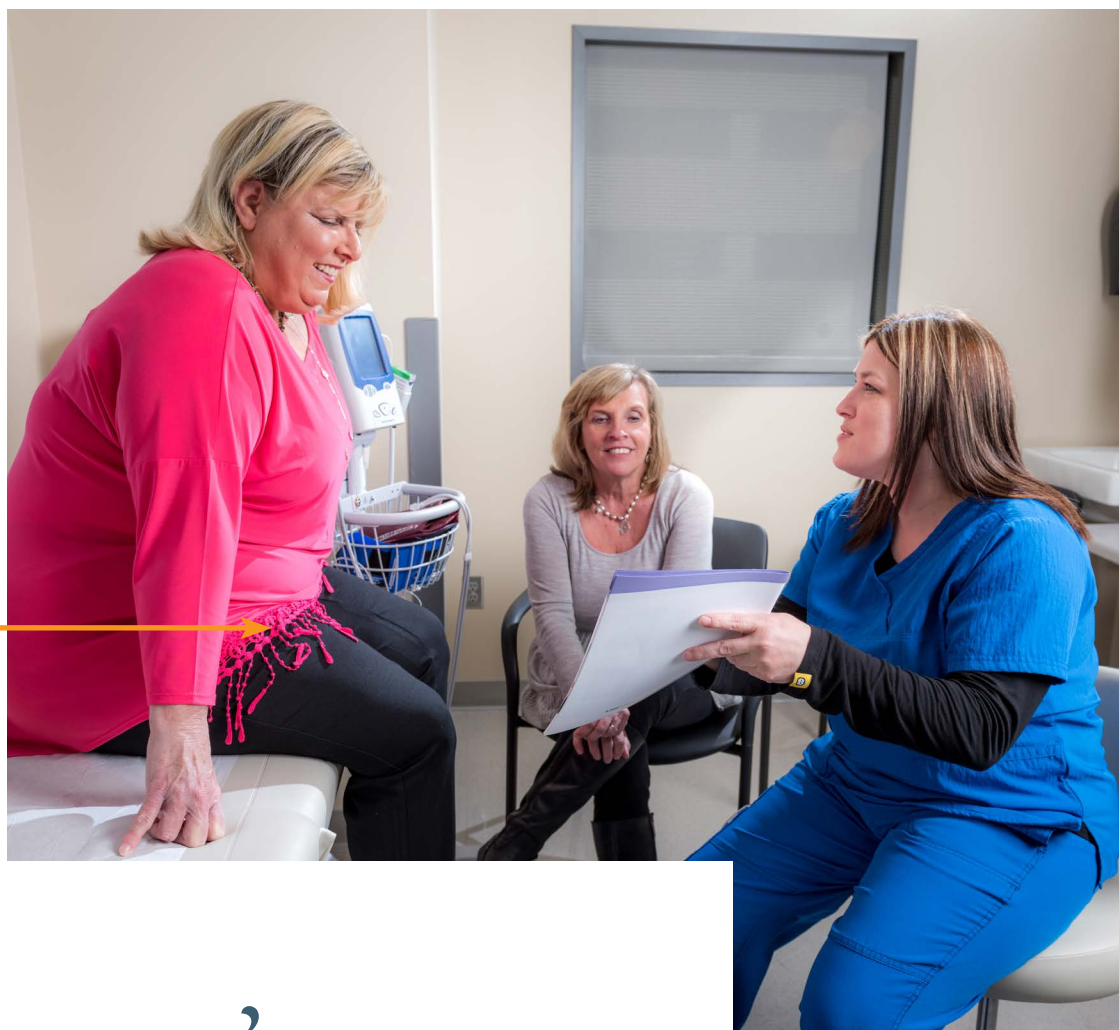


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Parkinson's Disease and Diet: A Practical Guide



THE MICHAEL J. FOX FOUNDATION
FOR PARKINSON'S RESEARCH

There is no one diet for Parkinson's disease (PD). But what you eat may affect how well your medication works and ease Parkinson's non-movement symptoms, such as constipation or low blood pressure. It's critical that we all, Parkinson's or not, prioritize self-care to stay as healthy and feel as well as possible.

For people with PD, doctors routinely recommend a balanced diet, with plenty of fruits and vegetables, which contain antioxidants. Antioxidants clear out free radicals, substances that are harmful to cells. A nutritious diet also includes whole grains (whole wheat, quinoa, oats, brown rice), healthy fats (avocado, nuts, olive oil) and, for non-vegetarians, more fish and poultry instead of red meat. The best news? The diet that works well for people with Parkinson's is also likely to bring universal health benefits, including boosting the immune system, mood and energy, for the entire family.

This diet is heavier on whole, unprocessed, non-sugary foods. In the United States, you will usually find these items on the perimeter of the grocery store, in the fresh produce sections.



Shopping list for antioxidant-containing foods

- **Coffee and green tea**
- **Dark chocolate:** 80 percent or higher cacao
- **Fruits:** apples, bananas, berries, cherries, grapes, melons, oranges, peaches, pears, pomegranates
- **Legumes:** black beans, cannellini beans, chickpeas, kidney beans, lentils, peas, pinto beans
- **Nuts and seeds:** almonds, hazelnuts, pecans, pine nuts, walnuts, ground flax seeds, hydrated chia seeds, pumpkin seeds
- **Red wine:** in moderation (one 5-ounce glass per day or less), if approved by your physician
- **Soy:** edamame, soybeans, tofu
- **Vegetables:** artichokes, asparagus, beets, bell peppers, broccoli, cabbage, carrots, cauliflower, garlic, kale, lettuce, mushrooms, okra, onion, potatoes, spinach, squash



Diet and Parkinson's Medications

If you take certain Parkinson's drugs, dietary adjustments may help your medications work better or avoid side effects.

Levodopa/Carbidopa

Duopa, Inbrija, Parcopa, Rytary, Sinemet, Stalevo

Levodopa is absorbed in the same part of the gut as protein in food. Taking levodopa at the same time as eating protein (meat, fish, cheese, beans or nuts) may mean less medication is absorbed. If levodopa doesn't work as well as you would like — it doesn't kick in quickly or it wears off before the next dose is scheduled — consider separating it from meals. Swallow your pill, for example, 30 to 60 minutes before or after you eat. (If this causes nausea, combine it with a low- or no-protein snack, such as crackers, dry toast or oatmeal.) Or, save higher amounts of protein for dinner and eat more vegetables and carbohydrates during the day when it's important for medication to work well. (This is called the “protein redistribution” diet.)



Dopamine agonists

Mirapex (pramipexole), Neupro (rotigotine) and Requip (ropinirole)

This class of drugs does not compete with dietary protein for absorption like levodopa does, so there are no specific dietary restrictions. But each individual has different medication responses and side effects. If symptoms are generally poorly controlled, your doctor may recommend you take the drug on an empty stomach. If, on the other hand, the medication causes a side effect such as nausea, your doctor may suggest taking it with food.

MAO-B inhibitors

Azilect (rasagiline), selegiline, Xadago (safinamide)

These medications increase a substance called tyramine. When mixed with foods high in tyramine, the combination could significantly raise blood pressure. People who take these drugs should be aware of the potential for this rare but serious interaction. You don't have to avoid tyramine-containing foods completely, but eat them in moderation.

Foods high in tyramine:

- + Alcohol: tap beer, wine, vermouth
- + Aged cheese: blue cheese, Camembert, Swiss
- + Cured, fermented or air-dried meat: mortadella, salami
- + Fermented cabbage: kimchi, sauerkraut
- + Pickled fish: herring, lox
- + Soybean products: miso soup, soy sauce, tofu

Treat diet like medication. Don't make significant changes without first discussing with your physician and, if you have one, registered dietitian.





Diet and Parkinson's Symptoms

Constipation

Constipation is, unfortunately, common for people with Parkinson's disease. Not only is this non-movement symptom uncomfortable, it can interfere with the absorption and benefit of medication. The first steps in managing constipation are dietary and lifestyle changes. Consider these tips:

+ *Drink at least six 8-ounce glasses of water per day.*

Water increases flow through the digestive tract. Warm water or prune juice, especially in the mornings, can help stimulate a bowel movement. Caffeine, alcohol and hot weather can cause dehydration and therefore increase your water needs.

+ *Add more fiber to your diet.*

Fiber helps drive waste through the intestine. Gradually increase the amount of fiber in your diet with vegetables, berries, fruits with skin (such as pears and apples) and whole grains. As you increase your fiber intake, you must also increase your fluid intake. Fiber and fluid work together to normalize bowel movements.

+ *Eat smaller meals throughout the day.*

Some people notice multiple small meals (rather than fewer larger ones) help constipation as they allow more time for digestion. But because dietary protein can affect the absorption of levodopa, talk to your doctor about the best timing and structure of meals in relation to your medication.

+ *Consider foods containing probiotics and prebiotics.*

Probiotics are bacteria that may keep your digestive system healthy by balancing the “good” and “bad” bacteria. Prebiotics help supply the “good” gut bacteria with energy. Some doctors recommend adding these to your diet for constipation.

+ *Exercise regularly.*

Abdominal muscle movement helps activate the gut. Steady, moderately strenuous exercise, such as walking, swimming or light weightlifting, may ease constipation.



If dietary and behavioral changes aren't enough, your doctor may recommend over-the-counter or prescription therapies for constipation. Always talk with your doctor before taking any non-prescription medications to be sure they are safe. Also, ask whether any of your medications could contribute to constipation. Many pain medications and some Parkinson's drugs (such as trihexyphenidyl) can cause constipation as a side effect.

Shopping list for constipation-fighting foods:

- **Dried fruits:** apricots, dates, figs, prunes, raisins
- **Fresh fruits:** apples, pears, plums
- **High-fiber products:** berries, beans, bran, peas, whole grains
- **Probiotic-containing foods:** kefir, kombucha, miso, sauerkraut, tempeh, yogurt
- **Prebiotic-containing foods:** artichokes, asparagus, bananas, garlic, onions, soybeans, whole grains

Low Blood Pressure

In Parkinson's, low blood pressure can come from the disease and from some of the medications used to treat it. Low blood pressure can cause dizziness and lightheadedness and can increase walking trouble and risk for falls. As with constipation, the initial treatments are dietary and lifestyle changes. A few suggestions:

+ *Drink at least six to eight 8-ounce glasses of water each day.*

Try filling a half gallon (or any measured jug) every morning so you can track your intake. Before standing from sitting, try drinking a full, cold glass of water as this can raise blood pressure for a short period.

+ *Add salt to your food or eat salty foods.*

Examples include V8 juice, Gatorade and canned soups. Ask your doctor about the right amount of salt for you and whether your heart and kidneys are healthy. Too much salt can stress these organs.

+ *Avoid hot or alcoholic beverages.*

These liquids may temporarily lower blood pressure.





+ *Eat multiple small meals throughout the day.*

For some people larger meals can lower blood pressure. Smaller meals may even out fluctuations.

+ *Exercise regularly.*

A regular exercise routine is good for general health and blood pressures, but avoid excessive sweating, which can worsen low blood pressure.

Behavioral adjustments also are important:

+ *Change positions slowly.*

When moving from lying down to sitting and from sitting to standing, take a few seconds or even a minute to let dizziness pass.

+ *Avoid standing for long periods.*

Prolonged standing can lead to low blood pressure and passing out. If you're in one spot for a long time, shift your weight between your feet.

+ *Raise the head of your bed or use more pillows.*

Increasing the incline of your head at night can improve blood pressure.

+ *Wear compression hose or an abdominal binder.*

These devices improve blood flow and increase blood pressure. You can buy whichever your doctor recommends from a medical supply store or online retailer. (Call your insurance company to see if they cover any or all costs.) These can be a bit uncomfortable and difficult to put on, but they are generally effective.

Review your medications with your doctor to see if any are contributing to low blood pressure. Sometimes the drug you once took to control high blood pressure is no longer necessary (or the dose or timing needs to be changed). Other drugs — certain antidepressants, fluid pills or bladder medications, for example — also can decrease blood pressure and may need adjustment.

When diet, lifestyle and medication changes aren't enough (you still have dizziness and lightheadedness, for example), your doctor may prescribe medication specifically to raise blood pressure.

Swallowing Problems

As Parkinson's progresses, a person may develop changes with eating or drinking. It may be more difficult to swallow certain foods or liquids, or you may notice you're clearing your throat or coughing with meals. For some, it feels like food gets stuck as it's going down. Swallowing problems can be mild or more significant, and they could increase risk for choking or pneumonia. Your doctor and a speech and swallowing therapist can evaluate and treat swallowing problems. Solutions for swallowing difficulties may include:

- + *Strategies to swallow safely* such as tucking your chin while swallowing, not drinking through straws, taking small bites and chewing slowly, and waiting until after meals to drink beverages.
- + *Diet changes* such as thickening liquids or making foods softer.
- + *Exercises* to strengthen swallowing muscles.

A speech and swallowing therapist will offer tactics and tips tailored to you, your dietary preferences and your specific swallowing problems. For example, a therapist might instruct you to avoid certain foods such as dry breads and cakes, rice, and nuts and seeds.

Sometimes people have more severe swallowing problems and can't eat enough to maintain their weight or nutritional needs. Or they have repeated bouts of pneumonia. In these cases, doctors may discuss a feeding tube. This is a less common situation for people with Parkinson's, and having swallowing problems (especially early or mild) does not mean you will later need a feeding tube.



Parkinson's medications may help swallowing problems somewhat, but they rarely relieve them completely. It also may be harder to take your pills when you have trouble swallowing, and you may want to ask your doctor about other options. Levodopa, for example, comes as a capsule (Rytary) that can be opened and sprinkled on applesauce (or food of similar consistency), a tablet that dissolves in the mouth, and a gel (Duopa) that's continuously infused directly into the small intestine.

Many people anecdotally share that their symptoms improve when they follow a specific regimen.



Specific Diets and Parkinson's

Research has not proven any particular diet can slow Parkinson's progression or ease all symptoms. But diet is hard to study. It's difficult to monitor and dictate exactly what and when people eat and it's sometimes impossible to know whether improvement is from a behavioral change, new motivation or greater sense of well-being. In other words, a person may feel and do better because they are taking an action, not because of the diet itself.

Many people anecdotally share that their symptoms improve when they follow a specific regimen. But Parkinson's is different for every individual and people respond differently to food, just as they respond differently to medications. What works for one person may or may not work for another.

If a certain diet works for your Parkinson's, there may be no reason to stop. But if you are beginning to contemplate a new diet for Parkinson's, discuss the pros and cons with your doctor. Think too about how challenging shopping, preparing and selecting meals may be and if the program may overly restrict the meals you can enjoy with family and friends. A registered dietitian can provide additional

education and support if you decide to try a new diet. Ask your doctor for a referral or search online for one in your area. (The Academy of Nutrition and Dietetics maintains a database of registered dietitians at www.eatright.org/find-an-expert.) Be sure to ask the dietitian about their experience with Parkinson's.

Here, we discuss a few popular diets:

Gluten-free Diet

This regimen cuts out foods that are made of gluten. Gluten is a protein in wheat, barley and rye, which are key ingredients in bread, pasta and cereal. In people who have celiac disease, gluten sensitivity or a gluten allergy, eating gluten can cause bloating, nausea and diarrhea. It also may cause headaches, joint pain, and mood and memory changes.

Currently, there is no strong pre-clinical or clinical trial evidence to support the use of a gluten-free diet for Parkinson's disease. There is one report of a man with PD and "silent celiac disease" (no symptoms but positive lab tests) showing significant improvement in Parkinson's symptoms upon removing gluten from his diet.

Some of the diet's general benefits may come from its focus on naturally gluten-free products. These include fruits, vegetables, meats, eggs, nuts, seeds and other whole, unprocessed foods. (Processed gluten-free foods are usually higher in sugar and calories.) Still, sticking to a strict gluten-free diet can be challenging and may put you at risk for certain vitamin deficiencies.

Mediterranean Diet

This "heart-healthy" approach stresses plant-based foods (fruits, vegetables, whole grains and legumes such as chickpeas, lentils and peas); fish and poultry over red meat; and healthy fats such as nuts and olive oil. Red wine in moderation is optional. Researchers have linked the Mediterranean diet to lower levels of "bad" cholesterol as well as a decreased risk for Parkinson's, Alzheimer's, heart disease and certain cancers. Many doctors recommend this diet for possible positive effects on thinking and memory.



Diets, like all treatments, are individualized.

To find the best one for you, consider your medical conditions, activity level and other factors that impact eating and lifestyle.

In Parkinson's, two studies have correlated the Mediterranean diet with lower disease risk and one showed that in people who do get Parkinson's, the diet might delay time to diagnosis. Potential benefits could be from antioxidant or anti-inflammatory effects.

MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) Diet

This method combines concepts of the Mediterranean and DASH (Dietary Approaches to Stop Hypertension) diets. The MIND diet has been associated with lower rates of Parkinson's and Alzheimer's disease. It recommends consumption of 10 foods and offers specific amounts to eat per week: (Check with your dietitian for details)

+ *Leafy greens: six or more servings per week*

Examples: chard, collard greens, kale, lettuce, mixed greens, spinach

+ *Other vegetables: at least one serving per day*

Examples: beets, green or red bell peppers, broccoli, carrots, celery, corn, eggplant, lima beans, peas, potatoes, string beans, summer squash, zucchini

+ *Berries: two or more servings per week*

Examples: blackberries, blueberries, raspberries, strawberries

+ *Poultry: two servings per week*

Examples: chicken, turkey

+ *Fish: one serving per week*

Examples: salmon, trout, tuna

+ *Beans: at least three servings per week*

Examples: beans, peas and lentils

+ *Nuts: five servings per week*

Examples: almonds, hazelnuts, pecans, pine nuts, walnuts



+ *Olive oil: main cooking oil*

+ *Whole grains: three servings per week*

Examples: whole grain bread or cereal, oats, brown rice, quinoa

+ *Red wine: up to one 5-ounce glass per day (If approved by your physician)*

This diet recommends limiting the following:

+ *Butter and margarine*

+ *Cheese*

+ *Red meat*

+ *Fried food*

+ *Pastries and sweets*



The Michael J. Fox Foundation (MJFF) is funding research to look at how the Mediterranean and MIND-DASH diets may affect symptoms and brain changes in people with Parkinson's. [Learn more.](#)

MJFF also is supporting work to examine how high-fiber diets may impact gut health and potentially improve Parkinson's symptoms or slow changes over time. [Read more.](#)





*There is no single
“Parkinson’s diet.”*

The best diet for Parkinson’s and general well-being is a healthy, balanced regimen focused on whole, unprocessed foods.

Ketogenic Diet

This plan is high in fat, low in carbohydrates and moderate in protein. Its aim is to shift the body’s usual energy source from sugar (glucose) to fats, or ketone bodies, which some believe are a more “efficient” fuel. Doctors sometimes recommend the ketogenic diet for seizures (epilepsy) that can’t be controlled with medication. Some researchers suggest the diet could work by providing different energy for mitochondria (the cell’s power source). In PD, potential support for the ketogenic diet comes from pre-clinical work and a handful of clinical trials. In one study, five people with Parkinson’s followed the ketogenic diet for 28 days and demonstrated improvement in their movement symptoms and ability to perform daily activities. Another study randomly assigned 47 people to either the ketogenic or a low-fat diet for eight weeks. While both groups showed movement and non-movement symptom improvement, the ketogenic dieters had greater non-movement symptom improvement. Because both of these studies were short, the long-term benefits and harms are unknown at this time.

Because this diet has lower protein, which can interfere with levodopa’s absorption and effectiveness, some of its potential benefit could be due to improved medication absorption rather than a direct effect on the brain. On the other hand, adequate protein intake is important for maintaining your muscles, exercising and doing your daily activities.

This diet also is typically low in fruits and vegetables that provide essential nutrients such as vitamins, minerals, antioxidants and fiber. Following the ketogenic diet could lead to decreased appetite, constipation, and nausea or vomiting.

If, after considering the possible side effects and benefits, you decide to go on this diet, work with your doctor and dietitian to get started. You’ll likely want to have regular bloodwork or monitoring for side effects such as dehydration, low glucose, kidney stones and certain nutritional deficiencies.

Modified forms of the ketogenic diet include the Atkins and Grain Brain regimens. Both emphasize higher fat and lower carbohydrate consumption but they differ in the types of fats recommended.





Frequently Asked Questions about Parkinson's and Diet

I've heard fava beans contain levodopa. Should I eat them to treat my Parkinson's?

Fava beans do contain levodopa. But how much they contain and how well your body might absorb them varies. If and how your symptoms might respond to fava beans is unclear. Eating fava beans on their own to treat your Parkinson's may or may not have any noticeable effect. Consuming large amounts of fava beans when you are taking prescribed levodopa (in Sinemet or Rytary, for example) could result in too much levodopa and dyskinesia (uncontrolled, involuntary movement).

What about mucuna pruriens? Can I take that for my Parkinson's?

Mucuna pruriens, or "velvet bean," is another dietary source of levodopa. One important way it differs from prescription levodopa (such as Sinemet or Rytary) is that it's not combined with carbidopa, the drug that prevents levodopa's breakdown before it gets to the brain, where it turns to dopamine. This may mean you need higher doses of mucuna to get the same amount of levodopa to the brain.

It also can be difficult to figure out the correct dose and to know exactly how much you're taking. Because the U.S. Food and Drug Administration (FDA) does not regulate dietary supplements such as mucuna like a drug, your actual dose could be different from what the bottle says. And the supplement could contain impurities or other chemicals.

Taking this form of levodopa could result in uneven symptom control (good some days, not so good others) and, if added to prescription levodopa, too much levodopa and dyskinesia.

What supplements should I take for Parkinson's?

Doctors do not typically recommend any dietary supplements to treat Parkinson's disease or its symptoms due to the lack of conclusive research evidence. If, however, you have falls or are older, your doctor will want to make sure calcium





More research is necessary.

To understand how diet affects Parkinson's (and vice versa) and how what you eat could ease symptoms and potentially slow disease progression, we must continue additional work.

and vitamin D are at the right levels to boost bone health. And if you have a deficiency of a particular vitamin, you may want a daily replacement.

Several supplements, including creatine, CoQ10, inosine and vitamin E unfortunately have failed to slow Parkinson's progression in Phase III clinical trials. A Phase II study of glutathione, an antioxidant, improved symptoms in both the glutathione and placebo groups, so its true benefit is unclear.

Supplements are available without a prescription, but always talk with your doctor about the potential positives and negatives before adding them to your treatment regimen. Most are affordable, but some (such as glutathione infusions) can cost thousands of dollars. And supplements, like all medications, can have side effects and drug interactions. Simply because they are “natural” does not mean they are completely “safe.” Some may even affect your Parkinson's medications and may need to, at the very least, be taken separately. Iron supplements, for example, can interfere with levodopa absorption, so talk to your doctor and pharmacist about potential interactions and how best to take your medications and supplements. It is always recommended to try to meet your vitamin and mineral needs through diet before taking supplements.

Can coconut oil treat Parkinson's disease?

Coconut oil contains high amounts of fats called medium-chain triglycerides (MCTs). The body uses these fats for energy quickly and efficiently, so some believe MCTs have many potential health benefits and could improve brain function. Some people with Parkinson's have reported anecdotal benefit with coconut oil on both movement and non-movement symptoms, including constipation as well as thinking and memory. Currently, there is no validated scientific research to support the use of coconut oil in Parkinson's. In people with Alzheimer's, a few small, short studies have shown improved learning, memory and brain processing with MCTs. If you are considering MCTs or coconut oil, which are high in saturated fats, it's typically recommended that you use them as a replacement for, not in addition to, other saturated fats such as butter. Talk with your doctor about how coconut oil might fit into your daily regimen.





Is drinking coffee good for Parkinson's?

In large population studies, researchers found that people who drank coffee seemed to have a lower risk of being diagnosed with Parkinson's. This shows a relationship between coffee and Parkinson's, but does not prove that drinking coffee decreases the risk of Parkinson's. Researchers can follow these associations to learn more about the disease and develop potential treatments. A therapy in clinical testing for dyskinesia (involuntary, uncontrolled movement), For example, a newer medication for Parkinson's — Nourianz (istradefylline) — works in the same brain areas as caffeine does.

One study of people with Parkinson's who drank coffee to ease symptoms showed no effect on tremor or other movement problems. (And in some people, high amounts of caffeine may even temporarily worsen tremor.)

At the current time, there's no significant support for coffee or caffeine as a treatment to slow Parkinson's or treat its symptoms. But because coffee and green tea contain antioxidants, consuming them in moderation may be good for general health.

How is the gut connected to Parkinson's?

Much evidence links the gut, or digestive tract, to Parkinson's. For many people with PD, non-movement symptoms are tied to this body system. Constipation can occur years or even decades before diagnosis. As disease progresses, the

stomach can empty slowly or irregularly causing symptoms (bloating or nausea, for example) and impacting medication benefit.

Early research also shows that gut bacteria (the microbiome) differs between people with and without Parkinson's and even among people with Parkinson's who have different symptoms (more tremor as opposed to more walking and balance problems, for example). Work now is evaluating whether this is a cause or result of Parkinson's or its treatment (or some other factor, such as diet).

Alpha-synuclein, the sticky protein that clumps in the brains of most people with Parkinson's, is seen in the gut of people with Parkinson's, too. This leads many to believe that disease could start in the gut and travel to the brain. If true, this could be an optimal place for early diagnosis and intervention.

NOTE: The medical information contained in this article is for general information purposes only. The Michael J. Fox Foundation for Parkinson's Research has a policy of refraining from advocating, endorsing or promoting any drug therapy, course of treatment, or specific company or institution. It is crucial that care and treatment decisions related to Parkinson's disease and any other medical condition be made in consultation with a physician or other qualified medical professional.





**He doesn't
have Parkinson's.
But he can help
end it.**

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everything.



Parkinson's
Progression
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Through MJFF's Parkinson's Progression Markers Initiative (PPMI) study, researchers are learning about the Parkinson's experience to develop better tests and treatments. Whether you have Parkinson's or care about someone who does, you can help.

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