

Parkinson's Disease and Nutrition

Good nutrition is essential for living your best life, especially if you have Parkinson's disease (PD). However, some PD symptoms can affect your ability to maintain proper nutrition, so it is important to learn the different ways that PD can impact your food intake and know the steps you can take to make sure you're getting the optimal nutrients and calories to help you stay strong. Poor nutrition can lead to a host of avoidable issues, so it is important to talk with your doctor and, ideally, a nutritionist or registered dietician to make sure you're eating healthy.

What is the best diet for people with Parkinson's disease?

Mediterranean and MIND diets

A Mediterranean diet is characterized by an emphasis on plant-based foods including vegetables, fruits, whole grains, legumes and nuts, with the addition of moderate amounts of low-fat proteins such as chicken and fish, and fats centered around olive oil.

Some proponents of brain health suggest a hybrid of the Mediterranean diet and the DASH (Dietary Approaches to Stop Hypertension) diet which together is referred to as the MIND diet (the Mediterranean-DASH Intervention for Neurodegenerative Delay). Both the Mediterranean diet and the MIND diets have been associated with improved brain health, including a lower risk and slower progression of Parkinson's symptoms in the elderly. A recent study of people with PD who followed the MIND and Mediterranean diets suggests that following these diets *before PD is diagnosed* may delay the onset of PD symptoms.

Practically, there is much similarity and overlap between the Mediterranean and MIND diets.

The MIND diet is based on ten food groups to eat and five to avoid.

The ten to eat include:

- Green leafy vegetables
- All other vegetables
- Berries
- Nuts
- Olive oil
- Whole grains
- Fish
- Beans
- Poultry
- Wine (no more than one glass a day)

The five to avoid are:

- Butter/margarine
- Cheese
- Red meat
- Fried foods
- Sweets

Probiotics

Probiotics are foods or nutritional supplements that contain micro-organisms (such as bacteria or yeast) that work to support a healthy microbiome (the trillions of microbes that live in the human gut) and possibly modulate the body's immune responses. Probiotics can be found in certain yogurts as well as in supplements in powder and pill form.

Clinical trials of probiotics in PD have shown that they can be helpful for management of constipation. Probiotics may also be beneficial for a condition known as small intestinal bacterial overgrowth (SIBO) in which there is excessive bacteria in the small intestine that leads to abdominal pain, bloating, chronic diarrhea, and weight loss. Talk to your doctor to see if adding probiotics to your diet would be beneficial.

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Antioxidants

There are a plethora of foods and supplements that show antioxidant properties – defined as the potential to protect against free radicals or reactive oxygen species that can cause damage to cells. A diet high in fruits, vegetables, berries, whole grains, nuts, and seeds tends to be rich in antioxidants (and are also features of the Mediterranean and MIND diets) and offer a variety of health benefits, including maintaining maximal brain health in PD.

However, demonstrating that any *particular* antioxidant in a food or supplement is important for either preventing PD or slowing the progression of PD has proven to be very difficult. Therefore, there is no specific antioxidant food or supplement recommended for everyone with PD. Studies are ongoing.

Vitamins

Vitamins are nutrients required in small quantities by the body. The vitamins that are essential for health usually can be obtained in adequate amounts from a balanced diet. Some, such as Vitamin D and Vitamin B12, are harder to obtain through the foods you eat. If there is concern that particular levels of vitamins are low, your doctor can order blood tests and potentially recommend vitamin supplementation.

- **Vitamin D** is derived from two sources – your diet and exposure to sunlight. There are not many foods that contain Vitamin D, so about 70-80% of our Vitamin D intake needs to be obtained from sunlight (ultraviolet B from sunlight converts a steroid precursor in the skin to Vitamin D). This can be difficult for people with mobility challenges, and especially for those that live in colder climates. Vitamin D plays many roles in the body, including helping with calcium absorption from food and supporting mineralization of bone. Strong bones are particularly important for people with PD to prevent fractures in the setting

of an increased risk of falls. To get some Vitamin D from your diet, try salmon, canned tuna, and mushrooms, which naturally contain Vitamin D. There are also many milk, yogurt, and orange juice options that are fortified with Vitamin D.

- **Vitamin B12.** As people get older, their ability to absorb Vitamin B12 from food decreases. Symptoms of low Vitamin B12 levels include depression, fatigue, cognitive decline, weakness, and tingling in the limbs. It is hard to obtain enough Vitamin B12 from purely plant-based sources. Foods rich in Vitamin B12 include beef, chicken, fish, dairy products, and eggs. Some foods, such as breakfast cereals, are fortified with Vitamin B12.

How can Parkinson's disease symptoms impact a person's ability to maintain good nutrition?

Having PD poses unique challenges to maintaining good nutrition. Identifying these issues gives you the best chance of staying strong.

Difficulty swallowing

Difficulty swallowing, or *dysphagia*, may develop as PD progresses and may lead to inadequate food consumption and risk of choking on food. If you think you might have a swallowing issue, it is important to speak with your doctor about it so they can refer you to a speech and language pathologist. A swallowing evaluation can determine the nature of the problem and swallowing therapy can help improve swallowing function. In addition, the speech and language pathologist will suggest the best food choices for you. These steps can reduce your risk of choking, make eating more enjoyable, and lessen the chances of unwanted weight loss and/or other discomforts.

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Delayed gastric emptying

PD may cause a slowing of food transit through the stomach, also called *gastroparesis* or **delayed gastric emptying**. This can result in abdominal pain and discomfort, nausea, bloating, and gassy feelings. All these symptoms can lead to decreased appetite and inadequate caloric intake. In addition, it can also cause medication doses to get “held up” in the stomach, resulting in erratic release of medication from the stomach into the small intestine, where absorption takes place. If medication does not leave the stomach, this can result in extended OFF time. There are medications that can be used to counteract nausea, but they must be chosen carefully, since some medications for nausea are contraindicated for people with PD because they can increase symptoms of PD. The treatment of delayed gastric emptying is a challenging problem and may necessitate a visit to a gastroenterologist.

Constipation

Constipation is a common non-motor symptom in people with PD and can be present very early on in the disease, sometimes even before motor symptoms appear. Similar to delayed gastric emptying (which takes place in the stomach), PD can also cause a slowing of food transit in the large intestine, leading to constipation. Decreased fluid intake, poor dietary habits, decreased exercise, and medication side effects can all exacerbate the problem. Constipation can result in a loss of appetite, complaints of bloating, and, if not corrected, can even lead to serious consequences like bowel impaction. The best treatment is prevention. People with PD should eat adequate amounts of fiber – approximately 25 to 35 grams per day – which can be found in fruits, vegetables, and whole grains. In addition, adequate amounts of fluid are essential for a healthy digestive system. (Adequate fluid is also imperative for those that have orthostatic hypotension, a form of low blood

pressure that occurs when changing head position, and another common non-motor symptom of PD.) If constipation can't be managed with diet and fluids alone, there are multiple over-the-counter and prescription medications that can be used to improve constipation, so make sure to speak with your neurologist about this problem.

The protein effect

Levodopa medications that are taken to help PD motor symptoms are absorbed in the small intestine. In a subset of people with PD, ingesting levodopa along with dietary protein can decrease the medication's absorption in the small intestine, thereby decreasing the effectiveness of the dose. This phenomenon is known as **the protein effect**. For these people, it is important to adjust the diet to maximize absorption of medication. The most straightforward way to do this is to ingest most of your protein at the end of the day when optimal motor control is not as essential. Your doctor and/or a registered dietician can also help you balance your diet so that your protein intake is not negatively impacting the effectiveness of your medication.

Other nutrition roadblocks

Additional symptoms related to PD such as dry mouth, depression, apathy or lack of motivation, cognitive impairment, motor symptoms, and loss of sense of smell can interfere with appetite and meal preparation and can therefore impact nutrition. Trying to clarify the specific elements that are impacting nutrition is the first step in improving nutritional intake. Keep track of any of these symptoms so that you can speak with your doctor about the role they may or may not play in your ability to maintain a balanced diet. The free APDA Symptom Tracker app, available on the App Store or Google Play, can help you do this, or simply keep a detailed list on your own.

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What are the impacts of poor nutrition on your health?

Poor nutrition can have significant consequences on your quality of life.

Weight loss

Because nutrition can be impacted by PD symptoms, **weight loss** is a common problem for some people with PD. It is important to note that weight loss is a non-specific symptom and could be a sign of other medical problems (not specifically PD). It is therefore important not to assume that weight loss is due to PD without a medical workup. However, if a workup does not reveal a cause, the weight loss may be attributed to PD itself. In addition to all the challenges that PD creates in obtaining adequate nutrition, the tremors and dyskinesias of PD can also cause increased energy expenditure, so you're burning more calories than you might realize. Weight loss has been linked to a poorer quality of life, increased rates of fracture, and more rapid progression of PD, so it is important to figure out why the weight loss is happening and try to address the cause. Increasing caloric intake by ingesting high-calorie healthy foods such as nut butters and avocados may be helpful as well. A nutritionist or registered dietician can help you make smart food choices based on your specific situation.

Increased disability

Poor nutrition can contribute to fatigue, weakness, frailty, and an overall level of increased disability. In addition, poor nutrition can impede recovery from other illnesses or infections.

Good nutrition is essential

The bottom line is that proper nutrition is very essential to your PD experience. And the good news is that your diet is something you have control over, so you can make positive adjustments that can help you feel better, stay stronger, and enjoy life a bit more.

As always, be sure to talk with your medical team about any new or worsening PD symptoms and before you make any significant changes to your diet.

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