

# Nutritional Value

*A guide to diet and nutrition in Parkinson's*

*We acknowledge the contribution of:*

Ms. Salome Benjamin

Medical Nutritionist

Dept. of Medicine & Endocrinology

TNMC and Nair Hospital.



PARKINSON'S DISEASE AND MOVEMENT DISORDER SOCIETY.



## NUTRITION IN PARKINSON'S DISEASE

### INTRODUCTION:

Diet plays an important role in the lives of people with Parkinson's disease (PD).

Through the correct diet and nutrition one can:

- Maintain optimal nutritional status of the patient.
- Ensure optimal absorption and effectiveness of PD medication.
- Provide relief from symptoms such as constipation, weight loss/ gain etc.
- Provide relief from the side – effects of medication such as nausea, abdominal bloating etc.

The above goals can be achieved by taking help of Dietician. A Nutritionist would assess one's energy and protein levels and requirements based on the present nutritional status of the patient, age of the disease, grade of nutrition, individual tolerance to proteins and drug dosage.

### NUTRIENTS & FOOD GROUPS

A thorough understanding of what constitutes a healthy diet can be obtained by understanding two basic concepts of Diet and Nutrition viz. Nutrients and Food Groups.

**Nutrients** are basically divided into *Macro – nutrients* (**Carbohydrates, Protein and Fat**) and *Micro – nutrients* (**Vitamins and Minerals**).

All foods fall into five basic Food Groups and each food group consists of a varied amount of nutrients.

1. **Breads, Cereals, Rice** contributes mainly carbohydrates, besides fiber, and some protein, calcium, iron, and B vitamins.

Ideally one requires around 6 – 11 servings per day.

2. **Fruit and Vegetables** provide vitamins and minerals (Vitamin C, carotenes, folates), besides the most important fiber and water content and some carbohydrate, due to which they have fewer calories.

2 – 4 servings of the fruit group and 3 – 5 servings of the vegetable group should suffice.

3. **Meat, Fish, Eggs, Nuts, Pulses, Lentils** provide mostly protein with some fat, and vitamins and minerals including iron, zinc, magnesium and B vitamins.

The requirement is 2 – 3 servings per day.

4. **Milk and Dairy products** contain carbohydrate, protein, fat, and some vitamins and minerals, including vitamins B12, A and D. Calcium, an extremely important mineral is provided through this food group, more so in PD because there is an increased risk for osteoporosis.

3 – 4 servings per day are required.

5. **Extras** that include oils, sweets, cream etc include fat and sugar content. Though not a daily requisite, this food group can be used with PD patients who are experiencing weight loss to increase their calorie intake, and also to provide any extra energy needed by the body.

Anywhere “between” 1 – 7 portions may be required depending on the needs of the particular individual.

Along with these daily-required servings, the intake of FLUIDS, mainly water is an essential part of a healthy, balanced diet.

One should take at least 8 – 10 glasses of water everyday.

## **SERVINGS / PORTIONS**

Knowing what constitutes **one (1) serving or portion is extremely necessary** and makes it easy to incorporate with the following examples that have been provided:

**In the first group, where 6 – 11 servings per day are required, you could choose ONE serving from either of the following:**

1 slice bread	½ chapatti	½ cup / 2 tbsp cooked rice
3 tbsp breakfast cereal	1 plain biscuit	3 tbsp cooked pasta/noodles
2 small boiled potatoes	1 medium baked potato	½ bread roll or muffin

When eating from this group, one should mostly attempt to choose whole grains foods over refined flour and grains, for example whole-wheat bread over white bread or whole-wheat pasta over refined flour pasta.

**In the *second* group of fruits and vegetables, one could choose ONE serving from either of the following:**

3 tbsp cooked vegetables	½ cup chopped raw vegetables	1 cup raw leafy greens
1 small side salad	1 small glass fruit juice	1 apple/ pear/ orange/ peach
2 plums	½ cup/ 7 berries / cherries	12 - 15 grapes
1 small banana	1 bowl papaya/ watermelon	¼ cup dried fruits

In the vegetable group one should include more *thoroughly* washed green leafy vegetables, as well as red, yellow and orange vegetables. In the fruit group, more importance should be given to citrus fruits and berries and cherries. Papayas are good for relieving constipation.

**In the *third* group of meat, nuts, pulses, one could choose ONE serving from either of the following:**

1 cup / 4 tbsp cooked lentils, dal, or pulses.	2 eggs	2 slices cold cuts / 2 sausages
60 gm cheese	6 – 10 nuts	60 – 90 gm meat / poultry
140 gm fish	30 gm peanut butter	110 gm Soya chunks/ tofu

**To take your daily requirement of the *fourth* group of milk products, one could choose ONE serving from either of the following:**

1 cup / 200 ml milk	1 bowl yoghurt	1 bowl rice pudding
120 gm paneer / cottage cheese	30 – 40 gm soft/ hard cheese	

**The *fifth* group of ‘extras’, which are to be taken if required, include the following, and one could choose ONE serving from either of the following which consists of 50kcal/ serving**

1 tsp butter/ margarine	2 tsp jam/ jelly/ marmalade/ honey	1 tsp cooking / salad oil
2 tsp/ cubes sugar	1 mug hot chocolate drink (made with water)	1 tbsp mayonnaise

***Following table that is equivalent to THREE servings of foodstuff that one may generally eat has been provided for further help:***

1 bar chocolate (30 gm)	1 packet wafers/ crisps (25 gm)	½ small slice cake (60 gm)
-------------------------	---------------------------------	----------------------------

1 avg. scoop ice - cream	1 croissant	½ donut
2 cream – filled biscuits	1 small glass wine	30 ml spirits (scotch, whiskey etc)

## **SPECIAL CONSIDERATIONS FOR A PATIENT WITH PD**

### 1) FOOD – MEDICATION INTERACTION

In PD, the food – medication interaction mainly constitutes protein – levodopa interaction. Foods rich in protein include meat, fish, nuts, and pulses. The mechanism with which these are absorbed into the blood stream are the same, and therefore, they compete with each other for absorption, often resulting in protein being absorbed, and the medication not providing the optimal effects. To avoid this one could take one of the following precautions/ steps, but only after consultation with ones Neuro physician/ Registered Dietician.

- Medication should be taken an hour prior to meals
- One could follow either of the following methods of protein distribution for optimal levodopa effectiveness:

	<b>PLAN I PROTEIN INTAKE DISTRIBUTION (E.g. 40gm)</b>		<b>PLAN II PROTEIN INTAKE DISTRIBUTION (E.g. 40gm)</b>	
<b>BREAKFAST</b>	1/4th	10 gm	1/3rd	13 gm
<b>LUNCH</b>	1/4th	10 gm	1/3rd	13 gm
<b>DINNER</b>	1/2	20 gm	1/3rd	13 gm

Decision between these two methods of distribution depends on the dosage, severity of the disease and the person's life-style needs.

- IF AT ALL IT IS REQUIRED, and as recommended by ones medical consultant, the protein intake may be reduced. This however, is in very rare cases as protein intake is essential to the body. To prevent weight loss at such times, the intake of carbohydrates should be increased.

The ideal ration of protein (P) to carbohydrates (CHO) is 1:5. If this is not helping the patient maintain optimal body weight, the ration may be increased to 1:6 and 1:7. A few examples of how one can incorporate the 1:5 P: CHO ratios are provided in the table below:

<b>PROTEIN</b>	<b>CARBOHYDRATES</b>
1 vati dal / sambhar	¾ chapatti OR ¾ vati rice/ pulao
1 vati curd	½ chapatti OR ½ vati rice
1 cup milk	1 khakhra OR ½ vati poha/ upma
1 whole egg	1½ chapatti OR 1½ vati upma

1 egg white	¾ chapatti OR ¾ vati rice/ upma/ poha
100 gm fish	3 chapatti + 1 vati rice + 1 vati vegetables
100 gm chicken	4 chapatti + 1 vati rice + 2 vati vegetables
40 gm paneer	1½ chapatti OR 1½ vati rice

## 2) MANAGING WEIGHT

- People suffering from PD may experience weight fluctuations either due to side – effects of the medications, or as a secondary symptom of the disease itself, or due to reduced/ lack of movement caused by rigidity and imbalance. In such cases, the person may go on a calorie – controlled balanced diet as recommended by a registered dietician.
- However, most often the problem with people with PD is weight loss, which may be due to loss of appetite, swallowing difficulties, difficulty in using utensils, increased energy depletion (in trying to cope with symptoms). In such cases they should be encouraged to take in more calories in the following ways:
  - Give small and frequent meals, instead of bulky meals.
  - Give favorite foods and try to modify them according to nutritional requirement.
  - High calorie foods like peanut butter; biscuits/desserts and milkshakes can help to increase weight, and may be given in appropriate quantities.

## 3) CONSTIPATION

Another very common symptom faced by people suffering from PD is constipation, which may be defined as bowel emptying less than thrice a week, or uneasy feeling even after bowel emptying. Constipation in PD is a problem because the condition reduces the action of muscles in the bowel. However, it can be easily managed with a natural diet. If constipation becomes a more serious problem, then medical consultation may be necessary. A few dietary tips to prevent or reduce constipation are provided below:

- Increase intake of a fiber – rich diet. Foods containing fiber are –
  - Whole – grain bread and cereal
  - Thoroughly washed raw fruits (with skin, if edible), especially prune, pear, peach, papayas, unstrained fruit juices
  - Dry fruits. (Avoid them if you also have heartburns).
  - Vegetables especially leafy vegetables like cabbage, cauliflower, broccoli, and celery.
  - Lentils and split peas.
  - Bran (can be added to meals).
  - Drink plenty of water.
  - Drink hot fluids. However, avoid tea and coffee as they dehydrate the body thereby worsening constipation.
  - Regularize meal timings.

#### 4) SWALLOWING AND CHEWING PROBLEMS

If a person with PD has swallowing or chewing problems as a secondary symptom of the disease itself, then one can aid oneself by following the dietary tips given below:

Consumption of the following foods may minimize chewing, and facilitate swallowing:

- i. Upma/ Chopped, Mashed or Pureed Foods
- ii. Porridge or Gruel
- iii. Poha/ Khichdi/ Dhokla/ Idli/ cutlet
- iv. Soups/ Kanji
- v. Buttermilk/ Lassi
- vi. Milkshakes/ Juices
- vii. Egg custard/ Pudding/ Kheer
- viii. Rice preparation with raita

#### 5) GASTRO ESOPHAGEAL REFLUX DISEASE (GERD)

Gastro esophageal reflux disease, commonly known as heartburn is another common problem among PD patients, due to fluctuations in the body mechanisms. Following the subsequent tips can prevent this:

- Give small and frequent meals, avoiding bulky meals.
- Use cumin (jeera), coriander, curry leaves, lemon juice, asafetida (hing). Avoid chilly, pepper, ginger, garlic, and garam masala.
- Avoid tobacco, alcohol and carbonated beverages and peppermint.
- Avoid extreme hot or cold foods.
- Avoid nuts and dry fruits.
- Use boiling, steaming baking or roasting instead of fried foods, which can be spicy too.
- Drink lots of water.
- Tea and coffee limited to not more than 2 cups per day.
- Avoid smoking.
- Do not sleep immediately after meals.

#### **FLUID INTAKE AND PD**

Water is the most important nutrient required for a balanced diet and healthy functioning of the body. Drinking plenty of water is particularly important for PD patients because of the secondary symptoms of constipation and dry mouth from which PD patients suffer.

Taking frequent sips of water, or sucking ice chips helps in lubricating the mouth. Constipation is generally aided by the intakes of fluid, and so is it in PD.

However, when one is not used to drinking too much water, they should slowly increase the water intake by increasing half a glass of water everyday till the total intake is 6 – 8 glasses. Initially there may be water retention, which may cause bloating, but eventually the body will adjust and maintain optimal hydration.

Thus having covered the basic points one needs to keep in mind to follow a balanced diet and an ensuing healthy functioning. Provided next is a ‘Sample Menu Plan’ that can be used by a PD patient, or altered according to individual needs, of course in consultation with ones dietician.

### **SAMPLE MENU PLAN**

<b>TIME/ MEAL</b>	<b>MENU</b>	<b>NUTRITIONAL VALUES</b>
<b>7.00 a.m. DRUG</b>		
8.00 a.m. BREAKFAST	1 cup tea/coffee with sugar + Upma/ Vermicelli/ Rawa/ Poha/ Sheera/ 2 Idlis/ 2 Sada Dosa/ 1 Uttapam + 2 egg white omellete with 1 chapatti/ 2 khakhras with vegetable/ Corn flakes/ Oat flakes/ Wheat flakes/ Muesli with milk.	12 gm Protein 60 gm CHO
10.30 a.m.	Fruit	
<b>12.00 p.m. DRUG</b>		
1.00 p.m. LUNCH	1 vati Jeera rice/ Pulao/ Khichdi/ Plain rice + 1 Roti/ 2 Chapatti/ 1 Paratha + 1 vati Dal/ Sambhar + 1 vati Vegetable	12.5 gm Protein 64 gm CHO
4.30 p.m. SNACKS	Lemon tea/ Black tea/ Black coffee + Fruit juice/ Whole fruit + Popcorn/ Kurmura/ Sukha bhel + Upma/ Poha/ Gavan/ Rice Dosa	2 gm Protein 10 gm CHO
<b>6.30 p.m. DRUG</b>		
7.30 p.m. DINNER	4 small Chapatti/ 2 Roti/ 1 Paratha + 1 vati Rice/ Khichdi/ Lemon Rice + 1 vati Dal/ Sambhar/ Kadhi + 1 vati Usal/ Sprout veg/ Sprout salad + 1 vati Vegetable	(Dinner + 9.00 p.m. snack): 24 gm Protein 120 gm CHO

9.00 p.m.	1 glass Buttermilk/ ½ glass Lassi/ 1 glass milk OR Kheer/ Sheera/ Poha and milk	
-----------	---	--