

# Levodopa and Protein: Medication Absorption Concerns

Levodopa continues to be the gold standard for the treatment of Parkinson's disease (PD), and nearly everyone diagnosed with PD is prescribed this medication. Levodopa is found in a variety of formulations including:

- Levodopa plus carbidopa, referred to as levocarb or levodopa/carbidopa (brand names Sinemet® and Sinemet CR® Duodopa®)
- Levodopa plus benserazide (brand name Prolopa®)
- Levodopa/carbidopa/entacapone (brand name Stalevo®)

Some people taking levodopa notice a decrease in the effectiveness of their medication if it is taken at the same time as, or shortly after, a high protein meal or snack. Not everyone with PD has this problem. For those who do, they find that eating a protein-rich food at the same time as taking their levodopa can interrupt the absorption and effectiveness of the medication.

## **Why does protein sometimes interfere with the absorption of levodopa?**

When any kind of protein is being digested, it is broken down into its core components which are amino acids. The lining of the digestive tract contains many receptors designed to absorb the amino acids and to transfer them into the blood stream to be carried to the brain.

There are only so many receptors in the digestive tract and for some people food-based amino acids may be absorbed first (in preference to pills), resulting in less medication being taken up. This means that the medication does not start working and providing symptom relief. The absorption of the medication may remain low until the protein has moved through the gut.

## **What does this mean for me?**

A decrease in medication effectiveness can be different for everyone. For some, it may seem as though it is taking a very long time for your medication to “kick in” or you may be spending more time than you usually do in an “off” state. In some instances, you may experience “dose failures”, defined as when your medication does not work at all.

If you are concerned about your ability to absorb levodopa, we recommend that you discuss this with your healthcare team. Prior to your appointment, it is useful if you can make notes about the effectiveness of your medication.

When you take your medication please note:

- If you have food with your medication and what was in your main meal and/or your snack
- How close your medication was to a main meal
- Effectiveness of your medication around the times you are eating

Even if you suspect that protein is getting in the way of adequate absorption of levodopa, **you must not make adjustments to your medication schedule without talking to your doctor.** Effective management of Parkinson's medications requires following a strict schedule. **Adjust your meals and snacks, not your medication.**

### Should I have a snack along with my levodopa?

Opinions differ on this question. It is generally considered wise to have a light, non-protein snack along with your levodopa to assist with digestion. Foods to consider include:

- Fruit
- Crackers
- Apple sauce

### If I notice an absorption problem relating to protein, what foods should I avoid when I am taking my scheduled dose of levodopa?

Foods that are high in protein and that **should be avoided** in large servings include:

- High protein milk products including yogurt, ice cream, butter, cheese, and cottage cheese (a little in coffee or tea, or on cereal is usually OK)
- Almond, soy, hemp and rice beverages
- Eggs and egg substitutes (an egg maybe OK, but not with bacon and sausages)
- Meats, poultry and fish of all types
- Nuts (including spreads like peanut butter)
- Sunflower seeds and all other seeds such as pumpkin, flax, and sesame
- Beans, peas
- Soybeans (including tofu and tempeh)
- Puddings and custards
- Dietary supplements (*Ensure*, *Boost*® and other similar products have a high percentage of protein) as do whey and protein powders

Protein is essential to good nutrition and good health. If you find that protein does interfere with the absorption of levodopa, **do not cease eating protein unless directed to do so by your doctor.** Rather, reschedule your meals and snacks around your medication schedule. Regular amounts of these protein rich foods may be taken 1 hour before or 1 hour after your scheduled medication time.

## Maintaining a healthy diet is important for your overall health.

Adapted from Dr. J. Eric Ahlskog's book "The Parkinson's Disease Treatment Book: Partnering with your doctor to get the most from your medications"

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