Chelsea Ganc, CHES
Johns Hopkins Parkinson’s Disease and Movement Disorder Center
A Parkinson’s Foundation Center of Excellence
OBJECTIVES

1. Define nutrition.
2. Identify nutritional concerns in Parkinson’s.
3. Identify popular diets that have been studied for their potential effects on Parkinson’s Disease.
4. Introduce basic nutrition concepts.
5. Define macronutrient and micronutrient.
6. Provide daily recommended amounts for macronutrients.
7. Highlight evidence-based findings relating to macro and micro nutrient diet choices that may help reduce rate of Parkinson’s disease progression.
WHAT IS NUTRITION?

“Nutrition is the intake of food, considered in relation to the body’s dietary needs.

-World Health Organization
NUTRITIONAL CONCERNS FOR THOSE LIVING WITH PARKINSON’S
BONE THINNING

• Strong bones can keep people living with Parkinson’s safer when unexpected falls happen.
• Mobility challenges can become more common as PD progresses, including an increased risk of falls.
• Studies show that Parkinson’s also increases the risk for bone thinning. This combination can lead to injury.

*Parkinson’s Foundation, Common Nutritional Concerns in Parkinson’s*
CURRENT RECOMMENDATIONS

• Eating meals rich in bone-strengthening nutrients such as calcium, magnesium and vitamins D and K is important.

• Regular exposure to sunlight also increases vitamin D.

• In addition to the right foods, walking and other weight-bearing exercises keep bones strong, making fractures or breaks less likely.

*Parkinson’s Foundation, Common Nutritional Concerns in Parkinson’s*
DEHYDRATION

• Parkinson’s medicines can raise dehydration risk, which can lead to confusion, weakness, balance problems, respiratory failure, kidney problems and even death.
• Dehydration can also lead to low blood pressure or orthostatic hypertension.

*Parkinson’s Foundation, Common Nutritional Concerns in Parkinson’s*
CURRENT RECOMMENDATIONS

• Work toward drinking eight 8-ounce glasses of fluid daily to stay hydrated.
• Parkinson’s disease can slow the movement of the colon, causing constipation.
• Unresolved constipation can lead to bowel impaction. This is when a mass of dry, hard feces becomes impossible to pass normally.
• Bowel impaction can require hospitalization and even surgery.

Parkinson’s Foundation, Common Nutritional Concerns in Parkinson’s
CURRENT RECOMMENDATIONS

If you have less than one bowel movement per day, try to:

• Drink more fluids.
• Consume more fiber, from fruits, vegetables, beans, whole grains, nuts and seeds.
• Aim for 30-40 grams of fiber per day.
• Choose foods that have five or more grams of fiber per serving.
UNEXPECTED WEIGHT LOSS

• People living with advancing Parkinson’s disease can experience weight loss.
• Difficulty swallowing, feeling full or bloated and improperly fitting partial plates or dentures are all potential causes.

*Parkinson’s Foundation, Common Nutritional Concerns in Parkinson’s*
CURRENT RECOMMENDATIONS

- Eating smaller, more frequent meals can help.
- Discuss concerns about weight loss with your medical team and consider getting tested for H. Pylori, a bug in the gastrointestinal tract that may affect the absorption of PD medications and consequently affect the overall response to treatment.

*Parkinson’s Foundation, Common Nutritional Concerns in Parkinson’s*
THE ROLE OF NUTRITION
DIET AND BRAIN HEALTH

- Current state of knowledge about the role nutrients and diet play in PD is very limited.
- However, researchers have seen a correlation between diet and the management of neurologic conditions such as epilepsy, dementia and stroke.
- While no single ingredient exists to magically cure neurological conditions, several well-studied diet plans have been associated with a positive effect on the brain.

Source: Cure PSP
TAKING A CLOSER LOOK

- Mediterranean Diet
- Ketogenic Diet
- MIND Diet (Mediterranean- DASH Intervention for Neurodegenerative Delay)
- Intermittent-Fasting Diet
- Feingold Diet
MEDITERRANEAN DIET

• Emphasizes eating primarily plant-based foods, such as fruits and vegetables, whole grains, legumes and nuts.
• Replace butter with healthy fats such as olive oil and canola oil.
• Using herbs and spices instead of salt to flavor foods.
• Limiting red meat to no more than a few times a month.
WHAT IS THE RESEARCH SAYING?

• A 2012 study, published in the *Movement Disorders Journal*, suggests that lower adherence to MeDi is associated with PD status.

• In other words, adherence to the MeDi diet may both lower the risk for PD or push back the age of onset.

• Vitamin C, vitamin E, and carotenoid, may serve as antioxidants and are found in high concentrations in the typical components of MeDi.

• Adherence to the MeDi may reduce inflammation.

• In addition, MeDi adherence may be protective because of lower consumption of compounds which are associated with higher PD risk.
The ketogenic diet is a very low-carb, high-fat diet.

**Standard ketogenic diet (SKD):** This is a very low-carb, moderate-protein and high-fat diet. It typically contains 75% fat, 20% protein and only 5% carbs.

**Foods to eat:**
- **Meat:** Red meat, steak, ham, sausage, bacon, chicken and turkey.
- **Fatty fish:** Such as salmon, trout, tuna and mackerel.
- **Eggs:** Look for pastured or omega-3 whole eggs.
- **Butter and cream:** Look for grass-fed when possible.
- **Cheese:** Unprocessed cheese (cheddar, goat, cream, blue or mozzarella).
- **Nuts and seeds:** Almonds, walnuts, flax seeds, pumpkin seeds, chia seeds, etc.
- **Healthy oils:** Primarily extra virgin olive oil, coconut oil and avocado oil.
- **Avocados:** Whole avocados or freshly made guacamole.
- **Low-carb veggies:** Most green veggies, tomatoes, onions, peppers, etc.
- **Condiments:** You can use salt, pepper and various healthy herbs and spices.
A 2018 study published in the *Movement Disorders Journal*, showed that it is plausible and safe to maintain a low-fat or ketogenic diet for 8 weeks.

While both diet groups significantly improved in motor and non-motor symptoms, the ketogenic group showed greater improvements in nonmotor symptoms.

Nonmotor symptoms included: depression, urinary problems, fatigue, daytime sleepiness, cognitive impairment (those such symptoms that are considered to be least responsive to L-dopa).

Adverse effects were mild.

In the ketogenic group, the most common adverse effect was exacerbated tremor and/or rigidity.
• Mix of the Mediterranean and DASH (Dietary Approaches to Stop Hypertension) diets.
• Tweaked specifically to address cognitive decline.
• The mind diet focuses on 10 brain-healthy food groups: chicken, fish, green leafy vegetables, other vegetables, berries, nuts, olive oil, wine, beans, and whole grains.
While the MIND Diet has not exclusively been studied in PD, promising results have been found in Alzheimer’s disease.

2015 study published in *Alzheimer and Dementia*, showed that adults who followed the MIND diet rigorously had a 53% reduction in the rate of Alzheimer’s disease compared to those who followed it the least.

Those who followed the MIND diet moderately showed a 35% reduction.

Results were independent of other lifestyle changes.

- Suggests the MIND diet may also have preventative and disease-reduction benefits for diseases such as heart disease, diabetes, obesity, and hypertension.

FEINGOLD DIET

• Elimination diet that helps you find out if certain foods or artificial additives are triggering sensitivities.

• The list of off-limit foods and ingredients includes:
  • Artificial food colors, dyes, and flavors
  • Artificial fragrances in foods, air fresheners, or lotions
  • Artificial sweeteners, including aspartame, sucralose, or saccharin
  • Food preservatives BHA, BHT, and TBHQ
  • Salicylates, which some foods contain naturally and which are also in some medications.
WHAT IS THE RESEARCH SAYING?

• Currently, no research has been done to support the Feingold Diet for PD.
• Originally developed to alleviate asthma and eczema.
• Later, it became a recommendation for hyperactive kids.
• Link between consumption of artificial sweeteners, food colorings, and flavors with ADHD.
INTERMITTENT FASTING

- Intermittent Fasting (IF) is an eating pattern that cycles between periods of fasting and eating.
- It doesn’t specify which foods you should eat but rather when you should eat them.
- Several strategies exist to accomplish an intermittent fast.
  - 16-hour, 5:2, Eat-Stop-Eat, Alternate-Day Fasting, Warrior Diet.
WHAT IS THE RESEARCH SAYING?

• Research does not support claims linking intermittent fasting with a reduction in PD symptoms.
• Organizations do NOT recommend fasting since it can be dangerous for vulnerable populations who may already be dealing with loss of appetite and difficulty getting proper nutrition.
• Risky for those with PD who may be dealing with low blood pressure, dehydration, and poor balance.

Source: Parkinson's Institute and Clinical Center
PROTEIN AND LEVODOPA

• In some cases, protein MAY interfere with the effects of L-dopa.
• Symptoms may not be controlled as effectively as well as if L-dopa were taken on an empty stomach.

**WHY?**
• Protein and L-dopa compete for the same receptor in the digestion track to get into the blood and the brain.
• Protein always wins!

Source: Parkinson’s Victoria
PROTEIN REDISTRIBUTION DIET

• A protein redistribution diet is where the majority of the protein is consumed later in the day to maximize a person’s ‘on’ time during the daytime hours.
• PRD needs to be very specifically planned and monitored by a dietician to ensure that adequate energy and nutrient requirements are being met.
• It is not considered a low protein diet, but rather, it is a shift of dietary protein towards the end of the day.
• The amount of protein consumed is the same.
• Our understanding of the impact of nutrients in PD patients is in its infancy.

• Because of these limitations, physicians usually limit their dietary recommendations to eat a well-balanced diet that includes increased fiber intake to prevent constipation as well as fluid consumption to prevent dehydration.

• It is important to remember one size does not fit all.
  • Genetics play a critical role.
QUESTIONS?