

Basics on Nutrition

By: Olivia Conklin & Lori DePorter

Macronutrients

- The three major macronutrients are carbohydrates, proteins, and fats.
- Macronutrients provide the body with energy and are used to help maintain the body's structures and functions.
- The human body processes macronutrients differently and needs them all in adequate amounts to optimally function.

Macronutrients Continued...

- Macronutrients contain calories per gram that are consumed.
 - Carbohydrates contain 4 calories per gram.
 - Proteins contain 4 calories per gram.
 - Fats contain 9 calories per gram.
- What is a calorie?
 - Calories are a measurement of the energy content that is inside the foods we consume.

Functions of Carbohydrates

- Carbohydrates:
 - Most carbohydrates are broken down into sugar molecules or glucose, which is converted to energy and used to support bodily functions and physical activity.
 - Carbohydrates are the body's primary fuel source.
 - Carbohydrates provide and store energy.
 - Carbohydrates, such as fiber can help aid in digestion.

Examples of Carbohydrates

- Carbohydrates can be found in healthy & unhealthy foods.
 - Examples of healthy carbs: unprocessed whole grains, vegetables, fruits, beans.
 - Examples of unhealthy carbs: white bread, pastries, soda, and highly processed foods.

Functions of Proteins

- Proteins are made up of long chains of amino acids that form proteins in the body.
- Aid in repairing the body's tissues with growth and maintenance.
- Helps to maintain the pH in the body and the body's fluid volumes.
- Stores energy in the body.
- Provides structure to the cells in the body.
 - Examples are collagen, keratin, and elastin.

Examples of Proteins

- Plant proteins:
 - Legumes, nuts, seeds, whole grains
- Animal proteins:
 - Poultry, seafood, eggs, red meats
 - Animal proteins to avoid:
 - Processed meats: bacon, hot dogs, sausages

Functions of Fats

- Store energy in the body.
- Insulate the body.
- Protect the body's vital organs.
- Act as messengers to help proteins.
- Helps the body absorb vital nutrients.

Examples of Fats

- Unsaturated fats (good fats) improve blood cholesterol, ease inflammation, stabilize heart rhythms.
 - Examples: vegetable oils, avocados, nuts, seeds, fish
- Saturated fats (bad fats) are mainly found in animal sources, but some are found in plants.
 - Examples: beef, cheese, ice cream, pizza, whole fat milk, cookies, hamburgers, most fast -food dishes
- Trans fats are made by hydrogenation (heating liquid vegetable oils in a process) and are the worst type of fats for the heart, blood vessels, and body.
 - Examples: margarine, fried foods, commercial baked goods, shortening

Micronutrients

- Micronutrients are vitamins and minerals needed by the body in small amounts.
- They perform a range of functions, including enabling the body to produce enzymes, hormones and other substances needed for normal growth and development.
- Micronutrients are not produced in our body and need to be consumed in the foods we eat.

Vitamins

- Vitamins are organic substances classified as fat-soluble or water-soluble.
- Fat-soluble vitamins dissolve in fat and are vitamins A, D, E, & K.
 - Typically found in animal fats, vegetable oils, dairy foods, liver, oily fish.
- Water-soluble vitamins must first dissolve in water before being absorbed in the body and are the B-complex vitamins and Vitamin C
 - Typically found in fruits and vegetables, grains, and milk and dairy foods.

Minerals

- Minerals are inorganic elements present in soil and water, which are absorbed by plants or consumed by animals.
 - Major minerals – sodium, potassium, chloride, calcium, phosphorus, magnesium, sulfur.
 - Trace minerals- iron, copper, zinc, selenium, iodine, chromium, fluoride, manganese, cobalt, molybdenum.
- Most minerals are found in meat, cereals, fish, milk and dairy foods, fruits and vegetables, and nuts.

MIND Diet...latest research

- The Mediterranean-DASH Diet Intervention for Neurodegenerative Delay, or MIND diet, targets the health of the aging brain.
- The MIND diet recommends specific “brain healthy” foods to include, and five unhealthy food items to limit.
- The MIND diet was associated with the preservation of cognitive function.

<https://www.hsph.harvard.edu/nutritionsource/healthy-weight/diet-reviews/mind-diet/>

The **healthy items** the MIND diet guidelines suggest include:

- 3+ servings a day of whole grains
 - 1+ servings a day of vegetables (other than green leafy)
 - 6+ servings a week of green leafy vegetables
 - 5+ servings a week of nuts
 - 4+ meals a week of beans
 - 2+ servings a week of berries
 - 2+ meals a week of poultry
 - 1+ meals a week of fish
 - Mainly olive oil if added fat is used
-

The **unhealthy items**, which are higher in saturated and trans fat, include:

- Less than 5 servings a week of pastries and sweets
- Less than 4 servings a week of red meat (including beef, pork, lamb, and products made from these meats)
- Less than one serving a week of cheese and fried foods
- Less than 1 tablespoon a day of butter/stick margarine

- Nutrient-dense fruits and vegetables are also high in fiber to help prevent constipation, a common symptom of Parkinson's.
- Foods that may also be neuroprotective (support the health of brain cells) include:
 - Soy
 - Caffeine
 - Foods with omega-3s (such as fish and walnuts)
 - Foods with resveratrol (such as red wine or grapes)
 - Turmeric
 - Black or green tea
- However, protein intake may interfere with your body's ability to absorb levodopa — sold as Duopa, Parcopa, Rytary, and Sinemet.
- Taking your Parkinson's medication either 30 minutes before or 60 minutes after you eat is enough to prevent fluctuations in Parkinson's symptoms.

<https://www.myparkinsonsteam.com/resources/healthy-eating-and-parkinsons>

Snacking

Benefits

- Provides a boost of energy if several hours pass between meals and blood glucose levels drop.
- Helps curb your appetite to prevent overeating at the next meal.
- Provides extra nutrients when choosing certain snacks like fresh fruit or nuts.
- Can help maintain adequate nutrition if one has a poor appetite but cannot eat full meals, such as due to an illness.

Cons

- Unwanted weight gain if portions or frequency of snacking is too much, adding excess calories.
- Too much snacking can reduce hunger at meal times or cause one to skip a meal entirely, which increases the risk of losing out on important nutrients.
- Regular intake of ultra-processed hyperpalatable snacks that contain added salt, sugar, and fats but that are low in nutrients and high in calories can increase a preference for these types of foods, leading to a change in eating behaviors and diet quality (e.g., a higher intake of hyperpalatable snacks along with a decreased intake of healthful foods).

Power Snacking

- **Crunchy**—raw vegetable sticks, nuts, seeds, whole grain crackers, apple
- **Creamy**—cottage cheese, yogurt, hummus, avocado
- **Sweet**—chopped fresh fruit, dark chocolate
- **Savory/Salty**—cube or slice of cheese, roasted chickpeas, handful of nuts, nut butter
- A snack portion should be enough to satisfy but not so much that it interferes with your appetite for a meal or adds too many calories. A general rule of thumb is to aim for about 150-250 calories per snack.
- <https://www.hsph.harvard.edu/nutritionsource/snacking>

Some Useful PD Sites

- PMD ALLIANCE
<https://www.pmdalliance.org/>
- PARKINSONS NEWS TODAY
<https://parkinsonsnewstoday.com/>
- MICHAEL J FOX FOUNDATION
<https://www.michaeljfox.org/>
- PARKINSONS FOUNDATION
<https://www.parkinson.org/>
- BRIAN GRANT FOUNDATION
<https://briangrant.org/>
- DAVIS PHINEY FOUNDATION
<https://davisphinneyfoundation.org/>

References

- <https://www.hsph.harvard.edu/nutritionsource/carbohydrates/>
- <https://www.healthline.com/nutrition/what-are-macronutrients#functions>
- https://www.healthline.com/nutrition/functions-of-protein#TOC_TITLE_HDR_6
- <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/protein/>
- <https://www.nigms.nih.gov/education/Inside-Life-Science/Pages/what-do-fats-do-in-the-body.aspx>
- <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/types-of-fat/>
- <https://www.hsph.harvard.edu/nutritionsource/vitamins/>
- <https://www.nhsinform.scot/healthy-living/food-and-nutrition/eating-well/vitamins-and-minerals>