



InMotion

**THE ROLE OF FIBER IN CHRONIC DISEASE
MANAGEMENT:
CANCER AND PARKINSON'S DISEASE**

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InMotion

Mission

To help people with Parkinson's disease feel better every day.



OUR MISSION

The mission of The Gathering Place is to support, educate and empower individuals and families currently coping with the impact of cancer in their lives through programs and services provided **free of charge**.

OUR FOCUS

The Gathering Place reaches individuals during and after cancer treatment with FREE programs & services designed to complement traditional cancer care by addressing the mind, body and spirit through the following:



Individual & Group Support Services



Information & Education



Exercise & Nutrition Programs



Children, Teen & Family Programs



Art & Music Programs



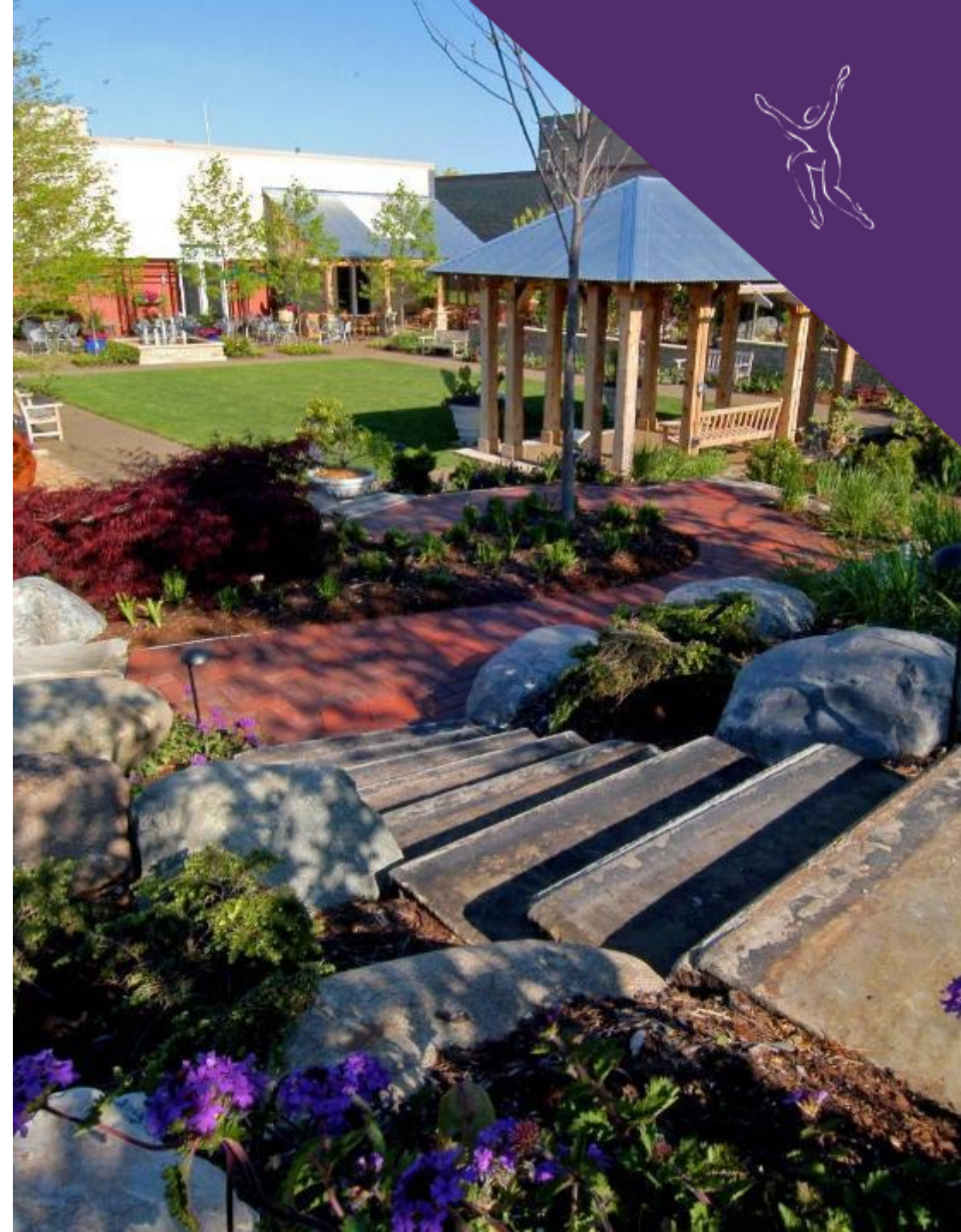
Healing Arts



Regina Brett Wig Salon



Medical Librarian & Resource Center



NUTRITION AND CHRONIC DISEASE



One single food or nutrient cannot cause, cure, or prevent disease. However, daily balanced eating habits can help manage disease while nourishing the body and can reduce risk for other chronic disease.

Overall eating habits show the strongest potential to support health

OBJECTIVES



- Define fiber and specify different types of fiber
- Discuss role of fiber in symptom management
- Describe benefit of fiber in cancer risk reduction and healthy survivorship and emerging role of fiber and gut health in Parkinson's disease
- Q&A
- Cooking demonstration



FIBER OVERVIEW

KEY POINTS:

Fiber is a naturally occurring component of plants

Fiber is indigestible by humans

Fiber is NOT a nutrient but important to human health

Present in polysaccharides like cellulose and hemicellulose, and lignin

Fiber is formed by bonds in cellulose

Recommended intake: 25-30 g/day



INSOLUBLE VS SOLUBLE FIBER

Soluble (Viscous)

Can be dissolved in water

Lower LDL (bad) cholesterol

Slows absorption of carbohydrates →
reduces rise in blood sugar

Sources: apples, cranberries, grapefruit,
mango, oranges, asparagus, broccoli,
Brussels sprouts, carrots, peanuts,
pecans, walnuts, legumes, oats

Insoluble (Bulking)

Cannot be dissolved in water

Helps with bowel movements

Increases dilution of carcinogens

Sources: apples, bananas, berries,
cherries, pears, broccoli, green
peppers, red cabbage, spinach,
sprouts, almonds, sesame seeds,
sunflower seeds, legumes brown rice,
whole wheat bread, wheat-bran
cereals

FERMENTABLE FIBER



Fermentation: process in which organisms convert carbohydrates into chemical energy anaerobically

- Gut microbiome – microorganisms (bacteria) within the gut
- How it works – ferment (break down) fibers and certain nutrients that did not get absorbed
- Fermentation of fiber releases energy and nutrients
- Helps to support activity and growth of microbiome
- Nutrients released can then be absorbed into the body
- Fermentation of fiber also creates short-chain fatty acids (SCFAs) – provides energy to colon cells and trigger apoptosis of cancer cells

FIBER SOURCES



Source	Serving size	Amount (g)
Whole Grain Bread	2 slices	4
Broccoli	½ cup	3
Lentils	½ cup	4
Chickpeas, spinach, peas	½ cup	4.5
Apples, oranges, strawberries, bananas	1 medium or 1 cup	3-4
Oats	1 cup uncooked	8
Almonds, pistachios, peanuts, walnuts, pecans	1-2 oz	3-5
Legumes/beans	1 cup (cooked)	5-20

NUTRITIONAL CONSIDERATIONS



Cancer

- *Unintended weight change*
- Manage cancer & treatment related side effects such as nausea, vomiting, poor appetite, *taste & smell changes*, diarrhea, **constipation**, early satiety, *swallowing difficulties, bone thinning*, etc.
- *Diet goals: provide adequate nutrition and hydration to support body during and after treatment*

Parkinson's Disease

- *Unintended weight change*
- Manage disease & treatment related side effects such as change in *swallow function, taste & smell changes*, decreased *appetite*, **constipation**, *bone thinning*, orthostatic hypotension, etc.
- Monitor protein timing
- *Diet goals: provide adequate nutrition and hydration to support body*

BRISTOL STOOL CHART



TYPE 1 - SEVERE CONSTIPATION
Separate, hard lumps



TYPE 2 - MILD CONSTIPATION
Lumpy and sausage like



TYPE 3 - NORMAL
A sausage-shape with cracks in the surface



TYPE 4 - NORMAL
Like a smooth, soft sausage or snake



TYPE 5 - LACKING FIBER
Soft blobs with clear-cut edges



TYPE 6 - MILD DIARRRHEA
Mushy consistency with ragged edges



TYPE 7 - SEVERE DIARRRHEA
Liquid consistency with no solid pieces

CONSTIPATION



NUTRITIONAL CONSIDERATIONS



Symptom management

- Unintended weight change → Appropriate nutrient intake and balance
- Appetite loss → Make each bite count with small, freq meals
- Taste change → Flavor & balance with fat, acid, salt, and sweet
- Constipation → Increase hydration and gradually increase fiber
- Difficulty swallowing → Change the texture of meals
- Bone loss → Resistance exercise, adequate vitamin D and calcium

FIBER* TO MANAGE CONSTIPATION



**Be mindful of fiber if also experiencing gastroparesis*

- Both viscous and bulking fiber can help alleviate constipation but especially bulking fibers
- Hydration: minimum of 64-80oz (8-10 cups) of fluid daily
 - Additional 32 oz (4 cups) fluid daily if using medicinal fibers
- Bulking fiber foods: bran, ground flax, wheat germ
- Medicinal fiber products: psyllium (Metamucil), wheat dextrin (Benefiber), carboxymethylcellulose (Trulance), methylcellulose (Citrucel), polycarbophil (FiberCon)

MEAL IDEAS FOR CONSTIPATION



Breakfast: oatmeal topped with berries and nuts or whole wheat toast with mashed avocado



Snacks: trail mix, apple with peanut butter



Lunch or dinner: broccoli stir fry with whole wheat noodles or salad with white beans and grilled chicken



NATIONAL CANCER INSTITUTE EATING HINTS BOOKLET



RECIPE to help relieve constipation

Apple Prune Sauce

Yield:
16 servings

Calories per serving:
10 calories

Serving size:
1 tablespoon



Directions

Blend all ingredients and store in a refrigerator.

Take 1 to 2 tablespoons of this mixture before bedtime, then drink 8 ounces of water.

Note: Make sure you drink the water, or else this recipe will not work to relieve constipation.

Ingredients

1/3 cup unprocessed bran

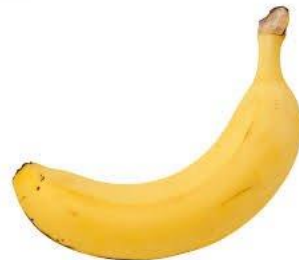
1/3 cup applesauce

1/3 cup mashed stewed prunes

PREBIOTIC FOODS



- Most prebiotics are dietary fibers, but not all dietary fibers are prebiotics
- Prebiotics have the potential to improve bowel function and support gut health



CANCER RISK REDUCTION & HEALTHY SURVIVORSHIP

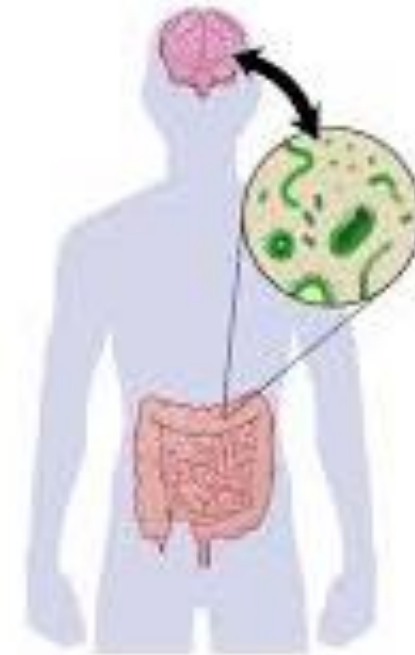


- A high fiber diet is associated with reduced risk of weight gain and obesity which is a risk factor for 13 different cancer types
- There is strong evidence that a high fiber diet is linked to lower risk of colorectal cancer
 - Improved digestion and bowel regularity; protects colorectal cells from exposure to toxins
 - Reduction in insulin resistance: a risk factor for colorectal cancer
- Viscous fiber has potential to lower circulating estrogen by increasing fecal estrogen excretion – may lower breast cancer risk

EMERGING ROLE OF FIBER & PARKINSON'S DISEASE



- Changes in gut microbiome composition may play a role in Parkinson's disease and could be a potential target in future therapies
- Gut microbiome of people with Parkinson's disease: less butyrate-producing bacteria and short-chain fatty acid concentrations; greater inflammatory environment



EMERGING ROLE OF FIBER & PARKINSON'S DISEASE



- Can a high fiber diet increase short chain fatty acid (SCFA) production in people with Parkinson's disease through colonic fiber fermentation?
- One study found that **inulin** sources, as well as fungal **beta-glucans**, stimulated butyrate production in people with Parkinson's; analyzed by stool samples
 - Butyrate production was still less so compared to controls
 - Overall dietary habits were not evaluated – only fiber intake of the day prior to stool sampling
- Another study looked at prebiotic intake via supplemental bar for 10 days in people newly diagnosed with Parkinson's disease – tolerated? Safe? Increase SCFA production?
 - Tolerated well and was found to be safe
 - Decreased total constipation severity
 - Prebiotic bar were associated with increased SCFA



IDENTIFYING FIBER

- Dietary Reference Intake (DRI): 14g/1000 kcal
- Label-reading tip: look for choices with at least 10% of DV
 - "Good" source = at least 10% of DV (2.8g/serving)
 - "Excellent" source = 20% of DV (5.6g/serving)
- Added fiber ingredients: inulin, chicory fiber, -FOS, -GOS

Nutrition Facts	
8 servings per container ←	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.



ADDING MORE FIBER IN MEALS



Tips

Breakfast

- Choose a whole grain cereal
- Add nuts or seeds to cereal, yogurt, or smoothies
- Include fruit
- Scramble eggs with vegetables

Lunch or dinner

- Choose whole grain starch
- **Beans and lentils!**
- Have vegetables with meals

Snacks

- Whole fruit vs juice
- Keep peels on (apples, potatoes, cucumbers)
- Dried fruit and nuts
- Cut vegetables
- Whole grain crackers
- Popcorn

RESOURCES

Information (and recipes!)

- [American Institute for Cancer Research](#)
- [National Parkinson's Foundation](#)
- [Cook for Your Life](#)



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Q&A COOKING DEMO





the
GATHERING
Place

FACING CANCER • EMBRACING LIFE



WAYS TO CONNECT

216-595-9546
touchedbycancer.org



TGP EAST

The Arnold & Sydell Miller Family Campus

23300 Commerce Park
Beachwood, Ohio 44122

TGP WEST

The Sandy Borrelli Center

25425 Center Ridge Road
Westlake, Ohio 44145