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This document provides a general guide about foods that support a balanced microbiome. Those with gastrointestinal issues should get individualized recommendations from their provider, as feeding the microbiome may contribute to discomfort if not introduced correctly.

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Eat Right for Your Microbiome

Nourishing yourself with nutrient-rich foods will provide the complex combination of vitamins, minerals, antioxidants, and fiber needed to protect your body, feed your microbiome, and promote optimal health.

Good Health Starts in the Gut

Approximately 75% of immune cells are found in the gut, which is why feeding your microbiome is such an important aspect of health. In general, remember to:

- **Eat a wide variety of foods.** The more diverse your diet, the greater your gut's bacterial diversity – and the greater your bacterial diversity, the stronger and more resilient your gut.
- **Eat foods rich in fiber.** Your body uses fiber to make short-chain fatty acids (SCFAs) – nutrients produced by bacterial fermentation during digestion. SCFAs are essential in strengthening the gut barrier and promoting local intestinal immunity.
- **Eat organic foods whenever possible.** Pesticides and foods grown with synthetic fertilizers can disrupt the balance of good bacteria in your gut, destroy beneficial microbes, and weaken the gut lining.
- **Eat fermented foods and healthy fats.** This will also help nourish the ecology of microbes that live in your gut.

Use this guide (and the quick-reference chart on pgs. 9 & 10) to help you make gut-friendly choices about the foods you eat and learn dietary tips for supporting a healthy microbiome.

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Fiber

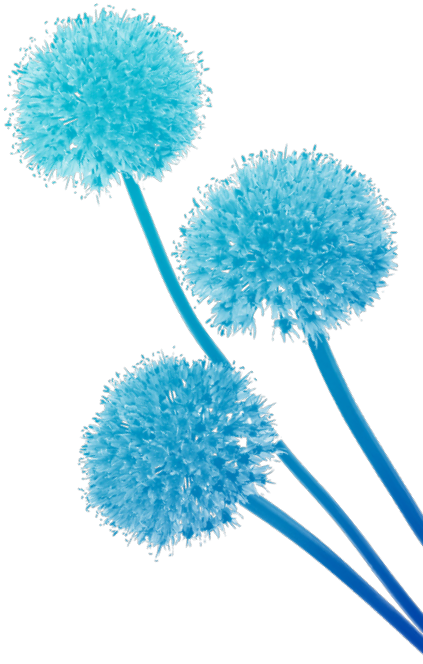
The microbiome lives off fiber and helps your body break it down to make SCFAs, which are essential to maintaining good gut health. Fiber is considered prebiotic and ultimately supports the good bacteria in your gut, helping it thrive. There are two categories of dietary fiber: insoluble and soluble.

Insoluble fiber is the category most of us think of when we think about fiber. It attracts water, adds bulk to stools, and is found in foods like wheat bran, whole grains, nuts, legumes, cauliflower, green beans, and potatoes. Insoluble fiber helps food pass more quickly through the gastrointestinal tract, alleviating constipation.

Soluble fiber produces a gel when broken down to lubricate the gut. It slows digestion for better absorption of nutrients. It also helps regulate blood sugar and can lower heart disease risks. Sources of soluble fiber include oat bran, barley, nuts and seeds, psyllium, peas, legumes, apples, and carrots.

There are two types of prebiotic soluble fiber that are excellent to include in your diet:

- **Inulin acts** as a prebiotic, feeding the good flora in your gut. Foods containing inulin include leeks, asparagus, onions, garlic, chicory, oats, Jerusalem artichokes, jicama, and (organic only!) soybeans.
- **Beta-glucans** are prebiotics that are great at regulating immune function. Foods containing beta-glucans include barley flour (only if you can tolerate gluten), oats, whole grains, reishi, maitake and shiitake mushrooms, seaweed, and algae.



Prebiotics & Probiotics

Resistant starches are considered both soluble and insoluble fiber. These starches are prebiotic foods that help produce SCFAs, which are critical to maintaining a healthy gut lining, mood, and metabolism. Food sources of resistant starches include cooked and cooled potatoes and rice, potato starch, green bananas, oats, beans and legumes, peas, and plantains.

Probiotics are living organisms that are considered beneficial to the gut microbiome. Probiotics help diversify and balance the populations of beneficial microorganisms that live in your gut, which means a healthier gut overall.

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The microbiome will naturally break down and ferment fiber as part of the digestive process. But you can also eat fermented foods that are "predigested" by these microbes and are tremendously helpful for gut health. Examples of **fermented foods** include **kimchi, sauerkraut, kombucha** (with no added sugar), **kefir, plain unsweetened yogurt** (if you can tolerate dairy), **miso,** and **kvass.**

Other gut-friendly foods:

- **Healthy fats** – avocados, wild-caught salmon, nuts, and seeds
- **Cabbage** – high in glutamine, which heals the gut lining
- **Ghee** – clarified butter, which feeds the microbiome and lubricates and heals the gut. Ghee also has high amounts of a very important SCFA called butyrate.
- **Bone broth** – helps reduce inflammation and heal tight junctions ("leaky gut") in the gut

Vegetables

Eat as many vegetables as you can from the list below. Choose organic whenever possible to avoid unwanted pesticides or toxins. Or selectively choose organic produce from the Environmental Working Group's "Dirty Dozen" and "Clean Fifty" lists (http://www.ewg.org/foodnews/).

Other considerations to keep in mind:

- Serving size of vegetables is ½ a cup
- Eat at least 5-9 servings (2-5 cups) of vegetables every day
- Vegetable intake should be double the amount of fruit intake
- Steam or stir-fry most vegetables for 4 minutes over low heat
- Consume half of your total vegetable intake raw if your digestion can handle it
- Fresh is best, frozen is ok
- Slow cook vegetables to retain more nutrients; avoid boiling or microwaving if possible
- Use fresh herbs and spices to flavor

- o Artichokes
- o Arugula
- o Asparagus
- o Bamboo shoots
- o Bean sprouts
- o Beets and beet greens
- o Belgian endive
- o Black radish
- o Bok choy
- o Broccoli
- o Brussels sprouts
- o Cabbage
- o Cauliflower
- o Celery
- o Chicory/radicchio

List contined on next page

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- o Chives
- o Collard greens
- o Cucumbers
- o Dandelion greens
- o Endive/escarole
- o Fennel
- o Green beans
- o Heart of palm
- o Jalapeño peppers
- o Jicama
- o Kale
- o Kohlrabi
- o Leeks
- o Lettuce (except iceberg)
- o Mushrooms
- o Mustard greens
- o Okra
- o Onions
- o Oyster plant
- o Parsnips
- o Pumpkin
- o Radishes
- o Shallots
- o Spinach
- o Sprouts (any type)
- o Squash, any variety
- o Sweet potatoes
- o Swiss chard
- o Turnips and turnip greens
- o Wasabi root
- o Water chestnuts
- o Yucca root
- o Zucchini

Fruit

Fruits should be eaten at half the amount of vegetables per day. People who are above their ideal weight or who have trouble digesting fructose may want to minimize or eliminate fruits that are higher in sugar.

Other considerations:

- Fresh or frozen ok
- Avoid undiluted fruit juices and fruit drinks
- If acidic fruits upset you, avoid strawberries and tomatoes
- If you have acid reflux, you may want to avoid citrus fruits (oranges, lemons, limes, grapefruits)

- o Acai (raw)*
- o Apples*
- o Apricots*
- o Avocados*
- o Bananas
- o Blackberries*
- o Black currants*
- o Blueberries*
- o Boysenberries*
- o Cherry*
- o Clementine*
- o Coconut*
- o Cranberries*
- o Dates*
- o Elderberries*
- o Figs
- o Gooseberries*
- o Grapefruits*
- o Grapes*
- o Guava*
- o Kiwi*
- o Kumquats*
- o Lychee*
- o Mango*
- o Nectarines*
- o Olives*
- o Oranges*
- o Papayas
- o Passion fruit*
- o Peaches (any variety)*
- o Pear (any variety)*
- o Persimmons*
- o Pineapple
- o Plums*
- o Pomegranate*
- o Raspberries*
- o Rhubarb*
- o Strawberries*
- o Tangerines*
- o Watermelon

* Low glycemic fruits

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Legumes

Beans are high in fermentable carbohydrates, making them one of the foods most supportive to your microbiome. But if you experience digestive bloating or discomfort, consider soaking beans overnight, using a pressure cooker to prepare them, or avoiding them altogether.

- Average serving size = ½ cup cooked
- Can have 1-2 servings per day
- Look for BPA-free cans
- Supplemental digestive enzymes can be used to help better digest beans

o Adzuki beans
o Black beans
o Garbanzo beans
o Green beans
o Kidney beans
o Lentils
o Mung beans
o Peas
o Pinto beans
o Soy beans (edamame, tofu)
o White beans, any variety

Grains & Starches

- Average serving size = ½ cup cooked
- Can have 1-2 servings per day
- Whole grains contain fiber that is beneficial for the microbiome
- To reduce bloating and improve digestibility, consider soaking grains in water for three hours or more (can soak overnight)
- May want to avoid grains that contain gluten, as they can affect gut barrier integrity in some people

Starchy Vegetables

o Beets
o Carrots
o Corn (organic only)
o Squash
o Sweet potatoes
o White potatoes (baked or sautéed)
o Yams

Grains

o Amaranth
o Gluten-free oats
o Millet
o Quinoa
o Teff
o Whole grain rice
o Barley*
o Kamut*
o Rye*
o Spelt*
o Wheat*

*Grains that contain gluten can be inflammatory and should be avoided for those with sensitivities or Celiac disease.

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Dairy

Dairy can produce mucus in the body and be inflammatory. If tolerated, eat organic, grass-fed, and fermented versions.

- If you have sensitivities, allergies, or increased mucus, avoid dairy (milk, cheese, yogurt, ice cream, etc.)
- Goat's or sheep's milk, or cheeses and yogurts made from goat's or sheep's milk may be easier to digest
- Add probiotics if needed
  - o Butter
  - o Ghee (clarified butter)
  - o Kefir and yogurt
  - o Whole milk and cheese

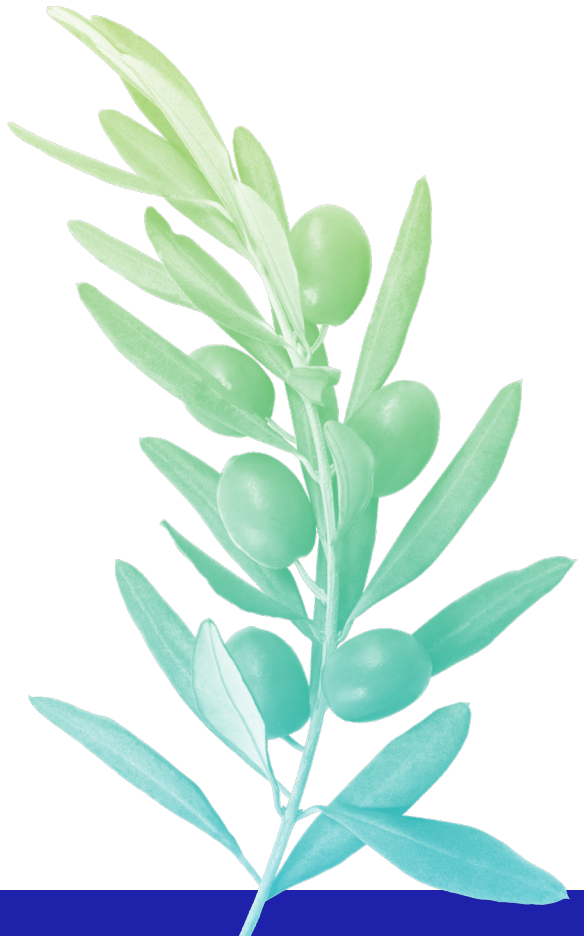
*All dairy should be organic and/or grass-fed.

If using dairy substitutes, make sure they are unsweetened:

- o Almond milk
- o Cashew milk
- o Coconut milk
- o Hemp milk
- o Macadamia milk
- o Oat milk
- o Rice milk
- o Soy milk*
- o Coconut, soy, or cashew yogurt or kefir

*Organic only

Oils & Fats



- Average serving size = 1 teaspoon. Servings: 4-7 teaspoons per day
- Should be organic, cold-pressed, and unprocessed
- Avoid partially hydrogenated oils, a.k.a trans fats (margarine, shortening, commercial salad dressings, mayonnaise)
- Limit highly saturated fats that can be tough on digestion and affect the microbiome. These are mainly animal fats but can also be coconut oil, so use them in moderation. Quality is also key! (organic, grass-fed)
- For cooking with high heat: use avocado oil, ghee, or grapeseed oil
- For sautéing with moderate heat: use coconut or sesame oil
- Low heat: use extra virgin olive oil
- No heat: use extra virgin olive oil and flaxseed oil

- o Avocado oil
- o Coconut oil
- o Extra virgin olive oil
- o Ghee (clarified butter)
- o Grapeseed oil
- o Sesame seed oil
- o Flaxseed oil
- o Mayonnaise alternatives (avocado- or olive oil-based)

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Nuts & Seeds

- Serving size = 1 ounce (about 1 handful)
- Can have 2-3 servings per day if nuts are tolerated
- Nuts should ideally be eaten raw. Nut butters can be salted, but no added sugar.
- Seeds should be raw and unground. You can grind them right before ingesting to preserve nutrients and reduce oxidation.
- Nuts and seeds may be soaked for three to eight hours for improved digestibility and increased nutrient absorption.
- Peanuts, peanut butter, and pistachios may be an additional source of mycotoxins from mold and should be avoided for those who deal with these issues.

- o Almonds and almond butter
- o Brazil nuts and Brazil nut butter
- o Cashews and cashew butter
- o Coconuts*
- o Flax seeds
- o Pecans and pecan butter
- o Pumpkin seeds and pumpkin seed butter
- o Sunflower seeds and sunflower seed butter
- o Sesame seeds and tahini
- o Walnuts and walnut butter

*In moderation

Proteins

- Average serving size = 3-5 oz. cooked, roughly the size and thickness of your palm
- Total servings 2-4 per day, with 1-2 servings of fish per week
- Broil, bake, roast, grill, or poach
- Use organic, grass-fed, grass-finished, wild-caught, pasture-raised
- No cured, smoked, fried, or luncheon meats (unless nitrate-free)
- Avoid agri-industry meats (non-organic) and farm-raised fish
- Limited red meat (high in saturated fats), canned meat, shellfish, soy products

- o Cod
- o Halibut
- o Chicken
- o Turkey
- o Mackerel
- o Salmon
- o Sardines
- o Shellfish: shrimp, lobster, crab, mussels, clams, scallops, crayfish*
- o Tilapia
- o Trout
- o Ground beef or steak*
- o Lamb
- o Pasture-raised pork*
- o Wild game, any variety
- o Eggs
- o Soy, organic only*

*In moderation

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Other Foods

Broths/soups:

- Ready-made or homemade (both organic)
- Vegetable broth
- Chicken broth
- Beef broth
- Turkey or chicken chili

Miscellaneous:

- Baking powder
- Baking soda
- Curry paste
- Dijon mustard
- Seaweed or kelp
- Vanilla extract

Sugars and sweeteners:

Avoid all processed sugars. 2 tsp/day of allowed sweeteners only.

- Xylitol
- Fruit sweeteners (banana, dates, apples, etc.)
- Stevia
- Pure maple syrup
- Raw organic honey
- Molasses

Vinegars:

- Apple cider vinegar
- Red wine vinegar
- White wine vinegar

Beverages:

- Water (at least half your body weight in ounces!)
- Herbal teas

Spices:

Use any spice as long as you can tolerate it.

- Basil, bay leaves, cardamom, cayenne, chili powder, chives, cilantro, cinnamon, cloves, cumin, dill, garam masala, garlic, ginger, lemongrass, mint, mustard, nutmeg, oregano, paprika, parsley, pepper, rosemary, sage, sea salt, tarragon, thyme, turmeric

Refrain from consuming or using:

- Processed and refined sugars: Cane sugar, corn syrup, dextrose, sucrose, artificial sweeteners (sucralose, saccharin, aspartame, etc.); limit brown/raw sugar, coconut sugar
- Alcohol
- Tobacco
- Dairy (unless fermented, raw, organic, or grass-fed and you can tolerate)
- Gluten grains (unless whole grains and you can tolerate)
- Processed or refined foods
- Limit saturated fats

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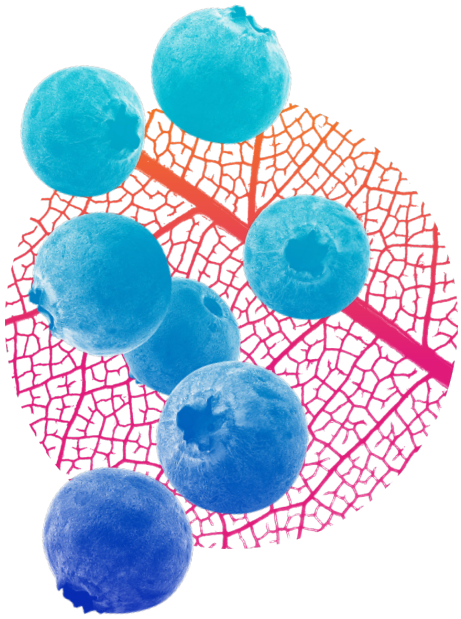
Foods That Feed Your Microbiome



Key Takeaways:

- Eat a variety of vegetables and fruits: Diversity of plant foods = stronger, more diverse microbiome
- Increase fiber: This feeds the bacteria in the gut, which helps support the gut barrier. Aim for 30-35 grams per day.
- Eat fermented foods: Predigested by bacteria means good for your gut

Microbiome Diet Checklist

- ☐ Eat the rainbow: A variety of organic vegetables
- ☐ Gluten-free whole grains
- ☐ Legumes: Beans, lentils (if tolerated)
- ☐ Starchy veggies high in nutrients: Sweet potatoes, squash, carrots, beets
- ☐ Increase probiotic and fermented foods
- ☐ Healthy oils (all organic): Butter/ghee, extra virgin olive oil, coconut oil, avocado oil
- ☐ Increase omega-3 fatty acids: Wild-caught fatty fish, organic pasture-raised eggs, hemp seeds, flax seeds
- ☐ Add nuts and seeds to your diet
- ☐ Increase your fiber: Berries, vegetables, beans, whole grains, nuts and seeds
- ☐ High-quality animal protein or plant-based protein to support blood sugar

- ☐ Avoid or limit gluten and dairy
- ☐ Eliminate processed foods and sugars, fast food, fried food
- ☐ Eat the following only if organic: Eggs, corn, soy
- ☐ Avoid or limit white starchy carbohydrates
- ☐ Eat in moderation: Animal proteins (organic, free-range, grass-fed/grass-finished, wild-caught)
- ☐ Eliminate or limit pork
- ☐ Avoid unhealthy fats: Partially hydrogenated, margarine, vegetable shortening, canola oil, corn oil, cotton seed oil, regular safflower & sunflower oils, mixed vegetable oils
- ☐ Avoid alcohol and tobacco
- ☐ Limit caffeine (1-2 cups daily)

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Fiber

Soluble Fiber

Fermented by gut bacteria to produce a gel to lubricate the gut. Slows digestion for better absorption of nutrients and can lower heart disease risks and help regulate blood sugar.

- Oat bran, barley, nuts and seeds, psyllium, peas, legumes, apples, carrots

Specific prebiotic soluble fibers:

- **Inulin** acts as a prebiotic, feeding the good flora in your gut. Foods include leeks, asparagus, onions, garlic, chicory, oats, Jerusalem artichokes, jicama, soybeans (organic only!)
- **Beta-glucans** are prebiotics that are great at regulating immune function. Foods include barley flour (only if you can tolerate gluten), oats, whole grains, reishi, maitake and shiitake mushrooms, seaweed, and algae.

Insoluble Fiber

Not fermented by gut bacteria. Stays intact through GI track, attracting water and adding bulk to stool to helps food pass more quickly and alleviating things like constipation.

- Wheat bran, whole grains, nuts, legumes, cauliflower, green beans, brown rice, spinach, potatoes

Specific insoluble fibers:

- **Cellulose** provides structure to plant cells and supports bowel regularity and cardiovascular health. Foods include cereal bran, oats, quinoa, legumes, nuts, cabbage family.
- **Lignans** are known to lower risk of heart disease and support hormonal balance. Foods include flaxseeds and sesame seeds, root veggies.

Prebiotic Foods (Soluble or Insoluble Fiber)

Feed the beneficial bacteria:

Resistant starches help with the production of short-chain fatty acids (SCFAs) which are critical to maintaining a healthy gut barrier, mental health, and metabolism.

Cooked and cooled potatoes and rice, potato starch, green bananas, oats, beans and legumes, peas, plantains

Probiotic Foods

Living organisms and their metabolites that are considered beneficial to the host, especially the gut microbiome.

Fermented foods predigested by bacteria are full of probiotics and tremendously beneficial for gut health.

Kimchi, sauerkraut, kombucha (no added sugar), kefir, plain unsweetened yogurt (if dairy is tolerated), miso, kvass