

DIGESTION

AND THE MICROBIOME



FARMER JONES FARM
at The Chef's Garden



The most important superpower you didn't know you had...the microorganisms that inhabit your body! Some say that our body is just the scaffolding for our microorganisms, as they outnumber our own cells.

These organisms when in balance with our own system can positively influence all aspects of health (including immune, mental, cardiometabolic, of course, digestive, and so much more) and are symbiotic. When the microbiome is out of balance the body begins to give us signals, and eventually, more serious conditions (autoimmune, arthritis, diabetes, atopy, etc) may occur.

Common Signals the Microbiome May Be Out of Balance

- Heartburn
- Gas, Bloating
- Constipation, Diarrhea
- Difficulty Sleeping
- Fatigue, Brain Fog
- Food Intolerances
- Intense Cravings
- Mood Swings

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How to Support the Microbiome

The microbiome is influenced by many factors, many often within our control, including dietary intake, medications (antibiotics), dietary supplements (pre and probiotics), stress, and the environment. Below are some tips!

1. Eat Plenty of Fiber

Pre-biotic fibers like inulin found in onions, garlic, and Jerusalem artichokes act as fuel for your microbes! Fiber also helps with regular bowel movements, satiety, and removing toxins from the body. If you currently are not consuming foods rich in fiber start slow and increase over a few weeks up towards a goal of 35 grams of fiber daily.

2. Enjoy Fermented Vegetables

No need to force yourself to have large amounts, just a forkful will provide plenty of probiotic benefits. Fermented vegetables are easy to incorporate into salads, sandwiches, tacos, and just about anything else you can imagine and there are so many different types of fermented vegetables to choose from. Look for these in your grocer's refrigerator section, or local farmers' market, or make them yourself at home (stay tuned for more coming soon on this!).

3. Avoid unnecessary antibiotics

Antibiotics only treat bacterial infections but can be potentially misused for viral infections. If you have a cold, reach for nourishing vegetables that are good sources of zinc (garlic, broccoli), vitamins A (red bell peppers), C (kohlrabi), and D (mushrooms), stay well hydrated, and rest.

4. Get dirty

Enjoy time in the outdoors gardening, hiking, etc. Spending time in nature has been shown to have beneficial effects on the microbiome due to increased exposure to microbes in the environment as well as stress reduction. Learn more about [Soil Health and Human Microbiome Health](#).

5. Reduce stress

Find a way to release stress that resonate with you. A few ideas include pausing to take a few deep slow breaths during the day, joyful movements (like dance, biking, or walking), journaling, reading, or meditation. A great time to focus on reducing stress is prior to eating. Learn more about [mindful eating](#) and how it can improve digestion.

6. Not all microbes are “bad”

In fact the more we learn the more we appreciate the amazing interdependence of microbes all around us (including on our skin) to create healthy environments. Try castile soap in place of antibacterial soaps, cleaners, and sanitizers around your home. Castile soap can be used in so many ways, from hands and body washing to household cleaning. Not all microbes are “bad” and often antibacterial products are not selective for just harmful microbes they are killing almost all microbes except the few that can survive, which may select for more resistant microbes over time.

How to Start Improving the Microbiome in Just 5 Steps

Besides resolving digestive symptoms, brain fog, fatigue, etc. improving the microbiome helps you use the food that you are ingesting more efficiently.

1. The **first** step is removing offending agents. Step back and look at what is going on that may be harmful to your microbiome and address that first. This may involve working with your healthcare team regarding dietary factors (identifying food sensitivities or intolerances, reducing consumption of processed food and high sugar foods), medications, etc. Each person is different as to what will be most effective in their situation.

Microbes may produce B vitamins (including biotin, cobalamin, folates, nicotinic acid, pantothenic acid, pyridoxine, riboflavin, and thiamine) and vitamin K and other nutrients (amino acids) depending on the microbe. Interestingly the B vitamins produced by microbes in the intestinal microbiome are often used to feed other microbes in the area that do not produce B vitamins in addition to being absorbed and utilized to some extent in our bodies.

The more we learn about the microbiome the more it's clear that diversity matters! Having a healthy microbiome is not about identifying the "one" species that should be there (often in the form of a probiotic supplement). It's really about changing the "terrain" where the microbes live. Creating an environment in your body that supports the balance of a thriving symbiotic community.

2. The **second** step in moving towards an improved microbiome is increasing your natural secretion of digestive enzymes, hydrochloric acid, and bile acids.
- Enjoying digestive bitters or bitter greens (like my favorite, dandelion) prior to meals can help increase the secretion of digestive enzymes including bile and hydrochloric acid. Bile acids that are secreted by the gallbladder to help digest fat following a meal are mostly reabsorbed and reused but about 1-5% of the bile acids make their way to the colon.

Being able to digest and absorb the fat that you consume as well as fat-soluble vitamins (A, D, E, K) is important for overall health. Bile acids in small amounts help to control the microbe population in the colon and provide nitrogen, sulfur, and carbon atoms to the microbes. Because of the effects of microbes on bile acid, there are over 30 different types of bile acids that are potentially created in the colon. Depending on the bile acids produced and reabsorbed they send messages to the body that turn on and off genes that affect bile acid production, transport in the liver, detoxification, fat and glucose metabolism, and energy balance.



3. The **third** step is to reintroduce healthy microbes, by eating foods rich in prebiotic fiber (ex. onions, garlic, etc.) as well as probiotic foods that contain beneficial microorganisms. I love including all types of fermented vegetables (cucumbers, carrots, cabbage, beets, etc.), as well as tempeh, miso, and yogurt in small amounts throughout the day. [Read about Fresh Vegetables for Gut Health.](#)

4. The **fourth** step is to help repair the gut lining which I like to think of as the “soil” but it also acts as the barrier between your digestive tract and the inside of your body.

We enjoy "[Eating the Rainbow](#)" as does the microbes in your gut! Studies have found that polyphenols (one type of phytonutrient that includes flavonoids, isoflavones, lignans, hydroxycinnamic acids, ellagitannins, and anthocyanins) are primarily utilized by microbes in the colon that break them down into more simple compounds that can be absorbed and utilized by our bodies. Depending on the gut microbes living in the colon depends on how well we are able to absorb and utilize these beneficial phytonutrients.

Phytonutrients have powerful antioxidant and anti-inflammatory effects. In addition consider eating nourishing foods that are high in zinc, Vitamin A, C, and E as well as the amino acid glutamine (found in cabbage, spinach, tofu, lentils, and meat) to help repair the lining of the digestive tract. Bacteria in the microbiome can also produce short-chain fatty acids which act as an energy source for the cells lining the colon. A healthy lining in the digestive tract helps to keep out harmful organisms or other substances that do not belong in the body and reduces inflammation.

5. **Fifth**, it is important how to make these changes stick. One of the best ways to do this is to address supportive lifestyle factors such as reducing stress, obtaining restful sleep regularly, practicing mindful eating, and engaging in regular enjoyable movement.





Carrot Fritters

Ingredients:

- 1 lb Jerusalem artichokes well scrubbed and roughly sliced
- 1 lb carrots peeled and roughly sliced
- 3 field onions peeled and roughly chopped
- 2 celery stalks with leaves roughly chopped
- 2 plump garlic cloves peeled and thinly sliced
- 2 tbsp olive oil
- 5 cups vegetable stock
- salt & pepper to taste
- yogurt and some chopped watercress to serve

Instructions:

- Prepare all the vegetables.
- In a large stock pot heat up olive and add all of the vegetables, letting them stew gently until lightly softened but not colored (approx. 10 min).
- Add stock, season with salt & pepper and bring to boil.
- Cover, reduce the heat and simmer for approx. 30 min or until vegetables are soft.
- Take the soup off the heat and puree using a high speed blender until desired consistency.
- Taste and adjust seasoning and viscosity if required.
- Serve garnished with a swirl of yogurt and top with some chopped watercress.

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One of our goals with Farmacy at the Chef's Garden is to have the Farmer become part of the health and wellness team. We're so excited to announce our new digestive health box which will provide the prebiotic fiber, phytonutrients, and vitamins and minerals needed to help support a healthy microbiome.

If you are not currently consuming many fiber-rich vegetables start with small amounts and increase slowly (Rome wasn't built in a day) to avoid gas and bloating. Learn more about Digestive Health [here](#). If you have questions do not hesitate to reach out to info@farmerjonesfarm.com.

We would love to connect with you on social media! [Join our Facebook group](#), or follow us on Instagram [@farmerjonesfarm](#) [@amysapola](#) and Facebook.

Please share your photos with us! We'd love to see what you create with this box!



Sources:

Oral Microbiome Findings Challenge Dentistry Dogma.

<https://www.nature.com/articles/d41586-021-02920-w>

Human Microbiome Symbiosis to Pathogenesis.

<https://www.frontiersin.org/articles/10.3389/fmicb.2021.605783/full>

Stress, depression, diet, and the gut microbiota: human–bacteria interactions at the core of psychoneuroimmunology and nutrition.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7213601/>

Gut microbiota functions: metabolism of nutrients and other food components

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5847071/#:~:text=It%20has%20been%20known%20for,acid%2C%20pyridoxine%2C%20riboflavin%2C%20and>

