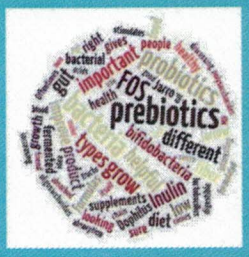
VibrantWellness

PROBIOTICS AND PREBIOTICS FOR A HEALTHY GUT



Probiotics support a healthy gut microbiome, as well as maintain the integrity of the gut lining, boost immune function, promote healthy inflammatory responses, improve digestive function, help to heal inflammatory bowel conditions, manage and prevent skin conditions, fight food-borne illnesses, and improve psychological function. Probiotics are friendly bacteria that can be found in a variety of foods.

Prebiotics are carbohydrate-based sources of fiber that are food for beneficial bacteria in your gut. These fibers help them grow and thrive. Prebiotic fibers are helpful in the treatment of irritable bowel syndrome, inflammatory bowel disease and intestinal permeability. They also help to regulate bowel function.

Prebiotic rich foods

VEGGIES	FRUITS	GRAIN AND LEGUMES
Artichokes	Berries	Quinoa
Tomatoes	Bananas	Flaxseeds
Onions	Kiwis	Oatmeal
Leafy Greens	Cherries	Lentils
Asparagus	Apples	Chickpeas
Garlic	Pears	White Beans
Leeks	Mangoes	Black Beans

Probiotic rich foods

FERMENTED FOODS

Sauerkraut
Kimchi
Kombucha
Kefir
Yogurt (Dairy and Non-Dairy)
Lassi (Indian Yogurt Drink)
Natto
Miso
Fermented Pickles
Tempeh

PREBIOTICS	PROBIOTICS
Asparagus: Asparagus is packed with fiber, folate and other B vitamins.	**Live cultured yogurt and Kefir:** Naturally high in lactobacilli and bifido bacteria, yogurt can also be a healthy source of protein and calcium. Both dairy and non-dairy varieties are available.
Bananas: Bananas contain both soluble and insoluble fiber. This provides a food source for a variety of beneficial gut bacteria.	**Kombucha tea:** Kombucha is a fermented black or green tea made from live cultures of beneficial bacteria and yeast. It is high in B vitamins, which can also provide an energy boost.
Garlic: Garlic is a good source of inulin as well as contains natural antibacterial compounds. It is also a good source of sulfur compounds and vitamin B6, which aid in metabolism and nervous system health.	**Tempeh:** Tempeh is a fermented food made from soybeans. Soy is a complete protein, containing all the essential amino acids. Look for organic varieties of soy.
Onions: Onions are a natural source of inulin, which is a type of fiber that feeds beneficial bacteria in your gut.	**Kimchi**: Kimchi is a traditional Korean food rich in Lactobacillus bacteria. It is also high in fiber and vitamins A and C.
Artichokes: Artichokes are a very high fiber, low glycemic index vegetable. They are also good sources of folic acid and vitamin K.	**Sauerkraut:** Made from fermented cabbage and other vegetables, sauerkraut contains lactobacilli as well as soil-based organisms. It is a good source of vitamins C and K, calcium, magnesium and iron.

All Vibrant Wellness patients have the opportunity to work with our team of Clinical Dietitians.
To schedule an appointment please call: Toll-Free 866-364-0963

VibrantWellness

What are Polyphenols?

Polyphenols *(pol-ee-fee-nawls)* are chemical compounds that come from plants. They are used by your gut bacteria to make beneficial substances for you, and they help to keep your gut bacteria balanced by some of their antimicrobial effects.

Eating more polyphenol-rich foods has been shown to create an optimal gut bacterial balance, which, in turn, can reduce your risk for many diseases. If you have a decreased abundance of some beneficial gut bacteria, increasing your intake of polyphenol-rich foods is one thing you can do to improve your gut bacteria balance.

Higher Polyphenol Content

48 Highest Polyphenol Foods to Consume Often		
Cloves (spice)	Peppermint, dried (herb)	Celery seed
Cocoa powder	Mexican oregano, dried (herb)	Dark chocolate (70% or higher) *
Flaxseed meal	Black elderberry (fruit)	Chestnut (nut)
Sage, dried (herb)	Rosemary, dried (herb)	Thyme, dried (herb)
Blueberry (fruit)	Capers (herb/seasoning)	Black Olive (veg.)
Hazelnut (nut)	Pecan nut (nut)	Plum (fruit)
Green olive (veg.)	Sweet basil, dried (herb)	Curry powder (spice)
Sweet cherry (fruit)	Blackberry (fruit)	Roasted soybean (seed)
Milk chocolate *	Strawberry (fruit)	Red raspberry (fruit)
Coffee	Ginger, dried (root)	Whole grain wheat flour *
Prune (fruit)	Almond (nut)	Black grape (fruit)
Red onion (veg.)	Thyme, fresh (herb)	Refined maize flour *
Soy, tempeh	Whole grain rye flour *	Apple (fruit)
Spinach (veg.)	Black tea	Red wine
Green tea	Yellow onion (veg.)	Pure apple juice
Pure pomegranate juice	Extra virgin olive oil	Peach

* *indicates a food that contains or may contain gluten*

Glossary

Antibiotic – antibiotics, or antibacterial treatments, are a type of antimicrobial product used to target bacteria, and are often used in medical treatment of bacterial infections. They can either kill or inhibit the growth of bacteria.

Archaea are a kingdom of single-celled prokaryotic microorganisms that are often mutualists (two different species that exist in a mutually beneficial relationship) or commensals (a species that benefits from other organisms without affecting them).

Atherosclerosis (also known as arteriosclerotic vascular disease or ASVD) is a specific form of arteriosclerosis in which an artery wall thickens as a result of invasion and accumulation of white blood cells (WBCs) or foam cells and proliferation of intimal-smooth-muscle cell creating a fibrous fatty plaque.

Bacterial classification - All organisms are classified in a hierarchical manner. For bacteria, we begin with the broadest division, the phylum, and work all the way down through sub-phylum, class, order, family, genus, and species, to strain. Most bacterial names that we encounter are described in terms of their genus, species and strain, which provides a very precise description of an individual organism.

Bacteroides are a phylum of bacteria commonly found in the human intestine, where they have a symbiotic host-bacterial relationship with humans. They assist in breaking down food and producing valuable nutrients and energy that the body needs. However, Bacteroides can be pathogenic when introduced to parts of the body other than the gastrointestinal area. They can cause or exacerbate abscesses and other infections.

Diversity index is calculated as the negative sum of each genus and species proportional abundance multiplied by the log of its proportional abundance and then normalizing the index with respect to the reference diversity index (calculated from running 192 healthy control stool samples).

Dysbiosis (also called dysbacteriosis) refers to microbial imbalance resulting from a change in the number or types of bacteria on or inside the body. Dysbiosis is most prominent in the digestive tract or on the skin, but can also occur on any exposed surface or mucous membrane.

Fermentation – a chemical process that converts sugar and carbohydrates into acids, gases, and/or alcohol. It occurs with yeast and bacteria, but humans also use fermentation to produce certain food and beverages.

Firmicutes are a phylum of bacteria, most of which have Gram-positive cell wall structure. Firmicutes make up the largest portion of the human gut microbiome. The division Firmicutes as part of the gut flora has been shown to be involved in energy resorption and obesity. Many Firmicutes produce endospores, which are resistant to desiccation and can survive extreme conditions. They are found in various environments, and the group includes some notable pathogens.

Fungus refers to any member of a large group of eukaryotic organisms that includes microorganisms such as yeasts and molds, as well as mushrooms. These organisms are classified as a kingdom, Fungi, which are separate from plants, animals, and bacteria.

Gastrointestinal tract/Digestive System – an organ system responsible for consuming and digesting foodstuffs, absorbing nutrients, and expelling waste. Bacteria constitute a large domain of prokaryotic microorganisms. They were among the first life forms to appear on Earth, and are present in most of its habitats. Bacteria also live in symbiotic and parasitic relationships with plants and animals. The majority of bacteria in the human body are harmless or beneficial, the largest number being in the gut flora. However, some species of bacteria are pathogenic and cause infectious diseases.

Gram-negative bacteria are a group of bacteria that do not retain the crystal violet stain used in the Gram staining method of bacterial differentiation. They are characterized by their cell envelopes, which are composed of a thin peptidoglycan cell wall sandwiched between an inner cytoplasmic cell membrane and a bacterial outer membrane.

Gram-positive bacteria are bacteria that give a positive result in the Gram stain test. Gram-positive bacteria take up the crystal violet stain used in the test, and then appear to be purple-colored when seen through a microscope. This is because the thick peptidoglycan layer in the bacterial cell wall retains the stain after it is washed away from the rest of the sample, in the decolorization stage of the test.

Gut microbiota refers to the community of microorganisms that live in the gastrointestinal tract. Gut refers to the intestine. Gut microbiota consists of tens of trillions of microorganisms, including at least 1,000 different species of known bacteria with millions of genes. Gut microbiota perform a host of useful functions, such as fermenting unused energy substrates, training the immune system, preventing growth of harmful, pathogenic bacteria, regulating the development of the gut, producing vitamins for the host, such as biotin and vitamin K, and producing hormones to direct the host to store nutrients.

Microbiota (or microbiome) is the community of microorganisms that typically inhabits a bodily organ or part. Microbial cells are more abundant in the human body than are human cells. These microorganisms may be commensal (living in close association that allows one species to benefit without harming the other), symbiotic (having an interdependent relationship), and pathogenic (disease- producing).

Short Chain Fatty Acids (SCFA), also referred to as volatile fatty acids (VFAs), are fatty acids with an aliphatic tail of less than six carbon atoms. Short-chain fatty acids are produced when dietary fiber is fermented in the colon.

Trimethylamine N-oxide (TMAO) is the organic compound in the class of amine oxides with the formula $(CH_3)_3NO$. This colorless solid is usually encountered as the dihydrate. It is a product of the oxidation of trimethylamine. The concentration of TMAO in the blood increases after consuming foods containing carnitine or lecithin if the bacteria that convert those substances to TMAO are present in the gut. High concentrations of carnitine are found in red meat, some energy drinks, and some dietary supplements.