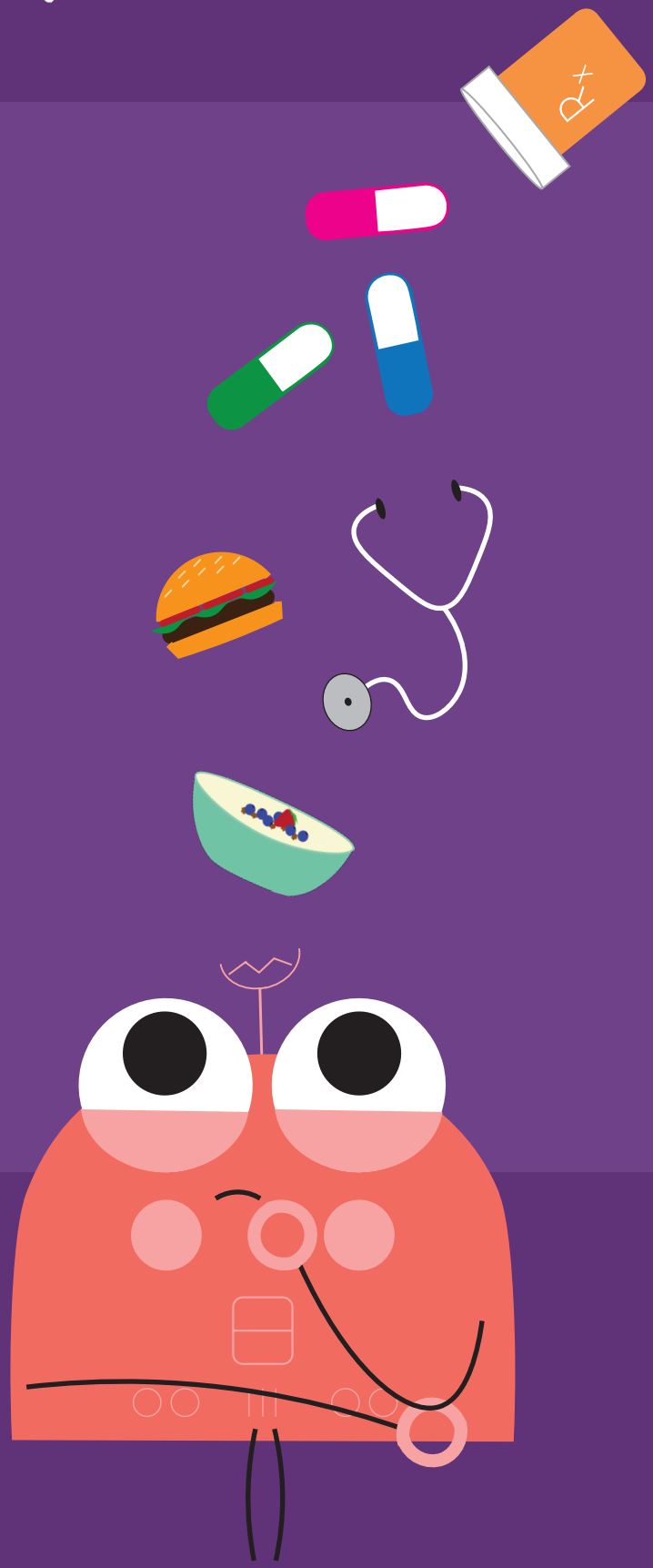
GUT BUSTERS

10 MYTHS ABOUT GUT HEALTH

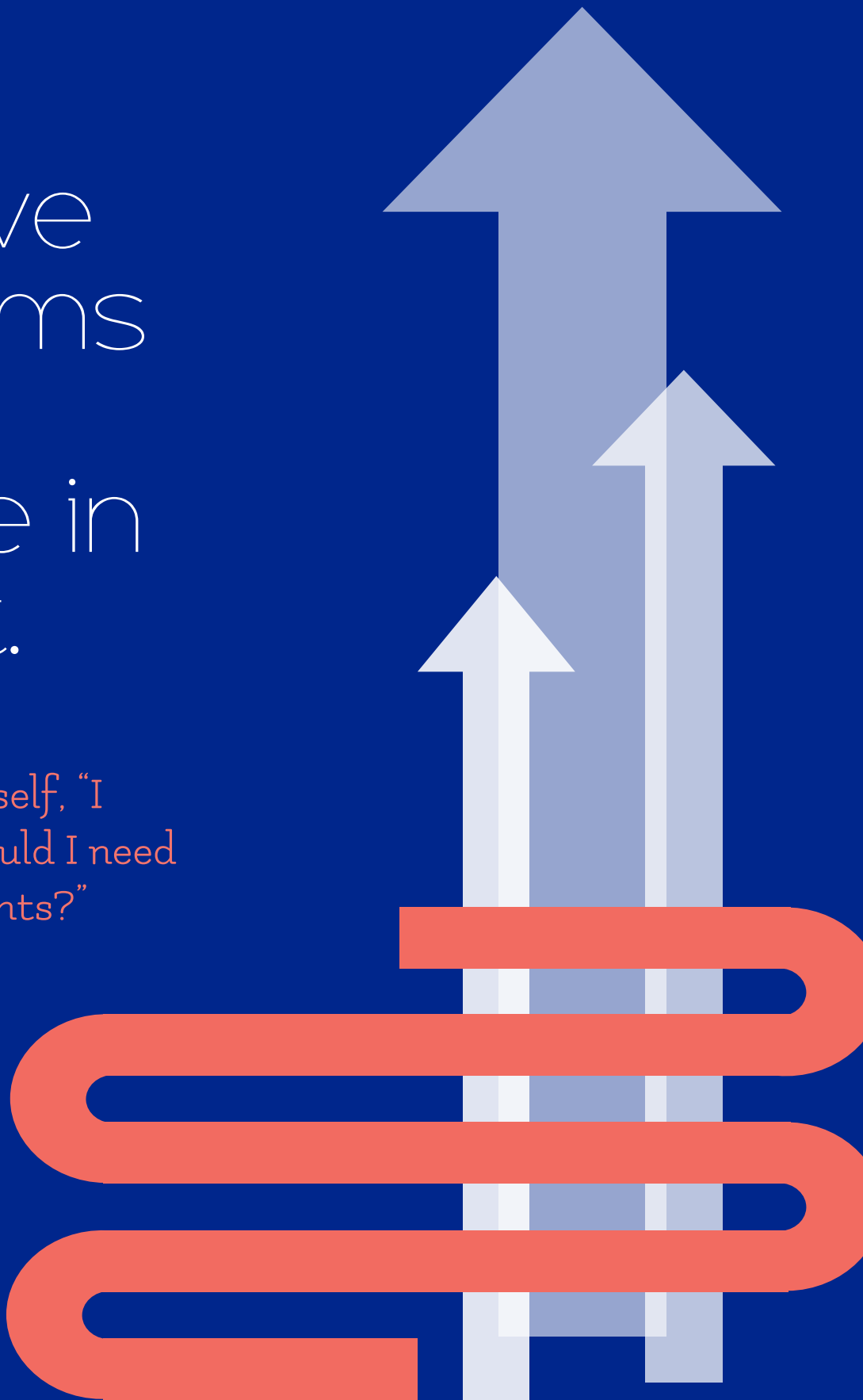


IgY NUTRITION®

MYTH 1

Digestive problems only surface in the gut.

You might ask yourself, "I have a cold, why would I need digestive supplements?"



RECENT RESEARCH

has revealed that the balance of bacteria in our gut affects a lot more than just our digestive health.

In fact, an imbalance in the microflora, called dysbiosis, can make you more susceptible to infections as well as conditions like obesity, diabetes, cardiovascular disease, allergies, disrupted sleep-wake cycles (in mice and humans)[1] and other inflammatory conditions.[2]

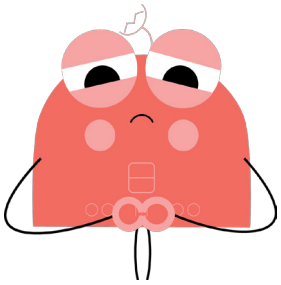
From birth, the gut microbiota contributes to the development of gut function.

It provides protection against infection, promotes tolerance of foods, and builds the immune system. Therefore, it makes sense that imbalance in the gut can weaken the overall immune system, making you more susceptible to illness.[3]

Moreover, emerging evidence suggests that the gut microbiota may play a role in neurological disorders as well as in perception, behavior and emotional responses.

But the good news is that it may be possible to manage these conditions and associated symptoms by manipulating the gut microbiota.[1]

In addition to maintaining a healthy diet, the use of pro and prebiotics has been shown to help correct dysbiosis. While probiotics provide beneficial flora, prebiotics may offer an alternative or symbiotic benefit to probiotics by stimulating beneficial bacteria, thus helping to restore the gut balance.[4]



"imbalance in the gut can weaken the overall immune system"

However, new and complementary techniques are on the rise to help correct dysbiosis and its associated symptoms.[1]

For example, products that reduce the occurrence of non-beneficial bacteria in the intestinal tract can improve gastrointestinal function and overall wellbeing by helping to restore healthy microbial diversity.

The takeaway?

You don't have to have digestive symptoms like gas or bloating to suspect dysbiosis.

Even something as seemingly minor as just feeling tired or having a runny nose can signal that your microbiota is out of whack, and you might consider taking steps to restore your gut balance.

References:

1. Sirisinha, S. The potential impact of gut microbiota on your health: Current status and future challenges. Asian Pac J Allergy Immunol. 2016 Dec;34(4):249-264. doi: 10.12932/AP0803.

2. Reynolds, AC., Paterson, JL., Ferguson, SA., Stanley, D., Wright, KP., Dawson, D. The shift work and health research agenda: Considering changes in gut microbiota as a pathway linking shift work, sleep loss and circadian misalignment, and metabolic disease. Sleep Med Rev. 2016 Jul 11. pii: S1087-0792(16)30061-2. doi: 10.1016/j.smrv.2016.06.009. [Epub ahead of print]

3. Olivier G. Potential role of the intestinal microbiota in programming health and disease. Nutrition Reviews. 2015, 73 (1) 32-40; DOI: 10.1093/nutrit/nuv039

4. Vitetta L, Coulson S, Linnane AW, Butt H. The Gastrointestinal Microbiome and Musculoskeletal Diseases: A Beneficial Role for Probiotics and Prebiotics. Pathogens. 2013;2(4):606-626. doi:10.3390/pathogens2040606.

5 SIGNS YOUR GUT IS SICK

① Fatigue

When your digestive tract is out of balance, your body can't absorb all the nutrients it needs to produce enough energy throughout the day.

Digestive Sensitivity ②

An important function of the gut bacteria is to break down food in your digestive tract. So any disruption in the microbiome can hinder your body's ability to process certain proteins, carbohydrates and sugars.

③ Weak Nails

It might surprise you, but your fingernails say alot about your health. In fact, cracked or soft nailbeds can indicate your gut is underperforming.

Skin Conditions ④

It has been suggested that the health of your skin mirrors the health of your gut. Therefore, dysbiosis may contribute to excessively oily or dry skin, autoimmune conditions, and acne.

⑤ Frequent Infections

The gut makes up 70% of the body's immune system. Therefore, if you suffer from frequent colds or viral or fungal infections, it might be a sign that your gut needs a little TLC.

MYTH 2 All probiotics are the same.

The probiotics category is ever-expanding, but there are some important considerations to keep in mind when shopping the aisle.

ALL PROBIOTICS ARE NOT CREATED EQUAL.

1

Different strains can affect the microbiome in unique ways for distinct health effects. Because probiotics are strain-specific, they may not always address the unique imbalances which vary from person to person. After all, each individual's microbiome is home to a distinct array of bacteria, so a strain that benefits consumer A isn't guaranteed to improve the digestive problems of consumer B, making it difficult to predict which probiotics are truly the most effective for a general audience.

2

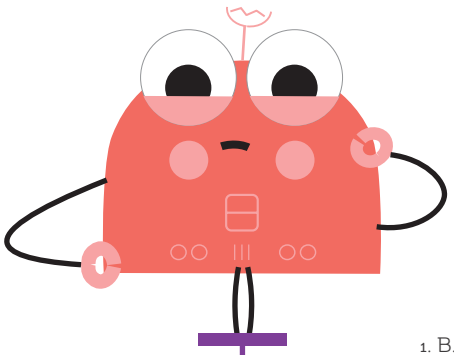
Research in the digestive health category has led to the development of symptom-specific probiotics, but consumers should be aware that this research is in its infancy. These products contain a unique blend of probiotics to target specific needs ranging from gas and bloating to skin and immune health, but consumers should not expect an instant resolution of symptoms. Instead, they should expect an improvement in the balance of microbiota that will lead to a gradual enhancement in overall health.

3

While the majority of "healthy" gut microbes have yet to be studied, researchers have established the beneficial effects of *Bifidobacterium*, *Lactobacillus*, and *F. prausnitzii*.[1,2] Therefore, consumers should make sure their probiotics contain at least these strains.

4

Lastly, researchers have yet to identify an effective dose for any strain of probiotic. Because dosage is influenced by many variables such as health endpoint, the specific probiotic used, and the method of delivery, it is difficult to generalize one optimal dose for probiotic effects.[3]



In conclusion,

Probiotics have received a lot of attention in the digestive supplement market, but there is still much left to discover concerning their efficacy and how they impact our health.

While symptom-specific probiotics present a new and exciting frontier in addressing individuals' health issues, consumers should do their homework and consult a healthcare professional to make sure that the strains on the label have been scientifically tested to support the target issue.

References:

1. B. Sánchez, S. Delgado, A. Blanco-Míguez, Aná. Lourenço, M. Gueimonde, A. Margolles, Mol. Nutr. Food Res. 2016, 1600240.

2. Sánchez, B., De Los Reyes-Gavilan, C. G., Margolles, A., Gueimonde, M., Probiotic fermented milks: present and future. Int. J. Dairy Technol. 2009, 62, 472–483.

3. Ouwehand, AC. A review of dose-responses of probiotics in human studies. Benef Microbes. 2016 Dec 23:1-10. doi: 10.3920/BM2016.0140. [Epub ahead of print]

What can the right strains do for you?

BIFIDOBACTERIUM

-Bifidum:
Protect intestinal lining
Produce B12, biotin & K2
Aid in digestion of sugar
Improve allergy symptoms

-Lactis:
Fight lactose intolerance
Support healthy cholesterol
Combat effects of leaky gut
Reduce respiratory infection

-Infantis:
Boost metabolism
Reduce indigestion
Improve immune function

LACTOBACILLUS

-Acidophilus:
Produce lactase enzyme
Reduce occurrence of diarrhea
Protects against yeast infection
Fights off pathogens

-Rhamnosus:
Reduce anxiety
Counteract weight gain
Combat IBS symptoms

-Helveticus:
Improve sleep quality
Enhance bowel motility
Facilitate nutrient absorption

F. PRAUSNITZII

best known for anti-inflammatory properties and ability to promote optimal digestive function and immune recovery

MYTH 3

Only yogurt contains probiotics.

Yogurt is probably the best known and widely consumed food source of probiotics, but there are plenty of other options out there.

Kefir:

a fermented milk product that contains several major strains of friendly bacteria, such as Lactobacillus Caucasus, Leuconostoc, and Acetobacter species, as well as some beneficial yeasts that aren't found in yogurt. Kefir is made by adding kefir grains to milk, which causes a unique fermenting process to occur. While both yogurt and kefir are cultured milk products, they contain different strains of bacteria, with some Kefir brands containing up to 12 strains.

Dairy-based probiotics appear to retain their active cultures the best, and they are also great sources of calcium and protein (as long as you stick with plain or vanilla options, which are lower in sugar than many of the blended fruit flavors). So if you can tolerate dairy, then yogurt or Kefir are your best sources of probiotics.

Kimchi:

a non-dairy Korean product that consists of spicy fermented vegetables like cabbage and carrots mixed with seasonings such as hot pepper flakes, ginger, and salt. Since this is often used as a condiment and is known to be hot, it's best used as a topping with other dishes in smaller quantities.

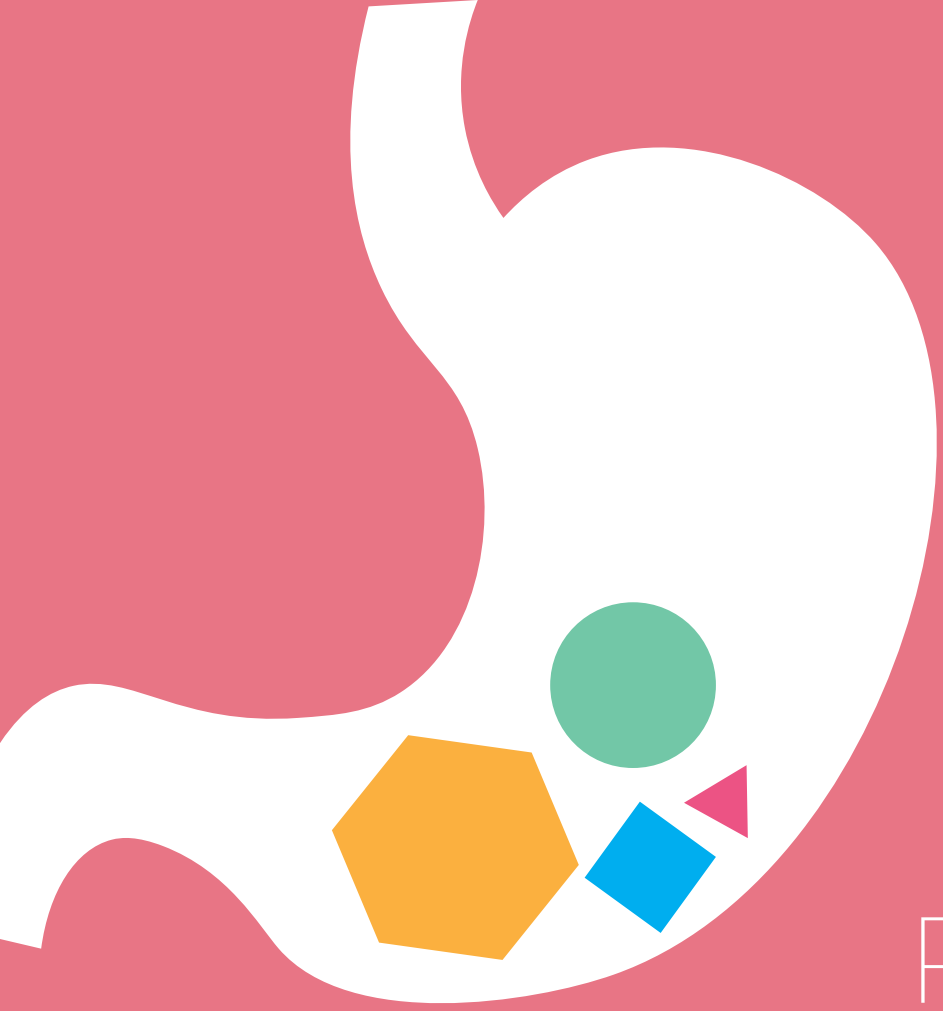
Sauerkraut:

fermented cabbage but without the spicy kick. This is considered to be a good source of probiotics as well as vitamin C and digestive enzymes. Additionally, fermented soybean products like tempeh, miso, and natto are good non-dairy sources of probiotics.

Kombucha tea:

made by placing a kombucha mushroom in sweetened black tea. As a traditional medicinal food, kombucha is believed to be another good source of probiotics.

Today, probiotics are being added to everything from nutrition bars, to chocolate, to pizza crusts, to various drinks. But buyer beware, because due to the limited shelf life of probiotics, these foods may not always contain the exact amount of active cultures that it says on the label, so try a natural source of probiotics instead!



MYTH 4

Probiotics are all you need to avoid microbial imbalance.

Probiotics and prebiotics can help improve and maintain a healthy gut balance, but there are many other factors that impact digestive health.

Environmental factors, including one's diet, exercise, and stress play a huge role in shaping the composition of the intestinal microbiome.

In fact, dietary changes account for up to 57% of changes in the microbiota.

Eat balanced meals.

Recent research has shown that the amount, type, and balance of protein, carbohydrates, and fat in one's diet have a profound impact on the gut microbiota, with several studies showing evidence that alterations in gut microbiota may contribute to obesity and metabolic dysfunction. These changes may occur directly or as a consequence of disturbances in the gut flora that cause "low-grade" inflammation, which may promote development of the dysfunction.

An unhealthy diet leads to an increase in unhealthy bacteria, which creates an unhealthy gut. Therefore, it makes sense that a healthy diet will lead to a healthy gut. In fact, the consumption of diets higher in fruit, vegetables and fiber is linked to increased microbial diversity, which can occur in as little as 24 hours after making a dietary change.[1,2]

Additionally, a recent study showed that the consumption of a Mediterranean diet (containing phenolic-compound-rich foods such as fresh fruit, vegetables, red wine and olive oil) induced significant positive changes in the composition of gut microbiota in obese individuals with metabolic dysfunction.[3]

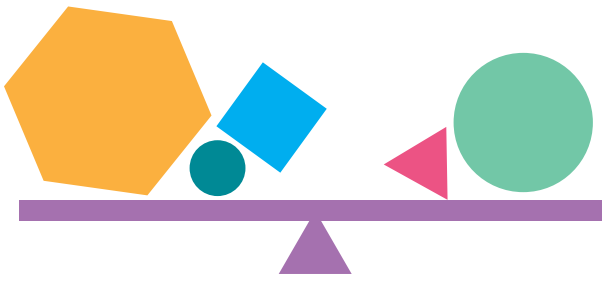
Hit the gym.

Exercise has been shown to produce a more diverse microbiota and reduce unhealthy bacterial communities while increasing communities of beneficial flora.[4]

De-stress.

However, even physical health isn't the only factor you need to consider. It has been shown that different types of psychological stress can alter the composition of gastrointestinal microbiota as well. This means your resilience to stress- and immune-related disorders may be dependent on the diversity and complexity of gastrointestinal microbiota.[5]

By taking these other factors into consideration, you can maintain a healthy balance in the gut, which in turn helps to prevent obesity and its related conditions.



References:

1. Ojeda P, Bobe A, Dolan K, Leone V, Martinez K. Nutritional modulation of gut microbiota - the impact on metabolic disease pathophysiology. J Nutr Biochem. 2016;28:191-200. doi: 10.1016/j.jnutbio.2015.08.013. Epub 2015 Aug 20.

2. Walsh CJ, Guinane CM, O'Toole PW, Cotter PD. Beneficial modulation of the gut microbiota. FEBS Lett. 2014; 17:588(22):4120-30. doi: 10.1016/j.febslet.2014.03.035. Epub 2014 Mar 26.

3. Haro C, Montes-Borrego M, Rangel-Zúñiga OA, Alcalá-Díaz JF, Gómez-Delgado F,et.al. Two Healthy Diets Modulate Gut Microbial Community Improving Insulin Sensitivity in a Human Obese Population. J Clin Endocrinol Metab. 2016;101(1):233-42. doi: 10.1210/jc.2015-3351. Epub 2015 Oct 27.

4. Campbell SC, Wisniewski P. Exercise is a novel promoter of intestinal health and microbial diversity. Exercise and Sport Sciences Reviews. 2017;45(1):41–47. doi: 10.1249/JES.0000000000000096

5. Rea K, Dinan TG, Cryan JF. The microbiome: A key regulator of stress and neuroinflammation. Neurobiology of Stress. 2016;4:23-33. doi:10.1016/j.ynstr.2016.03.001.

Did you know yoga can improve digestion?

Through a combination of meditation, deep breathing, and abdominal stretches, yoga provides the digestive benefits of both exercise and stress management.

Certain yoga poses can help relieve gas, constipation and cramping, but the practice in general also helps increase blood flow to digestive organs to combat the effects of sedentary lifestyles.

Additionally, through its emphasis on mindfulness and controlled breathing, yoga can help relieve anxiety and stress that contributes to digestive imbalance.

Yoga asanas that aid digestion. (2013, Nov 04). Mint Retrieved from https://search-proquest-com.ezproxy.lib.ou.edu/docview/1448252862?accountid=12964

MYTH 5

You must detox to clean your gut.

There are several reasons to question the idea that you need to detox to get rid of toxins in the body.

According to Natural Standard,

an organization that analyzes and validates scientific data on integrative medicine, there is insufficient evidence to support the idea that our bodies need help outside their natural detoxification processes or that popular detox procedures even do what they say.[1]

No rigorous clinical investigations of detox diets or supplements have been conducted.

As for the handful of studies that have been published, these are poorly designed in that they have small sample sizes, sampling bias, lack of control groups, reliance on self-report, and qualitative rather than quantitative measurements.[2]

The term 'toxin' remains ill-defined.

In the context of commercial detox diets, the term 'toxin' has adopted a much hazier meaning; encompassing pollutants, synthetic chemicals, heavy metals, processed foods, and other potentially harmful products of modern life.

Commercial detox regimens rarely identify the specific toxins they are trying to remove or the mechanisms by which they eliminate them, making it difficult to investigate their claims.

Their approach to detoxification generally involves pathways that promote the excretion of chemicals and their metabolites in sweat, urine and stool. And while detox advertising makes it seem like chemicals can be divided into 'good' and 'bad' categories, in reality it is the dose and the balance of substances that cause an issue for most chemicals.[2]

Just by practicing a healthy lifestyle, you can support the body's natural filtration pathways.

Remember, the human body is well equipped with its own detoxification system: the lungs, kidneys, colon, lymphatic system, and, of course, the liver.

Plus, if you eat a healthy diet, drink plenty of water and exercise, you will expose yourself to fewer toxins, and your body will excrete those that you do come in contact with.

Maintaining a healthy balance of bacteria in the gut plays an important role in the "detox" process.

For example, there are two specialized defense and protection systems at the tissue level, namely intestinal alkaline phosphatase (IAP) and inducible heat shock proteins (iHSPs). Both of them are modulated by the microbiota and the diet. Due to their potent anti-inflammatory and anti-oxidant capacities, they confer gut epithelial (and body) protection against pathogens and toxins.[3]

The takeaway?

When healthy bacteria populate the digestive tract, the body can function more efficiently, and expel toxins on its own. Therefore, individuals can maintain their natural detox system by simply maintaining proper gut health.

References:

1. Palmer S. Cracking Myths — Experts Bust Digestive Health's Top Misconceptions. Today's Dietitian. 2011;13(4):24.

2. Klein A.V. & Kiat H. Detox diets for toxin elimination and weight management: a critical review of the evidence. J Hum Nutr Diet. 2015; 28:675–686. doi: 10.1111/jhn.12286.

3. Lallès J-P. Microbiota-host interplay at the gut epithelial level, health and nutrition. Journal of Animal Science and Biotechnology. 2016;7:66. doi:10.1186/s40104-016-0123-7.

5 WAYS TO DETOX *naturally*

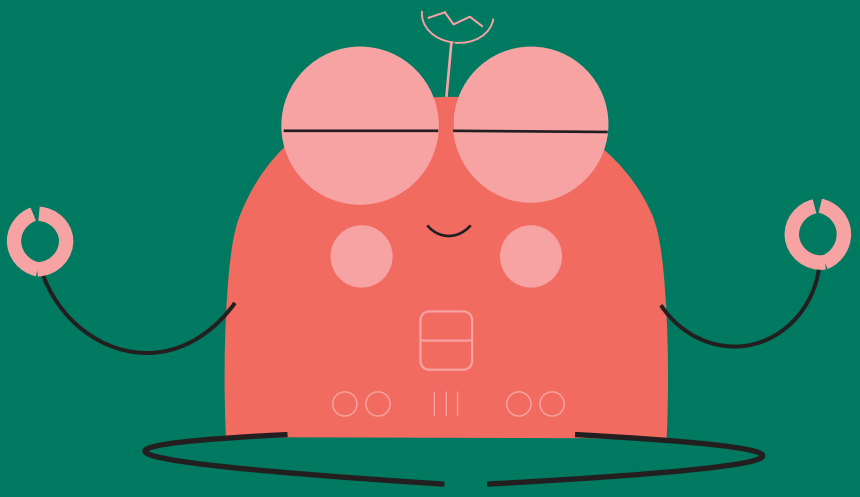
Drink more water

Get a deep-tissue massage

Sweat it out at the gym

Cut out sugary and fried foods

Get more sleep



MYTH 6

Dysbiosis is inevitable when using antibiotics.

Antibiotics aren't always a cause for alarm.

While antibiotics can reduce bacterial diversity in the gut, it is important to keep in mind that these effects are hard to quantify and predict.

For some, the compositional changes associated with antibiotic use can last a year or longer, but most of the time they only last for the short-term.

Additionally, research has even shown significant differences between people taking the same antibiotic at the same dosage, and even in the same person taking the same course at different times.

Many factors influence how an antibiotic will affect an individual's microbiome, including:

- route of administration (IV or oral)
- age of the individual
- changes in diet and lifestyle
- other medications being taken
- other health-related conditions

While these variables make it difficult to predict the effects of taking antibiotics, a disruption in microbial diversity is not inevitable.[1]

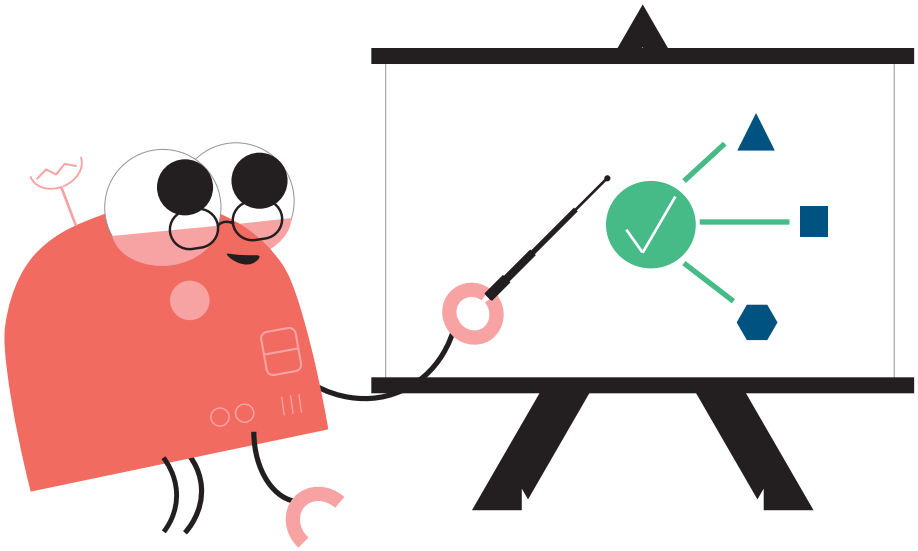
Take probiotics and synbiotics during the course of treatment and after to help avoid dysbiosis and rebalance microbial diversity.

Studies have shown that probiotics help to offset antibiotic-associated diarrhea. Most studies conducted thus far have used a probiotic containing the lactic acid–producing bacteria such as Lactobacillus rhamnosus, or L casei, with few exceptions.[2,3]

Next time you are prescribed an antibiotic, don't consider it a guarantee for dysbiosis.

While overuse of antibiotics is common, there are times when a course of antibiotic therapy is necessary and prescribed. Speak to your healthcare practitioner about the possibility of consuming lactic-acid containing probiotics (either from foods or supplements) during and after the course of your treatment to help mitigate any negative side effects associated with the antibiotic.

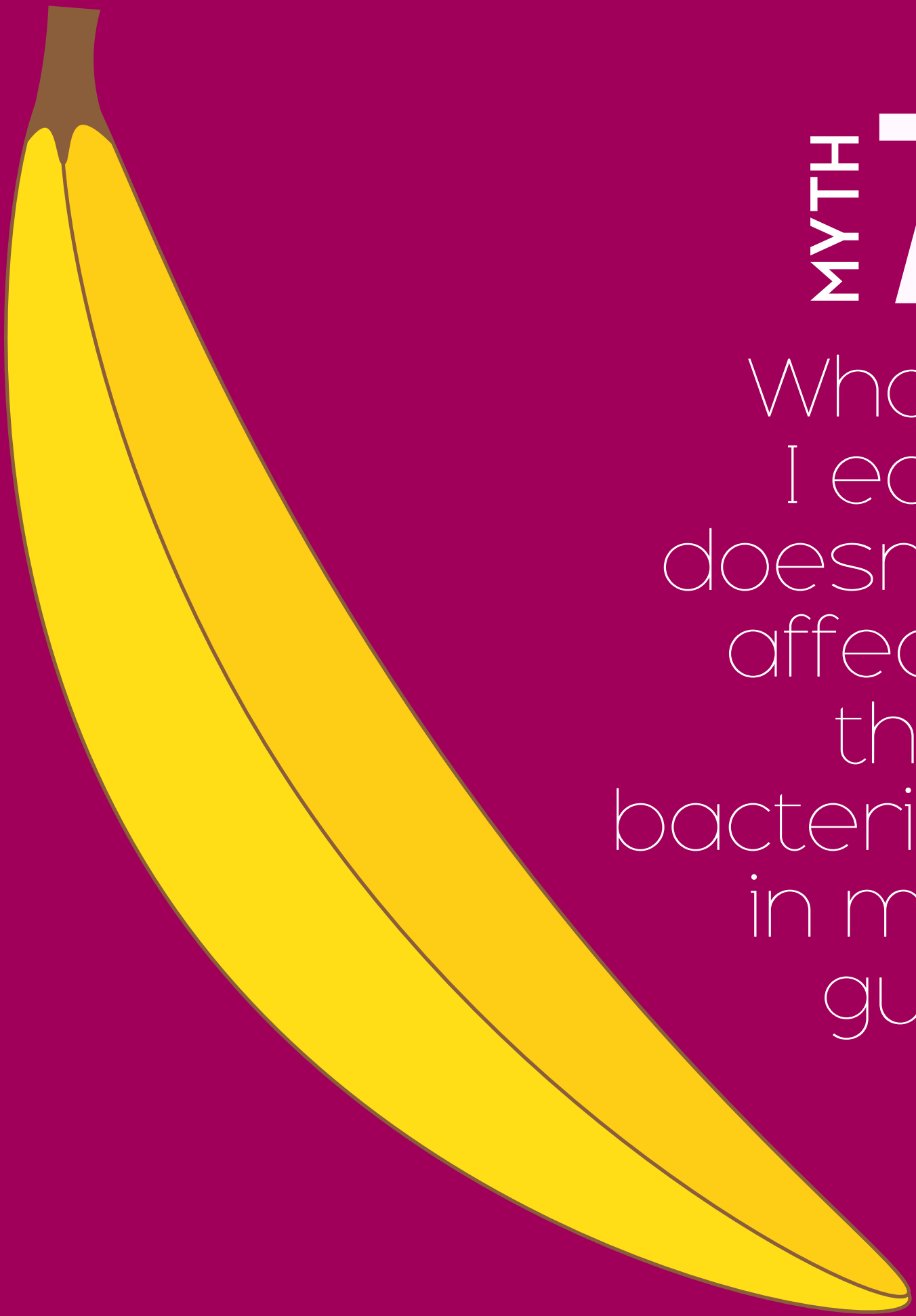
Additionally, try to continue to consume a healthy, vegetable based diet and maintain your exercise regimen to help maintain a healthy microbial balance.



References:
1. Mikkelsen KH., Allin KH., Knop, FK. Effect of antibiotics on gut microbiota, glucose metabolism and body weight regulation: a review of the literature. Diabetes Obes Metab. 2016;18: 444–453. doi:10.1111/dom.12637

2. Hempel S, Newberry SN, Maher AR, et al. Probiotics for the prevention and treatment of antibiotic-associated diarrhea: a systematic review and meta-analysis. JAMA 2012; 307(18):1959-1969.

3. Jafarnejad S, Shab-Bidar S, Speakman JR, et al. Probiotics reduce the risk of antibiotic-associated diarrhea in adults (18-64 years) but not the elderly (>65 years): a meta-analysis. Nutr Clin Pract 2016;31(4):502

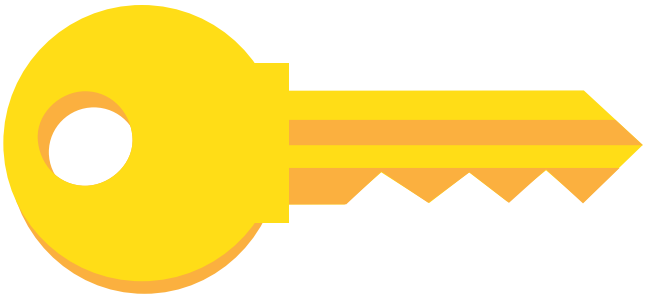


MYTH 7

What I eat doesn't affect the bacteria in my gut.

A healthy diet is the key to a healthy gut.

Several environmental factors influence the microbiome, but dietary intake may be one of the most immediate and controllable factors.[1]



Over the course of our lives, changes in the microbiome related to weight loss and diet continue to subtly alter the composition and abundance of our gut bacteria, impacting us through adulthood.[2]

This can perhaps be seen best in the elderly population where changes in the microbiome are typically associated with a decrease in diversity. This was originally thought to be part of the aging process but has since been associated with dietary changes often seen in the elderly population.

Studies have shown that elderly people consuming a moderate fat and high fiber diet had a much greater bacterial diversity in their digestive tract than elderly people consuming a high fat and low fiber diet.[2]

Fiber is your Friend

The high fiber diet has been shown to be beneficial for adults of all ages because it provides prebiotics from foods like bananas, onions, asparagus, and wheat bran. Prebiotics are "food" for probiotics; they feed the good bacteria already in your gut, helping them grow.

Additionally, fiber increases transit time which reduces the time that potentially unhealthy bacteria are in contact with the walls of the intestines; it essentially moves them through faster.

Mighty Macronutrients

Resistant starch and oligosaccharides present in high fiber diets are utilized in the large intestine by bacteria to produce Short Chain Fatty Acids (SCFAs).

These have been shown to play a role outside of the gut by providing energy, preventing overgrowth of pathogenic bacteria, enhancing insulin sensitivity, and decreasing inflammation. They also play a role in producing B vitamins like vitamin K and folate and may play a role in appetite regulation.

It has been suggested that the high fat, low fiber Western Diet has created a widespread microbial imbalance that has contributed to the increase of many lifestyle related conditions such as Metabolic Syndrome and Obesity.[3]

Therefore,

consuming a diet that minimizes processed and high fat foods, particularly animal fats, and maximizes intake of fruits, vegetables and whole grains can significantly impact our microbial diversity and therefore our overall health and well-being, not just today but throughout our lives.

References:
1. David LA, Maurice CF, Carmody RN, et al. Diet rapidly and reproducibly alters the human gut microbiome. Nature. 2014;505(7484):559-563. doi:10.1038/nature12820.
2. Voreades N, Kozil A, Weir TL. Diet and the development of the human intestinal microbiome. Frontiers in Microbiology. 2014;5:494. doi:10.3389/fmicb.2014.00494.
3. Jeffery IB, O'Toole PW. Diet-Microbiota Interactions and Their Implications for Healthy Living. Nutrients. 2013;5(1):234-252. doi:10.3390/nu5010234.

There is a clear definition of a "healthy microbiome"

"What does a healthy gut look like?"

Since everyone's microbiome is very unique, there is no concise definition of a "healthy" microbiome.

However, dysbiosis *is* clearly defined: It's any disruption in the bacterial composition relative to the microbial balance found in healthy individuals.

So, rather than define a healthy microbiome by the occurrence of a set number of specific bacteria, we can typically refer to a healthy microbiome in terms of the absence of dysbiosis, or as one with high bacterial diversity.[1]

More specifically, dysbiosis can be due to:
- a loss of beneficial microbial organisms,
- an expansion of potentially harmful bacteria
- a loss of overall microbial diversity

*Note that these types of dysbiosis are not mutually exclusive - all of them can occur at the same time.

Given the importance of microbial diversity in establishing a healthy microbiome, it is unlikely that one single bacteria will be a one-size-fits-all solution to dysbiosis. Instead, a complex assortment of microbes is most likely going to provide the most benefits.

A healthy microbiome involves more than just bacteria.

While the vast majority of the microbiome is made up of bacteria, our guts are also colonized by certain fungal and viral species.

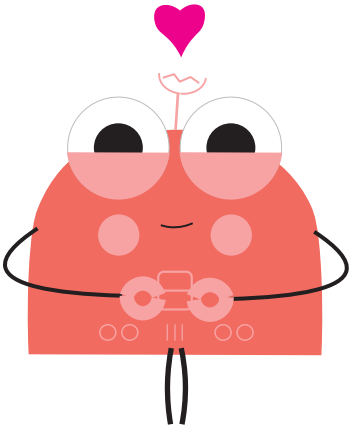
In fact, the state of our microbiome depends on maintaining a delicate balance of these microorganisms as well.

Therefore, imbalances in any of these aspects of our microbiota can also lead to symptoms associated with dysbiosis.[2]

While we are just beginning to understand this complex ecosystem and how it influences our well-being and interacts with our genetics, we do know that a healthy lifestyle is key to maintaining this delicate balance.

What does this mean?

The most reliable way to achieve and maintain a healthy microbiome is by eating a vegetable based diet, getting plenty of exercise, maintaining a healthy weight, including pro and prebiotics in your diet, and taking antibiotics only when absolutely necessary.



References:
1. The Human Microbiome Project Consortium. Structure, Function and Diversity of the Healthy Human Microbiome. Nature. 2012;486(7402):207-214. doi:10.1038/nature11234.

2. Petersen C, Round JL. Defining dysbiosis and its influence on host immunity and disease. Cellular Microbiology. 2014;16(7):1024-1033. doi:10.1111/cmi.12308.

MYTH 9

A gluten-free diet is all you need to correct dysbiosis.

A gluten free diet (GFD) is a diet that omits all source of wheat, barley and rye.

While it has long been the only treatment for those with Celiac disease, it has recently become very popular among non-celiac individuals with gastrointestinal discomfort. Now it one of the most popular diets worldwide.[1]

However, the question remains: is it enough to alleviate symptoms such as bloating, gas, or cramping? Considering that many of these complaints are also associated with diet, lifestyle and the associated dysbiosis, a GFD may not resolve all these symptoms.

While the effect of a Gluten-Free Diet on the microbiome of healthy individuals has not been clearly identified, a few studies have attempted to address the question.

One such study examined 10 healthy subjects on a GFD for one month. Surprisingly, the results suggested that a GFD actually leads to microbial imbalance by suppressing beneficial bacteria and supporting the growth of potentially pathogenic bacteria, thus worsening symptoms.[2]

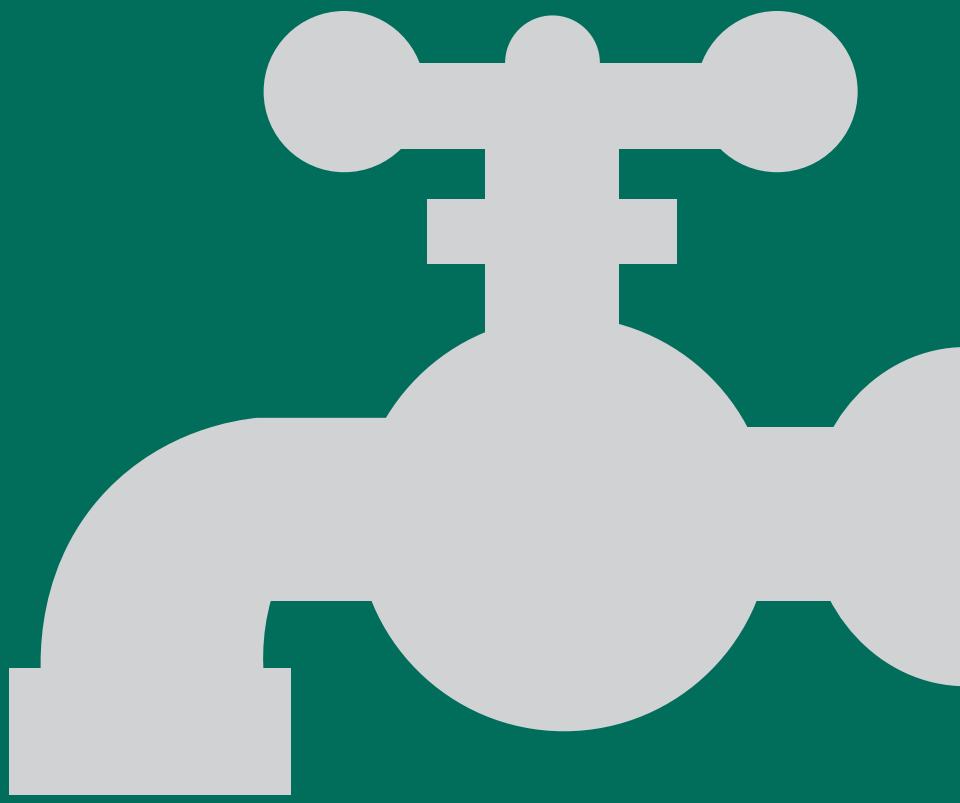
Another study was designed to assess microbial changes in non-celiac subjects on a gluten free diet for 4 weeks and found moderate changes in the microbiome. However, despite a decrease in pro-inflammatory bacteria in the gut, a GFD and its effects on the microbiome did not cause major inflammatory or metabolic changes in gut function in healthy participants.[3]

More studies on a greater number of subjects over a longer period of time may help to clarify this issue.

However, due to the less-than-favorable changes observed so far, it has been suggested that changing the main energy source (meat vs. plant protein) has a more profound effect on the microbiome than changing the carbohydrate source (gluten).[4]

Therefore, if you want to prevent or alleviate the issues associated with dysbiosis, it appears that the best approach is still a healthy, balanced vegetable-based diet that includes pro and prebiotics.

References:
1. Catassi C, Bai JC, Bonaz B, Bouma G, Calabrò A, Carroccio A, et al. Non-celiac gluten sensitivity: the new frontier of gluten related disorders. Nutrients. 2013;5:3839–53. doi: 10.3390/nu5103839.
2. De Palma G, Nadal I, Collado MC, Sanz Y. Effects of a gluten-free diet on gut microbiota and immune function in healthy adult human subjects. Br J Nutr 2009; 102:1154 - 1160
3. Bonder MJ, Tigchelaar EF, Cai X, et al. The influence of a short-term gluten-free diet on the human gut microbiome. Genome Medicine. 2016;8:45. doi:10.1186/s13073-016-0295-y.
4. David LA, Maurice CF, Carmody RN, Gootenberg DB, Button JE, Wolfe BE, et al. Diet rapidly and reproducibly alters the human gut microbiome. Nature. 2014;505:559–63. doi: 10.1038/nature12820.



MYTH **10**

Leaky gut is only associated with disease.

Rather than being a condition in of itself, leaky gut may be more symptomatic of a larger issue at hand.

Specifically, there is some evidence to suggest that when individuals suffer from conditions related to systemic inflammation, they are more likely to experience "tight junction dysfunction".

The lining of the GI tract is the body's largest barrier to the outside environment.

As the first line of defense against the potentially harmful substances present in the foods we ingest, it provides a permeable barrier that limits what substances can cross into the body while allowing nutrients to be absorbed.

The spaces between epithelial cells along the intestinal boundary are called tight junctions, and they play a key role in regulating gut permeability.

It's been suggested that a breach to these junctions allows substances that wouldn't otherwise enter the bloodstream to permeate the wall of the GI tract, triggering an inflammatory response both in the gut and throughout the body. This is sometimes referred to as intestinal permeability, or "leaky gut."

As a central part of this inflammatory process, mucosal barriers become more permeable to allow the passage of immune cells, but this consequently permits access of other molecules as well, leading to further disruption of the gut barrier.

For instance, people diagnosed with digestive disease such as Inflammatory Bowel Disease (IBS) face a heightened threat to intestinal permeability and related inflammation. However, it is unclear if this circumstance also occurs in people with GI symptoms who do not have a diagnosable disease.[1,2]

Determining the progression of common symptoms may help to answer this. For example, while gut permeability and subsequent inflammation have been linked to dysbiosis, it has yet to be determined if the inflammation causes the dysbiosis or vice versa.[3]

However, it does appear that leaky gut is not just associated with a disease state. Evidence suggests that diet may also trigger intestinal permeability.

Specifically, a high-fat, high-sugar "Western Diet" has been shown to promote the development of a pro-inflammatory gut microbiota, and consequently increase intestinal permeability[4]. While ongoing studies will help clarify the connections between diet, obesity, dysbiosis and leaky gut, it is one more reason to eat a healthy plant-based diet to support a healthy gut and healthy body.

References:
1. Ahmad R, Sorrell MF, Batra SK, Dhawan P, Singh AB.Gut permeability and mucosal inflammation: bad, good or context dependent. Mucosal Immunol. 2017 Jan 25. doi: 10.1038/mi.2016.128. [Epub ahead of print]
2. Michielan A, D'Incà R. Intestinal Permeability in Inflammatory Bowel Disease: Pathogenesis, Clinical Evaluation, and Therapy of Leaky Gut. Mediators of Inflammation. 2015;2015:628157. doi:10.1155/2015/628157.
3. Stecher B. The Roles of Inflammation, Nutrient Availability and the Commensal Microbiota in Enteric Pathogen Infection. Microbiol Spectrum.2015; 3(3):MBP-0008-2014. doi:10.1128/microbiolspec.MBP-0008-2014.
4. Pendyala S, Walker JM, Holt PR. A high-fat diet is associated with endotoxemia that originates from the gut. Gastroenterology 2012;142: 1100–1. e2.

Ready to digest more? Check out our blog.

www.igynutrition.com/blog

NUTRITION®

(405) 242-5381
info@igynutrition.com