

INFLAMMATION, FOOD ALLERGIES & GUT HEALTH

By Julie Cottrell, MS, RD, LD

These 3 topics are presented together because it's difficult to discuss one without referring to the others.

INFLAMMATION: WHAT IS IT?

Below is an excellent article to explain more about inflammation and the various symptoms you may experience, depending on what part of the body is being affected.

- ❖ Healthline | [Inflammation: What You Need to Know](#)
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Is there a test that can measure my level of inflammation?

Several tests can assess inflammation, but most are non-specific (they can tell if there's inflammation in your body, but not where it is located). One of the more common tests is the hs-CRP.

- ❖ Healthline | [C-Reactive Protein Test: Purpose, Procedure and Results](#)
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Are there any natural ways to reduce inflammation?

Below is an excellent article, including a beautiful one-minute video of 5 foods to include in an anti-inflammatory diet. They also provide lists of foods to avoid as well as ones to include. Please read the full article for more details, but these 2 lists are shown below for easy reference.

- ❖ Healthline | [Anti-Inflammatory Diet 101: How to Reduce Inflammation Naturally](#)

FOODS TO AVOID

- Sugary beverages: [Sugar-sweetened drinks](#) and [fruit juices](#)
- Refined carbs: White bread, white pasta, etc.
- Desserts: Cookies, candy, cake, and ice cream
- Processed meat: Hot dogs, bologna, sausages, etc.
- Processed snack foods: Crackers, chips, and pretzels
- Certain oils: Processed seed and vegetable oils like soybean and corn oil
- Trans fats: Foods with partially hydrogenated ingredients
- Alcohol: Excessive alcohol consumption

FOODS TO INCLUDE

- Vegetables: Broccoli, kale, Brussels sprouts, cabbage, cauliflower, etc.
- Fruit: Especially deeply colored berries like grapes and cherries
- High-fat fruits: Avocados and olives
- Healthy fats: Olive oil and avocado oil
- Fatty fish: Salmon, sardines, herring, mackerel, and anchovies
- Nuts: Almonds and other nuts
- Peppers: Bell peppers and chili peppers
- Chocolate: [Dark chocolate](#)
- Spices: Turmeric, fenugreek, cinnamon
- Tea: Green tea
- Red wine: Up to 5 ounces (140 ml) of red wine per day for women and 10 ounces (280 ml) per day for men

Note from Julie:

I agree with these lists above as a general rule - and they make a great base from which to start. Clean up your diet just with those guidelines and you may solve a lot of problems. However, I also want to note that there can be individual tolerance to any of these items, even from the one listed as “anti-inflammatory”. Some folks need to dig deeper; this list below is for you.

Hidden food components or categories of foods to which you may react are listed below.

- ❖ **Antinutrients:** Vegetables and plant-based foods (including grains and legumes) contain varying levels of “antinutrients” in them (phytates, oxalates, lectins, etc). These antinutrients can interfere with vitamin and mineral absorption, but can also create various kinds of havoc in your body, especially if you are sensitive to them, or based on the amount consumed. You can read more about them here: Healthline | [How to Reduce Antinutrients in Foods](#).
- ❖ **Molds/toxins:** You may not even realize that specific foods are more likely to contain mold in them. Some of these foods include: grains; meat and milk from grain-fed animals; dried fruits; conventional coffee; wine and beer; “seed oils”; and nuts. You can read more about this here: Chris Kresser | [Food for Mold Illness: What to Eat and What to Avoid](#).
- ❖ **Wine:** May be a source of mycotoxins; read more about this here: [Mycotoxins in red wine: Occurrence and risk assessment](#). And this bulletin highlights a range of contaminants that may be present in wine: [MICROBIAL CONTAMINATION IN WINE](#). This information is not meant to scare you, and you don’t need to know every detail; however, it is worthwhile to note that there is a lot more in that wine bottle than you may have bargained for - and without this info being listed on a food label, you would never know.
- ❖ **Congeners:** Congeners are another substance that may be present in your alcohol that you don’t already know about. They are a natural by-product of making alcohol. You can read more about them here: Healthline | [How Congeners in Alcohol Affect You \(and Your Hangover\)](#). This article notes that congeners may stimulate the body to release stress hormones, such as norepinephrine and epinephrine; this in turn, will cause an inflammatory reaction. This article also includes a chart: [Alcohol chart with congeners](#).
- ❖ **Nightshades/Alkaloids:** Certain foods fall into the category of “nightshades”. Examples include: eggplants, peppers, potatoes, tobacco, tomatillos, and tomatoes. Herbs and spices derived from these vegetables include: cayenne pepper, crushed red pepper, chili powder, and paprika. Also look out for condiments: hot sauce, ketchup, marinara sauce, and salsa. Some people have more extreme reactions to these foods and need to limit or avoid them in order to feel their best. Learn more about them here: Healthline | [Are Nightshades Bad for You?](#)
- ❖ **Gluten:** Some people don’t tolerate gluten very well, even if they aren’t truly “allergic” to it (as in Celiac disease). Here’s a good article to help you know the difference between the two, as well as common symptoms. Healthline | [21 Signs of Gluten Intolerance](#). There are plenty of gluten-free foods on the market now if you find you need to avoid it. However, **gluten-free processed foods aren’t any “healthier” than their gluten-containing equivalents**. Limit processed foods as much as possible (even gluten-free ones) and focus on whole, real foods that also happen to be gluten-free.

- ❖ **Specific allergy to ANY food:** It's more common than ever for folks to have an allergic reaction to foods. Some of the most common food allergies are: cow's milk, eggs, tree nuts, peanuts, shellfish, wheat, soy and fish. You can read more about these, in addition to a list of less common food allergens here: Healthline | [The 8 Most Common Food Allergies](#). This article is also useful: [Food Allergy vs. Sensitivity: What's the Difference?](#)
- ❖ **Food Dyes:** Food dyes are found in many processed foods - but not in fresh foods, and usually not in minimally processed foods. Food dyes have the potential to cause an allergic reaction or other unfavorable effects. Read more about them here: Healthline | [Food Dyes: Harmless or Harmful?](#) and here: Healthline | [Understanding Food Dye Allergies](#).
- ❖ **Food Additives and Preservatives:** The list of additional items/ingredients - all primarily found in processed/manufactured goods - is long. Some items may be more worrisome than others. Read these 2 articles to learn more: Healthline | [12 Common Food Additives – Should You Avoid Them?](#) and Harvard Health Blog | [Common food additives and chemicals harmful to children](#).
- ❖ **Pesticides, Antibiotics:** These are 2 additional things that may be present in your food, depending on whether the food is organic. The effect that these have on our bodies is still being researched, but it is likely that they impact our gut health in some way. If your budget allows, buy organic in order to reduce the load of these in your diet; and refer to the **Dirty Dozen** and **Clean 15** lists to help decide which fruits and vegetables are actually worth the expense of buying organic.

The noteworthy thing about this list above is that ANY of these items could be a potential source of distress for you. This can result in inflammation; and chronic inflammation is at the root of many of our modern-day diseases. Try to minimize any of these that you find to be a source of distress to you. Your medical team is here to help you too! We can trouble-shoot together and find a path that works best for you.

HEALING THE GUT & NURTURING A HEALTHY MICROBIOME

After considering all (or many) of the things that we may react to - and that have the potential to damage the gut - it's important to consider **things we can do to promote gut healing and overall gut health**. After all, the gut plays a huge [role in our immune system](#); our health depends on its proper functioning!

WHAT IS LEAKY GUT?

“An unhealthy gut lining may have large cracks or holes, allowing partially digested food, toxins, and bugs to penetrate the tissues beneath it. This may trigger inflammation and changes in the gut flora (normal bacteria) that could lead to problems within the digestive tract and beyond.” -Excerpted from Harvard Health Blog | [Leaky gut: What is it, and what does it mean for you?](#) Please check out this article for more information.

A HEALTHY MICROBIOME IS THE GOAL

Here is an [excellent](#) article that explains all about the microbiome in a user-friendly format:

- ❖ The Guardian | [The human microbiome: why our microbes could be key to our health](#)

FOOD CRAVINGS: Fun Fact

Did you know that your microbiota are the source of your food cravings? Check out this educational and quite entertaining article: Psychology Today | [The Shocking Source of Your Cravings](#)

PROBIOTICS: WHAT ARE THEY?

The term “probiotics” refers to the bacteria that live in our gut and do good things for us. Some strains of bacteria are associated with health, while others are not. This resource is a good place to start: Healthline | [Probiotics 101: A Simple Beginner’s Guide](#).

HEALTH BENEFITS OF PROBIOTICS

This article does a nice job of listing out some potential benefits: Healthline | [8 Health Benefits of Probiotics](#). Refer to the article to read more about each one.

- ❖ probiotics help balance the friendly bacteria in your digestive system
 - ❖ probiotics can help prevent and treat diarrhea
 - ❖ probiotic supplements improve some mental health conditions
 - ❖ certain probiotic strains can help keep your heart healthy
 - ❖ probiotics may reduce the severity of certain allergies and eczema
 - ❖ probiotics can help reduce symptoms of certain digestive disorders
 - ❖ probiotics may help boost your immune system
 - ❖ probiotics may help you lose weight and belly fat
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PROBIOTICS: BEST FOOD SOURCES

It sure doesn’t hurt to include some probiotic foods in your diet as part of a strategy to optimize gut health. Read this article to learn more: Healthline | [11 Probiotic Foods that are Super Healthy](#)

Here is a snapshot of the top 11:

- | | | |
|--------------|--------------------------|------------------------|
| ❖ Yogurt | ❖ Miso | ❖ Natto |
| ❖ Kefir | ❖ Kombucha | ❖ Some types of cheese |
| ❖ Sauerkraut | ❖ Pickles | |
| ❖ Tempeh | ❖ Traditional buttermilk | |
| ❖ Kimchi | | |
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BUDGET-FRIENDLY: MAKE YOUR OWN PROBIOTIC FOODS

If you check online or the grocery for some of these products listed above, you may find that they are pricey. However, it is surprisingly easy to make your own kraut or kimchi at home. Check out these example recipes and see if there are any you would like to try. Also, check out this guide: [Sauerkraut Vs. Kimchi: The Ultimate Guide](#)

Kimchi	❖ Ginger, Carrot, Daikon Recipe
Sauerkraut	❖ Homemade German Sauerkraut (no fancy equipment needed!) ❖ How to Make Sauerkraut (4 Flavors!)

PREBIOTICS

Here are a couple of articles that can help differentiate between **probiotics and prebiotics**, and that also provide information about **prebiotic food sources**. Eating foods that contain probiotics (like yogurt) and prebiotics (mostly indigestible fiber) is a preferred way to bring healthy bacteria into your body AND provide them with the food they need to thrive versus taking a supplement.

- ❖ Healthline | [Probiotics and Prebiotics: What's the Difference?](#)
- ❖ Healthline | [The 19 Best Prebiotic Foods You Should Eat](#)

Here is the list of 19 prebiotic foods named in the article above:

- Chicory root
- Dandelion greens
- Jerusalem artichoke
- Garlic
- Onions
- Leeks
- Asparagus
- Bananas
- Barley
- Oats
- Apples
- Konjac root
- Cocoa
- Burdock root
- Flaxseeds
- Yacon root
- Jicama root
- Wheat bran
- Seaweed

Note from Julie: Scan through the list and see if you are already including any of these in your diet. Some of these foods are higher in carbs, but may still be consumed on a reduced carb diet, depending on your carb allowance. And there can be strategic ways of using them that blunts the blood sugar response, like half an apple combined with an ounce of cheese or tablespoon of nut butter as a healthy snack. Avoid tossing a ripe banana into a smoothie though; the liquid calories will be absorbed quickly and the banana (if not green or light yellow) is a very high carb item. Oats, while also a higher carb item, can be a source of resistant starch that is also gluten-free. See below for more information about resistant starch. You may want to experiment with that as part of your plan.

RESISTANT STARCH

Some forms of starch resist digestion and help feed the bacteria in your gut. Research is showing improved insulin sensitivity and other metabolic benefits from the use of resistant starch. Some of these [health benefits are listed here](#). And here are two references for learning more about this topic:

- ❖ Healthline | [Resistant Starch 101 — Everything You Need to Know](#)
- ❖ Healthline | [9 Foods That Are High in Resistant Starch](#)

Here is the list of 9 foods named in the article above:

- Oats
- Cooked and cooled rice
- Some other grains
- Beans and legumes
- Raw potato starch
- Cooked and cooled potatoes
- Green bananas
- Hi-maize resistant starch
- Other cooked and cooled starchy carbs

Healthline | [7 Tasty and Healthy Overnight Oats Recipes](#)

Note: Be cautious with these if you struggle with good blood sugar control. You may find that this makes a better snack later in the day or even dessert versus breakfast.

OMEGA 3's

You've probably heard of omega 3 fats, and you may even be taking a fish oil supplement. Omega-3 fats may benefit our health in many ways, including promoting the health of our gut and reducing inflammation. Here is a good article to learn more about the potential benefits of omega-3's:

- ❖ Healthline | [17 Science-Based Health Benefits of Omega 3 Fatty Acids](#).

A glimpse of the 17 benefits listed in the article:

- can fight depression and anxiety
- can improve eye health
- can promote brain health during pregnancy and early life
- can improve risk factors for heart disease
- can reduce symptoms of ADHD in children
- can reduce symptoms of metabolic syndrome
- can fight inflammation
- can fight autoimmune diseases
- can improve mental disorders
- can fight age-related mental decline and Alzheimer's disease
- may help prevent cancer
- can reduce asthma in children
- can reduce fat in your liver
- may improve bone and joint health
- can alleviate menstrual pain
- may improve sleep
- good for your skin

FACT SHEET ON OMEGA-3's

While the list of potential benefits of omega-3's is long, the number of PROVEN benefits is shorter. This fact sheet produced by the National Center for Complementary and Integrative Health is a straightforward resource that can help you cut to the chase on all aspects of omega-3s (including info on supplements) in a very user-friendly format:

- ❖ NIH Fact Sheet | [Omega-3 Supplements: In Depth](#)

OMEGA-3 FOOD SOURCES

Here is a good article to help you visualize some food sources of omega-3 fats. Healthline | [12 Foods That Are Very High in Omega-3](#). Note that eating more **foods rich in omega-3's** seems to be superior than taking omega-3 supplements (see fact sheet in section above for more about this).

How many of these foods are you already including in your diet? Any new ones you are willing to try?

- | | | |
|------------------|-----------------------------|----------------|
| 1. Mackerel | 5. Oysters | 9. Flax seeds |
| 2. Salmon | 6. Sardines | 10. Chia seeds |
| 3. Cod liver oil | 7. Anchovies | 11. Walnuts |
| 4. Herring | 8. Caviar | 12. Soybeans |

- ❖ Noted in the article is the fact that items 1-8 are sources of **EPA and DHA** omega-3's; items 9-12 contain **ALA**, which is an inferior form of omega 3's.
- ❖ **Some other foods also contain omega 3's, but in smaller amounts.** These include: **pastured eggs, omega-3-enriched eggs, meats and dairy products from grass-fed animals, hemp seeds, and vegetables like spinach, Brussels sprouts, and purslane.**

FISH OIL: TO SUPPLEMENT OR NOT?

The value of omega-3 fats in our diet seems pretty clear. If you aren't eating many foods rich in omega-3's (see above), it could be beneficial to consider a supplement. You can refer to the NIH Fact Sheet above to review which medical conditions might benefit from taking a supplement. Below are some additional articles that could help in terms of deciding how much to take, and in what format. This is something you should also discuss with your medical practitioner, as part of your overall plan.

- ❖ Healthline | [Omega-3 Supplement Guide: What to Buy and Why](#)
- ❖ Healthline | [How Much Omega-3 Should You Take per Day?](#)
- ❖ Healthline | [Cod Liver Oil vs Fish Oil](#)
- ❖ Healthline | [Krill Oil vs Fish Oil: Which Is Better for You?](#)

OMEGA-6 TO OMEGA-3 RATIO: The REAL Problem

As we consider whether or not to include omega-3 supplements in our health plan, it's worthwhile to pause and consider that the **IMBALANCE** of omega-6 fats to omega-3 fats in our modern diets is the real problem. **Cutting back on food sources of omega-6 fats** can go a long way toward correcting this imbalance, and may even make it unnecessary to consider omega-3 supplements. This article below does an excellent job explaining this and even provides a nice chart of cooking oils to illustrate which ones are lowest in linoleic (omega-6) fats. Processed foods and fast foods/restaurant foods are a big source of omega-6 fats (lots of soybean oil and other unfavorable oils used). The more we prepare foods at home, the greater our control of the ingredients used.

- ❖ Healthline | [How to Optimize Your Omega-6 to Omega-3 Ratio](#)

OTHER FOODS/INGREDIENTS TO REDUCE INFLAMMATION

There are many foods and ingredients besides fish oils that have the potential to decrease inflammation. Read these 2 articles and scan through the bulleted lists (from the articles) to see if there are any you would like to include in your plan: Healthline | [10 Supplements That Fight Inflammation](#) and Healthline | [13 of the Most Anti-Inflammatory Foods You Can Eat](#).

Included in the list of 10 supplements:

- | | | |
|---------------|---------------------|-------------|
| ● curcumin | ● spirulina | ● garlic |
| ● fish oil | ● vitamin D | ● vitamin C |
| ● ginger | ● bromelain | |
| ● resveratrol | ● green tea extract | |

Included in the list of 13 antiinflammatory foods:

- | | | |
|--------------|--------------------------|----------------------------|
| ● berries | ● peppers | ● dark chocolate and cocoa |
| ● fatty fish | ● mushrooms | ● tomatoes |
| ● broccoli | ● grapes | ● cherries |
| ● avocados | ● turmeric | |
| ● green tea | ● extra virgin olive oil | |

VITAMIN D

Vitamin D was named in the list above and it deserves extra attention, particularly as we discuss gut health. Our understanding of the role that vitamin D plays in health is growing exponentially. **One little known role of vitamin D is that it serves as “food” for bacteria in our guts.** Many people have suboptimal levels of vitamin D. This may be one reason why taking probiotic supplements have little impact on our long-term microbiota; if these bacteria don't have the food they desire, they aren't inclined to stick around. [Dr. Stasha Gominak](#) has been working on this puzzle for many years. She believes that the gut bacteria thrive on vitamin D as a food source, in addition to other things, like prebiotics, mucus, etc, and that our chronically depleted vitamin D levels are a big reason they don't want to stay. Restoring vitamin D to an “optimal level” can provide an incentive to the bacteria; and this is good because our gut bacteria are responsible for manufacturing B vitamins, as well as many other beneficial substances.

Refer to the handout titled “**Vitamin D**” to learn more. And be sure to ask your medical provider to test your level; this is NOT part of routine testing (although it should be!).

COLLAGEN

Collagen supplements abound. Whether or not you should include some in your diet is debatable. Food sources of collagen include gelatin, bone broth and any food with the connective tissues of animals. The majority of the research on collagen pertains to **collagen supplements** (perhaps because the amount consumed and type of collagen is more easily quantified this way). This article will clarify some details about what collagen is, some of the potential benefits, and even includes a link to the best collagen supplements, according to the author.

- ❖ Healthline | [Top 6 Benefits of Taking Collagen Supplements](#)
- ❖ Healthline | [The 8 Best Collagen Supplements for Better Skin](#)

Potential benefits listed in the article (with varying levels of scientific studies to support each of these):

- May improve skin health
- May relieve joint pain
- May prevent bone loss
- May boost muscle mass
- May promote heart health
- May increase the strength of hair and nails
- May help with leaky gut

FAT CELLS: A SOURCE OF INFLAMMATION

As we wrap up this look at all the potential sources of inflammation, we can't forget to look at fat cells themselves. Fat cells release a range of chemicals, some of which promote inflammation. It is good to know that weight loss helps to reduce this. You may not care to know all the scientific information about this topic, but in case you do, here is a good resource: Endocrine Web | [Obesity and Inflammation: A Vicious Cycle](#). The important thing is just to acknowledge that **fat cells may be playing a significant role in continuing the cycle of inflammation**, so it is important to do everything possible to reduce their number through the act of weight loss.

TIME RESTRICTED EATING: DOWNTIME FOR THE GUT AND A POTENTIAL KEY TO WEIGHT MANAGEMENT

Giving the gut a break - both overnight and between meals - is an important, but often overlooked strategy. Please see the handout titled “**Time Restricted Eating**” for more details.