

How To Eliminate Morgellons

When Morgellons disease was first recognized most doctors believed it to be a delusional disorder, that it didn't exist, that is was most likely a combination of delusional parasitosis and obsessive picking of the skin. Doctors told their patients that Morgellons was all in their head, except for the skin lesions caused by self-abuse. Fortunately, scientists did some research. Recent studies have shown that the filaments accompanying Morgellons are composed of keratin and collagen and that is caused by the proliferation of keratinocytes and fibroblasts in epithelial tissue. Some researchers believe that the cause of this disease is an infection from a tick bite.

The study proved that filaments are not cellulose as found in cotton, linen, or other plant-based textile fibers, or chitin which would indicate fungal cells or insect exoskeletons.

They are biofilaments of human cellular origin produced by epithelial cells and stem from deeper layers of the epidermis, the upper layers of the dermis, and the root sheath of hair follicles.” – [NCBI](#)

Though studies are showing that the disease is real, conventional medicine is, of course, slow to acknowledge the disease. Googling “what causes Morgellons disease” gets you this non-answer:

Morgellons disease is a delusional disorder that leads to the belief that one has parasites or foreign material moving in, or coming out of, the skin. Morgellons disease is a little-known disorder that is often associated with nonspecific skin, nerve, and psychiatric symptoms. Some refer to it as a fiber disease.” – [MedicineNet.com](#)

But, the next article is titled, [Studies show that infections—not delusion—cause Morgellons disease.](#)

Morgellons involves many symptoms common to auto-immune sufferers including:

- chronic, severe fatigue
- joint pain
- neurological problems
- memory and cognitive disruptions (including brain fog)
- mood changes
- crawling sensations on and under the skin
- the sensation of itching or biting
- skin eruptions or lesions with little black specks on or under the skin
- filaments or threads under the skin and erupting from the skin

Morgellons and Lyme disease have a lot in common. Both were thought to be mostly psychosomatic. Both are thought to be transmitted from a tick bite. Both are autoimmune diseases that cause the first four symptoms listed above. Both may be caused by *Borrelia spirochetes* (corkscrew-shaped bacteria associated with tick-borne diseases). And both can be healed through the same means.

Like many of our readers, I first heard about Morgellons Disease back in 2015 when singer/songwriter Joni Mitchell was hospitalized for the disease. In 2010, she told the Los Angeles Times, “Fibers in a variety of colors protrude out of my skin like mushrooms after a rainstorm: they cannot be forensically identified as animal, vegetable or mineral.”

We published an article about the disease in 2015 and then I received more than a dozen calls and emails asking for help within a couple of months. Within the last few years, I’ve helped teach more than twenty people how to regain their health and rid their body of all Morgellons symptoms. The good

news is that every single person was able to eliminate the disease.

I suspected a Morgellons was a fungus. It looks like I was wrong about that. But, whether it's Lyme, Morgellons, diabetes, cancer, or depression, the only treatment that works is holistic with primary emphasis on gut health. The reason for this is that an unhealthy gut overwhelms the immune system, whereas a healthy immune system (one that is not overwhelmed) can rid the body of almost any disease.

Below is a list of recommended supplements, but the right diet is absolutely imperative. Don't skimp on the diet!

Morgellons Diet and Supplement Protocol

Here are three articles I put together on diet. This is indicative of how my family eats every single day.

- [*Detox Cheap and Easy Without Fasting – Recipes Included*](#)
- [*Start Eating Like That and Start Eating Like This – Your Guide to Homeostasis Through Diet*](#)
- [*How to Make the Healthiest Smoothies – 4 Recipes*](#)

We start off with cranberry lemonade and a huge salad every morning. For lunch, we sometimes do a smoothie or we snack on some nuts and/or fruit or we just finish our massive 11-cup salads. For dinner, we always cook from scratch, which takes preparation and time, but it gets easier. Rice and beans, quinoa, lentils, millet, oatmeal, and amaranth are common staples for our cooked meals. We add lots of raw vegetables and herbs to our dinners as well, for instance, the rice and beans go great with chopped tomatoes and avocado, diced onions and garlic, and shredded turmeric and ginger. Eat raw herbs and cooked herbs together for maximum health benefits.

This is truly a lifestyle, not a diet, and it's one we live

every day. You may not need to go to this extreme to rid your body of disease, but I find that most who are dealing with chronic illness need to take it this far, at least for a few months.

The salads are the most important part of this protocol! In fact, they are the most important part of all of my protocols. More than supplements, more than anything save getting enough water, the right kind of salads are imperative. Eat lots of salads with tons of different vegetables and herbs. Make sure they have at least 15 different vegetables and herbs. If you could see what packing your gut with salad does to your ecosystem under a microscope, you'd understand why I'm so passionate about salads. There is nothing more beneficially life-changing than developing a salad habit when the salads are big and diverse and homemade. They do more than any supplement or any other food to clean the intestinal walls of filth and develop a beneficial gut ecosystem. And that is the key to good health. A beneficial gut microbiome is a fortress against undigested proteins and unwanted pathogens. When the gut is not well these intestinal walls allow undigested proteins and pathogens to seep into the bloodstream wrecking havoc on the immune system. Salads feed the right gut microbes and the right microbes build a healthy microbiome.

The cranberry lemonade helps keep the kidneys and liver working optimally. These organs typically get sluggish quickly when lots of pathogens are killed. If salads are #1, this cranberry lemonade is #2, and supplements are a distant #3.

For those with very serious gut issues, legumes and grains will be a no-no for the first few weeks, but when enough salad has been consumed, the gut should be able to reap many benefits from cooked foods like the dinner meals aforementioned.

Sweet fruit should be severely limited, and for the very ill, avoided until the gut is working better. Grapefruit,

cranberry, avocado, lime, and lemon do not fall under this category.

Drinking fruit juice, even fresh homemade fruit juice, is not much better for you than refined sugar, so don't make the common mistake of thinking a fresh-juice fast is going to get you well. It has its benefits, but it doesn't usually rid the body of chronic disease.

Now that diet is covered, here's the supplement part:

Supplement Stack #1 – On an empty stomach, twice a day, early morning and late night

- 2 [Abzorb](#) (this is a probiotic and a systemic enzyme)
- 2 cups of cranberry lemonade
- Optional: Add a serving of the [MycoPhyto Complex](#)
- Optional: Additional [systemic enzymes](#) (systemic enzymes break down proteins that should not be in the body)

Supplement Stack #2 – With meals, three times a day:

- 5 of the [SF722](#)
- [Shillington's Blood Detox Tea](#)
- [Shillington's Blood Detox Formula](#)
- [Oil of Oregano](#)
- [Coptis Chinensis / Chinese Goldthread](#)
- [Shillington's Echinacea+](#)
- [MycoPhyto Complex](#)
- Optional: one serving of MycoPhyto Complex
- Optional [Intestinal Cleanse](#) (if bowel movements are slow)

Also, take absorb with any food that is difficult to digest.

If you can't afford many supplements, or are overwhelmed by

this information and don't know where to begin, contact me. I don't ever charge to talk to people.

Protocol

6am – Supplement Stack #1

Take two [Abzorb](#) with a big glass of cranberry lemonade. This is the right time to take systemic enzymes if you chose to take them.

9am – Supplement Stack #2

Salad time! The MycoPhyto Complex company recommends to take on an empty stomach, but I like to take it with salads and smoothies too.

12pm – Supplement Stack #2

Homemade Smoothie Time! If you're extremely ill you may need to wait on the smoothies and just double up on the salads for the first week, but I've found that many people who were suffering from a plethora of ailments and having trouble recovering responded very well to pineapple smoothies. Pineapple smoothies (made with fresh pineapple), like the ones I have recipes for in the above link, pack a massive amount of enzymes and can help break down a lot of junk in the gut, while delivering large amounts of nutrition. But, fruit smoothies have plenty of sugar, so it's a good time to repeat the supplements from 9am.

Use pineapple, coconut water, water, cranberry juice, or if you can withstand some sugar try granny smith apple juice, but don't use sweet fruit juices for smoothies. Always use fresh pineapple when using pineapple. Always add as many vegetables and herbs as you can. I also suggest adding [Total Nutrition Formula](#) or something similar ([here's a recipe](#)). If you want to make a smoothie without pineapple, I recommend coconut water as the liquid. Check out our [smoothie article](#) for more ideas.

3pm – Week 1 – Supplement Stack #2

3pm – Week 2 – Supplement Stack #1

6pm – Supplement Stack #2

Dinner time! Everything from scratch, nothing pre-made in any way, all whole food ingredients. See [this article](#) for more info and don't hesitate to contact me.

9pm – Supplement Stack #1

Finish off the night with probiotic support and leave them alone for the night to do their thing.

Three More Supplements to Consider – Die-Off, Heavy Metal Detox, & Bowel Movements

If a Herxheimer reaction is a concern (die-off) be sure to drink plenty of cranberry lemonade and I also recommend adding [Total Nutrition Formula](#) and the [Intestinal Detox](#). Here's a recipe to [make your own Total Nutrition](#). This way you'll get bentonite clay, charcoal, chlorella, spirulina, and more, which are all great for mitigating the die-off effects of a Candida detox, and they also chelate heavy metals.

You can take the Total Nutrition Formula with the smoothie or sprinkle it on the salad (or choke it down with water), and take the Intestinal Detox anytime throughout the day as directed.

If you're not defecating easily and at least twice daily, I also highly recommend the [Intestinal Cleanse](#). It kills parasites and moves the bowels better than anything else on the market that I know of, by far. I recommend taking it with the antimicrobials.

Conclusion

Morgellons is scary. It often causes otherwise social people to become unemployed shut-ins. Unless the doctor is abreast of the latest science, they will likely treat someone with Morgellons as if they're mad. It's a really hard thing to live with. Medical science does not yet really understand it, but understanding a disease doesn't typically help big pharma to cure a disease. The good news is that every single person that I've worked with was able to completely eliminate all of the symptoms. It takes a few months, and a lot of discipline, but it's very doable. The first step is to heal the gut.

Five Ways to Cure Athlete's Foot

Athlete's foot thrives in damp, warm areas and can spread from person to person. Athlete's foot fungus is often contracted from pool areas, public bathrooms, and locker rooms, hence the name, "Athlete's Foot." Ringworm and Candida are two types of fungus that most commonly cause athlete's foot. There are many types of Candida and many types of ringworm and many other fungi that can infect us in many different ways. Fungi like feet because feet are generally within socks and shoes, which make for the kind of warm, moist environment preferable to fungi.

Prevention

The prevailing opinion is that anyone can catch athlete's foot, but this is not true. Susceptibility to outer fungal infections like athlete's foot indicate a weak immune system

which indicates an unbalanced gut – a gut full of Candida, which leads to an abundance of Candida in the body. The best way to prevent athlete's foot is to keep a healthy and balanced gut. We have more on [gut health](#) near the end of the article, and here are some other preventive measures that will also help accelerate healing as well:

- Keep toenails short
- Change socks regularly
- Rotate shoes
- Don't go barefoot in a gym locker room or pool area, wear flip-flops
- Dry feet thoroughly after bathing; especially between your toes
- Give feet time to breathe
- Put a few drops of essential oils in each shoe every day into the toe area
- Open a probiotic capsule and put contents into each shoe at the toe area

Socks and shoes cause feet to stay moist and dark with little to no airflow. Fungi love these conditions. If you're dealing with athlete's foot, give your feet some time to breathe outside of shoes and socks. For instance, wear sandals in the house, relax with bare feet on the autumn, keep your floors, feet, and sandals clean and dry, and go to bed without socks. If feet sweat regularly, even outside of socks and shoes, this is a sign the endocrine system needs repair.

Must Read: [Holistic Guide to Healing the Endocrine System and Balancing Our Hormones](#)

Topical treatments don't get to the root of the problem but combine three or more of the following topical solutions with an efficient gut protocol like the one listed below and you should be able to get rid of athlete's foot fast. Keep the gut healthy and be rid of it for good. We don't recommend baking soda or cornstarch. These two ingredients can in some cases make the fungus infection worse.

Essential Oils

Essential oils are often applied undiluted, directly to the skin, which is effective, but this can also cause pretty serious pain to broken skin. Other options include making a foot bath and making a topical solution with essential oils with a carrier like aloe vera, or [coconut oil](#) (or both). You can also use avocado oil, olive oil, or any other healthy oil as well, but I like the antifungal properties and the thickness of coconut oil and I also like the soothing aspects of aloe.

Add 5-10 drops of your preferred essential oil to a one to two tablespoons of coconut oil or aloe vera (gel or juice). The gel is easier to use, obviously, but it's best if you've got the whole plant, fresh and unprocessed. An easy way to use this solution is to apply the carrier on the foot near the infection but about a half an inch away from any broken or irritated skin, and then add a few drops of the essential oil, mix, and repeat until the desired amount of essential oil has been applied. Then, spread throughout the infected area.

Apply this treatment at least three times a day (five or more for best results) until the infection is gone.

Top antifungal [essential oils](#)

- Lemongrass
- Satureja Montana
- Tea tree oil
- Oil of oregano
- Thyme
- Rosemary
- Peppermint
- Lemon
- Clove
- Garlic

- Lavender
- Geranium
- Cinnamon
- Citronella
- Eucalyptus

Lemongrass and Satureja Montana have come out on top for antifungal properties in multiple studies comparing the antimicrobial effectiveness of essential oils, but fungi are very adaptive, so mix it up. Try one or two on the first few rounds and then try one or two others on the next application.

Foot Baths

Another option is to soak your feet in an antifungal bath. Forty drops of essential oils mixed with water can make for a potent antifungal footbath, and you can also add these essential oils to any of the following footbath solutions. Don't forget to dry your feet thoroughly after soaking. Ideally, these soaks are done two times a day at least, preferably three to five, until all signs of the infection are gone.

Epson Salt

1. Add a half a cup of Epsom salt to a small, suitable container for your feet
2. Soak the infected foot or feet for 15 minutes, three times a day

Or, better yet, do an Epson salt bath; soak your whole body in a tub. And of course, add your favorite essential oils.

Vinegar

Vinegar is acidic. Fungi that commonly infects us (including Candida) don't like acidity. But vinegar can cause pain to broken and otherwise damaged skin, so beware. But it usually

is very effective.

1. Mix one part apple cider vinegar with 3 parts warm water in a small, suitable container for your feet
2. Soak the infected foot or feet for 15 minutes, three times a day
3. Once finished, dry feet completely

Feel free to combine essential oils with vinegar and epsom salt. Do not mix hydrogen peroxide with vinegar

Hydrogen peroxide with iodine

This is our least favorite solution. It's messy, it stains, and it can be very painful with damaged skin. But a [recent study](#) did find that the combination kills fungi effectively, and using these two ingredients together are much more effective than using them separately.

- Pour hydrogen peroxide into a suitable container for the feet
- Pour enough to cover infected areas of the foot when submerged
- Add a tablespoon of Iodine or about a quarter cup of an iodine solution, available at most drugstores

The foot bath solutions can also be applied topically. So can the following herbs and other supplements.

Garlic

Garlic is going to hurt damaged skin but it also accelerates healing.

1. Crush a clove of garlic and mix it with an oil to apply topically
2. Apply the paste to the infected area and leave it alone for 30 minutes.
3. Wash off the area and dry completely

Supplements For Topical Use

[SF722](#)

This is the best fungal killer on the market. It will burn for a little bit, and it's intense, but the pain goes away pretty quickly, and I know of nothing that works faster or better to kill the fungus. The other benefit of SF722 is that fungi cannot build up a resistance to it like it can with other treatments. Try taking five capsules of SF722 three times a day (fifteen total) and break open a gel tab to apply topically three or more times a day as well.

[Probiotic](#)

A probiotic capsule can be opened and used topically. This provides some immediate relief and it's not painful at all. I recommend rotating this with SF722 throughout the day. I like [Abzorb](#), which is a probiotic and an enzyme – both kill fungi.

[Colloidal Silver](#), [Oil of Oregano](#), [Pau D'Arco](#), [Coptis Chinensis](#)

Much less painful than the other treatments but I don't think it's as effective either. The other herbs listed here are very effective against fungal infections but can cause some pain when applied to broken skin.

Heal the Gut

If you have athlete's foot you've got a body with an abundance of Candida. This is also true if you have recently had a vaginal yeast infection, a white tongue, allergies, or pretty much any chronic inflammatory illness. If you suffer from athlete's foot, Lyme disease, AIDS, or diabetes, the first step is to heal the gut. Here is a supplements stack for fungal elimination, and articles below that I recommend to

help balance the gut. Supplements can help a lot, and SF722 is the best one to get if you can only afford one, but a healthy diet is crucial. If you think your diet is healthy, but you deal with chronic illness, I contend you need an even better diet. See the article links below for more on that.

Fungal Supplement Stack – Knock Out Yeast, Candida, Mold, Fungus

The first three should be plenty for most people, but for impatient people with really prominent fungal issues and bigger budgets could use all of these:

- [Formula SF722 – Thorne Research](#)
- [Syntol AMD – Arthur Andrew Medical](#)
- [Berberine 500mg – Thorne Research](#)
- [MycoCeutics MycoPhyto Complex – EcoNugenics](#)
- [MicroDefense – Pure Encapsulations](#)
- [Abzorb Vitamin & Nutrient Optimizer \(500mg\) HCP Formulas](#)

Gut Health Articles

- [*Best Supplements To Kill Candida and Everything Else You Ever Wanted To Know About Fungal Infections*](#)
 - [*Detox Cheap and Easy Without Fasting – Recipes Included*](#)
 - [*Stop Eating Like That and Start Eating Like This – Your Guide to Homeostasis Through Diet*](#)
 - [*How to Make the Healthiest Smoothies – 4 Recipes*](#)
 - [*How to Avoid GMOs in 2018 – And Everything Else You Should Know About Genetic Engineering*](#)
 - [*How to Heal Your Gut*](#)
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How To Heal Your Gut

The gastrointestinal (GI) tract of a healthy mammal is home to a complex community of bacteria. This microbial community is often called “microbiota,” “gut flora,” or “beneficial bacteria.” These microbes have evolved with us to coexist in a mutually beneficial relationship.

An Introduction to Gut Microbes

We need beneficial gut microbes for proper B vitamin production, digestion, and assimilation. Some bacteria also synthesize vitamin K. In fact, we need bacteria for synthesization, digestion, and assimilation of many vitamins, minerals, proteins, fats, and many other nutrients. Healthy bacteria also keep the population of other microbes (like candida) down to healthy levels. Healthy bacteria colonies form a biofilm that keeps the intestinal wall healthy and acts as a barrier against pathogens. Healthy bacteria move slowly and crowd out unwanted pathogens. A healthy gut biofilm is a home to thousands of different beneficial bacteria, the more the better. And they don't just reside on our gut. Some of them can and do pass through the gut wall and they live all over our body. It's often said that bacteria in our body outnumber our own cells by about ten to one. That's incorrect, but there are more bacteria cells than human cells in the human body. The ratio is about 39 bacterial cells to every 30 human cells.

If you have ever been to a bio-dentist, they may have shown you what your mouth bacteria looks like under a microscope. Generally, the fast-moving bacteria are up to no good. You can see these guys frantically swimming around looking for trouble, banging against the teeth and gums, maybe looking for a good spot to burrow in and make a home, feed, and reproduce. If you have teeth and gum issues try this: take the capsule of

a probiotic, break it open, and empty the contents into your mouth. Leave it in there. Move it around. Swish it around when you've built up some saliva. You should notice that some of the pain subsides. Now picture how this works in your gut. Incidentally, oral health is a very good indicator of gut health.

Without enough healthy bacteria, the whole body suffers. Gut microbes can change brain chemistry and alter endocrine functionality. Depression is tied to irritable bowel syndrome. Autism is believed to be caused by or at least exacerbated by an unbalanced gut. In my experience, every single autoimmune disease resides in the body of someone with an unhealthy gut.

Hopefully, you're getting an idea of how important healthy bacteria are to our health. We need them for good health for many reasons, and likely most of which we aren't even yet aware of yet.

It should be noted that the phrases "good bacteria" and "bad bacteria" are pretty inaccurate. Bacteria are only responding to their environment. "Good" bacteria, under bad circumstances, will become "bad" bacteria very quickly.

Candida

We all have candida spores in our gut even if we're healthy. They're practically indestructible. Anything we could do to kill them would probably kill us. They can reside in the body dormant without causing problems for an estimated six months.

Antibiotics kill bacteria and sometimes antibiotics can also kill some other pathogens including some fungi. But spores are left to rule. When there is an opportunity to flourish candida turns fungal, becoming pathogenic.

Common Causes of Candida Overgrowth

- Alcohol
- Antibiotics
- Vaccines
- Amalgam Fillings
- Refined foods
- Smoking

An often overlooked way that candida gets fed is damage to the body. Cells are mostly made up of glycogen and starch. Damaged, dying cells feed yeast and other pathogens.

Leaky Gut

The gut is permeable, so to some extent, it's always leaky. A health gut biofilm doesn't let unwanted things pass into the bloodstream. Some of the "good" bacteria will get through, but that's ok. Remember, there are bacteria all over our body. We want the good guys, not the bad guys. If candida takes over, an abundance of candida increases zonulin levels, the substance that controls the tight junctions between enterocytes in the gut, which leads to weaker junctions and the development of leaky gut. And here's a scary fact for you: candida filaments also penetrate directly through the wall of the gut lining and contribute to leaky gut in this manner as well. In other words, picture centipede looking things with very long legs that kind of drill into the gut lining. The intestinal wall will also get dry and cracked. All of this makes for a gut that is much more permeable than it should be. At this stage pathogens and undigested proteins make it into our bloodstream, overwhelming the body's immune system. Proteins have to be broken down completely or else the body sees them as foreign proteins and reacts accordingly. This is how most allergies happen.

And that gut drilling thing candida does – it does it all over

the body as well, opening up pathways for infection throughout the body. It's easy to see how candida wrecks havoc on the liver. Consider the gut-liver axis. 70% of the blood flow to the liver is flowing from the gut. The liver quickly becomes overwhelmed with the toxins produced by candida.

I could go on and on about candida, but I'm attempting to write my shortest gut-health article to date, so I'll stop here. But if you want to know more, read [*Best Supplements To Kill Candida and Everything Else You Ever Wanted To Know About Fungal Infections*](#). I'll bet it'll blow your mind. Candida is a fascinating creature.

Supplements

If you want to see a list of the top 25+ supplements for killing fungi, this is your list. Below is a list I put together a supplement stack with just a few that work very well to put the gut back into homeostasis.

- [**Activated Charcoal**](#): Binds with positively charged things in the gut, like candida in its pathogenic form, and many of the toxins it produces, which then gets defecated out of the body. ([more on activated charcoal](#))
- [**Astragalus**](#): A potent antimicrobial that also is anti-inflammatory, boosts the immune system, slows tumor growth, helps prevent and reverse diabetes, and more.
- [**Berberine**](#): This plant-root alkaloid extract has confirmed and potent antiviral, antibacterial, and anti-fungal properties.
- [**Biotin**](#): With the presence of the B vitamin, biotin, it is said that yeast is unable to change into its mycelium form. On the other hand, there are some studies that suggest candida can feed off of biotin.
- [**Black Walnut**](#): Studies have shown that black walnut can effectively kill canker sores, herpes, and syphilis sores. The husks of black walnuts have potent anti-

fungal powers; more powerful than many prescription drugs. Fungi and parasites thrive in an acidic environment.

- **[Caprylic acid](#)**: A the fatty acid in coconut which contains antibacterial, antiviral and antifungal properties. Coconut or coconut oil by itself does not have very strong antimicrobial properties.
- **[Chlorella](#)**: It's not an anti-fungal, but chlorella is negatively charged like charcoal and has a host of other benefits that counter candida symptoms. Chlorella also helps remove heavy metals and limited amounts of positively charged candida from the blood.
- **[Cinnamon](#)**: A potent natural antifungal with tons of other health benefits. [Read more on cinnamon](#).
- **[Clays](#)**: Like activated charcoal, bentonite clay can bind with candida and heavy metals and other positively charged items to pull them out of the body through defecation.
- **[Cloves](#)**: This strong smelling spice contains some of the same compounds as oregano oil. Studies have shown that cloves contain powerful antimicrobial and anti-fungal compounds.
- **[Cranberry](#)**: There is nothing better for a urinary tract infection than unsweetened, unadulterated cranberry juice. [Click for Recipe](#).
- **[Diatomaceous Earth](#)**: Often called DE for short, this supplement is another negatively charged chelator (like charcoal and bentonite clay, but not as effective in that way), that also kills pathogens, but candida biofilm protects itself well from DE. [More on DE](#).
- **[Enzymes](#)**: Hemicellulase, protease, and Cellulase have been shown to break down the cells walls and the biofilm of candida. These must be taken within a protective capsule that will break apart in the gut and not the stomach acid. [More on enzymes](#).
- **[Garlic](#)**: Allicin, a compound in garlic, has antifungal, antibacterial and antiviral properties, and garlic helps

strengthen the immune system. [Read more about garlic.](#)

- **[Goldenseal](#)**: A popular herb that has been used by Native Americans for hundreds of years, with potent antimicrobial activity, including some pretty decent antifungal properties.
- **[Goldenrod](#)**: Goldenrod is antifungal, diuretic, diaphoretic, anti-inflammatory, expectorant, astringent, antiseptic, and carminative.¹⁰
- **[Magnesium](#)**: Breaks down the toxic metabolites (byproducts) of candida albicans. Read about [homemade calcium and magnesium here](#).
- **[Molybdenum](#)**: Also breaks down the toxic metabolites (byproducts) of candida albicans.
- **[Mushrooms](#)**: Fight fire with fire, and fungi with fungi! Many mushrooms produce natural anti-yeast factors to prevent other fungi from taking over their turf. The reishi mushroom is well known throughout the world for its plethora of health benefits, including powerful antifungal properties, but there are many other mushrooms that help clean the gut as well.
- **[Lemongrass](#)**: Lemongrass oil is the most powerful antibacterial and antifungal essential oil.
- **[Neem](#)**: This plant's properties include immunomodulatory, anti-inflammatory, antihyperglycaemic, antiulcer, antimalarial, antifungal, antibacterial, antioxidant, antimutagenic, and anticarcinogenic.
- **[Oil of Oregano](#)**: This extract is very well known for its ability to kill off pathogenic activity, and there are plenty of studies that demonstrate its efficacy.
- **[Olive Leaf Extract](#)**: This extract is known for killing fungal and pathogenic bacterial infections without harming healthy bacteria. I suspect this is because it's weak and doesn't penetrate biofilm.
- **[Pau D'Arco](#)**: Also known as Lapacho, this supplement has received worldwide attention in recent years due to the

numerous studies proving its amazing health benefits including the ability to kill antibiotic-resistant bacteria and difficult fungal infections like candida.

- **[Probiotics](#)**: Most everyone knows to take probiotics to fight yeast infections, but make sure the probiotic is of quality. Lots of cheap probiotics break down in stomach acid and the ingredients end up actually feeding yeast. Also, they need to be able to pass through stomach acid and into the gut to do its job. Taking probiotics with antimicrobial supplements will reduce the effects of both.
- **[Spirulina](#)**: For purposes of candida killing, it works just like the other aforementioned algae, Chlorella. Check out [How to Grow Spirulina at Home](#)
- **[Turmeric](#)**: Turmeric is a potent antimicrobial herb with proven antifungal properties and a host of other amazing health benefits. Check out [How to Optimize Curcumin](#).
- **[Undecylenic acid](#)**: This fatty acid is six times more effective than caprylic acid. It's been shown in studies that candida cannot build a tolerance for undecylenic acid, which probably makes it the most potent candida killer on this list.
- **[Wormwood](#)**: This is a potent antimicrobial's active ingredient is Artemisia, and it is better known the world over for its ability to kill parasites.
- **[Zinc](#)**: helps with protein digestion, enzymatic reactions, energy production, antioxidant functions, and it is imperative for proper mineral balance. It's common to see a zinc deficiency in a candida-laden body.

Fungal Supplement Stack – Knock Out Yeast, Candida, Mold, Fungus

The first three should be plenty for most people, but for impatient people with really prominent fungal issues and bigger budgets could use all of these:

- [Formula SF722 – Thorne Research](#)
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- [MicroDefense – Pure Encapsulations](#)
- [Abzorb Vitamin & Nutrient Optimizer \(500mg\) HCP Formulas](#)

I recommend taking the SF722, Berberine, MycoCeutics, and Microdefense with meals, and the Abzorb and Syntol separately, on an empty stomach (like in the morning and before bed). The Abzorb and the Syntol are a bit redundant, but I find good results using both if the budget can afford it. If money is really tight, just get the SF722 and put your money into your diet.

Diet

You could probably take lots of SF722 every day and eat like the average health-conscious person does and be fine. If you don't want to take supplements forever, you'll need to adopt a much healthier diet.

Here are three articles I put together on diet. This is indicative of how my family eats every single day. The first article has recipes for cranberry lemonade and salads.

- [Detox Cheap and Easy Without Fasting – Recipes Included](#)
- [Start Eating Like That and Start Eating Like This – Your Guide to Homeostasis Through Diet](#)
- [How to Make the Healthiest Smoothies – 4 Recipes](#)

Make cranberry lemonade every day. The cranberry lemonade helps keep the kidneys and liver working optimally. These organs typically get sluggish quickly when lots of candida are killed. If salads are #1, this cranberry lemonade is #2, and supplements are a distant #3.

Eat a very large salad (7-9 cups) for breakfast. The salad has

at least 10 different vegetables and a few different herbs.

Don't let anyone cook or prepare your food for you. This means no boxes or cartons or almond milk. Make it yourself. No restaurants, not premade dinners, no prepackaged meals, your foods you buy should have only one ingredient.

Start off with cranberry lemonade and a huge salad every morning. For lunch, for those that aren't very sick, do a smoothie or snack on some nuts and/or fruit, or we finish that massive breakfast salad.

For dinner, cook from scratch, which will take preparation and time, but it gets easier. Try rice and beans, quinoa, lentils, millet, and amaranth. Some of these foods are not recommended on candida-cleanse diets, but I feel they are beneficial when one is eating the aforementioned salads. Also, we add lots of raw vegetables and herbs to our dinners as well. For instance, the rice and beans go great with raw chopped tomatoes and avocado, diced onions and garlic, and shredded turmeric and ginger. Eat raw herbs and cooked herbs together for maximum health benefits.

The salads are the most important part of this protocol. More than supplements, more than anything save getting enough water, the salads are imperative. Eat lots of raw vegetables. Eat a variety of them. Your fridge should be full of produce! There is nothing more beneficially life-changing than developing a salad habit when the salads are big and diverse and homemade. They do more than any supplement or any other food to clean the intestinal walls of filth and develop a beneficial gut ecosystem.

For those with very serious gut issues, legumes and grains may be a no-no for the first few weeks at least, but when enough salad has been consumed, the gut should be able to reap many benefits from cooked foods like the dinner meals aforementioned. I recommend, for those who are very sick and

who have a hard time digesting foods, to slowly add in the aforementioned dinner foods into salads first.

Sweet fruit should be severely limited, and for those who are chronically ill, avoided until the gut is working well. Grapefruit, cranberry, avocado, lime, and lemon do not fall under this category.

Juicing with fruits is not much better than refined sugar, so don't make the common mistake of thinking a fresh-juice fast is going to get you well.

Modern fruit has too much sugar in it; I don't recommend being a fruitarian, especially with an abundance of candida. The key to fixing the gut is a very wide variety of fresh raw vegetables and herbs. Some fruit is great, but too much fruit can send even a healthy gut into fungal overload.

Wheat and oats should be avoided until gut health is restored. Wheat and oats tend to be drenched in glyphosate before they are harvested, and wheat has a host of other issues regarding health. If you want to eat bread, make your own using heirloom seeds and old-school practices. Check out [*Gluten Intolerance, Wheat Allergies, and Celiac Disease – It's More Complicated Than You Think*](#) for more information.

Variety

You need a lot of different kinds of bacteria to make a healthy gut colony. Different bacteria like different foods, and the most beneficial bacteria like the healthiest foods. Raw vegetables and herbs feed the gut the best, producing the healthiest bacteria. If you think about it, nature really wouldn't work any other way. A lot of health practitioners want to limit the diet when someone is sick. They also often say to avoid raw produce. These two ideas are wrong! I work the other way. Limit sweets, including fruits, and eliminate refined and processed foods, but expand your healthy whole

foods that don't feed pathogens, and fresh raw produce is best.

Six Months

It takes around six months for spores to die off. It takes about as long for the gut lining to heal. Fortunately, you can build a healthy biofilm full of beneficial microbes much faster than that. Unfortunately, spores are ready to come to life as soon as they're feed. For anyone with systemic fungal related health issues, it takes six months of being very careful and strict on the diet – six months from the day, after all, symptoms are gone – to really get rid of candida, other fungi, and chronic illness.

Sources:

- [Scientists bust myth that our bodies have more bacteria than human cells – Nature](#)
- [Why gut bacteria are essential for a healthy immune system – Medical Express](#)
- [The role of gut microbiota in immune homeostasis and autoimmunity – NCBI](#)

Gluten Intolerance, Wheat Allergies, and Celiac Disease – It's More Complicated Than You Think

Is “gluten free” a fad? No, it's going to be a thing for as long as we are producing wheat and bread the way we're doing

it. A lot has changed in the bread industry – it's not just one thing.

People often comment about how bread didn't cause problems with our health before GMOs and Roundup were prevalent in our food supply. Our farming practices have changed, and fairly recently, wheat has started being sprayed with Roundup. The newest speculation is that wheat is not the problem – that the problem is glyphosate, the active ingredient in Roundup. People also often suspect that wheat has been genetically modified. And, of course, there are those who believe the whole gluten-elimination thing is ridiculous and that most people are jumping on the gluten-free bandwagon because it's trendy.

In my experience, if one suffers from a chronic illness of any kind, they must remove gluten from their diet in order to get well. I have yet to see an exception. So what's the problem? Is it the glyphosate or the wheat or something else? The truth is it's not just one thing. Everyone would already know this if most humans weren't so bad at thinking in terms of systems. We tend to think linearly and look for singular cause and effects, but rarely if ever are complex problems solved by such simplistic thinking. There are multiple reasons one gets sick, with a cold or a chronic disease, just like there are multiple reasons why our planet's ecosystem is changing. This is why you can't blame the rise of autism on just glyphosate, or GMOs, or increased vaccinations, or diminishing food quality, or environmental degradation – they all correlate, it's all of the above.

Related: [Best Supplements To Kill Candida and Everything Else You Ever Wanted To Know About Fungal Infections](#)

There is a very complex system that is causing the decline of American health, and it's not just the bread. And yes, our health is in decline. If you doubt that...[here, google it](#) and take your pick. Our lifespan is [actually decreasing](#).

What's the difference between Gluten Intolerance, Wheat Allergies, and Celiac Disease

Conventional medicine states that celiac disease and non-celiac gluten sensitivity have a lot of symptoms in common but identifies a key difference. Non-celiac gluten sensitivity is not a genetic disease and does not cause an autoimmune reaction, and celiac disease is a genetic autoimmune disease. A wheat allergy is an allergic reaction to any of the hundreds of proteins in wheat. Gluten intolerance used to be a catch-all phrase for any problem with eating gluten, but now it's being relegated to mean Non-celiac gluten sensitivity.

Non-celiac Gluten Sensitivity

Non-celiac gluten sensitivity is believed to be the most prevalent of the gluten-related disorders, but it's not as well defined as the other two. It's not an autoimmune reaction nor is it an allergic reaction. There are no tests or biomarkers to identify this disorder. Other components of gluten-grains may be causing symptoms. In order for non-celiac gluten sensitivity to be diagnosed, a doctor will rule out celiac disease and wheat allergies or other possible causes of the symptoms first.

Common Symptoms for Non-celiac Gluten Sensitivity

- Fatigue
- Mental fatigue, aka "brain fog"
- Headaches
- Migraines
- Bone or joint pain
- Gastrointestinal distress
 - Gas
 - Bloating

- Cramping
- Indigestion
- Abdominal pain
- Diarrhea
- Constipation

It's said that individuals with gluten sensitivity do not experience damage to the small intestine or develop tissue transglutaminase antibodies like they do with celiac disease. Non-celiac gluten sensitivity has been linked to a variety of health problems including, diabetes, allergies, autism spectrum disorders, and much more.

Related: [How to Avoid GMOs in 2018 – And Everything Else You Should Know About Genetic Engineering](#)

Gastroenterologists looking for celiac disease typically test for a few specific antibodies, and if found, they do an intestinal biopsy to determine if tissue damage is present. Chris Kresser addresses the issue with this kind of testing in [3 Reasons Gluten Intolerance May Be More Serious Than Celiac Disease](#), which I highly recommend reading. He states:

According to some estimates, for every diagnosed case of celiac disease (CD), there are 6.4 undiagnosed cases that remain undiagnosed—the majority of which are atypical or “silent” forms with no damage to the gut. (1) This silent form of CD is far from harmless; it is associated with a nearly fourfold increase in the risk of death. (2)

I believe that patients with NCGS are even more likely than patients with CD to go undiagnosed. Most gastroenterologists today know how to screen for celiac disease. They will typically test for antibodies to alpha gliadin, transglutaminase-2, deamidated gliadin, and endomysium, and if positive do a biopsy to determine if tissue damage is present.

However, we now know that people can (and do) react to several other components of wheat above and beyond alpha gliadin, the component that is implicated in CD. These include other epitopes of gliadin (beta, gamma, omega), glutenin, wheat germ agglutinin (WGA), gluteomorphin, and deamidated gliadin. What's more, people can react to other types of tissue transglutaminase, including type 3—primarily found in the skin—and type 6—primarily found in the brain. ([3](#), [4](#), [5](#), [6](#), [7](#), [8](#))

Celiac Disease

Celiac disease is considered a genetic, autoimmune disorder. Ninety-eight percent of people with celiac disease carry one or both of two very specific genes, HLA DQ2 and DQ8. On the other hand, so does up to 25-30% of the general population. Carrying one or both of these genes does not mean you have celiac disease nor does it mean you will develop it. Doctors often use gene testing to rule out celiac disease, but there are some cases where people who do not have either of the genes still tested out to have celiac disease.

Though celiac disease is said to be genetic, genes cause predispositions and our diet and environment adjust our genes. Environment can alter gene activity without changing the DNA sequence. This is called gene expression. I also believe that the environment and diet can actually alter the DNA sequence, but from what I'm seeing, current science doesn't agree with me on this. Regardless, how your genes affect you is altered by our diet and our environment, and those traits can be passed down to our offspring as well. In other words, a predisposition to celiac disease may be hereditary, but whether or not we have celiac disease could depend on our genetic health, which depends on our overall health, which depends on our lifestyle. And this can all be traced to gut health – you cannot have a healthy gut without a healthy lifestyle, and our gut health is something most of us have

complete control over.

Related: [*Gluten, Candida, Leaky Gut Syndrome, and Autoimmune Diseases*](#)

Common Symptoms of Celiac Disease

- Fatigue
- Mental fatigue, aka “brain fog”
- Headaches
- Migraines
- Bone or joint pain
- Gastrointestinal distress
 - Gas
 - Bloating
 - Cramping
 - Indigestion
 - Abdominal pain
 - Diarrhea
 - Constipation
- Arthritis
- Dermatitis
- Eczema
- Osteoporosis
- Liver disorders
- Depression or anxiety
- Peripheral neuropathy
- Seizures
- Migraines
- Irregular menstruation
- Miscarriages
- Canker sores

Doctors believe that in order to develop the disease, a person needs to have the genetic predisposition while they are consuming gluten and to subsequently have the disease activated. Activation triggers are said to potentially be stress, trauma, and viral infections. I contend that vaccines

and antibiotics are the two most common triggers for the disease. Damaging the gut is what leads to problems with wheat, but we'll get more into that below.

Wheat Allergies

Celiac disease and non-celiac gluten sensitivity have many symptoms in common, but wheat allergies are often much more distinctive. Symptoms include itching, hives, or anaphylaxis which is a life-threatening reaction. A wheat allergy is an immune reaction to any of the hundreds of proteins in wheat. It is possible for a person to be allergic to wheat and to have non-celiac gluten sensitivity or celiac disease at the same time.

What About Roundup?

Monsanto introduced glyphosate under the trade name Roundup in 1974 shortly after DDT was banned. It wasn't used very much until the late 1990s when Monsanto genetically engineered seeds to withstand high doses of Roundup, and the product took off. Eager to sell more of its flagship herbicide, Monsanto has encouraged farmers to use their glyphosate as a desiccant. Wheat can be harvested quicker and easier if you dry it all out ahead of time with Roundup. It's also used in this way on wheat, barley, oats, canola, flax, peas, lentils, soybeans, dry beans, and sugar cane.

Studies have concluded that chronically ill people have higher levels of glyphosate in their bodies. Glyphosate has been attributed to an increased prevalence of most of our common chronic conditions including, but not limited to ADHD, Alzheimer's, birth defects, autism, cancer, kidney disorder, irritable bowel syndrome, Parkinson's disease, depression, diabetes, heart disease, thyroid disorders, liver disorders, multiple sclerosis, reproductive issues, adrenal failure, obesity, asthma, and of course, celiac disease.

It's not hard to understand why. Glyphosate is poison and so are the other ingredients in Roundup. People have to wear protective gear to apply the product. It is designed to kill. It kills plants by preventing them from making certain proteins. Just imagine what that does to one's gut ecology.

How Wheat Has Changed

The wheat we have now is very different from what our ancestors consumed. Modern dwarf wheat is hybridized. That isn't a GMO, but the genes of our wheat plant have certainly been modified to grow faster, and to be more resilient. We used to eat wheat called einkorn, which was actually one of the very first grains we humans cultivated more than 10,000 years ago. When you read in the Bible about how we should eat bread, this is the wheat it refers to.

There is a lot more gluten in modern wheat than there is in einkorn, and the gluten that einkorn wheat does contain is different. Einkorn also has 15 percent less starch and 30 percent more protein. Modern wheat has a lower nutrient content and a different protein structure. In fact, many with celiac and gluten intolerance report being able to eat einkorn without issue.

Also, that blood sugar spike experienced after eating bread does not happen with einkorn.

So I conducted a simple experiment on myself. On an empty stomach, I ate 4 oz of einkorn bread. On another occasion I ate 4 oz of bread that dietitian, Margaret Pfeiffer, made with whole wheat flour bought at the grocery store. Both flours were finely ground and nothing was added beyond water, yeast, olive oil, and a touch of salt.” – [Einkorn and blood sugar](#)

“Ancient wheat diets caused a downregulation of key

regulatory genes involved in glucose and fat metabolism, equivalent to a prevention or delay of diabetes development. Spelt and rye induced a low acute glycemic response compared to wheat.” – [NCBI](#)

How Bread Making Has Changed

Most commercial bread contains bromides, added starches, refined sugars, added gluten (vital wheat gluten), preservatives, artificial flavorings, leveling agents, and stabilizers. Potassium bromate is an additive used in commercial bread and baked goods that make the products lighter and fluffier. Bromines are part of the halide family, a group of elements that includes fluorine, chlorine, and iodine, which are all endocrine disruptors that cause digestive issues and a host of other health problems.

Related: [Sugar Leads to Depression – World’s First Trial Proves Gut and Brain are Linked \(Protocol Included\)](#)

Baking Soda, baking powder, and cream of tartar are often used in place of yeast or in addition to rapid rise yeast to make the bread rise quickly and more uniformly. Modern bread rises for a couple of hours or less, whereas homemade bread traditionally takes at least 12 hours to rise. I got curious about the difference between baking soda and baking powder, and I thought you might be as well, hence the video below.

Traditional bread recipes typically utilized a few common ingredients including flour, yeast, salt, water, a sweetener, and some spices or herbs.

Related: [Holistic Guide to Healing the Endocrine System and Balancing Our Hormones](#)

Refined flours started to be widely used around 1880 which caused worldwide epidemics of pellagra and beriberi. Refining the flours removes bran and germ which increases shelf life.

It also removed the B vitamins. Previous iterations of bread did use bolted or sifted flour which did refine the wheat somewhat, but it didn't remove all of the bran, germ, and endosperm, and that flour was never bleached.

Bread with Whole Grains that are gently stone ground just before mixing the dough and then allowed to ferment slowly and naturally, in other words – authentic sourdough. That's how the Egyptians made it 6,000 years ago."

Bread was fundamentally redesigned. Refined flours, large quantities of commercial yeast, and a combination of additives and intense energy created the modern industrial bread. Fast mixing, fast rise, fast baking. Industrial bread is made far too fast." – [Mario Repetto](#)

How Our Gut Biology Has Changed

We keep eating more and more sugar. In the early 1700s, the average sugar consumption was about 4 pounds a year. By 1800 we were at 18 pounds a year. By 1900 we were up to 60 pounds of sugar a year. Today the average American consumes between 130 and 150 pounds of sugar every year.

Sugar feeds pathogens. Our healthiest gut bacteria like the healthiest foods: vegetables and herbs. Nature wouldn't work any other way; how could it? You're probably thinking, "What about fruit?" We don't eat the fruit we used to eat. Like wheat, our fruit has been radically altered through hybridization. But that's another article (I'm working on it). For now, just Google "[wild banana](#)" or "[what watermelon used to look like](#)".

We get way more sugar than our ancestors got even if we cut out refined foods. This causes an abundance of Candida. I believe Candida is prevalent in every single person with chronic illness. Everyone has yeast but when yeast is left

unchecked they turn into pathogenic fungi. Tests for Candida aren't accurate. Candida, when in its virulent fungal form, will make the gut more permeable. When this happens food proteins are absorbed into the body before they are digested. This causes allergies. This is one of the main causes of allergies, but there are others at play as well. In my experience, every single person who has cut refined sugar out of their lives and decreased their body's Candida was able to rid themselves of seasonal, environmental, and food allergies. Every single time!

In addition to that, a study published in *The Lancet* showed that the candida protein HWP-1 is similar in structure to gluten.

A candida infection in the gut can cause an immune system reaction to HWP-1, which then stimulates an allergic reaction to the gluten in wheat and other grains and may trigger celiac disease in genetically susceptible people.” – [Leyla Muedin, RD](#)

Wheat proteins can also cause an immune response against the thyroid.

An obvious explanation is that the initial attack on the thyroid by anti-tTG autoantibodies of celiac leads to thyroid inflammation and presentation of TPO, with a second round of autoantibodies produced to TPO resulting in Hashimoto's Thyroiditis.” – [Dr. Art Ayers](#)

Celiac disease and hypothyroidism beget more chronic autoimmune issues. Allergies lead to autoimmune disease. Allergies lead to chronic health issues. Medical science has established this. Medical science is just starting to understand the fact that a permeable gut causes allergies. Science also has established that an abundance of Candida causes a permeable gut. What they haven't figured out yet is

just how prevalent the permeable gut issue really is. But the bottom line is that our poor diet leads to allergies and almost all that commonly ails us.

Suggestions

If you have a healthy gut, make your own sourdough bread using heirloom wheat and the old-school practices. If you have any chronic illness, then you do not have a healthy gut. [Here's how you fix it](#). If you're not well, wait until you get well before consuming any kind of bread. And don't think of old-fashioned bread as healthy. Vegetables are healthy. Bread is at its best a neutral food with some health benefits and easy calories that can help sustain life like brown rice and millet. Vegetables and herbs heal the body.

Obviously, stay the heck away from poisons! Glyphosate is a cocktail of poisons. Science has firmly established this. And avoid GMOs as well. They weren't designed with our health in mind, they were designed for profit, and in most cases, to sell more Roundup.

The hard truth is that letting companies cook your food for you leads to poor health. People often ask me, "If you can cure cancer why aren't you rich?" If I could cure cancer and figure out how to do it while still eating refined, prepackaged, and processed foods that we humans have grown accustomed to, I would be rich. But people would rather die for convenience food than give it up. Obviously. We see this everywhere.

Being well long-term means preparing all your own food yourself the right way, or being rich and hiring someone else to do it. There is no shortcut. Certainly not with bread.

Sources:

- [Your Ancestors Didn't Eat The Same Type Of Wheat That](#)

[You Do \(And They Were Healthier\) – Off The Grid News](#)

- [4 Ways Modern Bread is Different From Traditional Bread – Our Heritage of Health](#)
 - [The Real Problem With Bread \(It's Probably Not Gluten\) – Mother Jones](#)
 - [Problems Linked to Monsanto's RoundUp – EcoWatch](#)
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 - [Consumption of Sugar – Sugar and Sweetener Guide](#)
-

The Difference Between Heirlooms and Hybrids, GMOs and Gene Editing

Avoiding GMO foods is becoming more of a challenge as they remain mainly unlabeled. Many consumers also are left in the dark about what these foods are, and there is a persistent misconception that 'all foods have been modified anyway.' That is not true, and there are stark differences between foods that have changed through creating heirlooms and hybridization versus altering the DNA of GMOs and other new gene editing technologies like CRISPR. These differences affect not only the plant but the health of the consumers. With the rise of serious, life-changing and life-threatening diseases such as cancers and autism, understanding which foods have been modified and how in order to avoid them is more important than ever.

Image credit: [Heirloom Veggies: 5 advantages over hybrids](#)

Heirloom Seeds Are The Chosen Ones

“An heirloom variety is a plant variety that has a history of being passed down within a family or community.” – Seed Savers.

Heirloom seeds are often prized by farmers as the best seeds available. They are the best of every crop that came before it. The process of creating heirloom varieties is absolutely natural and can be done by anyone who grows their own food. The featured image above contains heirloom vegetables.

Must Read: [How to Avoid GMOs in 2018 – And Everything Else You Should Know About Genetic Engineering](#)

All it takes is harvesting the strongest, best-looking seeds from the best plants. For example, a farmer grew a whole row of tomato plants, but a couple stood out as bigger than the rest with larger yields. The farmer may then choose to live the best of the tomatoes from these plants (often chosen by size or color) and leave them for seed collecting. The next year, using these seeds, the farmer follows the same process until years later they are left with quality heirloom seeds.

Heirloom foods are often tastier and may have better pest resistance that was developed over the decades.

These heirloom seeds are often passed down generation to generation, and they keep improving with time. They were the most popular seeds throughout history until large-scale farming became common. On large farms, the field technologies do not have the capacity to collect the best seeds. Heirloom foods are grown by primarily small farmers and gardeners.

Today, some farmers still like to specialize in heirloom varieties, and some seed companies sell nothing but heirlooms. The best way to support these foods is to buy heirloom produce from small farms.

Great heirloom vegetables and fruits to try are lemon cucumbers and 'Mexican Sour Gherkin' cucumber, 'Pink Accordion' tomato, 'Lebanese Bunching' eggplant, 'Green Nutmeg' melon, 'Romanesco' broccoli, and 'Chioggia' beet.

Recommended: [*Start Eating Like That and Start Eating Like This – Your Guide to Homeostasis Through Diet*](#)

Hybrids: Natural, Yet Limited

“Hybridization is a controlled method of pollination in which the pollen of two different species or varieties is crossed by human intervention.” – Seed Savers.

Hybrid foods are also created without the use of laboratories and genetic editing. It is done by controlling pollination to cross two different varieties or species of plants. It is done on small farms, but also on a larger scale. Mass commercial hybridization began in the 1950s.

Commercial hybrid seeds are labeled as F1, but there is a huge flaw in growing them. They produce the intended harvest once, but the follow-up seeds are unpredictable and often unusable. Farmers who use hybrids have to buy new seeds every year.

Hybrid seeds can be stabilized to grow the same variety every time, but the process takes years and patience. Some hybrids have been in our food system for many decades. Hybrid corn goes all the way to Mayan times, and the non-GMO hybrid corn available today was created in the 1930s.

Other common hybrid produce includes carrots, cucumbers, melons, tomatoes, broccoli, cabbage, and squash. Many fruit varieties are also hybrids.

Hybrids are the biggest reason why some people argue that many foods have been genetically modified. That's incorrect. They have gone through hybridization, but that is natural and not

done in the lab like in the case with actual GMOs.

Recommended: [Best Cooking Oils – Health benefits, Smoke Point, Which to Use and Avoid](#)

GMOs: The First Lab-Altered Foods

“Genetically modified organisms (GMOs) are living organisms whose genetic material has been artificially manipulated in a laboratory through genetic engineering. This creates combinations of plant, animal, bacteria, and virus genes that do not occur in nature or through traditional crossbreeding methods.” – The NON-GMO Project

GMOs are most known to be created by one of Big Biotech corporations Monsanto. Yet, it is not the only company producing GMO foods and patents. Syngenta, Dow AgroSciences, Bayer, BASF, and a few smaller companies are also producing GMOs.

The very first GMO was created in 1982, and it was a diabetes medicine. This approval has led to the Food and Drug Administration (FDA) giving green light to many GMOs to come, including foods. The first tomato was altered in 1994, RoundUp soybeans in 1996, and today there are GMO rice, corn, squash, canola, yeast, alfalfa, cotton, sugar beets, papaya, and salmon.

GMOs are defined as an organism that was genetically altered in the lab. Often times, these organisms have genetic material from other species inserted into them.

The most bizarre genetic manipulations included inserting a gene from a flounder fish into a tomato. The product from this experiment never made it to the market, but now there are actual GMO animals. GMO salmon is the first and entered food supply in 2017 after being approved two years earlier. This salmon is modified with a growth hormone to make it grow

faster.

Like other GMO foods, activists and many health experts are raising alarm to the fact that there is still not enough information regarding GMOs effect on human health. There are, however, many studies linking GMOs to increased risks of cancers and other diseases.

Due to these risks, GMO foods have been banned in dozens of countries around the world, yet in the U.S., biotech companies are not slowing down.

Recommended: [Best Supplements To Kill Candida and Everything Else You Ever Wanted To Know About Fungal Infections](#)

American consumers today are left to figure out which foods contain GMOs themselves and make educated choices. There are many hidden GMOs in processed foods. Most commonly found are the ones made from corn, soy, and canola. These are corn flour, corn masa, corn meal, corn oil, corn sugar, corn syrup, and cornstarch; and soy flour, soy isolates, soy lecithin, soy milk, soy oil, soy protein, soy protein isolate, and soy sauce.

Other ingredients can be less obvious. The common potential GMOs are also in baking powder, citric acid, condensed milk, glucose, glycerin, lecithin, maltodextrin, protein isolate, starch, sugar, vegetable fat, and vitamins B12 and E.

The one way to know for sure you are buying a non-GMO food or product is to buy certified organic and look for the non-GMO label.

Gene Editing

“CRISPR/Cas9 is a system found in bacteria and involved in immune defense. Bacteria use CRISPR/Cas9 to cut up the DNA of invading bacterial viruses that might otherwise kill them. Today we’ve adapted this molecular machinery for an entirely

different purpose – to change any chosen letter(s) in an organism’s DNA code.” – The Conversation

Gene editing technology is the newest on the market today. The one technology that is gaining attention is “CRISPR” or Clustered Regularly Interspaced Short Palindromic Repeats, which is the basis for CRISPR-Cas9 genome editing.

In the future, this technology can be used to slice human DNA like a pair of scissors and choose to alter the genome in absolutely any way. The potential there, some scientists say, is to find answers to treating incurable diseases.

The danger in this technology is that any minor error in the genetic code can have unpredictable results. The second concern is that this technology can be accessed by anyone.

Finally, CRISPR has been approved by the USDA earlier this year to be used on food. First foods that received the green light include white-button mushrooms and an oilseed crop.

Recommended: [Best Supplements To Kill Lyme and Everything Else You Ever Wanted To Know About Lyme Disease](#)

The USDA also said that as long as the gene is manipulated in the way nature can, the CRISPR food will not be regulated. This is a stark difference from animals edited with CRISPR that are classified as “animal drugs.”

CRISPR cannot introduce DNA from one species into another, but it is still questionable what hidden effects it has on food and animals that it genetically edits.

This newest technology is hotly debated among the health groups, but companies out to make money will be too fast to patent and sell it to the consumers. Both Monsanto and DuPont Pioneer already have their hands on it. Another food company which is exploring CRISPS is Mars.

When it comes to CRISPR food, the consumers will once again be left in the dark, as it will not be labeled.

Conclusion

To say that most foods are not what they used to be is correct. Most plants have changed over the decades whether by their own evolution or the hand of man. Yet to say that all have gone through genetic engineering is false.

By definition from the Merriam-Webster dictionary, genetic engineering means:

“The group of applied techniques of genetics and biotechnology used to cut up and join together genetic material and especially DNA from one or more species of organism and to introduce the result into an organism in order to change one or more of its characteristics.”

Foods that were enhanced by creating heirlooms or hybridization are not cut up and manipulated in the lab. They do not contain any foreign DNA from very different species. Neither do they have any health concerns.

GMOs created by Monsanto and other biotech companies, on the other hand, could not be done without using a laboratory. The true results of these DNA manipulations are still hard to fully grasp. Yet, too many studies already exist linking them to adverse health effects. Natural foods will always be safer and in the case of the heirlooms tastier, which is why it is highly recommended to always choose organic foods and produce.

Be sure to check out [How to Avoid GMOs in 2018 – And Everything Else You Should Know About Genetic Engineering.](#)

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 - [19 Best Heirloom Plants – Sunset](#)
 - [What's the Difference? Open-Pollinated, Heirloom & Hybrid Seeds – Seed Savers Exchange](#)
 - [Hybrid Foods – Live Strong](#)
 - [The Monsanto GMO Story: Adding a Fish Gene Into Tomatoes – Mother Earth News](#)
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 - [The USDA Just Gave the Green Light to CRISPR'd Food – GIZMODO](#)
 - [GMO Facts – The NON-GMO Project](#)
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Lyme and Candida – Why Both Must Be Addressed To Heal

Why and How the Two Go Together

The human body is colonized by an unfathomable number of different microbial species including bacteria, fungi, and viruses. Candida is a normal member of human gut flora. Virtually all of us have it. When beneficial bacteria is not present Candida can become virulent. Lyme patients often undergo long-term antibiotic therapy. Antibiotics destroy beneficial intestinal bacteria which then allows candida, other fungi, and other pathogens to flourish.

Most pathogens, including candida and *Borrelia burgdorferi* (Lyme bacteria), need carbohydrates to survive. How they get their carbohydrates differs, but a diet high in

sugars and starches literally feed Candida and Lyme as well as other living pathogens both directly and indirectly.

Since virtually all of us have Candida, those with Lyme are especially susceptible. Even without antibiotic treatments, a weak immune system allows Candida to flourish, [grow hyphae](#), and colonize all around the body.

Some people are not susceptible to Lyme disease. Scientists think that genes and overall health determine susceptibility, but the presence of virulent Candida is probably one of the best measures of the health of a person. As mentioned, we all (or nearly all) have candida, but healthy bodies do not have virulent candida. Candida overgrowth is what happens in a compromised immune system. In other words, even if someone has not been treated with antibiotics, it stands to reason that virulent candida, and many other pathogens are present in the body of someone who is susceptible to Lyme.

Why Lyme Is Becoming More Prevalent

Ticks can't survive in very cold climates. Warmer climates help ticks reproduce and survive longer, proliferate earlier, and live farther north. And yes, our climate is warming. We can argue that this is caused by man-made pollution or the reversal of our polarity, or the ebb and flow of the planet's ecosystem, or even intentional geoengineering, but the climate is, without a doubt, getting warmer. Even a minor adjustment in average temperatures can have massive effects on the ecosystem. Warmer winters are also expanding the geographic range of animals associated with Lyme, helping to explain the spread of the disease in northern climates like Canada.

In addition, we have more deer. Deer were nearly extinct at the turn of the 20th century. Hunters decimated deer populations and Lyme disease is believed to be most often contracted by deer ticks. Over the last century, deer have obviously made a comeback.

It's not just the deer, forty to 90 percent of white-footed mice carry *Borrelia burgdorferi*, and these mice are also proliferating and expanding their territories lately. There are other creatures that carry the ticks, and other parasites that carry the disease as well.

Some researchers estimate that global warming has doubled tick populations in the US, and increased populations by up to five fold in Canada.

Why Candida Is So Common

Our modern world's continued fervor for irradiating germs, mostly bacteria, live us to deal with antibiotic-resistant bacteria and fungi. Our sugar and starch consumption is also increasing while our diet diversity is decreasing, and consequently, our gut's ecosystem diversity is also decreasing. Fungal infections are becoming increasingly prevalent in the human population. *Candida albicans* incredibly opportunistic and is the most common fungal pathogen found in humans worldwide.

Even the fruit we consume has far more sugar than what our ancestors were accustomed too. Check out the difference between our modern hybridized bananas and the wild ones:



Try looking into other fruit as well and you'll see that we used to have to work a lot harder for that sugar.

Why You Have To Address Address Both Lyme and Candida

Candida overgrowth opens up the gut. There little tiny holes that are only supposed to allow digested, completely broken down foods. When Candida becomes virulent it makes the gut much too permeable, consequently, pathogens including parasites, undigested proteins, and sugars get into the bloodstream radically overwhelming the immune system. The body is not capable of handling Lyme under such stress. The immune system already has its work cut out for itself under healthy conditions. And, in case you haven't heard yet, your immune system is only as good as your gut health.

Have you ever heard the phrase "feed a cold, starve a fever?" There is some truth to it, but its incomplete. The phrase should be, "feed a virus, starve bacteria and fungal infections." But Lyme and Candida take a long time to get rid of, and fasting for months is not a good idea. But we can still starve them by restricting sugars and starches, and we can speed up their demise with supplements.

For more information on Candida, along with a protocol including recommended supplements and diet, check out my article [Best Supplements To Kill Candida and Everything Else You Ever Wanted To Know About Fungal Infections.](#)

I also wrote, [Best Supplements To Kill Lyme and Everything Else You Ever Wanted To Know About Lyme Disease,](#) but I recommend starting with Candida.

Sources:

- [Tetracycline Effects on Candida Albicans Virulence Factors – NCBI](#)
- [Carbohydrate utilization by the Lyme borreliosis spirochete, Borrelia burgdorferi](#)
- [Dietary Carbohydrates Modulate Candida albicans Biofilm](#)

[Development on the Denture Surface – Plos One](#)

- [Candida Related Complex: A Complicating Factor In Lyme Disease – Public Health Alert](#)
 - [Adaptive immune responses to Candida albicans infection – NCBI](#)
 - [Does Lyme Disease Thrive on a High Sugar Diet? – Alternative Health](#)
-

How to Avoid GMOs in 2018 – And Everything Else You Should Know About Genetic Engineering

It's slowly getting harder and harder to avoid genetically modified foods, but it's still not that hard, especially if you do your own cooking. As of 2018, GMOs remain unlabeled in the US despite mounting consumer desire to know what exactly we are eating and drinking. Some companies have begun a voluntarily labeling process, but the protocols tend to leave much to be desired. Now we have gene editing capabilities using "CRISPR technology." We now live in a time when practically anyone can manipulate the genes of practically any living organism.

While science has taken GMOs to whole new levels, the original intent was largely to create vegetation which would be naturally pest-resistant. Prior to the development of GMOs, chemical pesticides were much in the news. Scientists strove to find a way to keep crops free from pests without the need to spray carcinogenic pesticides often, but then GMOs came

under attack as being harmful as well. Along the way, GMOs evolved as science found other benefits from modifying the underlying plant in question. Bigger, larger crops were possible which, in turn, was supposed to be a financial boon.

Most of the United States largest trade partners have boycotted GM crops from the U.S, including China, Japan, and much of Europe. Sixty-four countries have enacted GMO labeling requirements. Thirty-eight countries, including 19 in Europe, prohibit GMO cultivation.

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- [Foods Often Mistaken for GMOs](#)

GMO Foods

Summer Squash

For more information go to olmag.co/gmo-foods

Tomato



Tomatoes have been genetically modified, but they are not being grown commercially at this time

Rice



GMO rice has been approved but is not yet being used commercially

Sweet Corn



More than 70 percent of corn grown in the United States has been genetically engineered

Summer Squash



Farmers don't like GMO squash but some experts say GM squash have blended with wild squash

Canola Oil



87% of canola grown commercially, and 80% of wild canola is GMO

Yeast



GMO yeast for wine has been approved

Alfalfa



GMO alfalfa is contaminating non-GMO alfalfa crops at a rapid rate

Salmon



GMO salmon has not been approved by the FDA, but it will be very soon

Soy



More than 93% of soybeans the United States produces are genetically modified

Peas



Peas have been genetically modified but are not approved or available

Hawaiian Papaya



Most Hawaiian papaya is GMO, even many organic crops are contaminated

Wheat



Unapproved GMO has contaminated wheat fields, and we don't yet know the extent of it

Sugar Beets



90% of Sugar Beets (used to make 50% of our sugar) are GMO

Cotton



At least half of cotton grown in the world is GMO

organic lifestyle

MAGAZINE

How Are GMOs Made

*Genetically modified organisms are created by combining genes from one species into the DNA of a food crop or animal to produce a new trait. Because living organisms have natural barriers to protect themselves against the introduction of DNA from a different species, genetic engineers must force the DNA from one organism into another. Their methods include: Using viruses or bacteria to “infect” animal or plant cells with the new DNA. Coating DNA onto tiny metal pellets and firing it with a special gun into the cells. Injecting the new DNA into fertilized eggs with a very fine needle. Using electric shocks to create holes in the membrane covering sperm and forcing the new DNA into the sperm through these holes. Why is this done, you might ask? By inserting certain bacterial genes into crop seeds it allows farmers to spray otherwise deadly doses of weed-killer directly on the crop without killing it. Other seeds are inserted with soil bacterium *Bacillus Thuringiensis* (Bt) to produce an insect-killing pesticide within every cell of the plant.” – [Vessles](#)*

[That Thrive](#)

Recommended: [Best Supplements To Kill Candida and Everything Else You Ever Wanted To Know About Fungal Infections](#)

GMOs vs Gene Editing vs Hybrid vs Heirloom

- **Heirloom** plants have been grown and saved by generations of gardeners because of specific traits.
- **Hybridization** is when two different varieties of a plant cross-pollinate.
- **Genetic engineering** is the direct manipulation of an organism's DNA using any number of methods.
- **GMO** is the genetic modification of organisms. It's been around for a while and uses imprecise methods of genetic engineering.
- **Gene editing** is now a more precise method of genetic engineering which hopes to avoid any bad associations with GMO. **CRISPR** is one such technique.

If you are anti-GMO, you've heard the argument, "All of our food has been genetically modified for years," too many times. It's true but the argument is irrelevant and flippant. Let's clear up the differences between how genes evolve, how genes are manipulated over time, and how we modify the genes.

Heirlooms

The way fruits and vegetables have been grown and propagated for thousands of years is that the seeds get saved from plants with favorable characteristics, like color, shape, size, and flavor. Besides picking seed selection, which favors certain traits, the plant's genetics are not manipulated. Today we call these plants "heirlooms." Since these seeds can be harvested and planted year after year, a farmer does not have to purchase the seeds again.

There are downsides to heirlooms. They tend to have a relatively small gene pool. They often lack disease resistance. These reasons are why we discovered and started utilizing hybridization.

Hybrids

Hybrid plants happen in nature when two different varieties of a plant cross-pollinate, and we can do this with many plants fairly easily. Seed companies will cross two specific varieties of plants in an effort to produce a plant that has the best traits of both parent plants.

Hybrids enable more people to grow more food in a variety of climates while decreasing pesticide usage and increasing crop yields, and other desirable traits. The one major downfall of hybrids is that the seeds do not generally result in plants that are identical to the parent, and the seeds are often sterile, so the seeds are typically not saved.

Genetically Modified Foods – GMOs

GMOs are created in laboratories. These plants are the result of specific, manual genetic engineering, done by artificial means. GMO stands for “genetically modified organism.” This process alters the plant’s DNA in a way that cannot occur in nature. Genetic modification usually includes the insertion of genes from other species.

Gene Editing

CRISPR-Cas9 is a new technology that enables geneticists to remove, add, or alter sections of the DNA sequence by introducing molecules into the DNA that can cut the DNA at a specific location in the genome so that bits of DNA can then be added or removed. This method of genetic editing has many advantages over genetic engineering. It is currently the simplest, easiest, most versatile, and most precise method of

genetic manipulation available, and the technology continues to get more reliable. The method doesn't introduce foreign genes to the crop. It's also relatively cost-effective, so not only are more scientists are gaining access to the technology (compared to GMO), but there are even do-it-yourself CRISPR genome editing kits for the home hobbyist.

GMO News

Scientists have found that insects have become resistant to the resistant GMOs, just as many viruses and bacteria have become resistant to the medications once used to treat infected individuals. GM corn, in particular, is designed to stop caterpillars from eating the corn, and [caterpillars have evolved](#) to withstand the technology. Now GM corn is being sprayed with more and more pesticides to combat the ever-evolving pests.

There's a new kind of GM corn that may be coming soon. Researchers have discovered a way to [add a single E. coli gene to corn](#) that enables the corn to be grown with an essential amino acid otherwise that is only found in meat.

The EPA quietly approved [Monsanto's New Genetic-Engineering Technology](#) called RNA interference:

DvSnf7 dsRNA is an unusual insecticide. You don't spray it on crops. Instead, you encode instructions for manufacturing it in the DNA of the crop itself. If a pesky western corn rootworm comes munching, the plant's self-made DvSnf7 dsRNA disrupts a critical rootworm gene and kills the pest.

Recommended: [Holistic Guide to Healing the Endocrine System and Balancing Our Hormones](#)

GMO Labeling

The USDA released a proposed rule outlining the ways in which it may implement the mandatory labeling law for GMOs, called the National Bioengineered Food Disclosure Standard (NBFDS). It was passed by the US Congress and signed into law back in the summer of 2016 by Barack Obama. This is still a proposed rule and public comments are accepted until July 3, 2018.

Food manufacturers have been fighting expensive battles against GMO for years. The concern is that they would deter customers, giving an advantage to organic food producers (organic food is not allowed to be genetically modified).

Forgoing the stigmatized terms "G.M.O.'" and "genetically engineered," new guidelines propose labels that would say "bioengineered" or "BE." Food manufacturers would be able to choose one of three disclosure methods:

- Spelling out the information, like "contains a bioengineered food ingredient"
- Place a QR code on a package that directs consumers to a website with more information
- Label with a standard icon, like one of these:

**National Bioengineered Food Disclosure Standard
Proposed Symbols**

Symbol 1: Alternative 2-A



Symbol 2: Alternative 2-B



Symbol 3: Alternative 2-C



GM0 labeling advocates are concerned with the friendly, "smiley" nature of the images.

Will GMO Labels Include All Genetically Modified Foods?

No.

From [The New York Times](http://www.nytimes.com):

New gene-editing technologies let scientists tweak the DNA of plants and animals with great speed and precision, often by deleting a snippet of genetic information, or by inserting a desirable trait from one breed into another of the same species. Crops that contain such changes, which could theoretically be achieved through conventional breeding, or occur through a natural mutation, are excluded from the proposed labels.

The labels may also exempt highly refined sugars and oils, like those made from genetically modified sugar beets and corn, which typically contain no genetic material after being

processed. Consumer groups oppose that move, which could significantly curtail the number of foods that carry the label, saying that it's not just what we ingest that matters but how food is produced. Foods whose primary ingredient is non-G.M.O. meat, like beef stew, also don't have to be labeled, even if they contain other genetically engineered ingredients.

Vitamin C derived from GM corn, vitamin E derived from soy, and vitamin B2 and B12 derived from GM yeast would also be exempt, and so would CRISPR genome edited foods and Monsanto's new genetically engineered RNA interference foods as well.

Do GMOs Increase Crop Yields?

At the time of this publication, there is a meta-study being pushed by the pro-GMO media titled, [Impact of genetically engineered maize on agronomic, environmental and toxicological traits: a meta-analysis of 21 years of field data](#). Articles touting the review read something like:

The analysis 6,006 peer-reviewed studies covering two decades of data found that GM corn increased yields up to 25% and dramatically decreased dangerous food toxins.

While 6,000 is a big number, only 72 studies were used in the review, and only 32 of the studies were deemed acceptable for the analysis of increased crop yields.

The first step of the selection procedure yielded 6,006 publications. Te subsequent refinement, by adopting the stringent criteria above described, gave 32, 5, 32 and 10 eligible publications, covering, respectively, the following categories: grain yield and quality, TOs, NTOs (non-target organisms), and biogeochemical cycles (e.g. lignin content in stalks and leaves, stalk mass loss and biomass loss, CO2

emission).

Also, it's important to note that this is a review of many other studies over a 21 year period, not a 21 year study. The individual studies that were accepted into the analysis were comparatively short.

The reality is that GMOs, like pesticides, will increase crop yields for a period of time, but the increase is followed by an eventual and inevitable decrease in yields. Pesticides do their job until pests evolve, and the same is true of GMOs. The only way to keep crop yields high would be to develop GMOs at such a high rate that there would be no time for any reasonable testing, though many argue the tests that are done on GM food now are not adequate. With how easy and inexpensive CRISPR technology is to use, this may be how big agriculture will try to keep up with pest evolution.

From the same study:

*Despite the high effectiveness of IR crops, the evolution of resistance in pests and a consequent reduction of the GE crop effectiveness can not be excluded. Actually, resistance and cross-resistance to Bt maize were recently detected in *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae) in Puerto Rico, *Busseola fusca* (Fuller) (Lepidoptera: Noctuidae) in South Africa and in the Coleoptera *D. virgifera* in Iowa.*

From another paper published in Oxford Research:

Repeated use of a single pesticide over time leads to the development of resistance in populations of the target species. The extensive use of a limited number of pesticides facilitated by GM crops does accelerate the evolution of resistant pest populations (Bawa & Anilakumar, [2013](#)). Resistance evolution is a function of selection pressure from

use of the pesticide and as such it is not directly a function of GM HT crops for example, but GM HT crops have accelerated the development of glyphosate resistant weeds because they have promoted a tremendous increase in the use of glyphosate (Owen, [2009](#)).” – [Pros and Cons of GMO Crop Farming](#)

Recommended: [How to Detox From Plastics and Other Endocrine Disruptors](#)

The problem with GMO studies

There have been some long-term studies of GMOs on animals, but these studies only compare animals in factory farming conditions where their health is already poor compared to free range livestock. Long-term GMO studies generally mean the study looks at a few years, which does not yield adequate time to see the differences in which of the unhealthy groups of animals are less healthy.

Initially, the goal of GM crops was to reduce crop loss from pests and reduce toxic pesticide and herbicide usage. Washington State University researcher [Charles Benbrook demonstrated](#) that the net effect of GMOs in the United States has caused a rise in the use of toxic chemical inputs. As the pests adapt to GMOs, more and more pesticides are needed to maintain crop yields.

Humans are the true long-term study participants, and many argue that it's not looking good for GMOs. Autism rates are skyrocketing, as well as food allergies and other health issues, but the problem is that this can be (and should be) attributed to a wide variety of accumulated toxins, from the air we breathe to the water we drink as well as the medicines we take and inject ourselves with.

But none of this addresses the real problem with GMO studies.

The real problem is that are agriculture system is all wrong in a multitude of ways. Good health is not profitable to U.S. industry with the way we have things set up now. Food is grown for high yields, uniform appearance, and shelf-life, not health.

We don't need a study that compares the benefits of GM soybeans to non-GM soybeans. There may be little difference between GMO corn and conventionally grown corn, and there may even be little difference between GM corn and large-scale "organic" corn, especially considering how organic rules continue to be eroded by agriculture lobbyists.

We need small-scale farming that includes crop rotation and other sustainable practices, and we need to research and see which of these beneficial practices can be scaled up and how.

Current GM Crops

The most prevalent of GM crops grown today are sugar beets, soy, canola, cotton, and corn. In the United States, 93 percent of soybeans and 88 percent of corn is genetically modified, but only a few GM whole foods are available in the produce section, for now. At this time, look out for sweet corn, squash, alfalfa, and the latest addition, Arctic apples. GM potatoes are coming soon. AquAdvantage salmon has been sold in Canada and is coming to the U.S. any time now. Plenty more are on the way.

I've color coded the crops. Red means they are prevalent, and one must be vigilant to avoid them. Orange means they are not very common and easily avoidable. Black means that they are not available for consumption at this time. Click each one for more information.

- **Yeast** – This is approved in the United States for making wine and is used for making vitamins and other things.
- **Tomato** – The Flavr Savr is no longer available.

- **Squash** – GM zucchini and summer squash are not very common, but they are available, and they are impossible to detect.
- **Flax** – Not commercially produced, but GM flax has been found in Canada's flax crops.
- **Soybean** – The second-largest US crop after corn, more than 90% are GMO.
- **Cotton** – 94% of cotton grown in the U.S. is a GMO.
- **Corn** – Is most prominent GM crop in the world, includes field corn and newly introduced sweet corn.
- **Papaya** – GM papaya accounts for about 75% of the all papayas produced in the U.S.
- **Canola** – An estimated 90% of U.S. canola grown is genetically modified. Canola oil is used in cooking and biofuels.
- **Plums** – The GM plum, called c5, has not yet been approved. It is genetically altered to resist the mutation of the Plum Pox Virus.
- **Alfalfa** – It's only supposed to be grown to feed livestock, but there are reports of the GMO contaminating other crops.
- **Sugarbeets** – The root is white, contains high concentrations of sucrose, and is grown commercially for sugar.
- **Pineapple** – It's not available yet. If it is approved, it will be in canned pineapple.
- **Wheat** – Not commercially available yet, but there have been some reports of GM wheat infiltrating non-GM crops.
- **Potatoes** – The only GM potato for sale is the White Russet, but other GM potato varieties are coming soon.
- **Apples** – Non-browning fuji and granny smith apples are available at a few stores, in packages labeled as "Artic Apples".
- **Salmon** – Right now they are just sold in Canada and none have escaped confinement that we know of.
- **Rice** – Two varieties have been approved, but they are not being produced commercially, and are not for sale in

the U.S.

- **Bananas** – They are not on the market yet, but they are expected soon.
- **Microbes** – Enzymes, Hormones, and bacteria have also been genetically modified. Aspartame is produced from the excreta of GM E. Coli.

Recommended: [Detox Cheap and Easy Without Fasting – Recipes Included](#)

Genetically Modified Microbes – Yeast, Enzymes, and Bacteria

When thinking of genetically modified organisms, usually the plants and animals come to mind. Genetic modification of plants and animals are used to enhance taste, shelf life, nutrition and crop losses from pests and disease.

The very first GMO created was done in the 1970s, and it was bacteria, specifically, E. coli. Researchers created GM bacteria that produced human proteins like as insulin and blood clotting factors. A wide variety of drugs, hormones, and other medical products are created with the use of genetically modified microbes.

Genetically modified enzymes are used to make cheese, bread, alcohols, sugars, and more. Food additives are also made by GM microbes, including, but not limited to vitamin E, B2, B12, C, amino acids (aspartame), xanthan, and nisin (a food preservative). These items typically do not contain any GMO material in the final product.

Since the 1980s, GM bacteria have even been purposefully released into the environment, after approval by the U.S. Environmental Protection Agency (EPA). In 1985, researchers took bacteria that normally encourage ice formation on plants, and got rid of a gene that they needed to do this. Consequently, plants with the modified bacteria don't form

frost until around 23°F, saving the plants from damages brought upon by an early frost, or unusually cold weather. Soon after that, researchers made and released bacteria that were even better at nitrogen-fixation to help legume plants (like beans, lentils, peanuts, soy, and more). Bacteria have even been made to clean up the environment – some have been modified to break down a compound related to TNT. Ongoing work is being done to see how long the bacteria persist in the soil (often they're undetectable after a few weeks or a year, but sometimes they persist for more than two years based on some studies) to address any complications from releasing them, such as interactions with the “normal” bacteria and other organisms.” – [Biology Bytes](#)

In recent news, enzymes have been modified to [break down plastics](#), but we also heard this about [bacteria](#) a couple of years ago, and our [plastic problem is only getting worse](#), and fast.

Genetically modified yeast is used in making wine, and researchers have recently developed a genetically modified yeast that mimics the flavors of hops for beer production.

Genetically Modified Tomatoes

The FLAVR SAVR tomato was the first commercialized GM crop. It was first sold in 1994. It was only available for a few years before production ended in 1997. There are no GM tomatoes in production at this time. There was a disease-resistant GM tomato that designed to eliminate the need for copper pesticides, but researchers were unable to find a partner to commercialize the technology thanks to public fears.

Genetically Modified Squash

Zucchini and yellow summer squash became commercially available in the late-'90s and is grown on an estimated 24,000

acres today. Genetically modified zucchini has an added toxic protein that makes it more resistant to insects. The protein has recently been found in our blood, including pregnant women and their fetuses. To avoid GM squash, always buy organic when buying yellow summer squash or zucchini. Other varieties are not GMO.

Genetically Modified Flax

Canada's flax crop has been contaminated with trace amounts of a GMO flax, known as Triffid, named after the 1960s horror flick that starred a villainous breed of carnivorous plants. This is proving to be a big problem for Canada's flax market since Europe has banned further imports of flaxseed from Canada. The contamination is likely to slowly spread. If your flax doesn't come from Canada you should be safe from the GMO version, but buying organic from a reputable source is the safest option.

Genetically Modified Soybeans

Known as the Roundup Ready soybean, the seed was first introduced in 1996 by Monsanto to make soy crops resistant to Roundup so that farmers were able to spray large amounts of the herbicide on the soy to kill weeds and other unwanted plants without killing the crop.

It's the second largest U.S. crop after corn is the GM soy. It's grown for animal feed and soybean oil production, which is widely used for processed foods and is also common in restaurant chains. Reports say that soybean oil makes up 61% of Americans' vegetable-oil consumption. Soybean oil is used to make an emulsifier called soy lecithin, prevalent in lots of processed foods and health supplements. Any time you see soy listed as an ingredient, make sure it's certified non-GMO or it's organic. It's also important to purchase from a reputable company that tests for GMO contamination since GM soy has been discovered in organic foods, especially processed

foods coming from Asia and Latin America.

Genetically Modified Cotton

Non-organic cotton is one of the most chemically-laden crops in the world. Over 90 percent of the cotton grown in the U.S. is GM, designed to make the plant produce a protein that kills insect larva like the bollworm, and it's also engineered to survive heavy doses of Monsanto's Roundup herbicide. This genetic modification involves adding a bacterium called *Bacillus thuringiensis*, hence the name Bt cotton.

GM cotton is turned into cottonseed oil, commonly used for frying in restaurants and in packaged foods like potato chips, oily spreads like margarine, even things like cans of smoked oysters. Much of the plant is also used in animal feed, and what's left over can be used to create food fillers such as cellulose.

Many consumers are careful to purchase organic cotton clothing, citing concerns of cotton picker's welfare, environmental issues, and the prevalence of toxic residue on the clothing, but this crop is extremely resource-intensive, and organic cotton crops yield about half of the cotton in the same amount of space compared to GM cotton. For the sake of our ecosystem, please avoid cotton as much as possible, forgo the latest trends in fashion, keep your clothes as long as possible, and shop for used clothing at consignment stores.

Recommended: [*Doctors Against GMOs*](#)

Genetically Modified Corn

Corn, also called maize, is native to Mexico. At the time of publication, there are 142 varieties of genetically modified corn.

About 90% of all the corn grown in the United States goes to feed livestock and to produce biofuels. About 9% is processed

into high-fructose corn syrup, corn starch, corn oil, or used as the source material for some alcohols and citric acid. Recent additions of GM corn have been developed for drought tolerance, improved ethanol production, and to increase the lysine.

A few years ago corn on the cob was safe for GMO opponents, but now we have Performance Series Sweet Corn produced by Seminis and Roundup-ready sweet corn by Monsanto, available on store shelves, and becoming more and more prevalent quickly.

GM corn contamination is becoming more and more prevalent in organic corn crops. If you eat meat or a typically modern diet of processed foods, it's probably impossible to avoid GM corn without changing your eating habits. If corn is an ingredient on the package, you'll need to know that the company is very careful to eliminate potential contamination. If you're eating meat, we suggest only buying from small, local, free-range farms that take great care to ensure that any feed they use is never contaminated. GM corn seems to be taking over the industry, and at this time it seems to be inevitable. Corn is also an extremely resource intensive crop to produce, so we recommend avoiding it whenever possible.

Incidentally, corn is one of the reasons e. Coli can infect and harm us humans. Corn is inflammatory and acidic, especially GM corn. Conventional cows and other livestock are fed lots of GM corn and given lots of antibiotics, and this inhospitable environment mutates the naturally occurring e. Coli into the dangerous food-borne illness we all know and fear, and contaminates nearby waterways via the animal's defecation and urine.

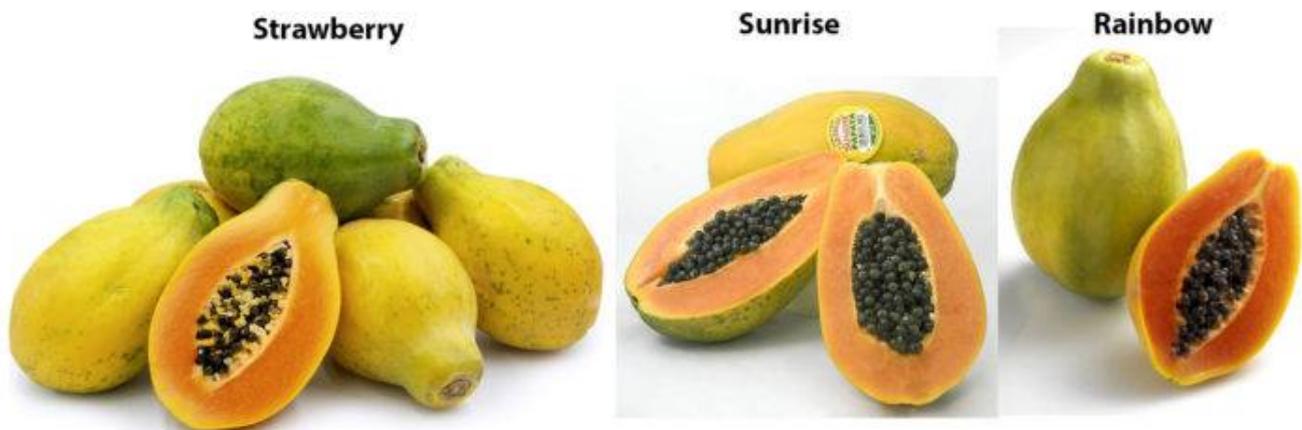
Genetically Modified Papaya

GM papaya was bred to withstand the ringspot virus, which destroys papaya plants and posed a huge problem for Hawaii's papaya crops. Some say the GMOs saved Hawaii's papaya crops,

which were near extinction, but now there is a new problem. Consumers no longer want GMOs, but the gene has spread to the extent that the island has virtually no more GMO-free papaya left. GM papayas account for about 75 percent of the 30 million pounds produced in the United States, almost all coming from Hawaii. And papaya is rarely produced to be certified organic. But there is good news.

Strawberry Papaya, also known as Sunrise papaya, is a Hawaiian grown and is the sweetest and juiciest of all the papayas. Unfortunately, it's also genetically engineered. It is pear-shaped and weighs about a pound, making it much smaller than the Mexican varieties.

Other GM papayas include the SunUp and Rainbow varieties. They look a lot like the Strawberry Papaya. Check out [this link](#) for a better description of these three and the non-GMO Kapoho Solo. The Kapoho solo is the original Hawaiian papaya; it's not a GMO or a hybrid.



Kapoho solo, Mexican Red, Caribbean Red, Maradol, Royal Star, Singapore Pink, and Higgins papayas are non-GMO.



Non-GM papaya

Genetically Modified Canola

Canola was developed in the 1970s through hybridization of the rapeseed plant. Genetically modified versions of canola came to be in the late 1990s. The plant is primarily insect pollinated, but the pollen is also able to travel by wind for great distances. GM canola is grown for cooking oil, margarine, and to for emulsifier production. It's estimated that 90% of canola grown in the U.S. and Canada are GMO. Organic crops are highly susceptible to windblown contamination if they are anywhere near GM crops. We recommend avoiding canola oil altogether, GMO or not. Studies show it's not a healthy fat, organic or not.

Genetically Modified Plums

The USDA may soon approve a genetically modified plum for commercial use, which would make it the second GM fruit, following papaya. The GM plum, called c5, is engineered to resist the mutation of the Plum Pox Virus, common among stone fruit trees. This virus is said to have the potential to devastate stone fruit production. The company says approval

will open the door for other stone fruits like peaches, apricots, cherries, and almonds, which are all susceptible to the virus.

At this time the Center for Food Safety opposes the GMO approval, saying that the virus is not found in the U.S.

Genetically Modified Alfalfa

Alfalfa is grown on 22 million acres in the US, which makes it the fourth largest crop. To much controversy, the FDA approved the commercial use of GM alfalfa in 2007. The addition of a gene makes it resistant to herbicides like Roundup. GM Alfalfa is grown primarily for hay for cattle feed. This RoundupReady Alfalfa did exactly what anti-GMO advocates knew it would do; it has contaminated other alfalfa crops. A recent study by the USDA shows that this feral GE alfalfa is contaminating fields all over the Midwest, costing American alfalfa growers and exporters millions of dollars in lost revenue. Unlike corn, soybeans, or cotton GM alfalfa is pollinated by bees and other insects that travel great distances, and it grows wild near roads, ditches, and yards.

At this point, it's very difficult for meat eaters to avoid GM alfalfa, and it's only getting harder. Goats, pigs, cows, horses, chickens, and sheep base their diet on alfalfa, either in fresh, hay or pellet form. Livestock food producers and farms using alfalfa are not regularly testing for GMO contamination. Alfalfa has amazing health benefits, but if you're buying it for your salads, to avoid the GMOs you'll need to make sure it's produced by a company that regularly tests for contamination, or is otherwise able to ensure you that contamination is not possible, like with small farms that grow it indoors from organic seed.

Genetically Modified Sugarbeets

The US sugar beet industry coordinated an industry-wide

conversion to genetically modified sugar beets, thus eliminating a non-GMO alternative for food manufacturers and consumers. Meanwhile, production of GM sugar beet seed is likely to contaminate organic and conventional vegetable seed production in Oregon's Willamette Valley. – [Non-GMO Project](#)

This is where I'm supposed to tell you how to make sure your sugar isn't GMO (which is to buy organic), but instead, I'm just going to say, STOP EATING REFINED SUGAR! It doesn't matter if it's organic, raw, sugar cane juice, sugar cane crystals, sugar in the raw, brown sugar, etc. Refined sugars are doing far more damage to us than any GMO on the market.

Recommended: [Sugar Leads to Depression – World's First Trial Proves Gut and Brain are Linked \(Protocol Included\)](#)

Genetically Modified Pineapple

Del Monte's new pink pineapple has been genetically engineered to produce lower levels of the enzymes that convert lycopene to the beta-carotene. If you are a fan of pineapple, you know that the enzymes are the what makes pineapple such a healthy food. Lycopene is a pigment that makes tomatoes red and watermelons pink, and beta-carotene makes pineapple yellow. Pink pineapple disease is a perplexing problem for the pineapple canned-fruit industry because the disease's symptoms almost always manifest itself after the fruit is canned, leaving the consumer to discover it. The thinking is that if the pineapple is pink to begin with, problem solved! The pineapple is slated to be grown in Costa Rica and labeled "extra sweet pink flesh pineapple."

This product is not commercially available yet. When it is on the market, it will likely be sold canned or otherwise processed, as opposed to fresh, at least at first.

Genetically Modified Wheat

Genetically modified wheat developed by Monsanto was never approved for consumption, but the GMO has escaped, it has been found growing wild in Washington State. It's only going to get worse. While contamination is still fairly rare, the only way to completely avoid it is to avoid any wheat grown in the Pacific Northwest.

GM wheat contamination is somewhat of a sore subject for Monsanto. In 2014, the agritech giant paid \$2.4 million to settle a lawsuit filed by U.S. wheat farmers over the GM wheat scare in Oregon. Last year, the company paid another \$350,000 to farmers in seven states over the same issue.

The latest discovery of GM wheat could also impact global trade, as many countries have strict regulations over GMOs and GMO imports. – [EcoWatch](#)

Genetically Modified Potatoes

The potato is the United States' most frequently consumed vegetable. The only GM potato currently sold is the "White Russet" potato, engineered by the J.R. Simplot Company. They have designed the potato to reduce browning and bruising and to reduce the amount of a asparagine, a naturally occurring chemical that converts to acrylamide under heat, which is believed to be a cancer-causing carcinogen.

Simplot has also received approval for other GM potatoes which are resistant to late blight, the disease that caused the Irish potato famine. They also last longer in storage through slower conversion of starch to sugars.

The company says they've grown only about 6,000 acres of the potato to be sold in 2017. There were more than 955,000 acres of potatoes grown in the U.S. in 2015. McDonald's chose not to use the potato, for now at least, but other restaurants are

buying them. They're rare right now, but they're still new.

Genetically Modified Apples

Another newly approved crop is an apple from a Canadian biotech company that does not brown even after it's been sliced. It recently received FDA approval for three varieties, Golden, Granny, and Fuji. Gala is coming soon, and more to follow. At this time, they are selling these apples in plastic bags labeled as "Arctic Apples," so, for now, they are easy to spot.



Genetically Modified Salmon

AquAdvantage, the genetically engineered Atlantic salmon, is now being sold in Canada. Wild salmon is big business for Alaska, so Sen. Lisa Murkowski and other Alaskan officials got Congress to hold up the sale of the GM fish in the U.S. The FDA blocked AquAdvantage imports until new GMO labeling regulations are in effect for food labels. FDA is mandated to issue that regulation by late July but has not indicated when to expect the rules.

Scientists inserted into the fish's DNA a growth-hormone gene from Chinook salmon, along with genetic regulatory elements from the ocean pout. We expect to see GM salmon in America after new GMO labeling laws take effect.

Genetically Modified Rice

There are two types, but neither are commercially available.

Golden Rice

Millions of people in Asia and Africa don't get enough vitamin A. Golden rice has been genetically modified so that it contains beta-carotene, the source of vitamin A. But the rice has not been successful in test plots.

A few months ago, the Philippine Supreme Court did issue a temporary suspension of GMO crop trials. Depending on how long it lasts, the suspension could definitely impact GMO crop development. But it's hard to blame the lack of success with Golden Rice on this recent action." – [Glenn Stone, professor of anthropology and environmental studies in Arts & Sciences](#)

Huahui Rice

The rice, known as Huahui 1, was developed by Chinese researchers, and designed to be pest resistant. It has been approved to be exported to the U.S, but China has not approved it to be sold or even cultivated. China does not allow commercial cultivation of GMOs.

Genetically Modified Bananas

Scientists in Australia have developed a banana with a genetic manipulation to increase the vitamin A content. The flesh is described as golden-orange. This project received a \$5 million grant from the Bill Gates-funded Grand Challenges in Global Health Initiative.

It's not available for consumption yet. Other GM bananas are being developed for disease resistance.

Banana is an important staple food crop feeding more than 100 million Africans but is subject to severe productivity constraints due to a range of pests and diseases. [Xanthomonas wilt disease] is capable of entirely destroying a plantation while nematodes can cause losses up to 50% and increase susceptibility to other pests and diseases.

How to Avoid GMOs in the Grocery Store

This list is as complete as I could make it, but it's likely missing quite a few, and there are more and more coming every year. won't last long, as new GM food varieties are approved every year. Let me know if I missed any, please!

List of Ingredients That May Be GMO

- Aminosweet
- Aspartame
- Baking Powder
- BeneVia
- Canderel
- Canola Oil (Rapeseed Oil)
- Caramel Color
- Cellulose
- Citric Acid
- Cobalamin (Vitamin B12)
- Colorose
- Condensed Milk
- Confectioners Sugar
- Corn Flour
- Corn Masa
- Corn Meal

- Corn Oil
- Corn Sugar
- Corn Syrup
- Cornstarch
- Cottonseed Oil
- Cyclodextrin
- Cysteine
- Dextrin
- Dextrose
- Diacetyl
- Diglyceride
- E951
- Equal
- Erythritol
- Food Starch
- Fructose (Any Form)
- Glucose
- Glutamate
- Glutamic Acid
- Glycerides
- Glycerin
- Glycerol
- Glycerol Monooleate
- Glycine
- Hemicellulose
- High Fructose Corn Syrup (HFCS)
- Hydrogenated Starch
- Hydrolyzed Vegetable Protein
- Inositol
- Inverse Syrup
- Inversol
- Invert Sugar
- Isoflavones
- Lactic Acid
- Lecithin
- Leucine
- Lysine

- Malitol
- Malt
- Malt Extract
- Malt Syrup
- Maltodextrin
- Maltose
- Maltose
- Mannitol
- Methylcellulose
- Milk Powder
- Milo Starch
- Modified Food Starch
- Modified Starch
- Mono And Diglycerides
- Monosodium Glutamate (MSG)
- Nutrasweet
- Oleic Acid
- Phenylalanine
- Phytic Acid
- Protein Isolate
- Shoyu
- Sorbitol
- Soy Flour
- Soy Isolates
- Soy Lecithin
- Soy Milk
- Soy Oil
- Soy Protein
- Soy Protein Isolate
- Soy Sauce
- Starch
- Stearic Acid
- Sugar (Unless Specified As Cane Sugar)
- Tamari
- Tempeh
- Teriyaki Marinades
- Textured Vegetable Protein

- Threonine
- Tocopherols (Vitamin E)
- Tofu
- Trehalose
- Triglyceride
- Vegetable Fat
- Vegetable Oil
- Vitamin B12
- Vitamin E
- Whey
- Whey Powder
- Xanthan Gum

Aisle by Aisle

In the produce section, to avoid GMOs, you'll need to be careful of conventional summer squash (yellow and zucchini), sweet corn, alfalfa sprouts, and the smaller pear-shaped papaya. These foods should be organic, and hopefully, the company tests their products for contamination. Also, avoid the Arctic apples, which are at this time being sold in easily identifiable plastic bags (see previous image). They will likely be out of their bags and sold individually soon, and conventional apples are sprayed with tons of chemicals, so we recommend yougo organic whenever possible.

In the bulk section, you'll need to make sure any grain that could be a GMO is certified as not GMO, via USDA Organic, Kosher, or Non-GMO Project Verified. The same goes for the packaged and processed foods that we shouldn't really be buying. There are other labels as well, and you should be able to trust packages that say they are GMO-free, but these are the three most popular certifications to look for:



Forget the PLU Numbers!

The PLU numbers won't help you. Articles still circulate on the web stating that PLU numbers indicate GM foods, but this is not true. Organic produce has a 5 digit PLU number, beginning with 9. Conventionally grown produce has a 4 digit PLU number. GM food was supposed to have a 5 digit PLU number beginning with 8, but this labeling is optional, and rarely if ever used.

At the Farmer's Market

The farmer's market is usually the best place to shop for produce for a multitude of reasons, but you'll often find that the best food at your local farmer's market is not certified organic or GMO-free. The organic label, while still strict regarding GMOs, is allowing more and more chemicals to be sprayed on crops every year. I prefer small farmers, and they typically don't have the time, money, or inclination to get such certifications. Just ask. Farmers are proud of their growing methods and you're more likely to get a lecture about the benefits of GMOs than you will get someone lying to you. The trick is to go to the farmer's market every chance you get and get to know your favorite stalls. Ask good questions, take your time, and develop relationships.

Foods Often Mistaken for GMOs

Seedless watermelons are not GMO, their genetics are modified through hybridization methods, but I don't recommend them.

Seedless watermelon is grown two ways. Usually, watermelons are diploid, meaning they have two sets of 11 chromosomes. Seedless watermelon is a triploid because they have 3 sets of chromosomes and are sterile. In order to produce seedless watermelons, a diploid watermelon is pollinated by a tetraploid (4 chromosomes) watermelon. In the process of reproduction, the new watermelon gets one chromosome from the diploid parent and two from the tetraploid which makes it triploid. Since the triploids have three sets, the eggs inside the watermelon are never formed and thus, seeds don't grow. The second way to grow seedless watermelon is by using a drug called Colchicine, a chromosome-altering chemical. This US drug is toxic (though people have been using it for the treatment of rheumatism and gout without FDA approval). Colchicine changes the chromosome number in the seeds from 2 to 4. After which, the seeds are pollinated with the natural 2 chromosome watermelon. The product – a genetically modified watermelon with 3 chromosomes.” – [LA Healthy Living](#)

Seedless watermelons have too much sugar as well.

Large apples are often assumed to be GMOs, but they are not, unless they are of the new non-browning variety. Neither are purple carrots or blood oranges, any other produce that's not listed above as a GMO crop regardless of how large or funky they look. As stated above, we do modify the genetics of foods through hybridization, but that's not what we call GMO, or genetically engineered, even though they are in a sense. Also, a lot of the funky looking produce is actually heirloom fruits and vegetables that you're not used to seeing.

Popcorn is made with a kind of corn that is not genetically

modified, though it's not the healthy snack many people think it is. Healthy corn is raw, organic corn on the cob grown on a small farm that doesn't spray chemicals. I find the inflammatory properties to be unnoticeable with raw sweet corn, but when cooked it feels different. I have no scientific evidence for this theory yet, but maybe you can compare the two and see for yourself.

To recap, within the produce section, at this time, the foods you should be concerned with in order to avoid GMOs are summer squash (including zucchini), corn, papaya, alfalfa, Arctic apples. We may see the White Russet potato and GE salmon in stores soon with plenty more to follow.

Conclusion

I'm not opposed to the idea of genetic modification of food, but until food companies are not primarily profit-driven and science has a much better understanding of health, I won't trust the GMO companies. And they should be better controlled so as not to be allowed to contaminate other crops, and not grown in uncontrollable environments at all. There is likely no turning back for alfalfa and corn, and soon, others will likely follow. I'll never be a fan of genetic modification designed to kill pests, or designed to allow heavy dosages of chemicals to be sprayed on them. These GMOs disrupt our gut's ecosystem and consequently, they are never going to be a good idea. If the GMOs are designed to kill anything, it's nearly certain they will kill gut microbes as well. I'm also not a fan of genetic modification to increase shelf-life, but I certainly do appreciate the motives, as we waste massive amounts of food. The problem with this approach is that our distribution is flawed due to corruption because of greed. We also have a serious lack of education that is keeping consumers in the dark. People should be taught natural health and how to grow their own food. On that note, are you growing your own food yet?

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