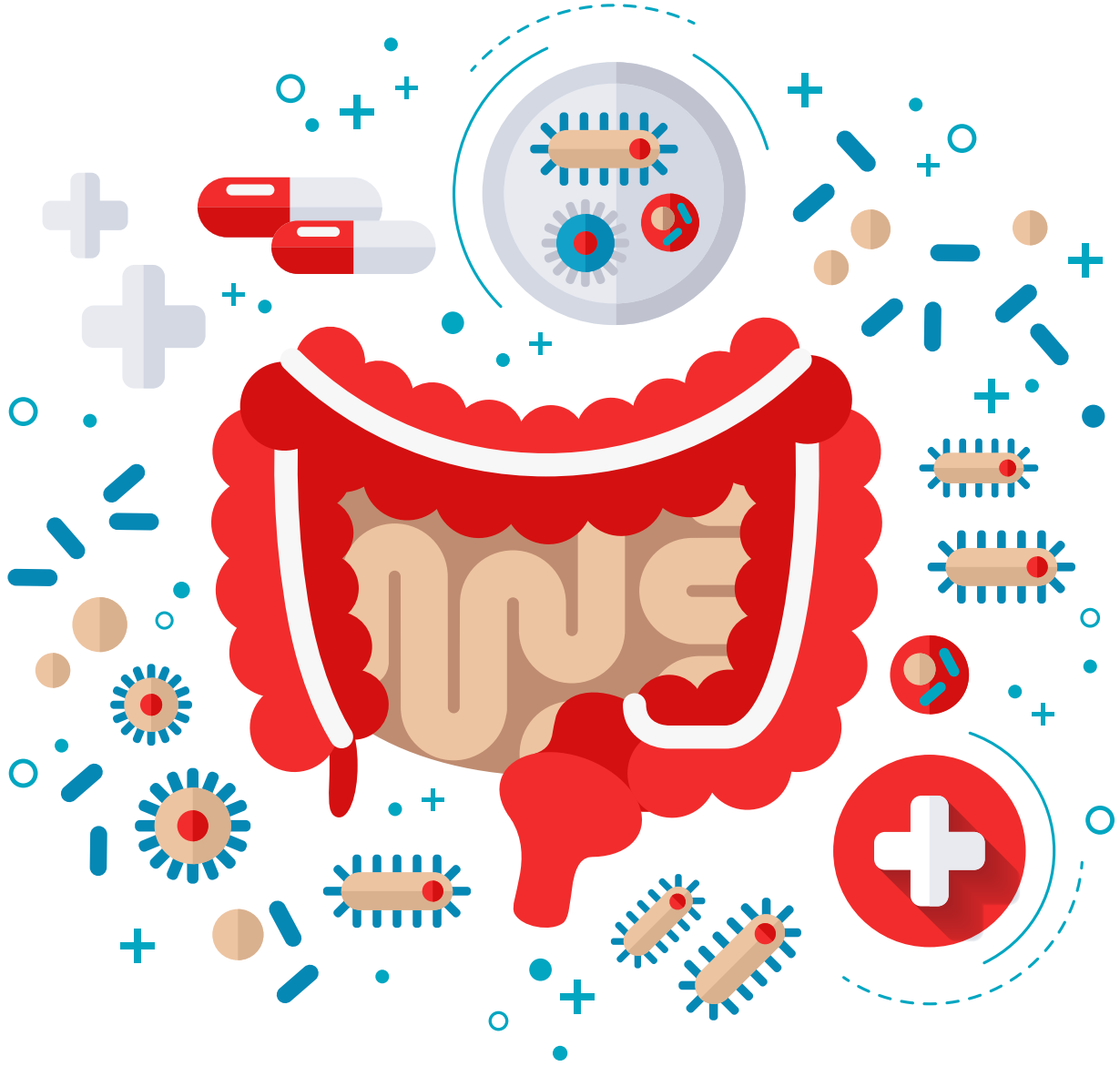
Body Ecology U

UNDERSTANDING CANDIDA

YEAST AND FUNGAL INFECTION



BY DONNA GATES

What Is Candida? Uncovering the Epidemic

Now let's get into candidiasis. It's a topic I really am anxious to discuss with you. It truly is an epidemic. And unfortunately, people are just not getting it, how serious it is to have a fungal infection. So, the words: candidiasis, Candida yeast, and fungus. They are all interchangeable words. And we are talking about an infection in the body that is very commonplace today, and I want to show you why.

"This is a deadly infection. People do die from it every day, especially if they have a compromised immune system."

Originally, twenty-something years ago when I began teaching about the diet, and I had met Dr. William Crook, and he had written his book *The Yeast Connection*, I knew I had a systemic yeast infection because I had taken antibiotics for many, many years, about 15, actually.[1] I had really, really painful digestion. I mean, it literally hurt when I ate food. And I had no energy, and I would have been diagnosed with something like chronic fatigue. I just was a complete mess at that time.

And his book was a godsend because I just realized that this really what's wrong with me after all these years of trying to figure it out. However, when I brought the book home and started following the diet very religiously, it just, it worked sort of but not enough. And I had had all this training previously, and I had decided that I was going to take what I knew already and figure out how to make this diet work for people with systemic fungal infections.

And that's what basically Body Ecology has become over all these years, and also, when I wrote the book, I wrote it with people like us in mind. People who had the systemic infection. Back in those days, there was really just a small group of people who were beginning to get turned on to candidiasis. And it was pretty hot, a pretty hot topic.

Dr. Crook was going around the country making people aware of it. People who were in the sick camp were on top of it, but the rest of the world was clueless. Over the years, a lot of books have appeared on the topic. There are some people that even completely disagree with what I have said, but Body Ecology has pretty much stood the test of time, and we have had the book out in the world for over 20 years. And it's made its way around the world helping people everywhere overcome their systemic yeast infection.

The Body Ecology Difference: Addressing Candida First

So, initially that was my intention to write a book for people with systemic yeast infection. And the book has made its way around the world and has helped tens of thousands of people. Other people have come out with programs very similar to Body Ecology. They are really not quite as precise. I think we

have just got this condition now, but I want you to understand how serious it is. I want you to know it's something to really pay attention to.

You may be the only one around you that pays attention to this. Because if you go to your doctor, they just don't get it. If they get a report back from the lab that you have yeast in your bloodstream or there is a gut infection, then they take it seriously, but they tend to immediately write up a prescription for an antifungal like Nystatin. And really, that's not the answer. That's not getting to the root cause. That's not getting — the root cause is they have this infection. The infection is causing a lot of inflammation, no matter where it is in the body, whether it's in the bloodstream or it's in the gut.

It's causing inflammation. You know, all diseases have inflammation behind them. I believe that this systemic infection is a major cause of many, many of the diseases that people are facing today.
So, you can't expect your doctor to be there for you. This was one that you need to do on your own. You need to understand this infection and then you need to know what to do to conquer it. And it's really not difficult. That's what we are going to be doing, really that's what Body Ecology is about, and that's what we are doing. And this module is covering candidiasis, and I am going to tell you at the end exactly what the solution is to overcoming this condition.

When Candida Becomes Systemic

Candidiasis is a systemic yeast infection. Systemic means it's in the bloodstream. Yes, it's very possible to have candidiasis in the gut as well. And many people do. They take an antibiotic. They wipe out all the good bacteria. The yeast are there. They are not at first in a harmful form. They are in a rather benign form. They are probably even playing an important role — one of the commensal microbes in the microbiome. And now, because they have got all the space to themselves, because the bacteria are gone, they actually become rather greedy and grow tentacles.

They create inflammation. They burrow into the lining of the intestines, with that inflammation and infection that they cause, they are able to then get through that gut lining — it's no longer, well, it becomes very permeable at that point. So, they move through, and then they get into the bloodstream, and that can be where a systemic infection can start. It can start from the gut. There are other causes as well, [which] I will get into. But I just wanted you to know that this is a deadly infection. People do die from it every day, especially if they have a compromised immune system.[2]

While there are very serious consequences to having a yeast infection, most of the doctors don't even know about it, or they don't care to know about it because they believe that yeast are harmless microbes and a normal part of the microbiome and naturally present in the body. But those are doctors who really don't understand this condition, as you are soon about to see. It's actually very easy to create this infection in anyone's body.

And it is contagious: Men and women can pass it back and forth when they make love. Mothers can even give it to their babies, as I am about to explain. Candidiasis has plagued all forms of life on this planet since time began. We have even lost species such as bats and frogs to systemic yeast infections. Millions of frogs around the earth were recently infected with yeast and fungus, basically, and they died off, so we lost lots of species that way, and that's been happening to bat populations. I may not be a big fan of frogs and bats, but they are actually an important part of our ecosystem, and we don't want to lose species on this planet.

But all forms of life can be affected with candidiasis, with fungal infections, and while this infection has been around for a long, long time — probably ever since man has lived in the planet — it wasn't prevalent then, not like it is now. And this is because of our lifestyle.

The Cause of Candida

So, what causes a fungal infection?

- A very widespread use of antibiotics.
- Other drugs, especially cortisone and Heparin.
- Estrogen and birth control pills.
- Bioidentical hormones, especially when they are not converting properly — when they are not being used properly by the body and escorted out of the body as they are supposed to be after they are used up.
- Stress — big, big issue for us today and definitely contributes to a fungal infection.
- A high-sugar diet, since so many people live off of all the processed foods and so on.
- And, unfortunately, and very, very sadly, babies for quite some time have been born with it.

Today, an antifungal diet is a must. Candida, or you can say candidiasis, is a systemic infection that is threatening our very lives and the lives of those that we love. It's also threatening our future as a species. The yeast constantly weakens its host. That's you, that's me. It does this so it can thrive. It's a parasite that has plagued man since time began. Your healthcare professional is most likely not going to understand it, not understand it to the point that you are about to. So, let's look at the impact of yeast on our body.

The Common Symptoms of Candida

While it weakens our immunity, it creates hormone imbalances and infertility. The yeast causes us to crave foods that make us feel bloated and fat. They cause insulin resistance, diabetes, and obesity because of the types of food they make us crave, especially sugar. They actually alter our brain chemicals, causing us to be emotionally unstable. They affect how long we live and how well we live, and yes, people do die, as I mentioned before, from a yeast infection. The symptoms are all over the place.

That's probably one of the reasons why it's so difficult for people to realize that they have a systemic yeast infection. You might have Crohn's, colitis, and irritable bowel syndrome, especially obviously if you have the yeast growing in your gut, but [also] depression, moodiness, cravings for sugar, eating disorders, being overly-focused, even being OCD (which is an extreme version of being overly-focused), having ADHD, memory problems, spacey-ness.[3]

Now, don't just think of adults, think of children when I go through these symptoms linked to having candidiasis:

- Asthma
- Sinus infections
- Chronic ear infections
- Joint pain
- Rheumatoid arthritis
- Infertility
- Acne
- Eczema
- Psoriasis
- Hives
- MS
- Lupus
- Hashimoto's
- Other autoimmune conditions

When women have systemic yeast infections, symptoms that they suffer from are PMS, recurrent vaginal yeast infections — some women never have this problem at all, they never have vaginal infections every month, and some do every single month. But over the years, some women have told me they never have a vaginal infection, and yet, systemically, it is definitely in their bloodstream. Urinary tract infections that recur over and over. You get rid of it, you take an antibiotic, you think it's gone. It comes back. It's often a fungal infection, and it's not going to respond to an antibiotic at all. Vulvodynia, endometriosis, painful intercourse, and thrush on the nipples are all very common symptoms that women, particularly, suffer from that men don't.

Women, Babies, and Candida

One of the things that I like for young women to know if they are going to become a mother or they already are a mother, if they are pregnant — babies and children are especially at risk. A fetus can inherit this infection from their mothers in the womb, and I believe that this is truly one of the reasons that we have so much autism. No one is doing any studies on the connection between candidiasis and autism, but interestingly, every child [with autism] I have ever worked with over the last 15 years, every single child has candidiasis. And their mothers will tell you that they do too.

So, here are some of the signs of a Candida infection in babies:

- The baby might have a very low birth weight.
- Preterm is another big issue. The baby is born before the full nine months.
- They could have thrush, colitis, constipation, and diarrhea — these are all signs that the yeast is in the digestive tract.
- Cradle cap is very common on a baby today, and diaper rash. The cradle cap looks like a crusty layer on the baby's scalp, and you want to kind of just take your fingernails and scratch it off, but that is a sign of yeast on the baby's skin. Diaper rash is very common in babies, and the yeast produce toxins that cause the diaper rash and the cradle cap.
- Eczema — many, many children by the age of 2 have eczema somewhere on their body, even all over their body, and this is caused by candidiasis.

If you see these signs on your child, you know, it's time to do something about it for yourself and the baby, because these are signs that the mother has candidiasis as well, and she's given it to her baby — not something to be guilty about because women don't know. Actually, women have been doing this probably since the beginning of time, but it's important to know so that we can nip this infection in the bud as soon as the baby is born. We do this all the time by giving the baby a dropper-full each day of the young coconut kefir, taking the juice of the cultured vegetables and putting that in water and then putting a dropper-full of that into the baby's mouth.

Putting bacteria, even *Bifidus* bacteria, too is important, to be sure that you establish the baby's immune system in the very beginning of his life — because as he grows over the next three months, and his immune system gets stronger, he can throw off this infection. So, this is something very important to know, very important to pass on to other women. Women should be passing this kind of knowledge on to other women.

Candida's Dangerous Toxins — And How They Harm the Body

Now, why is it so hard to get rid of a yeast infection? Well, quite simply, it slams our immune system. These [yeast] secrete over 79 dangerous biotoxins that are used as weapons: A biotoxin is a toxin produced inside the body. The yeast infection is a very stealthy infection. It's a very cunning infection. It can escape the immune system. It can literally change form and hide itself, and the immune system can't see it, and then it wants to change itself back into a more pathogenic form — so it's a very, very difficult infection for our immune systems to overcome.

Now, there are over 79 different toxins, so I am not going to go into all of them, but there is gliotoxin. Gliotoxin shreds part [of] the DNA inside of our white blood cells. We need the white blood cells to fight the yeast, and here this toxin, gliotoxin, is basically shredding apart the DNA — destroying the white blood cells.

Mannan is another poison they produce, and this particular one poisons the immune system as well. There is zymosan — this particular poison causes inflammation, which is why people have psoriasis and eczema. Arabinitol is known to produce toxic effects on the brain, on the nervous system, and the immune system in [some] studies.[4] And then there is acetaldehyde — this might be the most serious toxin that they produce. It definitely causes memory retention problems. And that feeling that you are spacey or even drunk.

This chemical, the acetaldehyde, is what is produced in the body every time we drink alcohol. Alcohol — it's ethanol that is reduced to acetaldehyde and then it goes and is cleared. It turns into acetic acid, and then it's cleared by the kidneys, but this isn't happening when you are 24/7 having yeast infection in your body, so we retain this acetaldehyde. It's a very, very dangerous chemical, definitely it [may] lead to cancer.

There are numerous other toxins produced by the yeast, and this explains the hormone imbalances, the fatigue, the depression, so many symptoms that are caused by these yeast. The yeast can affect our mind, our mood, and our brain. We have sleep disorders, migraines. We feel anxiety. We feel worried. We have cravings for carbs. We can be obsessive-compulsive, or at least overly-focused. There is depression and a feeling that life is flat. And that's because yeast can cause a serotonin deficiency. All these symptoms are actually related to a serotonin deficiency.

That toxin that I mentioned, the acetaldehyde, it creates neurotransmitter imbalances, so low serotonin, low dopamine, and low GABA are a consequence of acetaldehyde being in our blood caused by the yeast. Fungus can enter the brain, and it may be the cause of Alzheimer's.[5] A recent finding is that the brain has its own immune system, and these beta-amyloid plaques that build up might be there as a protective mechanism.[6] In other words, the brain is forming these plaques to protect itself from bacteria, from viruses, and from yeast, [and] they are actually able to enter the brain.

Yes, the brain has a blood-brain barrier. Scientists didn't think the [yeast] could get through the blood-brain barrier, but we know now that there are places where they can enter, and they can infect the brain.[7] But I think the big takeaway is that acetaldehyde, this terrible toxin produced by the yeast, creates neurotransmitter imbalances — and look how many people today feel that life is flat, or they are worried, full of anxiety. They are depressed. And then they go and get medications for that, when really the answer would be to conquer the yeast infection.

What about hormones? Candida does have an impact on estrogen, and estrogen has an impact on candidiasis. Estrogen helps Candida grow. Of course, we take in artificial estrogens from the environment and the foods that we eat. And these are called xenoestrogens. If you are taking these artificial estrogens, you are feeding your yeast.

Candida can actually produce a protein that binds estrogens and then depletes estrogen from the body, so this strange relationship that candidiasis has with the estrogen in our body is just causing all kinds of havoc for us. Candida can even product a false estrogen, and this is all very confusing to our body. And

it's very confusing to our cells [that] are trying to figure out what estrogen is the right estrogen to take in. The research shows that estrogen actually feeds the yeast. Many, many men and women today have elevated estrogen. When your estrogen levels are too high, this increases vaginal candidiasis.[8] It leads to abnormal growth and cysts and fibroids and even to cancer. It leads to PCOS and endometriosis. It can cause infertility. Birth control pills and estrogen replacement therapy put a woman at a greater risk for developing candidiasis.

Now, this is even true for the healthy bioidentical hormones. It's all about balance. You want to keep your estrogen in balance. Birth control pills are definitely a no-no. They do kill the bacteria in our gut, and we need those bacteria to have a strong immune system because, really, an immune system is the key here. A strong, strong immune system is key.

Candida and the Thyroid

"It's really very simple — you have to build a strong, hardy immune system."

Let's look at the thyroid. How many people have thyroid problems today? The yeast actually limit the production of thyroxine. Now thyroxine is the hormone called T4 that we have to have to make T3. So, T4 is supposed to turn into T3, and T3 is supposed to enter the cells, and that gives energy to all the cells everywhere in the body. But if you don't have enough T4, then that can cause a low thyroid condition. One of the signs of having Hashimoto's or hypothyroid is a cold body.

The yeast like it when you are cold. They do not like heat. So, if you get in a sauna, they don't like that. There are types of therapies for cancer where they use heat. They don't like that — what you want to do is keep your body temperature warm, and you want to nourish your thyroid, and you nourish your thyroid with minerals. The amino acid tyrosine, fats, and healthy fats like butter, a little bit of ghee, cod liver oil, egg yolks, avocado, coconut oil — coconut oil is especially good for the thyroid and for controlling Candida.[9] You want to put these in your diet and eat them, but then some people don't do well on butter and ghee because it's a saturated fat.

So, be careful. Again, one of the things that you will hear me say often is the Body Ecology Diet is a gut-smart diet. It's a gene-smart diet as well. And we teach people to have their genes tested and look and see what [your] genes are telling you about whether you can take fat or not. I have looked at a lot of gene tests, and I have found that not — people, really, you know, if you look at all the genes together that are related to fat, a high saturated fat diet doesn't seem to be for anyone, but small amounts of butter and ghee might be fine. It's about too much. It's all about balance for your body.

As for the minerals, there [are] zinc, selenium, and iodine. We have in our line of products two mineral sources. We have Ancient Earth Minerals that supplies the fulvic and humic minerals, and we also have Ocean Plant Extract, which gives you iodine. So, zinc, selenium, and iodine are really important for the

thyroid. You will get iodine from sea vegetables, and then you can get minerals from taking a really high quality salt.

My favorite salt is the Maki salt that is sold by Selina Naturally. It's very rich in potassium, lower in sodium; it's very clean salt, comes from Hawaii. I love it when people cook with that salt, sprinkle a little on their food. Some people are salt-sensitive. This is definitely the preferred salt for salt-sensitive people.

Again, this is a gene thing. When you look at your genes, it will tell you if you are salt-sensitive or not. So, fulvic and humic minerals are great. Ocean Minerals are great, and then you may want to take selenium and zinc actually as a supplement. You can be tested for iodine to see if you are low, but very, very often, people just need to eat sea vegetables — and seafood, like fish, is a good source of iodine as well.

Tyrosine, you can take as a supplement. It's an amino acid. All the amino acids usually come as 500 milligrams. The dose varies from person to person. You might start off with one in the morning, but you might need three throughout the day, but you never want to take it after 3:00 p.m. because it will give you too much energy, and you could not sleep well.

And then quality fats are fuel for the thyroid, especially the ones with vitamin A and D, and, of course, taking vitamin A and D might be a wise idea as a supplement for you. Once you have this yeast infection in your body, there are other hormones that play a role as well in keeping that yeast infection alive.

Cortisol, as in chronic stress. So many of us do have a very stressful life all the time. Our mind chatters. We make up stressful situations even when there really doesn't need to be a stressful situation; we create stress for ourselves. So, it's something important to work on if stress in your life is just simply too high because you will never get over your yeast infection if you don't bring the stress under control. The stress elevates cortisol, and when you elevate your cortisol, that slams your immune system and, of course, that allows the yeast to thrive inside of us.

The stress makes the body much more acidic, and also, cortisol naturally elevates glucose, our blood sugar, and with more sugar in the blood, the yeast have more food to eat. Very few people realize that T4 does not convert to T3 and get into your cells and give you energy — that doesn't happen if you have high cortisol levels in your body. So, between the cortisol, raising your blood sugar, and feeding the yeast, and the T4 not converting to T3, you just don't have any energy, and you have yeast growing and growing and growing, and this is why it's so difficult to overcome, basically.

But progesterone is a really interesting hormone. It's actually anti-Candida. It doesn't feed the yeast like estrogen does. But, it's only anti-Candida in the absence of estrogen. Estradiol actually, and that just really doesn't happen. We don't have progesterone in the body without estrogen. But if you took out the yeast and exposed them to progesterone, you would find that it doesn't feed yeast at all. It actually goes and fights against yeast.

Candida and Autoimmune Disease

Let's talk about autoimmune diseases. They are rampant today, especially in women. Actually, women tend to have more autoimmune conditions than men do.[10] And this is because of our immune systems. We actually have different immune systems. Men have an immune system where they are more than likely to succumb to an infection. Let's say that they get a bacterial infection or a viral infection. They are more likely to succumb to that than a woman is because nature has made our immune system so that we are able to overcome that virus or that bacteria better than a man.

It really has to do with the microbe center gut acting upon our hormones, so testosterone though is very protective against autoimmune conditions. Since we [women] don't have such high levels of testosterone, we don't have that protection against autoimmune conditions. So, women definitely suffer with more autoimmune conditions, and we have more autoimmune conditions than we have ever struggled with.

I mean, there are 60, 70, 80, I don't even know, I keep hearing higher and higher numbers. But you know a couple of generations ago, we didn't have these autoimmune conditions that we have today. So, what's going on? Well, I know that yeast, candidiasis, is definitely playing a role, and then with Hashimoto's, definitely because so many people with Hashimoto's respond beautifully on the Body Ecology Diet. They are getting their yeast infection down. They are building their energy. I mean, there is just every successful program out there that is dealing with Hashimoto's is actually following the principles and the foods on the Body Ecology Diet.

Candida and Gluten

I am sure you are very aware of how many people in the country are on a gluten-free diet. Gluten intolerance is a hot, hot topic in the field of natural medicine. And you have to ask yourself: *Why today is it so prevalent?* Well, there [are] a lot of reasons. I mean, the quality of the wheat we are eating is not anything like the wheat of the past, and it's sprayed, and there [are] just lots of reasons why you want to avoid gluten. But twenty-something years ago, I created a diet that was literally the first gluten-free diet in the country. It was gluten-free, sugar-free, dairy-free, rich in probiotic foods. So, it was literally the first gluten-free diet out there.

I didn't know about the difference between wheat today and wheat long ago. But what I did know is that people with a yeast infection are particularly sensitive to gluten. I have since found out that yeast are made of protein, and gluten is also made of protein, and they look alike. I didn't know that.

I knew that yeast are protein. I knew gluten was protein. I didn't realize to the immune system they look exactly alike, so if you have been growing a yeast infection in your body, and you are eating gluten — [it is triggering] to the immune system, which is working so hard to try to bring this yeast infection under control. It sees the gluten as another enemy. It is yeast as far as the immune system is concerned, and it

fights, and you get this autoimmune attack on the gluten. So, this is another thing to add to the list of gluten intolerance.

You know, it isn't celiac. Celiac is where we genetically absolutely can't have gluten. Which there [are] very few celiacs, but many, many, many of us are gluten intolerant, and many, many, many of us have yeast infection, and here is another link. So, the foods that you'll find gluten in [are] wheat, of course — rye, barely, spelt, and kamut.

There is absolutely no gluten on the Body Ecology Diet. There are grain-like seeds that we recommend for fiber, so you get the same B vitamins — by the way, the fiber is very, very important for the bacteria and healthy gut. But we recommend amaranth, quinoa, millet, and buckwheat, and they are all gluten-free.

How to Conquer Candida, the Body Ecology Way

So, at this point, you are probably wondering: *How do you overcome it?*

It's really very simple — you have to build a strong, hardy immune system. And you have got to starve out the yeast. Nothing lives if it starves to death. Everything has to eat, or it dies. So, if you stop giving the yeast the food that it needs to stay alive, if you bring down the stress in your life and make your system more alkaline [since] they thrive in an acidic environment, and you build your immune system so that it's so strong, so hardy that it can keep this infection under control, then you have conquered your yeast infection.

That's what we do in Body Ecology. That's what we have done for over 20 years, and this is really the key to overcoming candidiasis.

You have got to have a sugar-free diet. It's got to be rich in probiotic foods to build that immune system. Now, you have got a good sense of the microbiome and its importance, and of course, that is your immune system — remember, 70 percent of your immune system is in your gut.[11] You know now that yeast are an issue for almost everybody. You've got to be mindful for the rest of your life that you don't feed the yeast and that you need to have a strong immune system. And when you nourish it, you have this strong, hardy, diverse, immune-boosting microbiome in your gut.

Sources:

1. Crook, William G. *The Yeast Connection: A Medical Breakthrough.* New York: Vintage, 1986. Print.
2. Peter G. Pappas, Carol A. Kauffman, David R. Andes, Cornelius J. Clancy, Kieren A. Marr, Luis Ostrosky-Zeichner, Annette C. Reboli, Mindy G. Schuster, Jose A. Vazquez, Thomas J. Walsh, Theoklis E. Zaoutis, and Jack D. Sobel. Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. *Clinical Infectious Diseases,* December 2015 DOI: 10.1093/cid/civ933.
3. Vighi G, Marcucci F, Sensi L, Di Cara G, Frati F. Allergy and the gastrointestinal system. *Clinical and Experimental Immunology.* 2008;153(Suppl 1):3-6. doi:10.1111/j.1365-2249.2008.03713.x.
4. Salonen JH, Rimpiläinen M, Lehtonen L, Lehtonen OP, Nikoskelainen J. Measurement of the D-arabinitol/L-arabinitol ratio in urine of neutropenic patients treated empirically with amphotericin B. *Eur J Clin Microbiol Infect Dis.* 2001 Mar;20(3):179-84. PubMed PMID: 11347667.
5. Ingar Olsen, Sim K. Singhrao. Can oral infection be a risk factor for Alzheimer's disease? *Journal of Oral Microbiology,* 2015; 7 (0) DOI: 10.3402/jom.v7.29143.
6. D. K. V. Kumar, S. H. Choi, K. J. Washicosky, W. A. Eimer, S. Tucker, J. Ghofrani, A. Lefkowitz, G. McColl, L. E. Goldstein, R. E. Tanzi, R. D. Moir. Amyloid- peptide protects against microbial infection in mouse and worm models of Alzheimers disease. *Science Translational Medicine,* 2016; 8 (340): 340ra72 DOI: 10.1126/scitranslmed.aaf1059.
7. Walter H. Backes, Ph.D et al. Blood-Brain Barrier Leakage in Patients with Early Alzheimer Disease. *Radiology,* May 2016.
8. Cheng G, Yeater KM, Hoyer LL. Cellular and Molecular Biology of Candida albicans Estrogen Response . *Eukaryotic Cell.* 2006;5(1):180-191. doi:10.1128/EC.5.1.180-191.2006.
9. Carol Kumamoto et al. Manipulation of Host Diet To Reduce Gastrointestinal Colonization by the Opportunistic Pathogen Candida albicans. *mSphere,* November 2015 DOI: 10.1128/mSphere.00020-15.
10. A. V. Rubtsov, K. Rubtsova, A. Fischer, R. T. Meehan, J. Z. Gillis, J. W. Kappler, P. Marrack. Toll-like receptor 7 (TLR7)-driven accumulation of a novel CD11c B-cell population is important for the development of autoimmunity. *Blood,* 2011; 118 (5): 1305 DOI: 10.1182/blood-2011-01-331462.
11. Vighi G, Marcucci F, Sensi L, Di Cara G, Frati F. Allergy and the gastrointestinal system. *Clinical and Experimental Immunology.* 2008;153(Suppl 1):3-6. doi:10.1111/j.1365-2249.2008.03713.x.

About Donna Gates

Donna Gates, M.Ed., ABAAHP, is the international best-selling author of *The Body Ecology Diet: Recovering Your Health and Rebuilding Your Immunity*, and *The Body Ecology Guide to Growing Younger: Anti-Aging Wisdom for Every Generation*. Donna is on a mission to change the way the world eats.

The Body Ecology Diet was the first of its kind — sugar-free, gluten-free, casein-free, and probiotic-rich. In 1994, Donna introduced the natural sweetener Stevia to the U.S., began teaching about fermented foods, and coined the phrase “inner ecosystem” to describe the network of microbes that maintains our basic physiological processes — from digestion to immunity.

Over the past 25 years, Donna has become one of the most respected authorities in the field of digestive health, diet, and nutrition. In 2013, she completed an Advanced Fellow with the American Academy of Anti-Aging Medicine.