



Could a **Candida** Infection Be Sabotaging Your Health?

Why You Should Take This Yeast Problem Seriously

Dr. Mercola

Millions of people are currently fighting a battle against a single-cell fungus they cannot see. This fungus belongs to a family of yeasts called *Candida* and, under normal circumstances, it lives harmlessly in the mucous membranes of your skin, mouth, intestines and, in women, your vagina.¹

Unfortunately, *Candida* cells can over-develop very rapidly under certain conditions, for example, if your immune system is out of balance from eating unhealthy foods, or if you are taking certain prescription drugs, fighting an illness, and more. When this overgrowth occurs, it can create a condition called *Candidiasis*, often referred to simply as a “yeast infection.” The result is an astounding array of health problems that can rob you of energy and interfere with your ability to enjoy life.

Unfortunately, there is a lot of misinformation on the Internet about *Candida*, which makes it difficult to know what’s true and what isn’t when it comes to preventing and treating yeast infections.

What’s worse, sometimes doctors not only do not immediately recognize the symptoms of *Candida* overgrowth, but are unsure of, or confused about how to cure it.

So, if you think you may be suffering from a yeast-related problem, or if you’re simply interested in learning more about yeast infections and their symptoms, keep reading. In the pages that follow, you’ll learn what *Candida* is, how to know if you have an overgrowth of it and, more importantly, how to prevent it—or if you already have an overgrowth, natural ways to overcome it.

What Is *Candida* and How Does It Become *Candidiasis*?

Candida is a common, yeast-like fungus that lives in your mucous membranes and, normally, quite benignly together with the microbiota and microflora of your mouth, gut, and intestinal tract all the way to the rectum.² It also likes to grow in warm, moist areas of the skin, such as under your baby’s diaper, in your armpits and groin and, in women, in your vagina and the folds of your vulva.

Over 20 types³ of *Candida* can cause infections in humans, but the most common is *Candida albicans* (*C. albicans*), which causes up to 75 percent⁴ of all *Candida* infections, and which is the type we’ll be focusing on in this E-book.



Undisturbed, *C. albicans* is a round, yeast-like structure that is present without it ever causing a problem or you even knowing it’s there. But with the help of a protein that has a sugar (glycogen) attached to it,⁵ it can grow too fast and too much, causing it to elongate into filaments called hyphae. These filaments then burrow into the soft tissues of your body, causing the fungus to morph into the infection called *Candidiasis*, commonly referred to as a yeast infection.⁶

*It’s important to understand that a **Candida overgrowth** is not due to the mere presence of *Candida* in or on your body—*Candida* is a normal part of your body’s microflora. In fact, it’s so normal that oral swabs in 40 to 75 percent of healthy adults will test positive for *C. albicans* at any given time. And, as many as 25 percent of women will be positive for *C. albicans* in their healthy vaginas with no signs of an overgrowth or infection.^{7,8}*

It’s thought that *Candida* enters your body as early as birth with other organisms that are a normal part of the birth process, all of which cause no problems until there’s a breach in your body’s defense system.

It’s that breach that opens the door for a *Candida* overgrowth to occur, and it’s the *overgrowth* that can wreak havoc on your health and even cause death if your immune system is dangerously low.⁹ That’s why people with AIDS or HIV, or who are immunocompromised by cancer treatments like radiation or chemo, or who are on antibiotic therapy, are especially susceptible to a yeast infection.

In fact, according to the Oral Cancer Foundation:¹⁰

“Yeast infections such as Candida were recognized centuries ago as an indicator of much larger underlying diseases such as diabetes mellitus, malignant tumors, and chronic infections (such of the miners’ canary.)

When antibiotics are used, there is a flip-flop in the balance of the natural occurring flora in the mouth (and elsewhere) where the normal flora is damaged by the antibiotic therapy to the advantage of the fungus, which then blooms.

Damage to the mucous membranes and to the salivary glands also allow for Candida colonization. Dry mouth (xerostomia) upsets the balance of microorganisms in the oral cavity. When the delicate balance of normal and abnormal bacteria is disturbed, an overgrowth of this fungus may occur.”

Please note that Candidiasis is a fungus, not a bacterium, and an overgrowth of it should not be confused with bacterial vaginosis,¹¹ a completely different type of infection that’s caused by an imbalance of bacterial flora in the vagina.

Since it’s a fungus rather than a bacterium, a yeast infection is **not** treated with an antibiotic—in fact, as I’ve already alluded to above, antibiotics are notorious for *triggering* yeast infections. Therefore, most doctors will recommend a topical or oral fungal treatment if you are diagnosed with a yeast infection.¹² But other, non-pharmaceutical ways of addressing Candida overgrowth are also available, which we’ll discuss later.

There are three main types of Candidiasis:¹³

1. Oropharyngeal Candidiasis

Commonly referred to as thrush, this yeast infection occurs in the form of whitish-yellow patches in your mouth and on your tongue and throat.

Normally, *C. albicans* is not a problem in your mouth, as it grows there along with about 300 species of bacteria that likewise never cause a problem. But when the normal microflora is disturbed by antibiotic therapy or when changes in your immune system and hormonal or mucosal secretions occur, it can grow out of control, and become thrush.¹⁴



Newborns sometimes get thrush, making it possible for the infection to spread to the mother’s nipples during breastfeeding, as new mothers’ nipples can tend to crack until nursing is well-established. Those tiny cracks provide opportune places for *Candida* to move into, and grow.

People with dentures and those who use inhaled corticosteroids such as the asthma inhaler Advair¹⁵ are also susceptible to thrush, as well as those with compromised immune systems, for example, people with AIDS or anyone undergoing chemotherapy or other cancer treatments.

According to the U.S. Centers for Disease Control and Prevention (CDC), thrush isn’t as common as genital yeast infections. But it’s still estimated that 5 to 7 percent of babies under a month old will get a thrush infection; nearly 20 percent of cancer patients will get it;¹⁶ and 90 percent of HIV-infected persons will become infected with it.¹⁷

Additionally, people with organ transplants, or who have cirrhosis of the liver¹⁸ or diabetes, and, again, those who use antibiotics may have an increased risk for oral candidiasis.

Usually doctors can tell whether you have thrush by simply looking in your mouth for the tell-tale signs of the whitish, yellow patches. On the other hand, *esophageal* candidiasis may be so deep in your throat

that it can't easily be detected by sight alone, so if you don't have visible patches in your mouth, you need to watch for other symptoms such as:¹⁹

- Burning pain in the mouth or throat²⁰
- Tiny cracks at the corners of your mouth
- Altered taste, especially when eating spicy or sweet foods
- Difficulty swallowing
- Chest pain accompanied by difficulty swallowing

Candidiasis of the esophagus is also often found in HIV patients, and occasionally in those on inhaled corticosteroids. Diagnosis of esophageal Candidiasis is made with an upper endoscopy that shows white and/or yellow lesions on the surface of the esophagus.²¹

In a worst-case scenario, an oral *Candida* infection can spread from the mouth, down the esophagus, and into the gastrointestinal tract, where it can move into the organs of the body and ultimately into the blood stream, causing an infection known as Invasive Candidiasis, or an even more deadly condition, *Candida* sepsis.

That's why critically ill patients must be carefully watched for any sign of a yeast infection—it's estimated that about 5 percent of all cases of severe sepsis and septic shock are caused by an invasive *Candida* infection. A third of those cases occur right in the hospital setting, usually in the intensive care unit, making invasive Candidiasis the fourth most common bloodstream infection in the US, with 40 to 60 percent of the patients who get it, dying from it.²²

2. Invasive Candidiasis

Invasive Candidiasis, or Candidemia, is a serious infection of the blood, brain, eyes, heart, bones, and other parts of the body. As I've already noted, this bloodstream infection is the fourth most common hospital-acquired infection (HAI) in the US, and is responsible for 40 percent of blood stream hospital infections.²³

Invasive Candidiasis occurs when your immune system becomes so weakened and vulnerable that it allows the fungus to leave its normal burrowing spots and spread throughout your body. It's also possible in rare cases to be infected with Candidemia by an outside source, such as from healthcare workers' hands or by contaminated devices²⁴ used in the hospital setting.



Various other spots in hospitals where *Candida* has been found are on foods, countertops, air-conditioning vents, floors, and respirators.²⁵ (This contamination is solely *topical*—meaning the contamination is ON the source, not in the air around it, as *Candida* is NOT an airborne infection²⁶.)

Even if you're not in the hospital, having a central venous catheter or port for chemotherapy can still make you more susceptible to Candidemia.

According to the CDC and Medscape,²⁷ other individuals who may be especially at risk for invasive Candidiasis include:²⁸

- Patients in an intensive care unit (ICU)
- People who have weakened immune systems because of an organ transplant
- People with diabetes
- People with neutropenia (very low count of neutrophils, a type of white blood cell)
- People with kidney failure or who are on dialysis

- People who have had recent surgery, especially gastrointestinal surgery
- People with burns or other severe trauma
- Those who have been on mechanical ventilation longer than 3 days

I can't stress enough how serious an illness invasive Candidiasis is, mainly because it can be very difficult to treat once it's spread to your vital organs. It can even be fatal: the death rate for patients who get hospital-acquired invasive Candidiasis is between 30 and 50 percent and increasing!²⁹

It's also a leading cause of morbidity and mortality in premature infants within the first six weeks of life, affecting 4 to 8 percent of extremely low-birth-weight infants, with a 30 percent death rate.³⁰

That's why you want to be sure that you and your medical team are taking every precaution possible to prevent you from getting this disease if you are in any of the above risk categories, or are hospitalized in an Intensive Care Unit (ICU).

The most common symptoms of invasive Candidiasis are fever and chills that don't improve after treatment for suspected bacterial infections. Skin rash, malaise, muscle aches, vision changes, low blood pressure, abdominal pain and headaches or neurological deficits can also be symptoms.³¹

About 16 percent of patients with Candidemia also experience serious eye complications, with the majority developing an inflammation of the choroid and retina of the eye, which is called chorioretinitis.³² Because chorioretinitis can potentially blind you, if you get Candidemia, it's very important to be checked for chorioretinitis, and quickly treated if you're found to have it.³³

3. Genital/Vulvovaginal Candidiasis

Diagnosed in up to 40 percent of women with vaginal complaints, this is what most women call a yeast infection. Yeast infections are the second-most common cause of vaginitis after bacterial vaginosis.³⁴

Genital Candidiasis is not a fatal disease, but as anyone who has had it can attest, it can be both annoying and unpleasant.

Certain conditions can enhance your susceptibility for getting this yeast infection,³⁵ including pregnancy, diabetes, a weakened immune system due to chronic or acute disease, and use of antibiotics, particularly long-term courses of antibiotics.

Additionally, some studies have shown that both bacterial vaginosis and a yeast infection may contribute to your susceptibility of acquiring HIV, so preventing a yeast infection or treating it quickly if you have one may help lower your chances of HIV infection if you are in a risk category for HIV.³⁶

While women are the ones usually talking about having a yeast infection, genital Candidiasis isn't limited only to women: men can get it too. That's why if you're a male and you are experiencing some of the symptoms of a genital yeast infection, you should be tested for it so you can begin a proper line of treatment right away if you're positive for it.

Males may also come down with a Candida inflammation of the prepuce of their penis, a condition called balanitis, or balanoposthitis. While it's not technically considered a sexually transmitted infection, experts say that balanitis *can* be acquired sexually, especially if you're uncircumcised or diabetic.³⁷

For this reason, uninfected males may want to refrain from sexual activity when they or their partner have an infection, since the act can irritate the penis and possibly cause a rash or itching, even if you don't end up catching the actual infection.³⁸

For women, research shows that a yeast infection is more likely to occur in those of child-bearing age—especially during pregnancy³⁹—than in postmenopausal women, with an increased frequency of the infection reported during the premenstrual week.⁴⁰ However, if you're menopausal and on hormone

replacement therapy, new research shows that your risk of getting a yeast infection will continue as long as you are on HRT⁴¹.

Do You Have Any of These Behavioral Risk Factors for Candida Overgrowth?

For women, there are certain behavioral risk factors that can increase your chances of getting a yeast infection. While the behaviors aren't necessarily "bad" in and of themselves, studies show they still can up your chances of getting a yeast overgrowth. Some of those risk factors are:⁴²

- Frequent sexual intercourse
- Receptive oral sex
- Using high-estrogen oral contraceptives,^{43, 44} condoms, and/or spermicides
- Frequent use of panty liners or pantyhose (*only* if you're prone to recurrent infections)

Other significant risk factors for both males and females include:⁴⁵

- Antibiotic use (in females, 28 to 33 percent of Candidiasis cases occur because antibiotics have altered the bacterial microflora of their vaginal and gastrointestinal tracts)
- Uncontrolled diabetes
- Having high reproductive hormone levels
- Genetic predisposition to yeast infections
- Smoking⁴⁶

When it comes to re-infection (recurrence), recent research shows that engaging in oral sex (cunnilingus) may increase a woman's chances of having a recurrent infection,⁴⁷ so it may be wise to simply forego sexual relations until your or your partner's infection is completely cleared.

Male or female, as with oral and invasive Candidiasis, immunocompromised persons are especially susceptible to genital yeast infections. In fact, about 90 percent of all people with HIV/AIDS will eventually develop a yeast infection of some sort.⁴⁸

What Are the Symptoms of a Genital Yeast Infection?

Noticeable symptoms of a genital yeast infection can include all or just a few of the following:^{49, 50, 51}

In women:

- Genital itching and burning
- Curdy vaginal discharge
- Painful or difficult urination
- Painful intercourse
- Redness or soreness of the vagina
- Patchy red areas on and around the vulva
- Vulvar edema and fissures

In men:⁵²

- Itchy rash on the penis
- Red skin
- Swelling
- Irritation and soreness
- Inflammation
- White patches
- Thick, lumpy discharge under the foreskin with an unpleasant odor
- Difficulty pulling back the foreskin
- Painful urination



- Pain during sex

How Common Are Vaginal Yeast Infections?

According to the National Institutes of Health, most women—about 75 percent—will have a vaginal yeast infection at some point in their lives,⁵³ with 40 to 50 percent of that number getting recurrent (four or more a year) episodes of it.

That said, I would be remiss not to acknowledge some very new research questioning these numbers. It seems that none of the medical literature is able to cite an *original, peer-reviewed* study validating the 75 percent figure, which appears to be wholly anecdotal, with citations of that number compounding over the years without a base study ever having been done.⁵⁴

According to the critics who pointed this out, Sujit D. Rathod and Patricia A. Buffer:

“The regular reference to these undocumented estimates in the literature has developed an ‘unfounded authority’, which masks the need for further study of the epidemiologic features of vulvovaginal candidiasis.

In fact, the original author ‘did not purport to estimate the lifetime incidence of vulvovaginal candidiasis, yet her publications are frequently cited by others to support the 75% figure’.”

Rathod and Buffer don't deny that yeast infections are extremely common in women; they're simply suggesting that an official study be done to verify the numbers.

I agree that such a study should be done, especially since a 2013 study on 6,000 women in six countries showed that the number of women who have ever experienced a yeast infection could be as low as 29 to 49 percent, depending on where you live in the world. For example, vulvovaginal candidiasis is more of a significant health problem in Western countries than other places around the globe.⁵⁵

Two other studies, which relied solely on women's anecdotal reports, are more than two decades old, and quite limited in their reporting. One from 20 years ago showed that just 55 percent of university women had at least one infection by the time they were 25.⁵⁶

The other *estimated* that 56 percent of American women nationwide will have at least one episode of vulvovaginal Candidiasis in their lifetime.⁵⁷ Both found that African-American women are more likely than white women to report having a yeast infection.

Judging from just these few examples, there does appear to be some discrepancy in the numbers, depending on which study you reference.

However, until an actual baseline study is done, for the purposes of this E-book, I'm going to go ahead and cite the data from the major medical literature and the National Institutes of Health, which is that 75 percent of women will get a yeast infection in their lifetime, and that about half of those will get a repeat infection.

What Other ‘Down There’ Yeast Infections Are There?

Another “down there” type of yeast infection that affects the genital/urinary tract, Candiduria, is common among the elderly, hospitalized, and immunocompromised persons, as well as newborns.⁵⁸

Candiduria is the second-leading cause of catheter-associated urinary tract infections, and it can occur very quickly after a catheterization: a new study shows that *C. albicans* was detected in over 69 percent of patients within 48 hours of a catheter insertion.⁵⁹

Candida Overgrowth in Your Gut

Much of the focus on Candida in the past has been on vaginal yeast infections and how to treat the symptoms. But more recent research has centered on the gastrointestinal system and Candida’s ability to both colonize the gut benignly along with your normal microbiota, as well as to contribute to inflammation⁶⁰ that triggers diseases of the gut.

For example, irritable bowel syndrome,⁶¹ Leaky Gut Syndrome, Crohn’s disease,⁶² and inflammatory bowel disease⁶³ have all been linked to yeast overgrowth in various studies.

Not surprisingly, it’s also been shown that patients with ulcerative colitis and gastric ulcers tend to have more severe disease if they have Candida overgrowths in their guts. Victims of Candida overgrowth also have more trouble getting well, apparently because the overgrowth can delay healing of inflammatory lesions, which can lead to a cycle of disease that promotes even more inflammation.⁶⁴

Even more serious is when Candida overgrowth occurs deep within the intestinal tract itself. If it grows out of control there, the infection can create structures called rhizoids, which act like little screws that drill into the walls of your intestines, penetrating tiny perforations, grooves, crevices and weak points⁶⁵ that might already be there naturally, and where foods, fats, and toxins can lodge and subsequently “leak” into your bloodstream.⁶⁶ This is called Intestinal Hyper-permeability, commonly known as Leaky Gut Syndrome.

When Leaky Gut happens, the body will start to fight what it believes is a foreign substance, and will form antibodies that not only wreak havoc on your entire immune system, but can trigger food allergies⁶⁷ as well as continue the Leaky Gut cycle.

In turn, this can cause vitamin and mineral deficiencies in your body, which lower your immune system even more, causing another vicious circle of gastrointestinal and autoimmune problems—and with them a feeling of fatigue, listlessness, and often, depression when it seems like you just don’t know what’s wrong with you.



Leaky Gut Syndrome: Where It All Begins

About 30 years ago, Dr. William G. Crook, a physician who I long admired and respected before he passed in 2002, wrote a groundbreaking book that connected certain health conditions to yeast infections. In it,⁶⁸ Dr. Crook named specific physiological and autoimmune, allergy, or allergy-like symptoms that he attributed to *C. albicans* overgrowth, such as:

| |
|--|
| Food cravings (especially for carbohydrates, yeast's favorite food) |
| Bloating |
| Liver overload as it tries to deal with all these toxins |
| Decreased thyroid function and metabolism because the liver is busy elsewhere |
| Tremendous fluid retention as your body tries to dilute the toxins |
| Fat cells swelling as they trap toxins as a means to protect the rest of the body |
| Gas from yeast due to its normal metabolic functions |
| Toxins that block thyroid hormone function |
| Hormonal imbalances on all levels (known as pseudo-hormones or false hormones) caused by environmental chemicals blocking receptor sites |
| Weight gain due to the stress of toxins and feeling awful create excessive release of cortisol, the chronic stress hormone, which has an added negative effect of making it nearly impossible to lose weight |

When you look at these symptoms in the context of what you might be suffering due to an unaddressed yeast infection, it's easy to understand how it's possible for something like depression to also be a manifestation of uncontrolled *Candida* overgrowth, if only because the weight gain, bloating and food cravings make you feel depressed.

Unfortunately, it took nearly three decades for conventional medicine to recognize that Dr. Crook was on to something—that, indeed, a yeast infection not only can disturb the gut enough to trigger immune responses that mimic allergies, but *can actually cause an allergy* to *C. albicans* itself!⁶⁹

For example the literature now shows that:

- Chronic urticarial (hives) can be caused by a hypersensitivity to *C. albicans*⁷⁰
- Women who don't respond to the usual antifungal agents for *C. albicans* might actually be allergic to *C. albicans* itself⁷¹
- Perennial allergic rhinitis is often tied to recurrent vaginitis caused by yeast infections⁷²
- *C. albicans* is a potent allergen that responds to allergen immunotherapy in women with recurrent vaginal yeast infections⁷³
- *C. albicans* aggravates inflammation in the gut⁷⁴
- *C. albicans* can trigger certain cytokines that produce autoimmune, anti-inflammatory responses⁷⁵

And today, Dr. Christina Zielinski, lead author of a 2012 study on *C. albicans* and autoimmune responses, has picked up where Dr. Crook left off, telling Science Daily that she is "...convinced that an imbalance in our microbial microflora has a decisive influence on the development of chronic inflammatory illnesses like rheumatism, Morbus Crohn and psoriasis."

And part of the guilty microflora causing this imbalance and chronic illness is *Candida* overgrowth, Zielinski says.

With science now solidly behind the idea that a yeast infection can trigger allergies and allergy-like symptoms, as well as alter your gut balance and cause numerous autoimmune and inflammatory problems, it's easy to understand how the symptoms below fit in to Dr. Crook's original analysis.

Signs of Candidiasis That You Wouldn't Immediately Guess

Some common conditions connected with Candida overgrowth in your gut, or exacerbated by it that you may not immediately recognize are:

| | | |
|--|--|---|
| Irritable bowel syndrome ^{76, 77} | Vaginitis ⁷⁸ | Food allergies ⁷⁹ |
| Migraines ⁸⁰ | Asthma and Rhinitis ^{81, 82} | Chronic Fatigue ⁸³ |
| PMS ⁸⁴ | Fibromyalgia and arthritis ⁸⁵ | Leaky gut ⁸⁶ |
| Cancer ⁸⁷ | Periodontitis ⁸⁸ | Depression and/or anxiety ⁸⁹ |
| Endocarditis ⁹⁰ | Pyelonephritis ⁹¹ | Esophagitis ⁹² and Gastritis ⁹³ |
| Atopic Dermatitis ⁹⁴ | Myocarditis ⁹⁵ | Parkinson's Disease ⁹⁶ |

As you can see, the list is long and varied, but sadly, it's by no means all-inclusive or definitive, as the science behind the link between Candida overgrowth in the gut and chronic illness is ever-growing. What is definitive, though, is that this simple graph highlights just how important your gut health is to your entire well-being. That's why the following two conditions may also be symptoms of Candidiasis.

Could a Yeast Infection Be Making You Fat?

According to the work of Dr. Crook and modern-day specialists in hypothyroidism: quite possibly, yes.

Repeating what the Oral Cancer Foundation said about *C. albicans* being a predictor of chronic disease, researchers already knew as far back as 1972 that chronic mucocutaneous Candidiasis can precede a diagnosis of hypothyroidism⁹⁷—and as we now know today, hypothyroidism even on a small, almost undetectable scale can lead to weight gain, and obesity on a larger scale.⁹⁸

This is how it happens when it involves Candida: Leaky gut caused by yeast overgrowth allows toxins to enter your bloodstream. These toxins can cause an imbalance in your thyroid hormone, which can cause an excess production of cortisol, which can lead to several different autoimmune diseases, all of which work directly *against* any weight loss goals you're trying to achieve.

In fact, if you have been exercising and eating right for your nutritional type with REAL foods (we'll discuss real foods later) but you're STILL not losing weight, it could be due to yeast overgrowth in your gut. In fact, it's quite possible that with some people, an inability to lose weight is their ONLY symptom of Candidiasis.

Do You Crave Sugar and/or Carbs or Feel Run Down? Yeast Might Be to Blame

Before we talk about how to diagnose, prevent and treat Candidiasis, here's one, additional reason why a yeast overgrowth and leaky gut can pave the way for health problems.

One sign that Candida might be taking hold of your body is feeling "run down" and developing a craving for sugars and carbohydrates, as this is the main fuel for the growing amounts of yeast in both your mouth and intestines.

Remember how I said earlier that a protein with a sugar (glycogen) attached to it causes the normally round *C. albicans* cells to elongate and grow out of control? Well, glycogen is the end product of what happens when you eat more carbohydrates and sugar than what your body can handle. Don't misinterpret—your body *needs* carbohydrates to live. Converted into glucose, this is what it uses for fuel.



But when you provide more fuel than your body needs, the extra fuel gets stored in your liver and muscles in the form of glycogen—setting up a perfect breeding ground for *C. albicans*.

What happens next is that the more sugar and grains you eat, the more the yeast grows out of control,⁹⁹ causing something called “gut fermentation.”¹⁰⁰ Eventually, this will weaken your immune system, which in turn can allow the yeast to infiltrate various other organs, which subsequently makes you even sicker.

Another problem is that once *Candida* overgrowth occurs, its toxic byproducts are regularly entering your bloodstream. In some people with chronic yeast infections, two of these toxins, alcohol and acetaldehyde¹⁰¹ (the breakdown product of alcohol that causes hangovers), are in such high amounts that these folks may actually end up feeling as if they were intoxicated. And if that weren't enough, new research shows that this toxic overload produces such high mutagenic amounts of acetaldehyde that it could even lead to certain mucosal cancers!¹⁰²

Acetaldehyde also reacts with the neurotransmitter dopamine, which is why people with yeast overgrowth can experience mental and emotional disturbances such as anxiety, depression, poor concentration and a feeling of being “spaced-out.”

Candida and Cancer: A Confounding Connection

The idea that cancer is a fungus has been batted around for several decades. In fact, fungal infections of various sorts are often associated with cancer, particularly *C. albicans*. However, to date, no direct, scientific evidence has shown that cancer itself is a fungus. Rather, it simply appears that fungi of all kinds, including *Candida*, can more easily grow where cancer is growing, most likely because your body is in such an immunocompromised state when you have cancer.



To that end, in 2003, two experts in cancer, infectious diseases and Candidiasis, Kenneth V.I. Rolston and Gerald P. Bodey, wrote a chapter in a cancer medicine book discussing the frequency of fungal infections in cancer patients.¹⁰³ The numbers with deep-seated fungal infections were huge, they said: 70 to 80 percent of patients. But Rolston and Bodey never attributed the cancer to the fungus, nor did they call cancer a fungus. Instead, they only talked about *C. albicans*' opportunistic ability to become a co-infection with cancer, *with the help of antibiotics the patients were taking for other infections*.

In 2010 another group of scientists published a study in the *Journal of Oral Microbiology*¹⁰⁴ on the association of *Candida* infection with cancer. They wrote their report with a caveat, stating that the evidence between any kind of fungus causing cancer is weak.

That said, they acknowledged that “for many years *Candida* spp. have been implicated in various epithelial cancers,” and that oral *Candida* infections with leukoplakia leading to oral cancer, for example, are well recognized.

But whether or not *C. albicans* can actually *cause* cancer is still up for debate, the scientists said: the association/correlation is there, and the ability to *promote* carcinogenesis is there, but definitive proof of a yeast infection *causing* cancer is lacking, even though some cancer specialists in the last couple decades have claimed to have treated and even “cured” cancer with antifungal drugs.

From my standpoint, this is important because the theory that cancer is a fungus still pops up in the media every once in a while. At one point many years ago, I even talked about this idea, but I've since decided that the evidence that cancer is a fungus just isn't there, at least not yet.

So How Does Yeast Grow Out of Control to Begin With?

Now that we've talked about the health problems that occur when yeast overwhelms your digestive tract and subsequently your entire body, here is the explanation of how this actually happens:

Inside your gut are 100 trillion microorganisms—about three pounds' worth—that line your intestinal tract. About 60 percent of these microbiota are bacteria—up to 1,000 different species. But other things live in there too, all calling your gut microbiome home: as many as 66 different fungi¹⁰⁵ including *Candida*, as well as protozoa¹⁰⁶ and single-celled microorganisms called archaea, are also in there.

In the healthy human gut, these microorganisms live harmoniously in what science calls a “commensal” relationship, meaning they live together without harming you or each other. Normally, as long as it's balanced, this is an extremely complex living system that aggressively protects your body from outside offenders.

But as soon as the balance begins to tip, the “bad” microflora can take over and flourish.

As I mentioned already, this tipping occurs with certain health conditions that compromise your immune system, as well as when you're taking antibiotics and certain other medications.

If you don't have one of those health conditions, however, or if you're not taking a “suspect” yeast-growing medication like antibiotics, oral contraceptives or corticosteroids, then your *diet* is most likely the culprit, mainly in the form of overconsumption of carbohydrates and sugars.

That's right—your diet, the primary influencer of how all those gut microorganisms work together, may be the singular cause of your yeast infection nightmare.

Not a lot of people paid attention to Dr. Crook when he pioneered this idea 30 years ago, but today the association between diet and the balance of the human gut microbiome is well-established.¹⁰⁷ Study¹⁰⁸ after study¹⁰⁹ after study¹¹⁰—and more—shows that an excess of carbohydrates and sugar in the gut in any form (dextrose, glucose and fructose) is a perfect breeding ground for a yeast infection.

That's why, to truly treat *Candida* overgrowth at its source, you absolutely **MUST** address your nutritional status and gut health. Two other immune system irritants—emotional stress and exposure to environmental toxins—can also lower your immune system and set you up for an infection, so it's important to address those issues too.

To sum up what we've learned so far:

- Taking antibiotics can kill both your good and bad bacteria
- Taking other medications such as birth control pills and corticosteroids can promote yeast growth
- Exposure to environmental toxins can lower your immune system, setting you up for a yeast infection
- A diet high in sugars and carbohydrates literally “feeds” *Candida* cells, prompting the cells to elongate and grow out of control
- Chronic stress, which impacts your immune system, can also contribute to yeast overgrowth
- Just treating your symptoms is not sufficient; the only way to effectively prevent and/or treat a yeast infection is to address your gut health through proper nutrition and diet, along with addressing whatever triggers you may have that encourage *Candida* overgrowth

How Do I Know for Sure That Candidiasis Is to Blame for My Symptoms?

Often you don't know for sure, and that's why so many people are suffering needlessly. There is a symptom checklist, however, that Dr. Crook once used with his patients, and that has been adopted by a certified nutritional consultant, Ann Boroch, who has written her own book on curing Candida.

A graduate of the International Society of Naturopathy, Boroch cured herself of Multiple Sclerosis and has since spent 20 years studying Candida causes and treatments. She's dedicated her book, "The Candida Cure: Yeast, Fungus & Your Health," to Dr. Crook. His checklist is in her book, along with a 90-day program that may help you treat and cure your own yeast infection.



If you do choose to utilize the checklist, and if you're experiencing some of the symptoms we've talked about, then I suggest that you ask your doctor to check whether Candidiasis might be involved.

And—one more time—you should bring up this topic especially if you have any of the following predisposing factors:^{111, 112}

- You've had a recent surgical procedure
- You have a prosthetic device implanted somewhere in your body such as catheters or a port for chemotherapy or dialysis
- You wear dentures
- You have a periodontal disease such as gingivitis or tooth decay
- You are on corticosteroid therapy
- You are on chemotherapy
- You are diabetic
- You are on prolonged antibiotic therapy
- You are obese

Once you've discussed your symptoms and risk factors with your doctor, you can begin the journey toward total wellness.

At this point, I can't emphasize enough how important it is to see a doctor who can diagnose exactly what you're treating *before you treat it*. I realize that with conditions like diaper rash, skin infections and vaginal yeast infections, many people just want a quick-fix, whether it's from easy-to-get, over-the-counter anti-fungal creams or through holistic alternative health methods. Unfortunately, when the symptoms go away, too many people assume they are cured—when they may not be cured at all.

That's because, in reality, if you're only treating symptoms, you're doing nothing about the underlying cause of the yeast overgrowth.

For example: With diaper rash, the diaper provides a moist, warm environment that's a perfect breeding ground for yeast. If your baby has been taking antibiotics (or if you have been taking them and breastfeeding), your or your baby's body's good gut bacteria may have been killed, paving the way for yeast infections to occur.

Therefore, the CAUSE of the yeast infection is the disruption, or dysbiosis, of the gastrointestinal tract—which means you need to do something to restore your baby's or your gut's microflora balance if you're ever going to totally cure the rash. The same goes with a vaginal yeast infection: just treating the symptoms until they go away doesn't mean you've cured the problem.

The bottom line is if you don't deal with your body as a whole, aside from potentially facing a lifetime of recurring yeast infections, you could eventually face systemic Candidiasis, a condition that potentially can be fatal.

What Tests Are There for Yeast Infections?

As I noted in the introduction, *a normal Candida colonization in your body has no symptoms or signs of disease.*

But if you do have symptoms such as those we've discussed so far, your doctor can take swab samples of visible infections and make a diagnosis based on a microscopic examination and antigen tests. The culture will reveal the species of the organisms causing the infection, which in turn will help determine your course of treatment.¹¹³

In addition to the lab culture, sometimes your doctor will take a stool sample because yeast cells can be detectable in your feces. The stool sample will help determine whether there is a Candida overgrowth in your intestinal tract.

An additional test is a urinalysis,¹¹⁴ which will aid in detecting genitourinary Candidiasis. And, since September 2014, a blood test has been available for detecting the presence of five Candida species, including *C. albicans*, in your blood.¹¹⁵

You may also be asked to have an endoscopy, with or without a biopsy, if your doctor suspects a yeast infection in your esophagus.¹¹⁶

In women, these tests are done in addition to vaginal swabs because the vagina is not the only place that can harbor a yeast infection. And obviously, you can't treat an internal infection with an over-the-counter drug meant only for topical use.

What Treatments Are Best for Yeast Infections?

If you have a yeast infection right now, most conventional doctors will probably order a topical or oral azole antifungal drug in various dosages that you take for varying lengths of time, depending on the severity of your infection. These azoles are available by prescription and over-the-counter, depending on the strength.

Unfortunately *C. albicans* is becoming more and more resistant to azoles,¹¹⁷ which means you may not be satisfactorily "cured" with them. Scientists are desperately searching for new drugs as well as alternative methods of treating *C. albicans*, but it can take a decade or more to develop a brand-new drug and bring it to market. Hence, the researchers have been looking at drugs already approved for other diseases that might also be helpful in treating Candidiasis. So far they've found about 15 possibilities which your doctor may know about, and may have you try.

However, your doctor may also suggest alternative treatments, such as a gelatin capsule of 600 mg of boric acid, which you insert inside your vagina for a vaginal yeast infection. (But be aware: the success rate for boric acid is only about 70 percent.)

Therefore, if you are already facing Candidiasis, I highly recommend working with a natural health care practitioner who is familiar with the latest, science-based research for fighting Candida with non-pharmaceutical products, and who specializes in treating yeast overgrowth.

There Are Other Natural and Inexpensive Candida Treatments

It's noteworthy that it costs the U.S. healthcare system \$2 billion to \$4 billion a year to treat Candidiasis with prescription and over-the-counter drugs.¹¹⁸ But what if I told you that dozens of studies, many published within the past few months, show that there are other things on the market that not only cost a fraction of what prescription drugs cost, but are all natural and effective to treat Candida overgrowth *right now, without a prescription?*

It's true. A compilation of the most recent medical research possible has shown that certain essential oils, as well as Manuka honey and coconut oil *are all incredibly safe and effective in preventing and treating Candidiasis.*

That's right: Manuka honey, coconut oil and select essential oils. And the science is solid.

For example, very recent studies show that:

- ✦ Coriander¹¹⁹ and Ceylon cinnamon “drastically” affect *C. albicans*’ ability to grow
- ✦ Both Ajwain and Black Cumin irreversibly damage *Candida* cells, stopping them in their tracks
- ✦ Dill seed kills *Candida* cells
- ✦ Tea tree oil eradicated *C. albicans* in mouse trials
- ✦ Manuka honey “significantly” inhibits *C. albicans*
- ✦ Pelargonium roseum (Geraniaceae) completely inhibits *C. albicans*’ growth
- ✦ Coconut oil and cinnamon mixed together in an “aroma candy” was effective against oral Candidiasis¹²⁰

The above studies—and more referenced in the graph below—all show highly effective, safe, natural ways of fighting and preventing *Candida* overgrowth:

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|------------------------------------|---|---------------------------------------|
| Coriander ^{121, 122, 123} | Cinnamomum cassia ¹²⁴ | Geranium, Geraniaceae ¹²⁵ |
| Thyme ¹²⁶ | Lemon, basil, clove ¹²⁷ | Raw organic honey ^{128, 129} |
| Ceylon cinnamon ¹³⁰ | Coconut oil (capric acid) ^{131, 132} | Angelica major ¹³³ |
| Ajwain, Black cumin ¹³⁴ | Curcumin ¹³⁵ | Lemongrass ¹³⁶ |
| Tea tree ^{137, 138} | Dill seed ¹³⁹ | Chinese persimmon ¹⁴⁰ |

Most natural health doctors will be up to date on these studies, so I urge you to find one if you are truly interested in treating and preventing yeast infections once and for all, with science-based, natural health treatments.

A word of caution, though, before you decide to bypass doctors and try to treat yourself: pure, commercial-grade essential oils can be very potent, and it can be very easy to take the wrong dosage in the wrong way, or even the wrong oil. (For example, Tea tree oil should not be taken orally.)

That’s why I advise you to find a practitioner who is familiar with essential oils and the studies, and who knows the proper use, application and dosages for your condition.

What Quick, Natural ‘Right-Now’ Treatments Can I Try Before I Go to the Doctor?

While instant relief from a serious yeast infection just isn’t possible, you may be able to relieve some of the pain and itching that often accompanies both *Candida* and non-*albicans* infections with one of the following home remedies until you can get to the doctor:

- ✦ Boric acid therapy, usually in the form of suppositories that you can purchase over-the-counter or make yourself with a powdered form of boric acid and size 0 gelatin capsules.^{141, 142} Once difficult to find, boric acid capsules and suppositories are widely available at major pharmacies, and they have years of positive reports and studies backing their use.

Studies show that the effectiveness of Boric acid is very high in diabetic women,¹⁴³ and especially in women with chronic resistant yeast infections. If you find that the Boric acid irritates your external genitalia you can protect the tissue with vitamin E oil (preferred).

- ✦ Inserting a garlic clove or a tampon with garlic oil¹⁴⁴ on it into your vagina in the morning and an acidophilus capsule¹⁴⁵ in your vagina in the evening
- ✦ Preparing a retention douche with bentonite clay¹⁴⁶
- ✦ Soaking a tampon with diluted tea tree oil (use a solution of one and a half tablespoons of tea tree oil and one cup of water) and keeping it in your vagina overnight
- ✦ Applying a paste of plain, “live” yogurt that has *Lactobacillus acidophilus* strains in it to the vulva and vaginal opening^{147, 148}

Please note that these “treatments” should only be temporary, if for no other reason than they are briefly treating symptoms, and not the root cause of your infection. That’s why I strongly urge that you quickly schedule an appointment with the doctor of your choice who can help you begin long-lasting, *effective*, science-based treatment against your Candida infection.

How to Keep Candida From Taking Over Your Body

Remember, although yeast overgrowth can feel like it’s taking over your life, your body is more than capable of fighting back, and winning, if you give it the right tools. In order to prevent yeast overgrowth, you’ll need to create an environment that makes it more difficult for the fungus to thrive. Typically, you can do this by making the following lifestyle changes. As you can see, these steps include a major focus on rebalancing your gut’s microbiome with whole, organic, fresh and fermented foods and/or probiotics:



1. Eat the Best Diet for Your Overall Health

Avoid added sugars in your diet, as well as sugar-enriched and carbohydrate-rich foods that convert into excess glucose in your body. This restricts the amount of fuel the yeast in your gut has available to it.

Ideally, you’ll want to keep your added sugar levels to a minimum and your total fructose below 25 grams per day, or as low as 15 grams per day if you have insulin/leptin resistance or any related disorders.

Boroch’s book also has a comprehensive list of good foods to eat for fighting Candida, as well as foods to avoid, many of which are the same ones that I advise eating and/or avoiding in my [nutritional health plan](#).

Generally speaking, you should:

- **Focus on eating a diet rich in [nutrient-dense](#) foods** including meats, chicken, eggs, seeds and nuts, vegetables, and healthy oils (from [free range](#) animals and organically-grown foods). Ideally you should also plan your diet in tune with your [nutritional type](#).
- **Replace refined carbohydrates with healthy fats** such as avocados, coconuts and coconut oil, along with butter from raw, grass-fed organic milk, and raw nuts. Avoid all trans fats or hydrogenated fats including margarine, vegetable oils, and butter-“like” spreads. Also eliminate gluten (primarily wheat) from your diet, especially processed grains (breads).
- **Speed this along by [eating REAL food](#)**, meaning avoiding all processed foods and severely limiting restaurant foods, and eating as many fresh, organic foods as possible.
- **Get plenty of high-quality, animal-based omega-3 fats**. This typically means increasing your intake of animal based omega-3 fats, such as krill oil, while decreasing your intake of damaged omega-6 fats (think processed vegetable oils and trans fats).

For more information on what a REAL food diet looks like, download a graphic of my [Food Pyramid for Optimal Health](#).

You can also try [intermittent fasting](#), which has lots of health benefits beyond simply providing you with another option for getting healthy and staying healthy.

2. Make Exercise a Lifelong Habit

Once you've started on the healthier diet, exercising will also begin to rebalance the levels of neurotransmitters in your brain and improve your mood, which will then help you reduce stress in your life. Make feeling better your goal. If you're new to exercising, start out gradually and increase your activity level, for example, by adding a walk to your daily routine (or a longer walk if you're already doing this), and then build on strengthening your body with core exercises and strength training.

[High-intensity interval training](#) (HIIT) involving short bursts of high-intensity exercise with gentle recovery periods, are central to my [Peak Fitness](#) routine, and will help you on your way to total fitness.

3. Nourish Your Gut With Plenty of Good Bacteria

You will want to increase your probiotic (good bacteria) intake with a high-quality probiotic supplement containing *Lactobacillus*^{149, 150} or by eating cultured and fermented foods.

Fermented foods were abundant in your ancestors' diets, and they're just as good for you now as they were then. Besides optimizing your immune system and working to get your gut microbiota back in balance, fermented and cultured foods are cost-effective.

There are many cultured and fermented foods that you can easily make at home, such as natto, kefir, kimchi, kombucha, yogurt and fermented vegetables of all kinds. These contain the good bacteria that keep your vagina and gastrointestinal tract healthy, and will ultimately replace the overgrowth of *Candida* with a balanced microbiome.

If you don't enjoy the taste of fermented foods, taking a probiotic supplement can be your next best option (but don't give up on fermented foods easily—start with small amounts and try adding them a teaspoonful at a time to your foods like you would a condiment).

While I generally do not advocate taking a lot of supplements, a high-quality probiotic containing *Lactobacillus*¹⁵¹ is something you can choose if you simply can't "stomach" fermented foods. Your probiotic supplement should fulfill the following quality and efficacy criteria:

- The bacteria strains in the product must be able to survive your stomach acid and bile, so that they reach your intestines alive in adequate numbers
- The bacteria strains must have health-promoting features
- The probiotic activity must be guaranteed throughout the entire production process, storage period and shelf life of the product

Through my years of clinical practice, I've discovered that no single probiotic supplement works for everyone. But many individuals seem to respond positively to *Lactobacillus sporogenes* more than any other probiotic, so that is a great place to start.

4. Practice Good Hygiene

When it comes to preventing a *Candida* overgrowth, sometimes the best defense is simply good hygiene.

If you wear dentures, be sure to clean them regularly and according to directions. You may also want to use an antifungal gel when you're wearing them (although I don't recommend that as a regular-basis preventive measure).

If you don't wear dentures, be sure to take care of your dental health so that yeast infections don't have cavities or damaged gums to grow in.

If you are on corticosteroids, always be sure to gargle well after each dose, so the back of your throat isn't a magnet for *Candida*. Better yet, brush your teeth *and tongue*, along with gargling.

If you're in the hospital or at home with a port, make sure that everyone who touches you has washed their hands first. As I already explained, many Candidiasis infections occur in the hospital setting, so don't be shy about asking caretakers if they have washed their hands before attending to you.

5. Avoid Exposure to Chemicals and Medications

As we learned earlier, antibiotics, corticosteroids and birth control pills all need to be avoided because these drugs can actually encourage Candida overgrowth.

Paints, household cleaners, perfumes and scents may also cause allergic reactions, as chemical sensitivities are very common in people with yeast overgrowth. You also should avoid other toxins and pollutants including air fresheners, bug sprays, and lawn insecticides and pesticides, especially glyphosate (an herbicide thought to be worse than DDT, and which is listed as probably carcinogenic by the World Health Organization).

6. Address Emotional and Psychological Issues

Food cravings, especially those for sweets, often are exacerbated by emotional dependencies rooted in stress, which has a direct impact on fueling inflammation, which ultimately fuels yeast infections.

Developing effective coping mechanisms, therefore, can help you not only feel healthier all over, but ultimately will help fight off yeast infections. Meditation, prayer, physical activity, and exercise are all viable options that help with maintaining emotional and mental equilibrium.



But I also strongly believe in using energy psychology with tools such as the [Emotional Freedom Techniques](#) (EFT) to address deeper, oftentimes hidden emotional problems.

7. Optimize your vitamin D levels to between 50 and 70 ng/ml

Besides addressing your diet, optimizing your vitamin D level is perhaps one of the most potent ways you can improve your overall health. Additionally, a study published in 2011 in *The Journal of Infectious Diseases* indicated that high levels of vitamin D3, as well as seasonal sun exposure, can modulate *C. albicans* with a "profound" anti-inflammatory effect.¹⁵²

In summary, a yeast infection can have a number of different causes, and can cause a number of different symptoms. What's important to remember is that while yeast infections are annoying and sometimes dangerous, they can be dealt with and prevented in most cases.

What's most exciting is that the recent literature shows that there are natural, effective and inexpensive ways to deal with Candida overgrowth. And, once you address the points I've presented here, you will have the information you need to take control of your own health to prevent and treat yeast affections.

For more information on simple ways to avoid illnesses of all kinds, and to help your body fix itself, you can also consult my latest book, "[Effortless Healing](#)," which offers nine simple ways to start your journey toward optimum health and wellness.

