



Conquering candida

Often referred to as thrush, infection with the fungal foe candida is a problem that many people face in their lifetime. Fortunately, it is possible to beat the yeast beast by starving, slaughtering and substituting it. In this wide-ranging report, we answer common questions about candida and sort the fungus from the facts.

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Fungus permeates nature with plants, rocks and waterways all carrying its coat. It is only when the earth's delicate ecosystem is overrun with fungus that ecological mayhem ensues. When fungi over-proliferate and other microorganisms are outnumbered, that is when the biosphere becomes diseased. Consequently, fungi cause the majority of plant diseases.

Your body also hosts healthy fungi which work symbiotically with other microorganisms to maintain biological equilibrium or homeostasis. However, when party crashers swarm your system, the harmonious house becomes a battleground for supremacy. The invading white fungus *Candida albicans* creates casualties in the mind and body.

Fatalities can even occur when immunocompromised people contract candida in the bloodstream (candidemia or *Candida sepsis*). This is the fourth most common bloodstream infection in US hospitals, with an estimated 40 per cent mortality rate according to Robert T Wheeler, researcher at the Department of Molecular and Biomedical Sciences, University of Maine. The Center for Disease Control and Prevention (CDC) states that individuals who are at high risk for invasive candidiasis include those with organ transplants or diabetes, dialysis patients, severe burns victims and those in ICU or on mechanical ventilation longer than three days.

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Gut guest

Healthy humans have *Candida albicans* in their gastrointestinal tract to moderate levels. Candida can colonise nearly every human tissue including the mouth, intestine, genito-urinary system and skin. *Candida albicans* can escalate quickly after antibiotics, chlorine in tap water, excess sugar, high alcohol intake, oral contraceptives, diabetes, stress and low immunity. Obesity increases the incidence of *Candida albicans* because increased skin folds where skin touches skin (intertriginous areas) are more likely.

Though it is the commonest cause of genital yeast infections, *Candida albicans* is not the only fungal pathogen affecting humans. Medical mycology, the science of pathogenic fungi, has identified approximately 300 fungi known to be pathogenic to humans including *Candida tropicalis*, *Candida glabrata*, *Candida parapsilosis* and *Cryptococcus neoformans*.

Over 20 types of candida can cause infections in people; however, *Candida albicans* is the most common, comprising 75 per cent of all candida infections. Human diseases fed by fungi include athlete's foot,

ringworm and aspergillosis, which primarily affects the respiratory tract.

Candida albicans only becomes problematic when it proliferates into the fungal infection candidiasis. Its round, yeast-like structure can elongate into filaments called hyphae. These then burrow into the body, causing the fungus to morph into candidiasis, or a yeast infection.

A pain in the pants

Candidiasis presents in many ways, varying from barely noticeable to unbearable. Women often experience vaginal candidiasis with symptoms including itchy genitals or anus, curdy discharge, burning urination and red raw skin around the genitals. Intercourse can also be painful. The Harvard Medical School says that 75 per cent of all women are likely to have at least one vaginal

candida infection, and up to 45 per cent have two or more. It's more common in women who are diabetic or pregnant, douche frequently, are immunocompromised or reside in the tropics.

Men can also contract candidiasis on their genitals. It's more common in uncircumcised men as the yeast thrives under the foreskin. Symptoms may include an itchy rash, red skin, swelling, irritation, itching around the head of the penis, curdy discharge under the foreskin, burning when urinating and pain during sex.

Candida can be contracted via oral, genital or dermal transmission if the host is susceptible due to suppressed immunity or high levels of existing *Candida albicans*.

If you ever feel furry in the mouth like you have cotton fluff lining your cheeks it could be oral thrush or candidiasis. There may

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also be white patches inside the mouth, and on the tongue and the lips. The corners of the mouth may be white, cracked or red.

Nails that are discoloured, brittle, weak, splitting, thickening, separating from the nail bed or overgrown can indicate nail candidiasis, aka onychomycosis or fungal paronychia. The nail bed may also be swollen, red, peeling or itchy. Onychomycosis occurs in 10 per cent of the general population but is more common in those over 60 years. It's so frustratingly difficult to cure that some people choose to have their nail removed permanently.

Candida overgrowth in the gut may be evident as bloating, flatulence, loose stools, froth in stools, abdominal pain and a sweet addiction. *Candida esophagitis* may make swallowing difficult or painful, and it can cause pain behind the breastbone.

Long-term candida overgrowth can contribute to leaky gut syndrome as the fungus infiltrates the gut lining to reach the circulatory system. Research published in the journal *Current Opinion in Microbiology* suggests that people with irritable bowel syndrome (IBS), ulcerative colitis and Crohn's disease have high levels of *Candida albicans* in their stool.

Cutaneous candidiasis likes the damp, warm regions of the skin. It tends to affect the skin folds, groin, buttocks, under the breasts and armpits. The rash is flat, red and itchy and can become cracked. Over time it may scale and flake away. Upon examination these lesions show yeast cells, hyphae or pseudohyphae, and cultures are positive for candida species in

approximately 50 per cent of cases.

Candida is the most common cause of nappy rash in infants. Cloth nappies not washed in bleach, cornstarch talcum powder, moderate sun exposure and nappy-free time can prevent and ease this condition.

The plethora of general candidiasis symptoms means that it is commonly misunderstood or misdiagnosed. Candida can cause or contribute to altered taste, tiredness, abdominal pain, acne, allergies, arthritis, bad breath, body ache, bloating, brain fog, craving for sweets or alcohol, canker sores, constipation, depression, fatigue, hair loss, headaches, IBS, itchy anus, low immunity, low libido, memory loss, migraines, itchy eyes, PMS, recurring infections, skin rashes, vaginal discharge, vaginitis, white-coated tongue and sensitivities to food or chemicals.

Alcohol and acetaldehyde are toxic by-products of *Candida albicans* that can cause symptoms similar to being intoxicated or hung-over, according to Dr Joseph Mercola in his free e-book *Could a Candida Infection be Sabotaging your Health?* 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 spaced-out feeling.

Candida die-off

Candida is like a greedy guest that will only go away if you don't feed it. When candida dies it can release a flood of endotoxins including uric acid and acetaldehyde.

This can cause mild to severe symptoms depending on the person and candida load. Candida die-off symptoms, also called the Herxheimer reaction, often include an aggravation of candidiasis issues.

Most commonly people will experience allergies, body ache, brain fog, fatigue, fever, swollen lymph nodes or glands, gas, inflammation, intense sugar cravings and irritability. The die-off duration depends on the degree of infection and the host's immune system.

To reduce the die-off symptoms, start on a low dose of herbs, drink plentiful pure water, eat high fibre, have borax baths, take probiotics, exercise gently, rest generously and wait until the second week to introduce small quantities of fermented foods. A drop in blood sugar, dopamine and serotonin may trigger temporary tiredness and depression. Seek support from your health care professional to establish that this is a transient reaction and not a candida aggravation. Often the first 14 days are the darkest before relief dawns on the third week.

Candidiasis causes

The modern processed diet, pharmaceutical drugs and stressful lifestyle create a breeding factory for candida spores. Many factors contribute to candida excess, with the most common cause being diet. Considering the myriad of contributing factors it's not surprising candida's on the rise.

Foods high in refined sugars, carbohydrates or starches breed candida to outnumber beneficial bacteria. This is further exacerbated by antacids, antibiotics, the contraceptive pill, corticosteroids, chemotherapy and hormone replacement therapy. Animal products that contain antibiotics also encourage candida growth. Excessive alcohol, environmental toxins and stress increase candida by impairing assimilation and immunity. Dentures, frequent vaginal douching, bleached tampons, bleached nappies and chemical cleansers can kill beneficial bacteria and hence promote candida. Those with immune-suppressing diseases such as diabetes, organ transplants and HIV infection have an increased risk of candidiasis.

Lifestyle factors that can encourage candida growth include hot humid weather, tight clothes, damp feet, poor hygiene, pantyhose, receptive oral sex, regular sexual intercourse and smoking.

Candida is difficult to evict once it has set up camp in your body. As naturopathic doctor Hulda Clark wrote in her bestseller *The Cure for All Diseases*, "Yeast is a fungus. It needs dampness



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Candida albicans can escalate quickly after antibiotics, chlorine in tap water, excess sugar, high alcohol intake, oral contraceptives, diabetes, stress and low immunity.



Foods specifically recommended to fight fungus are cinnamon, coconut oil, clove, garlic, onion, seaweed, ginger, olive oil, oregano, lemon, lime, pumpkin seeds, turmeric and pau d'arco tea.

to survive and sugar to grow. Our immune system, white blood cells, is capable of eradicating yeast providing it isn't growing too fast. And provided the white blood cells aren't immobilised or preoccupied with something else."

Preventative measures can effectively clear candida such as popping a probiotic, avoiding carbs, staying dry, dusting skin folds with cornstarch, adding borax to washing and only taking medications when essential.

Candida clinical tests

Combined with assessing symptoms, there are various tests to diagnose *Candida albicans* overgrowth and to distinguish it from other conditions. Investigations may involve tissue, urine, blood or stool samples. An endoscopy may be suggested if oesophageal candidiasis is suspected. The health care practitioner may require a swab, scrapping, biopsy or brushing for the test. A blood test

can check for candida overgrowth. Stool testing via microscopy and culture can also show *Candida albicans*. Patients may be tested for IgG, IgM and IgA antibodies to candida. There is also a polymerase chain reaction (PCR) test to check for five species of candida, stool PCR testing and microbial organic acids testing for D-arabinitol. Microbiome mapping offers a clear indication not only of *Candida albicans* but gut health as a whole.

Mould-free meals

Overcoming *Candida albicans* successfully requires long-term commitment. The lure for sugary foods must be managed like an addiction. Initially a strict diet for a month is vital to starve the sugar-dependent yeast. Meals can be modified according to the individual. Foods to focus on include organic protein sources, low-carbohydrate vegetables, low-mould nuts, seeds, non-glutinous wholegrains except wheat, herbs, spices and pure water.

Healthy fats including avocado, butter and coconut are allowed. Refined oils are avoided as they contain inflammatory omega-6 fatty acids that need to be balanced with abundant omega-3 fatty acids.

Strictly forbidden foods are alcohol, corn, sugar, fruit and processed foods. Dairy can also aggravate candida due to its high lactose content so may be restricted.

Caffeine is avoided as it can weaken the adrenals, raise blood sugar, increase inflammation and lower immunity. Caffeine-containing coffee and cacao are prone to mould and mycotoxins which can contribute to candida's spread through gut dysbiosis. So chocolate is off the menu. Though carob contains natural sugars which trigger sugar cravings, it can be taken moderately in its pure form as it has xylose, a five-carbon sugar with antifungal properties.

If gluten increases bloat, constipation, diarrhoea or pain it should be eliminated as it is potentially causing gut inflammation facilitating candida's transit through the colon.

According to thecandidadiet.com, vegetables to eat on the candida diet are artichokes, asparagus, bitter melon, broccoli, Brussels sprouts, cabbage, cauliflower, celery, cucumber, eggplant, garlic (raw), kale, onions, swedes, spinach, tomatoes and zucchini. The only fruits permitted are avocado, lemon, lime and olives.



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Non-glutenous grains to take are buckwheat, millet, oat bran, quinoa, ragi and teff. Glutenous grains to delete are barley, oats, rye, spelt and wheat.

All cheeses are avoided but butter, ghee, kefir and a sugar-free probiotic yoghurt are allowed.

A very small dose of sugar-free fermented foods such as kombucha, kimchi and kefir can be helpful for candida as they contain bacterial ferments that can counter candida colonies. Zero-sugar kombucha has an abundance of nurturing microorganisms including Schizosaccharomyces yeast which is antagonistic to *Candida albicans*. However, too much fermented food will increase prebiotics that can boost candida. Hence I recommend no fermented foods for the first two weeks of the diet and slowly introducing them in the third week.

Sweeteners are usually avoided including agave, aspartame, cane sugar, corn syrup, honey, maple syrup, molasses and sugar. Be aware of hidden sugars in foods that bear up to 60 names such as dextrose, mannitol and sorbitol.

The natural sweetener xylitol has been shown to reduce *Candida albicans* and oral plaque in its pure, unadulterated form according to research in the *Journal of Contemporary Dental Practice*. It has a low glycaemic index and low carbohydrate content so it won't interfere with the probiotics or antifungals killing the candida yeast. A 2011 study found that xylitol reduced acetaldehyde, one of the main by-products of candida, so it may even inhibit candida symptoms or die-off effects.

The most mould-prone nuts to avoid are cashews, peanuts, pistachios and walnuts. Nuts and seeds less susceptible

to mould include almonds, coconut, flaxseeds, hazelnuts, pepitas, sunflower seeds and macadamia nuts.

As grains and nuts are very prone to harbouring mould spores, Dr Hulda Clark recommends boiling or baking them at a high temperature for minutes or soaking rinsed nuts in water and half a teaspoon of vitamin C powder per litre of nuts. After straining the nuts dry them in the oven at a low heat to avoid burning them. Adding vitamin C to cooked grains can kill the mould. One may also add 5ml of 3 per cent food-grade hydrogen peroxide to the soaking water, drain, rinse and eat. Alternatively dehydrate for 24 hours at 46 degrees Celsius or until crunchy and store them in the freezer for up to six months.

Foods specifically recommended to fight fungus are cinnamon to balance blood sugar, coconut oil due to its antifungal lauric and caprylic acid, cloves, garlic, onion, seaweed, ginger, olive oil containing anti-candida oleuropein, oregano, lemon, lime, pumpkin seeds, candida-killing papaya seeds (maximum 10 seeds a day), swedes or yellow turnips, turmeric and pau d'arco tea.

Finishing off fungus

The allopathic approach to manage *Candida albicans* is generally

pharmaceutical antifungals. These may be effective temporarily but can cause side effects and are becoming impotent as people develop resistance to them. For example, about 7 per cent of all candida blood samples tested at the CDC are resistant to the antifungal drug fluconazole. Pharmaceutical antifungals come in many forms including creams, gels, ointments, sprays, capsules, tablets, liquids, injections or pessaries. Common names for these medicines often end in "ole" such as econazole and ketoconazole. Side effects related to antifungal use include itching, burning, redness, nausea, rashes, anaphylactic reactions and liver damage. Though antifungals can be effective against candidiasis they fail to address the underlying factors contributing to the candida overgrowth such as diet.

Bitter-sweet remedies

Starving and killing candidiasis simultaneously gives one better odds of expelling it rather than just adhering to a diet or medicine. Fortunately our planet produces abundant herbs to eradicate *Candida albicans*. A qualified herbalist or naturopath can prescribe a personalised potion of antifungals suited to each individual.

The antifungal task force includes andrographis, barberry, black walnut hulls, calendula, cinnamon, cloves, dandelion, garlic, goldenseal, horopito, manjishta, neem, olive leaf, oregano, Oregon grape, shatavari, thyme, turmeric and wormwood. While taking the herbs, thoroughly cleanse candida from the system with high-fibre food, a colonic irrigation or heavy magnesium oxide once every seven to 14 days.

For vaginal candidiasis there's a specific protocol. Wash with Kolorex intimate wash and apply Kolorex cream, and if thrush persists consider using a tampon or vaginal pessary. Inserting an unbleached tampon dipped in sugar-free yoghurt and a few drops of tea tree oil for an hour once a day can offer instant relief. One can also make vaginal pessaries with a recipe of shea butter, calendula and goldenseal. Pregnant women should not insert or apply anything genitally without medical supervision. Avoid intercourse, wearing underpants, tight clothes and sitting for

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prolonged periods. Underpants worn during the infection should be thrown away along with one's toothbrush, tongue scraper, diaphragm and menstrual cup.

Cutaneous candidiasis responds quite quickly with a mix of one part neem oil and 10 parts black seed oil when applied twice a day. Moderate sun or heat lamp exposure has also been shown to accelerate healing.

Oesophageal or oral thrush can be eased with a sugar-free toothpaste containing charcoal, clove, neem, tea tree oil and coconut oil. Use a tongue scraper every morning after brushing teeth. Gargle with an antifungal mouthwash twice a day and after giving oral sex. Effective candida-killing mouthwash ingredients include clove oil, oregano oil, neem oil and food-grade hydrogen peroxide. Oil pulling, also known as *gandoosha* in Ayurvedic medicine, with organic coconut oil draws bacteria and fungus from the mouth.

Replenishing supplements

Certain supplements are very helpful in healing candidiasis. Powerful anti-candida supplements include grapefruit seed extract and berberine, a bitter phytochemical found in plants including goldenseal. Chromium, fennel and *Gymnema sylvestre* can curb sugar

cravings. Certain essential oils can combat cravings, like citrus grapefruit and warming cinnamon.

Activated charcoal or bentonite may aid candida evacuation. Caprylic medium-chain fatty acid breaks down candida cell walls and kills it with antifungal finesse. Slippery elm and glutamine will help heal the gastrointestinal tract lining, thus reducing candida infiltration.

Last but not least, probiotics are vital to repopulate the microbiome with healthy flora. They will keep candida at bay and improve overall immunity, assimilation and elimination. The best probiotics to counter candidiasis contain billions of live bacteria. The superstars to take are *Lactobacillus acidophilus*, *Lactobacillus rhamnosus* and *Saccharomyces cerevisiae* (boulardii). According to a study published in the *Beneficial Microbes* journal, probiotics taken with a meal or within 30 minutes of eating survived in higher numbers than those taken 30 minutes after a meal. I suggest popping a probiotic directly after dinner to optimise efficacy.

Candida case study

Karen was a 30-year-old mother of one. She was suffering from recurrent vaginal thrush since taking antibiotics a year previously.

The itchiness, discharge and burning was affecting her sexual confidence and comfort considerably. After following a candida diet for a month and using a neem-plus-horopito intimate wash twice a day she started to improve. For a fortnight Karen also took a tonic of pau d'arco, garlic, shatavari, goldenseal and oregano for a fortnight. Karen also took a high-strength probiotic after dinner. She was elated when her groin itch and discharge cleared. She started to regain mental clarity, energy, libido and a taste for non-sweet foods. Karen was free of symptoms after six weeks on the regimen.

Disclaimer

Information in this article is not intended to diagnose, treat, cure or prevent any disease. It is advisable to consult a health care professional for specific guidance. If suffering symptoms, on medication, pregnant or breastfeeding it is vital to seek assistance from your health care provider before embarking on a diet or natural medicines.

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