
YEAST OVERGROWTH

Candida albicans (yeast) is nothing new to the medical profession. At one extreme, it can cause skin rashes or vaginal infections (mucocutaneous candidiasis). At the other extreme, in individuals whose immune systems are severely compromised, yeast can invade the bloodstream (candidemia) and cause death. In this chapter, I will present an aspect of yeast overgrowth largely unrecognized by the medical profession, one that certainly is not fatal, but which can nonetheless be devastating. As in the case of Lindsey, one of my patients, it is often the underlying cause of multiple symptoms in individuals who are chronically unwell. It is known as Candida-related complex, or polysystemic candidiasis, and we will discuss its symptoms, causes, medical testing, and treatment.

LINDSEY

As Lindsey sat down in my office, she began to cry. She was afraid that I would be another in a series of doctors to tell her nothing was wrong. Twenty-six years old, the mother of two and a homemaker, she was barely able to cope with daily life. She complained of exhaustion, depression, inability to concentrate, fuzzy thinking, headaches, muscle weakness, joint pains, terrible abdominal bloating and excessive gas, episodic diarrhea, irregular and strange menstrual periods, recurrent vaginal yeast infections, no sex drive, continual runny nose and congested sinuses, an irritated throat, itchy ears, and a heightened sensitivity to cigarette smoke and chemical odors. She also had an overwhelming craving for sweets.

Lindsey had been treated by ten physicians in the past fourteen months, from general internists to several specialists, but none had been able to offer any substan-

tial treatment. Their diagnoses were simply descriptions of her symptoms: vasomotor rhinitis (runny nose) or spastic colon (diarrhea) or urticaria (hives) or pruritis ani (itchy anus) or pharyngitis (irritated or sore throat) or arthralgia (joint pain). These findings never took into account any underlying condition. The treatments were no better. She continued using various pills, salves, sprays, and suppositories to temporarily suppress specific symptoms but none of these made any significant improvement in her health.

All the exams and test results were normal. The majority of these doctors suggested that she see a psychiatrist. Lindsey had a hard time believing that her symptoms were all in her head. She had never been even vaguely hypochondriacal in the past. She was depressed, certainly, but this was not her primary illness. It had come as a normal reaction to her body's "falling apart" and her inability to function adequately in her life. Although antidepressants might help, she thought, they were essentially another temporary Band-Aid approach, not addressing the core issue.

I asked Lindsey when she'd last felt well. She replied it was during her first pregnancy, when she was twenty-one. After the birth of her first child, things began to go downhill. It was after her second child, when she was twenty-four, that her health truly began to deteriorate. At that point, she decided to get serious about her diet. The fact that she could lose only a fraction of the weight she had gained from her pregnancy was an additional motivator. She gave up sugar, white flour, red meat, coffee, and fast foods. She began to feel a little better.

However, when her husband did not care to make similar dietary changes, Lindsey felt she lacked support. Not long after, she gave in to her sugar compulsion, which she described as "dangerous." It was during this time, when she could hardly live a normal life, no longer

muster the strength to perform some of the bare necessities in her home, that she began seeing one physician after another.

I questioned Lindsey further about her past history. When she was fourteen, her mother had brought her to a dermatologist to see if he could do anything for her acne. The doctor gave her an antibiotic (tetracycline) to take daily. As the medication seemed to do its job reasonably well, Lindsey was told to continue it for several more months. Her skin stayed reasonably clear as long as she took the tetracycline. Everyone was happy—Lindsey, her mother, and the doctor. Lindsey took the antibiotic for eighteen consecutive months.

During this period of time, she was also put on oral contraceptives to alleviate her excruciating menstrual

cramps. She stayed on the pill until she was twenty and ready to have a family. Lindsey mentioned that her diet from age thirteen to the present consisted largely of cakes, cookies, milk shakes, soft drinks, chips, hamburgers, and pizzas.

I suspected from Lindsey's symptoms and history that an overgrowth of *Candida albicans* was responsible for the deterioration of her health. She likely had an overcolonization of yeast organisms in her intestines, vagina, and sinuses, which was causing not only local symptoms in these specific areas, but polysystemic symptoms in her dermatologic, nervous, musculoskeletal, endocrine, and immune systems. The laboratory results I obtained, and above all her response to treatment, confirmed my suspicions.

DO YOU HAVE YEAST-RELATED ILLNESS?

Intestinal infections can be responsible for numerous symptoms involving more than just the gastrointestinal system, and yeast overgrowth is one that is extremely common. It can trigger minor irritations and cause debilitating states. The following list of symptoms and conditions can be caused by or associated with yeast overgrowth—of course, many items listed have other causes as well. If you can identify with enough of these symptoms/conditions, you should pursue further diagnostic confirmation of a yeast-related illness and/or a therapeutic treatment trial.

SYMPTOMS OF YEAST-RELATED ILLNESS

GASTROINTESTINAL

Constipation	Cramping	Excessive gas
Bloating and distension	Diarrhea	Mucus-filled or bloody stools
Colitis	Intestinal growling	Enteritis
Irritable bowel syndrome	Crohn's disease	Esophagitis
Indigestion	Spastic colon	Itchy anus
Decreased appetite	Heartburn	Canker sores
Coated tongue	Oral thrush	Chronic gum inflammation
Cracked/fissured tongue		

RESPIRATORY

Chronic stuffy or runny nose	Shortness of breath/difficulty taking a deep breath	Chronic sneezing or coughing
Asthma	Recurrent infections (sinusitis, tonsillitis, bronchitis, pneumonia, ear infections)	Recurrent or chronic sore throat
Itchy throat		Recurrent colds and flus
Congested or allergic sinuses		
Snoring		

MENSTRUAL

<p>Premenstrual symptoms: depression, emotional fragility, irritability, anxiety, fluid retention (including puffy face and fingers), breast tenderness, abdominal bloating, nausea, headaches, etc.</p>	<p>Delayed periods Irregular periods Bleeding between periods Scanty or profuse bleeding Infertility Fibrocystic breast disease Passing clots</p>	<p>Painful periods Decreased libido (sex desire) Endometriosis Miscarriages Under normal breast develop- ment</p>
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BRAIN AND NEUROLOGICAL

<p>Fatigue and lethargy Crying Nervousness Grumpiness Suicidal thoughts Behavior and learning problems Memory impairment Impaired ability to reason "Spacey" or unreal feeling Dizziness, light- headedness Insomnia Autism Multiple sclerosis</p>	<p>Lack of mental or physical stamina Mood swings Agitation Explosive irritability Loss of ability to concen- trate Hyperactivity/poor attention span Drunk feeling (without alcohol consumption) Clumsiness/lack of coordination Schizophrenia Manic-depressive syndrome</p>	<p>Depression Anxiety Restlessness Hostility Decreased intellectual functioning Tantrums Increasing lack of self- confidence Headaches (all varieties, including migraines) Shaking Catatonia Psychoses Myasthenia gravis</p>
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UROGENITAL

<p><i>Women:</i> Vaginal itching Burning and/or discharge Vulvar itching and inflammation Vaginal or pelvic pain Painful intercourse Infertility</p>	<p><i>Men:</i> Impotence Recurrent prostatitis or inflammation of the prostate</p>	<p><i>Both men and women:</i> Recurrent urethritis/cystitis Bladder irritations Painful urination Frequent urination Bladder cramping Loss of sex drive</p>
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SKIN

Rough, dry, or scaly skin	Acne	Hives
Rashes of all kinds	Generalized itching	Eczema
Chronic or recurrent fungal infections of the skin/nails	Psoriasis	Easy bruising
Recurrent staph infections of the skin	Folliculitis	Acne
	Rosacea	Burning
	Tingling	Numbness

EAR

Ringling in the ear	Stuffed or clogged ears	Itching ears
Recurrent ear infections	Ear pain	Diminished hearing

MUSCULOSKELETAL

Arthritis	Arthralgia	Joint pain
Joint stiffness	Joint swelling	Muscle pain/aching/discomfort
Muscle weakness	Muscle swelling	
Fatigue		

**INTOLERANCE OR ALLERGY TO BEVERAGES AND FOODS
CONTAINING DIETARY YEASTS AND MOLDS**

Alcoholic beverages	Aged cheeses	Vinegar
Soy sauce	Brewer's yeast	B vitamins with yeast
Mushrooms	Peanuts	Bread and other yeast-raised items

CHEMICAL INTOLERANCES

Cigarette smoke	Exhaust fumes	Perfumes
Gasoline odor	New carpets	Marking pens
Paints	Solvents	Cleaning agents, etc.

INHALANT ALLERGIES

Mold	Mildew (overall worsening of condition in damp, cold season)	Dust, etc.
Hay fever		

HEART/CIRCULATORY SYSTEM

Rapid heartbeat

Mitral valve prolapse

Cold hands and feet

SENSES

Disturbances of smell, taste, vision, and hearing (i.e., increased sensitivity to noise or light, deafness, salty or metallic taste, blurred vision, watery eyes)

AUTOIMMUNE DISEASES

Rheumatoid arthritis
Myasthenia gravis
Thyroiditis

Multiple sclerosis
Autoimmune hemolytic
anemia

Systemic lupus
erythematosus
Scleroderma

OTHER

Multiple allergies to foods
Underweight
Overweight
Anorexia nervosa
Cancer
General feeling of ill health

Cravings for sweets, alcohol,
bread, and cheese
Tendency to bleed easily/slow
clotting
AIDS

Hot and cold sweats
Fluid retention/edema
Elevation of blood alcohol
levels (without alcohol
consumption)

Adapted from *The Missing Diagnosis, 2nd ed.*, by C.O. Truss, M.D. and *The Yeast Connection and the Woman* by W.G. Crook, M.D. (Professional Books, Inc., 1995).

A BRIEF LESSON ON YEAST

Candida albicans is normally present in the gastrointestinal tract of healthy individuals. It shares its living space with millions of bacteria, a large percentage of which in healthy individuals include lactobacillus bacteria, friendly organisms that synthesize vitamins for our benefit and help fight undesirable intestinal bacteria, high cholesterol levels, and even some cancers. They keep the bowel functioning normally and discourage the overgrowth of yeast. We need sufficient lactobacilli to maintain good health (see Chapter Eight).

Unlike these friendly bacteria, the *Candida* yeast are normally present in very small numbers and do not apparently serve us in any way. They live off us, but are normally harmless. However, any condition or circumstance that enhances the growth of *Candida* populations or weakens the lactobacilli population or the immune system can upset the balance and trigger a yeast-related disorder.

Complications of Antibiotics

Over a period of years Lindsey's balance was altered

by several mechanisms. The initial assault came with the extended course of antibiotics she was prescribed for her acne. As you probably know, antibiotics kill bacteria and are prescribed for the infections they cause. Following is a list of common antibiotics.

COMMON ANTIBIOTICS

BROAD SPECTRUM

Achromycin™	Doxycycline	Panmycin™
Amoxicillin	Duricef™	Pediazole™
Ampicillin	EES	Principen™
Anspor™	E-Mycin™	Retet™
Asulfidine™	Eryc™	SAS 500™
Augmentin™	Erythromycin	Sepra™
Azo Gantanol™	Flagyl™	Sulfisoxazole
Bactrim™	Floxin™	Sumycin™
Biaxin™	Ganatanol™	Suprax™
Ceclor™	Gantrisin™	Tegopen™
Ceftin™	Geocillin™	Terramycin™
Cefzil™	Ilosone™	Tetraclor™
Cepotex™	Keflex™	Tetracycline
Cipro™	Keftab™	Tetracyc™
Cleocin™	Lorabid™	Velosef™
Cloxacillin	Minocin™	Vibramycin™
Dicloxacillin	Noroxin™	Zithromax™

NARROWER SPECTRUM

Bicillin™	Penicillin	V-Cillin™
Macrochantin™	Pen-Vee K™	Wycillin™

These antibiotics are used to treat such common infections as

- Strep throat
- Tonsillitis
- Middle ear infections (otitis media)
- Sinusitis
- Cellulitis
- Abscesses of the skin, teeth, or organs
- Kidney infections
- Bladder infections (cystitis)
- Bacterial pneumonia
- Pelvic inflammatory disease (PID)
- Uterine infections (endometritis)
- Dysentery
- Intestinal parasites
- Prostatitis
- Surgical wound infections
- Osteomyelitis
- Gonorrhea
- Syphilis
- Chlamydia

Although antibiotics have been extremely useful in the practice of contemporary medicine, they are often overprescribed and abused. Physicians commonly prescribe them for colds and flu ailments that are usually viral in origin and for which antibiotics are not effective. Some individuals are accustomed to receiving antibiotics for any cold or flu, and if not given antibiotics, they feel that they have been mistreated. Many physicians are aware of this attitude and feel pressured to prescribe antibiotics even when they're not entirely appropriate.

Another reason for the overuse and inappropriate prescription of antibiotic drugs is that most physicians, in their training, rarely learn how to enhance the immune response without using a pharmaceutical agent. It is almost a reflex for a doctor to reach for an antibiotic to treat an infection. In addition, even if antibiotics may not be entirely necessary, many physicians feel that they generally do no harm.

However, it has become apparent that extended use of antibiotics—for recurrent or prolonged infections, for instance, or for conditions like acne—triggers in users like Lindsey the potential for a new chronic illness. This is a yeast-related polysystemic condition that has potentially devastating mental, physical, and even social consequences.

The antibiotics listed above kill bacteria, not yeast. Broad-spectrum antibiotics kill a wide range of bacteria, including friendly lactobacilli in the intestines and the vagina. Too many antibiotics will kill enough lactobacilli to enable yeast to flourish and proliferate.¹ It is common knowledge that women often develop vaginal yeast infections after using antibiotics. Yeast overgrow, invade the vaginal mucosa, and cause an inflammation, with accompanying discharge, burning, or itching. Lindsey grew intimately acquainted with this condition before the age of eighteen.

During antibiotic use, it follows that a process similar to that described as occurring in the mucosa of the vagina would also take place in the colon and digestive tract, one of the larger surface areas of mucous membranes and home for yeast in the body. Many physicians, however, are entirely unaware of this disruption of intestinal ecology, or if they do recognize it, they are usually unaware of its implications.

Complications of Sugar and Other Dietary Hazards

In addition to antibiotics, dietary factors can also contribute to an imbalance and subsequent yeast overgrowth. An analysis of Lindsey's diet revealed that she ate foods extremely high in sugar and fat and low in vitamins, minerals, and protein. Lindsey's sweet tooth provided yeast with a superior food for their growth and proliferation. Simply stated, sugar is one of yeast's favorite foods. Sugar or sucrose also happens to weaken

the immune system.² It decreases the ability of white cells, specifically, phagocytes, to engulf invaders. A high-fat diet also weakens immune function by diminishing lymphocyte function.

In addition, the immune system (see Chapter Sixteen) requires numerous nutrients that Lindsey's deficient diet did not adequately provide (vitamins A, B-6, and E; beta-carotene; biotin; folic acid; the minerals selenium, iodine, and zinc; and essential fatty acids).³ You can begin to understand how Lindsey's diet and antibiotic dependency were setting up the conditions that would later allow yeast to cause a downward spiral of her health.

Complications of Hormones, Oral Contraceptives, and Pregnancy

About ten to fourteen days before a woman's menstrual period, progesterone levels rise until the monthly flow starts, at which point progesterone levels drop abruptly. This hormone stimulates *Candida*, and whatever symptoms the yeast produce the remainder of the month are much aggravated during this high-progesterone premenstrual time. (Yeast overgrowth happens to be one very common and unrecognized cause of premenstrual syndrome; see Chapter Seventeen.)

Menstruating women have a built-in monthly mechanism that stimulates yeast and are therefore somewhat more susceptible to this condition than men, children, and nonmenstruating women. If other factors are in balance, however, this monthly stimulation will not amount to anything significant. If they are not in balance, this time of the month can be a nightmare for some women.

Unfortunately, women have several additional opportunities to enhance their yeast populations.

1. The stimulation of synthetic hormones in oral contraceptives, predominantly the progesterone fraction, can contribute more to the disruption of the body's ecologic balance than a woman's natural premenstrual progesterone surge. If used for two or more years, oral contraceptives, as in Lindsey's case, can help trigger the *Candida* illness.⁴

2. Pregnancy presents two extremely favorable conditions for *Candida* yeast to grow and proliferate, namely, continuous, high levels of progesterone and higher than normal blood sugar levels—the sweeter state of a normal pregnancy. What could make yeast happier? You will recall Lindsey mentioning that her health began to deteriorate only after her first pregnancy. The more pregnancies a woman experiences—in addition to past antibiotics and oral contraceptive use, sugar abuse, and a nutrient-poor diet—the greater the chance that during or soon after the pregnancy the yeast will overcome her metabolic defenses. If a woman has not already devel-

oped a yeast overgrowth from her *Candida*-promoting diet and medications, the pregnancies will almost certainly tip the balance in favor of yeast.

Other Factors Favoring Yeast Overgrowth

Many other agents and conditions have the potential to weaken immune functioning and therefore contribute to yeast overgrowth.

We have already discussed the effect of sugar (a simple carbohydrate) on *Candida* growth. Even complex carbohydrates can feed the yeast in certain circumstances, such as when the bowel is irritated from food allergy, chronic anxiety, or other causes and moves food too fast to be digested properly. It is a rapid transit time, in effect, diarrhea, that delivers undigested carbohydrates to the yeast in the colon, nourishing and perpetuating their overgrowth.

Cortisone is another well-known immune system suppressant. Various oral preparations of cortisone, such as prednisone and prednisolone, are administered on a continuing or episodic basis for such chronic diseases as asthma, arthritis, lupus, and colitis. Sometimes intramuscular injections of cortisone (Kenalog, for example) are given for allergic conditions. Cortisone can cause devastating secondary problems when administered in high doses for too long. One side effect is the stimulation of yeast populations. The polysystemic effects of yeast can, in turn, actually exacerbate the very conditions for which you may be taking cortisone.

Medications such as Imuran are given to recipients of organ or bone marrow transplants, or to individuals with certain autoimmune diseases, to prevent the immune system from attacking and destroying the transplanted tissue or the autoimmune-involved tissues. These medications work by suppressing immune function and, like cortisone, help pave the way for yeast to flourish.

The chemotherapy and radiation treatments given to cancer patients destroy white blood cells. With low numbers of white cells, an individual becomes extremely susceptible to infections, including those from yeast overgrowth. These treatments can also cause gastrointestinal ulcerations and weaken mucosal defenses, allowing yeast to gain a stronger foothold. Any medication that can cause gastrointestinal ulcerations or gastrointestinal inflammations—*aspirin*, cortisone, and nonsteroidal anti-inflammatory drugs like *Advil*, *Anaprox*, *Feldene*, *Motrin*, *Naprosyn*, and *Plaquenil*—can also fortify yeast. And medicines given to ulcer patients—acid antagonists such as *Tagamet*, *Zantac*, and *Prilosec*—decrease acidity to levels low enough for yeast to grow.⁵

Environmental chemicals also burden the immune system (see Chapter Fourteen). The more chemical expo-

FACTORS INFLUENCING YEAST OVERGROWTH

Antibiotics

Oral contraceptives

Pregnancies

Cortisone and other immunosuppressant drugs

Sugar

Typical American diet (high-fat, high-sugar, nutrient-poor diet)

Environmental chemicals

Chemotherapy and radiation treatments

Free radicals

Food and other allergies

Malabsorption of nutrients

Deficiencies of hydrochloric acid, pancreatic enzymes, and bile

Excessively fast bowel transit time—chronic diarrhea

Hypothyroidism

Adrenal dysfunction

Chronic viral infections

Parasitic infections

Deficiency of intestinal secretory IgA

Diabetes

Anti-inflammatory drugs and other medications that can produce gastrointestinal ulcerations

Ulcer medications or acid blockers/antacids used for prolonged periods

Major surgery

Physical trauma

Emotional trauma

Poor coping mechanisms to life's stresses

sure accumulates, the greater the likelihood of immune breakdown and, therefore, yeast overgrowth. Individuals who have an occupational exposure to chemical toxins are at highest risk, but anyone can accumulate significant exposure. I refer to such toxins as pesticides, herbicides, solvents, paints, formaldehyde, pentachloro-

phenol, combustion products of natural gas and coal (sulfur and nitrous oxides), petrochemicals (exhaust fumes), and heavy metals such as lead, cadmium, arsenic, mercury, aluminum, and nickel.

The preponderance of chemicals in our environment, even at "safe" levels, puts us all at risk. They are

in the air we breathe, the water we drink, the soil our food is grown in, and even in the silver/mercury fillings in our teeth.

Allergies, whether inhalant, food, or chemical; viral infections, such as Epstein-Barr, HIV, and chronic or recurring flus; intestinal parasitic illnesses; and free radicals all consume some of the immune system's reserves and therefore potentially compromise its ability to control yeast populations. The more severe these conditions, the more they sap the immune system and trigger the potential for yeast overgrowth. In addition, if allergic inflammation happens to involve the intestines (common symptoms would be gas, bloating, diarrhea, alternating diarrhea and constipation, and cramps), it becomes easier for yeast to penetrate deeper into the intestinal mucosa. This can also happen as a result of parasitic invasions, from a deficiency of intestinal secretory IgA, or from free radical damage in the intestines.

Hypothyroidism/hypometabolism (see Chapter Seventeen) and adrenal exhaustion (see Chapter Eleven) are common causes of a weakened immune system. Nutrient deficiencies due to a poor diet or to digestive deficiencies will also weaken immune function and predispose an individual to a yeast overgrowth. Digestive deficiencies (hydrochloric acid, pancreatic enzymes, and bile) can in themselves directly increase susceptibility to yeast overgrowth.

For some individuals, major surgery seems to be a primary trigger of yeast overgrowth, even if antibiotics are not administered. It is likely that the trauma of this event alters immune function, perhaps by a mechanism similar to that of emotional trauma. Mental and emotional strain and anguish have documented weakening effects on the immune system (see Chapter Fifteen).

Two final factors predispose people toward a yeast overgrowth:

1. Diabetes—because of the high blood sugar state that yeast enjoy.
2. Beef, poultry, lamb, and pork products that come from animals fed antibiotics. Unless specified organic or chemical free, or unless your state has forbidden such practices, you can assume your meat and poultry products are tainted and contribute to the stimulation of yeast growth. This is, however, minimal in comparison to antibiotic medication that you take directly. By itself meat eating alone would not cause yeast overgrowth or sabotage treatment results.

THE CUMULATIVE EFFECT

It should be clear by now that a yeast overgrowth need not be caused by any one factor, but in all likelihood is the result of a combination of factors. These factors can

be current or have been active in the past. For example, you may have taken an extended course of antibiotics or birth control pills a decade ago, without any apparent complications. Your immune system and lymphoid tissue were more than competent at the time to handle the increased yeast load, and your liver was able to sequester and eliminate any yeast antigens that managed to escape into the general circulation.

In recent years, however, you may have suffered an emotional or physical trauma or had major surgery. Perhaps you have had young children, or a chronically ill parent, or a difficult marriage or divorce, or conditions that make it difficult for you to get the sleep you need. Perhaps there are severe financial strains or continual deadlines that haven't allowed you to exercise or relax and just plain have fun for far too long. Perhaps you've been exposed to too many chemicals over the years, and your liver and immune system have reached their tolerance level.

Perhaps too much sugar or too much fast food has crept into your diet. Perhaps antibiotics have come into the picture again for a minor infection, or have been given prophylactically to prevent infection for dental or other surgery. Maybe your blood sugar is running a little high thanks to an overweight condition or a chromium deficiency. Many factors can influence your immune system and yeast populations in a cumulative fashion, so that a recent stress may have been the "last straw" that throws you into a polysystemic Candida condition.

YEAST TOXIN DAMAGE

Yeast attach themselves to the walls of the gastrointestinal tract or any other mucous membrane in the body. When conditions are right, they transform their "bud" form into the mycelial state, where filament-like roots invade deep into the mucosa in search of nourishment. The mycelia release phospholipase, an enzyme that attacks cell membranes of the mucosa, splitting fatty acids, generating free radicals, and causing inflammation in the intestine. Wherever the yeast colonize, they cause symptoms, whether an itchy anus or vagina, diarrhea, heartburn, or sore throat. They can also colonize the sinuses and trigger sinus, ear, and eye symptoms.

The yeast release toxic by-products that enter and circulate throughout the bloodstream and cause disturbances in organs and tissues distant from the growing yeast colonies.⁶ Such diverse conditions as bronchial asthma, mucous colitis, schizophrenia, lupus erythematosus, sinusitis, emotional lability, premenstrual tension, bleeding between periods, kidney stones, and recurrent infections can all be caused by tissue injury from yeast. The good news is that they can all be treated successfully with the yeast protocol.

The specific tissue or organ damaged by the yeast toxins will determine which symptoms will occur.⁷ If the damage is in the brain, then depression, schizophrenia, irritability, mood swings, fatigue, poor memory, fuzzy thinking, and headaches are all possible symptoms. If the damage is in the lungs, then asthma, chronic coughing, and other symptoms may result. If the damage is to the skin, then itching, hives, and rashes are likely reactions.

Yeast toxins can cause damage either by direct injury or by impaired tissue response to hormones.⁸ The mechanism may be hormone masking, or tricking the body's hormone receptors into thinking the toxins are hormones or bacterial protection, enhancing staph and other bacteria.⁹ In the case of hormone masking, receptor sites for thyroid hormone may be taken up by yeast toxins and therefore bring on a state identical to hypothyroidism. Many menstrual abnormalities and symp-

toms of hypoestrogenism can occur from toxins taking up receptor sites for estrogen. It is also felt that yeast can bind cortisone, progesterone, and other hormones for its own use and by this mechanism bring on endocrine deficiency states. It can do this by decreasing adrenal steroid and testosterone synthesis. (You will learn shortly how autoimmune damage of thyroid, ovarian, and other tissues brought on by a yeast-impaired immune system can also explain these symptom pictures.)

One of the yeast toxins, acetaldehyde, is known to adversely affect red blood cell flexibility, making the cells abnormally rigid and thus impairing circulation and diminishing oxygen transport.¹⁰ Such a mechanism may explain many of the mental symptoms as well as the cold hands and feet often experienced by those with the yeast syndrome. Mental symptoms are also precipitated by acetaldehydes binding to the amine groups of neurotransmitters. Acetaldehyde also interferes with acetyl

YEAST TOXIN DAMAGE

Hormone masking/impairment of tissue response to hormones

Hypothyroid symptoms

Ovarian/hypoestrogen symptoms

Hypoadrenal symptoms

Symptoms of testosterone deficiency

Loss of bacterial protection

Recurrent staph infections

Acetaldehyde production

Decreased absorption of vitamin B-6

Decreased metabolism of beta-carotene

Decreased red blood cell flexibility, which leads to impaired circulation

Neurotransmitter impairment

Interference with magnesium and protein metabolism

Interference with delta-6 desaturase enzyme, which causes a functional essential fatty acid deficiency and increased production of unfavorable and inflammatory prostaglandin hormones (see Chapter Three)

Decreased suppressor cell function, which triggers multiple allergies, polyendocrinopathies and other conditions

Impaired T-cell response and low T-cell counts

Co A function and metabolism of glucose, both inherent components of energy production. Moreover, it is known to interfere with both the absorption of vitamin B-6 and the metabolism of beta-carotene, magnesium, and protein.

Yeast toxins interfere with delta 6 desaturase enzyme pathways during the synthesis of prostaglandin hormones, thereby potentially giving rise to inflammatory conditions. With widespread inflammation in the small bowel, caused by yeast disruption of the mucous membrane, incomplete digestion and poor assimilation of nutrients ensues, contributing often to weight loss and pronounced weakness.

The inflammation also creates a "leaky gut," where large undigested food molecules and other foreign substances are able to get into the circulation and trigger multiple allergies and intolerances (see Chapter Thirteen). Yeast are also known to produce alcohol in the body from the fermentation of carbohydrates.¹¹ Several cases of drunkenness due to such a *Candida* brewery have been documented.

Figure 12-1 shows yeast toxin injury to the immune system. The immune system consists partly of lymphocytes: B cells, which produce antibodies to foreign organisms or substances, and T cells, which can directly attack foreign invaders. Of the T cells, there are helper cells (H), which among other functions stimulate B cells to make antibodies, and suppressor cells (S), which are capable of arresting B-cell antibody production. There are also killer (K) cells, which directly attack foreign invaders or cancer cells. A delicately balanced feedback control relationship exists between T and B cells.

Through the circulation, yeast toxins proceed to inhibit the function of suppressor cells by mechanisms not entirely understood. The abnormally elevated helper/suppressor ratio in many *Candida*-afflicted individuals reflects this disturbance. The helper cells are then unimpeded or unopposed in their function of stimulating B-cell antibody production. B cells go wild, so to speak, and begin making antibodies to substances that ordinarily would not be considered foreign—to foods, for instance.

In addition to becoming hypersensitive or allergic to foods, a yeast-impaired immune system has less than the normal tolerance for ordinarily "safe" levels of common chemicals, such as gas and oil fumes, cleaning fluids, chlorine, perfume, and pesticide residues on produce. In such cases the chemical hypersensitivity syndrome can often develop.

The yeast-impaired immune system can become so confused that it can produce antibodies that attack the body's own tissues. The ovaries and thyroid are prime targets—resulting in the premenstrual syndrome and hypothyroid symptoms, respectively. Multiple endocrine glands can be targeted, giving rise to a polyendocrin-

opathy and multiple complex symptoms.¹² The yeast syndrome has been related to autoimmune diseases like rheumatoid arthritis, multiple sclerosis, myasthenia gravis, systemic lupus erythematosus, scleroderma, uveitis, thyroiditis, and autoimmune hemolytic anemia.

Although yeast may not be the precipitating cause for every autoimmune disorder or for such conditions as colitis, Crohn's disease, asthma, allergies, malabsorption, hypothyroidism, and chemical hypersensitivity, yeast treatment can often bring about remarkable improvement in these conditions and play a significant role in their successful management.

RECOGNIZING A YEAST PROBLEM

In order to determine the presence of a yeast-related illness, an assessment of symptoms and history and laboratory testing are needed.

Symptoms and History

First and foremost, you must ask: "Do my symptoms suggest a yeast problem? Do I have enough symptoms to 'fit' the yeast picture or the particular events in my history that are known to favor yeast overgrowth?"

The symptom list on pages 209-212 for yeast and the description of this syndrome throughout the chapter should provide adequate information for you to make this assessment. Remember that toddlers, children, teens, adults, and seniors can all be affected and manifest mental, emotional, behavioral, and physical symptoms due to yeast overgrowth.

You may also want to consult the "Candida Questionnaire Scoresheet" in *The Yeast Connection*, by William G. Crook, M.D. (Future Health, 1989). And in *The Missing Diagnosis*, by C. Orian Truss, M.D., one of the original researchers and authors on the subject, you will find very useful descriptions of individuals in whom a yeast-related illness should be suspected.¹³

Laboratory Testing

Cultures. Several laboratory tests can aid in the diagnosis of yeast-related illness. A quantitative *Candida* stool culture will tell if more than normal amounts of yeast are growing in the stool.¹⁴ An abnormally high stool yeast count will usually correlate with *Candida*-related illness. About 20 percent of the time, in my clinical experience, an individual who turns out to have this condition does not show it on the stool culture. For this reason, I usually obtain the stool culture in combination with a test for intestinal antibody levels specific to *Candida*, as well as a blood test for *Candida* toxins. These

Figure 12-1. How Yeast Toxins Injure the Immune System

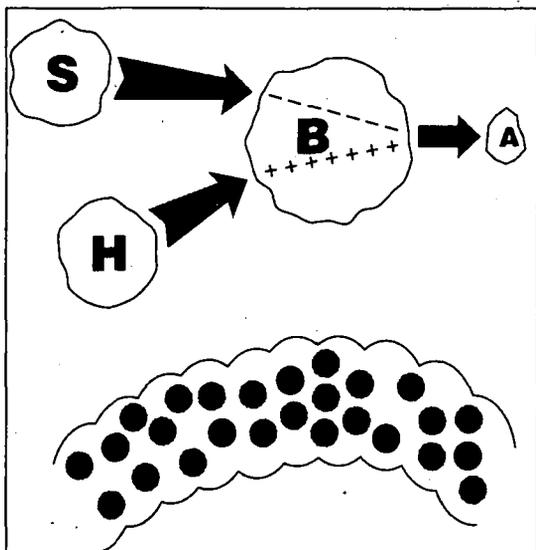
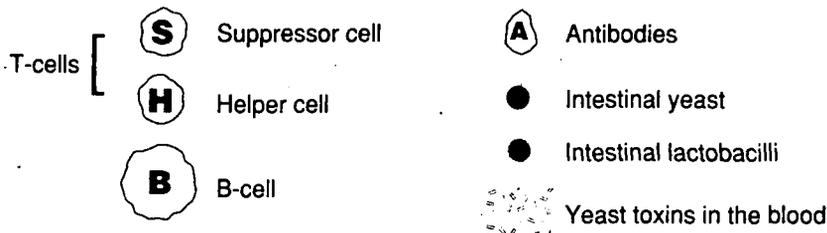


Diagram 1: Yeast and intestinal lactobacilli bacteria in balance; normal immune function.

In diagram 1, a balance between intestinal lactobacilli bacteria and yeast allow for normal immune lymphocyte function: helper cells stimulate the B cells to make antibodies, whereas suppressor cells appropriately oppose B-cell antibody production. Antibody production is in balance.

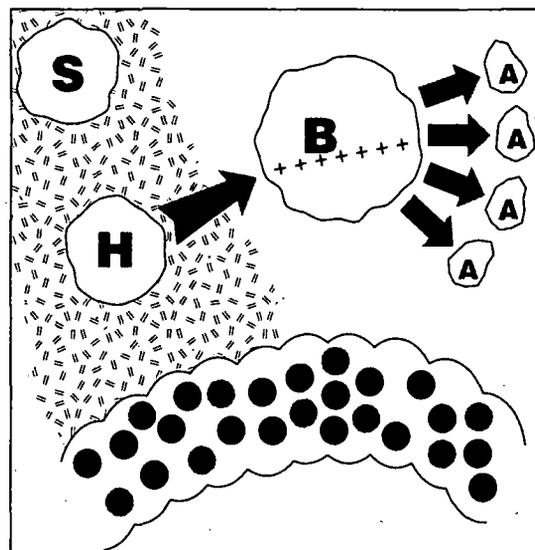


Diagram 2: Overgrowth of intestinal yeast, release of toxins into the bloodstream, and altered immune function.

In diagram 2, intestinal yeast overgrowth and yeast toxins released into the bloodstream inhibit suppressor cell function. Stimulation of antibody production by helper cells is now unopposed, and inappropriate antibody production occurs. Here we have a heightened state of allergy, as well as an increased susceptibility to autoimmune conditions.

additional tests can also help your doctor determine when a high count on the stool culture does not necessarily indicate Candida-related illness (see below).

A careful review of symptoms will help determine the locale of yeast outside the intestines, but vaginal, nasal, throat, and skin cultures or smears may also be indicated. If the cultures are positive, they will certainly guide treatment and are therefore worthwhile. Some-

times, however, they will show no yeast when in fact yeast are present but "burrowed." Treatment will then need to be guided by symptoms and other tests.

Candida-Specific Intestinal Secretory IgA. The immune system secretes antibodies (secretory IgA) that stand guard in the mucous layer to defend mucosal cells from invasion. A stool sample can disclose levels of

Candida-specific intestinal secretory IgA, antibodies responsible for defending against yeast attaching to intestinal wall cells.¹⁵ The latter test obtained along with a stool culture can determine, for example, if yeast are attached to intestinal mucous membranes, which would challenge the immune system, and cause an IgA elevation. Whether the stool yeast culture shows overgrowth or not, yeast treatment is indicated here. If the IgA is elevated and the culture count is not, this would indicate a false negative on the culture. So it would seem, for the time being, that the IgA test is more reliable than the stool culture.

The Candida-specific intestinal IgA test is also very useful in determining if an elevated stool yeast count necessitates aggressive treatment or not. If the IgA is low in tandem with an elevated culture count, this indicates the presence of abundant yeast not attached to the mucous membrane, and therefore not challenging the immune system. This may reflect excessive dietary carbohydrates feeding yeast, or rapid transit time. In this case, measures that address these conditions directly might be more appropriate than prescribing a strong antifungal medication. However, the IgA test is not fool-proof, and there are instances in which low readings are false negatives and, hence, misleading. A negative test result does not rule out a Candida-related condition.

Intestinal IgA production will be suppressed in a chronic adrenal stressed condition with elevated cortisol and low DHEA levels. Under such a condition, yeast could be aggressively infecting intestinal mucous membranes, and yet, due to immune system depression, the IgA levels would be very low. If necessary, obtaining cortisol and DHEA levels will clear the confusion (see Chapter Eleven).

Candida Antigen Titer Test. The Candida antigen titer test demonstrates if yeast antigens (toxins) are present in the bloodstream and in what concentration.¹⁶ Any amount of yeast antigen found in the blood is abnormal and means that the body's protective mechanisms are overwhelmed. The higher the blood concentration of antigen, the worse your symptoms and state of health are likely to be. The accuracy of the antigen titer test makes it superior to the Candida stool culture. It is not fool-proof, however, so I generally use it in combination with the stool and the IgA test. One weakness of the test is that when no yeast antigen is found, toxins may still be present but bound to antibodies in an antigen/antibody complex. This complex can still cause problems similar to the toxin alone. A negative result may indicate the need for other methods of assessment.

Candida Antibodies and Immune Complexes The Candida antibody blood test measures the amount of antibodies—IgA, IgE, IgG, IgM—immune system cells

have generated to fight yeast.¹⁷ The higher your antibody count, the more likely it is that you're in a battle with yeast. High counts of Candida immune complexes usually indicate the same thing. Interpretation can sometimes be difficult, because a high Candida IgG does not necessarily mean a current overgrowth, a low level of IgG could mean either no infection or immune suppression, and an elevated IgE count may be the result of yeast allergy, not overgrowth. It is best to test all the antibodies and immune complex levels. If you need laboratory documentation of an existing yeast problem and the stool culture, stool IgA and antigen tests are all negative, the Candida antibody/immune complex blood tests will likely pick it up.

Electrodiagnosis The Interro, Vega, Computron, Eclonian, and Dermatron Voll machines—all more or less electroacupuncture devices—can be used for yeast screening. They are discussed briefly in Chapters Thirteen and Twenty-one.

Clinical Evaluation versus Laboratory

Testing Although laboratory tests for yeast diagnosis are useful, their interpretation is not always straightforward and they can sometimes be misleading. In general, an assessment of symptoms and history usually provides as valuable information about my patients as lab tests. If a laboratory test discloses no evidence of a yeast problem, I will proceed anyway with a trial yeast treatment program if the person's history and symptoms lead me to suspect strongly that yeast is the underlying factor. Since this is not dangerous, the results are actually the final and best diagnostic test. I will not deny my patients treatment simply because of a lack of laboratory confirmation.

On the other hand, knowing that the treatment program is involved and sometimes prolonged or may even initially leave you feeling worse, lab tests that uncover the problem can make you feel more confident about your course of treatment and more willing to stick with it.

If yeast overgrowth is indeed related to your symptoms, you will usually have some indication that the treatment is significantly helping by the third or fourth week of the program. This improvement will provide the strongest motivation to continue the treatment. In effect, positive results of treatments are a confirmation of an accurate diagnosis.

TREATING YEAST OVERGROWTH

The treatment indicated for yeast-related symptoms varies according to the degree to which the yeast has overgrown and the degree to which immune function has

deteriorated. Simply using yogurt for several weeks may be adequate to reverse symptoms. However, a six- to twelve-month program involving dietary, medical/therapeutic, and lifestyle/personal adjustments and treatment of concurrent conditions may be necessary to reverse symptoms and reestablish the body's balance. If your yeast symptoms are confined to the gastrointestinal tract or vagina, a shorter and less involved program will usually be successful. If yeast toxins are circulating throughout your bloodstream and causing polysystemic symptoms, you will most likely require more involved treatment.

Dietary Changes

Eating whole foods that nourish you and not the yeast provides a basis for treatment, whether your chronic or recurring symptoms are localized or systemic. Before we present the specifics of the Candida-control diet in the tables that follow, there are a few things you may find helpful.

Avoiding sweets and eating an adequate amount of protein foods, an abundance of fresh vegetables, appropriate portions of unrefined complex carbohydrates and fat-containing foods, and perhaps a small amount of fresh fruit, provides the basic dietary guidelines for the program. Of course, individual needs vary. Some people will initially need to consume less complex carbohydrates and fruit. Others will need to minimize yeast- and mold-containing foods because of a yeast/mold allergy.

Minimizing sugar and other concentrated sweets is universal for all people with yeast infections. In addition, Candida-afflicted individuals should minimize their intake of the common dietary health hazards discussed in Chapter Three and listed in Group F (page 225) of the following tables.

Contrary to what you may have heard or read elsewhere, the diet may not have to be extremely restrictive—I allow occasional departures. So it shouldn't be difficult to remain on the diet for the initial three-to-four-week trial. If it proves to be helpful, then staying on it another three or more months may seem very reasonable to you.

**CANDIDA-CONTROL DIET GROUP A:
PROTEINS AND LOW/MODERATELY LOW-STARCH
VEGETABLES (EAT FREELY)**

Protein Foods	Low-Starch Vegetables	Moderately Low-Starch Vegetables
Eggs	Celery	Carrots
Fish	Cabbage	Beets
Shellfish	Broccoli	Rutabaga
Turkey	Cauliflower	Turnips

Protein Foods	Low-Starch Vegetables	Moderately Low-Starch Vegetables
Chicken	Leafy greens (e.g., lettuce, spinach,	Parsnips
Duck	parsley, chard,	Eggplant
Beef	kale, collards,	Artichoke
Lamb	beet greens,	(Jerusalem globe)
Pork	watercress, Bok choy)	Avocado
Rabbit	Brussels sprouts	Bamboo
Wild game	Squash (e.g. zucchini,	Mushrooms
Water chestnuts	summer, crook neck)	
Other flesh foods	Asparagus	
Milk/milk products (if there is no milk allergy; e.g., unsweetened yogurt, cottage cheese)	Radishes	
	Bell peppers	
Seeds and nuts (e.g., almonds, sunflower seeds, filberts, walnuts, sesame seeds, cashews, pine nuts, macadamia nuts, Brazil nuts, pecans, pistachios, peanuts)	(green, red, yellow)	
	Onion	
	Leek	
	Garlic	
	Sprouts	
	Tomatoes	
	Green beans	
Seed and nut butters		

For most Candida-afflicted individuals, I recommend adequate, but not excessive, protein intake and as many of the low-starch and moderately low-starch vegetables as desired. None of these foods will feed the yeast to any significant degree. In fact, eating primarily from this group will starve the yeast.

Some physicians actually recommend that for the first few weeks of treatment their Candida patients eat solely animal proteins and low-starch vegetables. Some advise the addition of yogurt in those who are not milk allergic. For some individuals, eating in this manner for a relatively short period of time can be extremely therapeutic. Others may find it weakening. For anyone, however, such a diet for too long can be too high in protein and fat and insufficient in complex carbohydrates and the nutrients they provide.

It is my experience that a diet drastically low in carbohydrates is unnecessary for most people fighting yeast overgrowth. I reserve it for those who have a more serious yeast illness, for those who have multiple allergies to the grains in Group B, and for those who can afford to lose some weight.

Many people on the Candida-control diet tend to oversnack on seeds and nuts. Be careful here. If you seem to return to this group again and again to satisfy

a craving, or if your digestion of these foods does not seem up to par, try soaking a small quantity of raw seeds and nuts overnight in water, strain, let dry, and store in the refrigerator. The soaking initiates the sprouting process, which renders nuts and seeds significantly easier to digest. Soaking will not work for all varieties, however. Try it with almonds, sunflower seeds, and filberts to start. Generally, eat most seeds and nuts raw and occasionally, dry-roasted.

GROUP B: COMPLEX CARBOHYDRATES (EAT ENOUGH TO MAINTAIN ENERGY—RESTRICTIONS VARY)

STARCHY VEGETABLES	LEGUMES	WHOLE GRAINS
Potatoes	Lentils	Brown rice
Sweet potatoes	Split peas	Wild rice
Yams	Black-eyed peas	Millet
Winter squash (e.g., acorn, butternut, buttercup, blue hubbard)	Beans (e.g., navy, garbanzo, pinto, mung, kidney, lima, adzuki, black)	Buckwheat
		Oats
		Barley
		Corn
		Rye
		Wheat
		Triticale
		Amaranth
		Quinoa
		Kamut
		Teff
		Spelt
		Whole grain rice cakes
		crackers
		cereals
		pastas
		pancakes
		waffles
		muffins
		bread
		popcorn
		bulgur
		couscous
		tortillas
		essene bread

The amount of complex carbohydrate allowed on the Candida-control diet depends primarily upon the variables just mentioned: weight, food allergies, and degree of illness.

You will recall that complex carbohydrates, when digested, break down in the intestines into simple sugars that can feed the yeast, particularly if diarrhea is a problem. But even with normal transit time, I advise many of my patients to reduce this group of foods somewhat—(smaller portions and no second helpings)—but to still

consume enough to retain their energy and strength. For some, this means one helping a day. For instance, try one moderate-sized bowl of oatmeal, or one moderate-to-large baked potato, or one moderate helping of brown rice. The remainder of their foods would come primarily from Group A, and some, perhaps, from C and D. However, many individuals need more than one helping a day and make adequate progress without much carbohydrate restriction at all.

If you reduce the carbohydrates too much, you can become very tired, even exhausted, weak, or “spacey,” and will be unable to function normally. Some people become so zealous in their attempts to starve the yeast by reducing carbohydrates that they seriously endanger their health by losing far more weight than they can afford to. This occurs most commonly, but not exclusively, in lean individuals who have difficulty gaining weight or maintaining their less-than-normal weight. Although initial carbohydrate reduction can be useful, it must be done appropriately. Take caution not to compromise your health, and above all, work closely with a health professional familiar with the treatment of yeast.

Allergies to grains are extremely common and can often sabotage Candida treatment results. If you are not making expected progress while on the yeast treatment, try to restrict some of the more common and repetitive grain items in your diet such as wheat, corn, rice, etc. Your repetitively used grains are the ones to suspect for allergy. Try a one-to-two-week elimination of suspected allergic grains, using instead those less common to you. It may prove worthwhile to do a trial elimination of all grains, substituting mostly starchy vegetables and some legumes for a week or two. You may need to use a trial-and-error approach to find the carbohydrates you can best tolerate.

If you are motivated enough, you can begin your yeast-control diet by restricting grains. Then, after you have experienced some improvement, reintroduce them one at a time for a three- to four-day test period to see if your symptoms recur. You can therefore decide which ones to include or avoid in your diet. You may need to do this trial elimination outside of the grain family with some of your other common repetitive foods. (See the self-testing instructions for food allergy on page 245.) And, of course, laboratory tests can reveal your allergic foods as well (see Chapter Thirteen).

GROUP C: YEAST AND MOLD-CONTAINING FOODS (ALLOWABLE IF NOT ALLERGIC—RESTRICTIONS VARY)

Bread and other yeast-raised baked items
Brewer's yeast
Enriched flour
Alcoholic beverages

Vinegar (including mayonnaise, mustard, ketchup, and prepared salad dressings)
 Aged cheeses (e.g., blue cheese, cheddar, Swiss, brie, Camembert, Limburger)
 Fermented dairy products (yogurt, kefir, buttermilk, sour cream)
 Fermented foods (pickles, sauerkraut, tempeh, miso, soy sauce, pickled vegetables)
 Mushrooms
 Peanuts and peanut butter
 Coffee
 Canned soups and juices
 Yeast-containing vitamins and minerals

Some individuals with yeast-related illness develop an allergy or sensitivity to their *Candida* and experience varied allergic reactions when ingesting food or beverages that contain dietary yeasts or molds, which are also in the fungus family and thus can cross-react. If you are allergic to your *Candida*, then you will also likely be allergic to some dietary yeasts and molds. Such allergic reactions can include sinus congestion, headaches, excessive fatigue, fuzzy thinking, gas, bloating, and itchiness, which can occur within an hour or two after ingestion and up to twenty-four hours or more afterward. An almost immediate reaction of this type to alcoholic beverages can be especially—but not exclusively—characteristic of yeast allergy. Be aware, however, that some yeast-afflicted individuals who are not allergic to *Candida* can tolerate these foods without any aggravation of their symptoms.

If you are not sure whether you have a yeast/mold allergy, try the following: After approximately two weeks of avoiding all the Group C yeast/mold-containing foods while on the *Candida*-control diet, reintroduce to your diet, on a trial basis, Group C items of your choosing—only one at a time, however. If an item triggers a reaction, whether immediate (symptoms occur within an hour after eating it) or delayed (symptoms occur in one or two days), you can conclude that you are allergic to it. Avoid its use for several months at least, until you've become less sensitive and can tolerate it. If you react to any item, wait until the reaction clears before reintroducing the next item. If there is no reaction by the end of day three, you can conclude you are not allergic to it and allow it in your diet. Then reintroduce the next item on your list. Follow the self-testing instructions for food allergy on page 245.

Realize that the category of "Yeast-Raised Baked Items—Bread, Etc." in Group C includes muffins, buns, rolls, croissants, some crackers, coffee cakes, and other items. If you react to these foods, try rice cakes, corn tortillas, essence bread in very small amounts, sourdough, whole wheat, or rye bread made without any yeast, whole grain pasta, chapatis or tortillas—beware, some brands contain a little yeast—yeast-free muffins or

cornbread made with whole-grain flours, yeast-free whole grain crackers (wheat, rice, or rye), and such whole-grain cereals and dishes as brown rice, bulgur, buckwheat, millet, quinoa, spelt, and the like.

If you react to vinegar or products containing vinegar, avoid these items; for salad dressing use fresh-squeezed lemon juice, plain or with unrefined oil (with or without herbal seasoning). Also realize that many B-complex vitamins and some mineral supplements contain yeast; you can easily find yeast-free supplements. If you are not milk allergic, instead of using the aged cheeses listed under Group C, use younger cheeses that have minimal mold content (cream cheese, cottage cheese, jack, feta, ricotta, mozzarella).

Fermented dairy products such as yogurt, buttermilk, and kefir contain beneficial bacteria, and are generally helpful if unsweetened. But these foods can also trigger reactions as well due to yeast allergy and of course, due to milk allergy. Other fermented foods with helpful bacteria, such as miso or "raw" sauerkraut, may also trigger symptoms, but if they do not, they may certainly be included in the diet. Most *Candida*-afflicted individuals should be able to use herbal teas, canned soups, and juices (if low in sugar and sodium, and preservative- and additive-free), and seeds and nuts, especially if soaked. However, severely allergic individuals may react to the small amount of mold on these items.

If you find that you do not experience a reaction upon reintroduction of a particular food, feel free to add it to your diet. Contrary to what you might have learned elsewhere, you may therefore be able to include on your *Candida*-control diet some of the following items: vinegar and vinegar-containing products, soy sauce (tamari/shoyu, the sugar-free kind), peanut products, coffee, and whole grain breads. Nevertheless, too much bread is inadvisable, and coffee is not generally recommended. If you must have a small amount daily, and it doesn't seem to cause symptoms, you can use it on your yeast-control program.

Even if you seem to be able to handle some alcoholic beverages without an adverse reaction, it may be inadvisable to use them regularly. The reasons are two-fold. First, many alcoholic beverages contain a significant quantity of sugar. And second, the generation of acetaldehyde from the metabolism of alcohol may add to the yeast assault with *Candida*-derived acetaldehyde. This would place undue strain on your liver's detoxification mechanisms and thus aggravate *Candida* symptoms.

If you have so many symptoms that it's not at all clear what eliminating or reintroducing these yeast/mold foods is doing to you, the health professional monitoring your treatment may advise you to minimize them all until the picture clears somewhat. Some sources recom-

mend that all yeast- and mold-containing foods be avoided for months. In my experience, this across-the-board restriction is unnecessary. It also has the unfortunate effect of deterring many individuals from staying with the treatment for the required time span. Let your symptoms—or lack of symptoms—be your guide. The health professional monitoring your treatment should be able to help you sort out any confusion.

GROUP D: FRUITS (SMALL AMOUNTS OF 1, SMALLER AMOUNTS OF 2, RESTRICT 3)

(1) LESS SWEET	(2) MORE SWEET	(3) MOST SWEET
Berries (e.g., blueberries, huckleberries, raspberries)	Melons Apples Pears Plums	Dried fruits (e.g., dates, raisins, bananas, apricots, pineapples,
Grapefruit	Peaches	mangoes, papayas,
Fresh figs	Oranges	figs, prunes)
	Nectarines	Fruit juices
	Grapes	
	Bananas	
	Apricots	
	Cherries	
	Pineapple	
	Berries (e.g., strawberries, blackberries)	
	Grapefruit juice	
	Very diluted fruit juices	

Fresh fruit contains simple sugars that yeast feed on, although not as readily as the concentrated sweets. If your condition is not too serious, allow perhaps just one piece of fresh fruit daily (the less the better in the initial phase of treatment). Generally speaking, the less sweet fruit tastes, the less sugar is available for the yeast. So choose blueberries, for example, over strawberries, or grapefruit over oranges. Avoid snacking on dried fruit—raisins, dates, prunes, apricots, and the like—as these contain very concentrated sugars. However, dried fruits may be used to sweeten hot cereals if they are cooked with the cereal, and therefore reconstituted, and if not too many are used. They can also be used to sweeten baked items.

Avoid fruit altogether initially for the first three to four weeks if you know that fruit affects you adversely, if your condition is serious, or if you won't miss it at all. But if it does not seem to impede your progress, allowing some fruit on your individual treatment program may not be a terrible violation. It's potentially much less damaging than indulging in concentrated sweets.

GROUP E: CONCENTRATED SWEETS (RESTRICT)

Refined sugar: Cake, cookies, candy, candy bars, donuts, pastries, ice cream, pudding, sodas, pie, etc.
(e.g., table sugar, corn sweetener, high fructose corn sweetener, corn syrup, dextrose, glucose)

Maple syrup
Molasses
Malt syrup (barley or rice malt)
Honey
Dried fruit

This is the most important group to avoid. The concentrated sweets, whether refined or "natural," provide immediate nutrients for the yeast and feed them better than anything else. If you can avoid the obvious sweets (cookies, candy, soft drinks, etc.) then the small amount of sugar in such foods as ketchup or salad dressing should not be a problem. However, it is best to find versions of such items that are sugar-free or minimally sweetened. Read the ingredient lists on food labels, and remember that the closer sugars appear to the beginning of the list, the higher the sugar content.

It may be easier than you think to reduce your sugar intake. Once you begin the medication part of the yeast treatment, sugar cravings diminish greatly (they sometimes vanish). In addition, the use of a multiple vitamin/mineral preparation formulated to help lessen sweets cravings may prove invaluable. Try Glucobalance (by Probiologic of Bellevue, Washington) or include its key ingredients: B complex, chromium, and biotin, discussed on page 193. Glutamine, if necessary, may also be helpful in reducing sweets cravings (see page 192).

If you can get along fairly well without sweets, yet occasionally experience overwhelming pangs of deprivation, allow yourself an occasional treat (not on an empty stomach, however)—ideally not more than once or twice weekly. If this episodic indulgence does not upset your progress, and helps you maintain the diet and treatment program most of the time, perhaps it's not such a terrible thing. Preparing your own sweet treats (with the smallest amount of sweetener possible) could also minimize the harm (see Chapter Five). If such an occasional treat does cause a significant setback, then you will understand the necessity of avoiding sweets altogether (for several months at least).

You may wonder if aspartame-sweetened beverages are allowable. Aspartame does not, to my knowledge, feed yeast, and small amounts may be permissible. Be aware, however, that aspartame may promote a craving for sweets. Those genuinely interested in optimal nutrition should minimize aspartame-sweetened nonfoods such as artificial chemical beverages (soft drinks), which do nothing to build health and can in fact damage it.

Stevia may be used regularly if you just cannot get by without a sweetener (see page 66).

GROUP F: COMMON DIETARY HEALTH HAZARDS (RESTRICT)

Sugar
White or refined flour products
Fried foods
Fast foods
Junk foods
Soft drinks
Caffeine
Margarine
Refined oils
Chemical additives (preservatives, dyes, etc.)

Avoid the items listed above whether you're on or off a Candida-control diet. They are generally hazardous to your health (see Chapter Three).

Helpful Hints While on the Candida-Control Diet

1. CONSTIPATION: If you restrict too many Group B carbohydrate foods, whether for Candida control or for food allergy, it is possible that you will become constipated as a result of reduced fiber intake. Psyllium husk or flaxseed powder or other bulk/fiber combination powders should remedy the problem: use one or two teaspoons shaken up vigorously in six to eight ounces of water, taken usually just once or twice daily—generally away from meals, although this is not a requirement. Drink another six to eight ounces of fluid immediately after and several more glasses throughout the day. If psyllium or flax does not agree with you, see Chapter Eight for other options.

2. MILK PRODUCTS: Cow's milk products quite often cause allergies for many individuals—especially those with type O blood. You may need to go through a trial elimination and reintroduction period to discover this. Some milk-allergic individuals will react adversely to ice cream or milk and yet be able to tolerate some cheese and yogurt. Some can tolerate only yogurt, while even more severely allergic individuals cannot. Most people who are milk-allergic, or are "lactose intolerant," seem to be able to tolerate butter. Some individuals will react adversely to aged cheese but will be able to handle fresh or younger cheeses, which can indicate a mold allergy.

Several sources suggest that, regardless of allergy, cow's milk products (lactose) feed the yeast. Others, admittedly more extreme, feel that most milk products are generally unfit for human consumption. Whether or not these assertions are true, I cannot say. As with so many other facets of this treatment, you must experiment to see how your body responds. However, if you restrict

milk products for a long period of time, and are eating animal protein regularly, it would be wise to include non-dairy calcium-rich foods in your diet (see pages 87–88) and perhaps add a calcium-magnesium supplement (see Chapter Six).

3. WEIGHT CONTROL: Many overweight Candida-afflicted individuals are pleased to observe significant weight loss on their yeast-control program without their necessarily having to cut calories. Restricting sweets, partially restricting complex carbohydrates and portion size, and identifying and avoiding food allergens are key. All these are helped by the Candida treatment's overall normalizing effect on the metabolism. I often see this treatment program trigger a whole self-care transformation with many of my patients. They not only improve their diet, but they begin to exercise more regularly, and learn to manage stress more effectively. And as they get healthier, they shed many pounds as an unexpected and very welcome result.

4. VEGETARIANISM: Because vegetarians commonly derive a good percentage of their protein from foods that are also high in carbohydrates—grains and legumes, as in Group B—their carbohydrate intake may be somewhat higher than is optimal for a Candida-control diet.

If you are a vegetarian, this increased carbohydrate load may not present a problem if you are able to identify and eliminate food allergies (especially in groups B and C). Be very rigorous about other aspects of the Candida-control diet—particularly concentrated sweets from Group E, and even the fruit listed in Group D; and be aggressive about therapeutic antifungal and immune-enhancing measures (see pages 226–231). Try to lower the percentage of grains and legumes in your diet somewhat. Get more protein from eggs and yogurt—if they are part of your vegetarian diet and you can tolerate them. Also, try hypoallergenic protein powders, free-form amino acids, seeds and nuts, nut butters, and seed and nut yogurts.

If this doesn't help, and you feel frustrated despite having tried everything in this chapter as well as the recommendations of your health care practitioners, try adding some fish or other animal protein, at least as a temporary medical/therapeutic measure. I would consider this recommendation early on in the treatment program if you are chronically ill or in a much weakened state—and especially if you have type O blood (see page 97). You may require supplemental hydrochloric acid and/or digestive enzymes if the sudden increase of protein seems to cause digestive discomfort (see Chapter Seven).

5. DISCIPLINE/BALANCE: Remember that the first three to four weeks can be crucial. Try to be as disciplined with your diet as you can. Your efforts will bring about substantial progress. This, in turn, will help confirm the diagnosis, and encourage you to continue with

treatment. In subsequent weeks and months, you should be able to relax your diet somewhat without losing ground.

An overly restrictive diet may be dangerous or too difficult or unacceptable to carry out for as many months as your condition requires. However, too many dietary indiscretions will sabotage the treatment program. You and the health professional counseling you should be able to come up with a reasonable middle ground.

Medical/Therapeutic Agents

In concert with the yeast-control diet discussed above, a broad range of medical and therapeutic agents are used to discourage and kill yeast directly, to stimulate the immune system to control yeast, and to normalize metabolic processes.

With so many treatment options available, you may wonder where to begin. Every Candida-afflicted individual has unique needs, and every health practitioner has particular preferences in the choice and style of treatment. Along with the yeast-control diet, I generally place my patients on an antifungal agent—either a combination herbal formula, caprylic acid, or nystatin—along with a high-potency, quality acidophilus/bifidus supplement, and a yeast-free, high-potency quality multiple vitamin/mineral supplement with approximately 50 milligrams of yeast-free B complex. This threesome generally provides the backbone of therapeutic agents: nystatin, the herbal formula, or caprylic acid to kill yeast, acidophilus/bifidus to build friendly bacterial populations, and vitamins and minerals to support the immune system and help correct metabolic imbalances and deficiencies. The program usually begins with the diet, caprylic acid, the acidophilus/bifidus, and the vitamin/mineral. If indicated, particularly in cases of constipation or slow transit time, measures to increase bowel and liver function are implemented. After several weeks on this regimen, I may introduce nystatin.

This combination of agents may not be appropriate or effective for everyone. Individual tailoring of the yeast-control program is a must, taking into account initial response, concurrent conditions, and the capacity to manage an involved program. For this reason, an experienced health professional's guidance is indispensable.

Nystatin Nystatin is a drug, available by prescription only, that taken orally coats the membranes of the gastrointestinal tract and kills the yeast with which it comes in contact. Hardly any nystatin enters the bloodstream, and most of it exits with the stool, so it is considered very safe and nontoxic, even for infants.

Nystatin tablets are widely available and are useful if your yeast colonies reside primarily in the lower

bowel, or if you're traveling and away from a refrigerator for more than a week.

If you have sinus, mouth, throat, esophagus, or even stomach symptoms due to yeast, pure powdered nystatin for oral use is indicated over the tablets, because the pills won't dissolve in time to coat most of these areas. The powder is very versatile. You can also use it vaginally, nasally, rectally, and topically, which also makes it preferable to tablets.

However, nystatin powder requires refrigeration, which may present a problem if you need to travel. You can keep a small supply unrefrigerated for up to one week—provided it is not exposed to excessive heat. Some individuals choose to use the more convenient tablet doses during the day when away from home and the powder for morning and nighttime doses.

Nystatin oral powder is generally available in the strength of approximately 500,000 units per $\frac{1}{8}$ teaspoon—the equivalent of one nystatin oral tablet. The powder may be taken straight—swallowed with saliva—or mixed with a few ounces of water according to the following adult dosage schedule.

NYSTATIN DOSAGE SCHEDULE

FIRST WEEK

$\frac{1}{8}$ teaspoon or 1 tablet three times a day

SECOND WEEK

$\frac{1}{4}$ teaspoon or 2 tablets three times a day

THIRD WEEK

$\frac{3}{8}$ teaspoon or 3 tablets three times a day

FOURTH WEEK

$\frac{1}{2}$ teaspoon or 4 tablets three times a day

Due to the yeast die-off phenomenon (see below) or because of the extrasensitivity of your system, you may need to begin with even smaller doses, take a longer time to move up to the next dose level, or restrict your dose to no more than $\frac{3}{8}$ teaspoon two or three times a day. Tailor the dosage to your response. Don't be too concerned if you can't follow the schedule exactly.

If your yeast overgrowth symptoms are primarily in the large intestine, it probably doesn't matter when you take the nystatin in relation to meals and beverages. Just divide the three doses throughout the day. However, if you have mouth, throat, esophagus, stomach, or other upper digestive tract symptoms, take the medication separately from meals if you can, at least one hour or more

before meals and at bedtime. In this way your food or fluid intake won't wash off the nystatin coating. Swish and gargle the dose before swallowing for mouth and throat symptoms.

THE NYSTATIN "SNIFF" If you have sinus, Eustachian tube, bronchial/lung, or brain symptoms, try sniffing nystatin powder directly into your nostrils. Put a small amount on the tip of your finger or on a Q-Tip and sniff it vigorously high up in the nostrils, one nostril at a time, closing off the opposite nostril. Do this two to four times a day. Some authors recommend shaking the nystatin jar, then immediately removing the lid and sniffing the nystatin cloud that arises.

Others find it easier to use a medicine dropper, taking a squirt of your oral dose of nystatin dissolved in water into each nostril. Let it trickle back while sniffing a little. Experiment, after it has trickled back some, with leaning forward abruptly, bringing your head between your knees. If the nystatin water does not leak out, it should find its way into the deeper recesses of your sinuses. If yeast are growing in the sinus or nasopharyngeal areas, you may find significant if not dramatic relief from this approach. If helpful, continue this nasal administration. Discontinue if not helpful, or if irritating.

NYSTATIN ENEMA Some physicians recommend an occasional enema with one teaspoon of nystatin dissolved in a quart of water. If you're unfamiliar with this procedure, see Chapter Eighteen, and consult your physician or an experienced nurse.

NYSTATIN DOUCHE AND OINTMENT You can use nystatin powder as a vaginal douche in the same dosage as for the enema. You can also put nystatin powder in empty clear gelatin capsules and use them as vaginal suppositories, one every twelve to twenty-four hours. If you suffer skin symptoms due to yeast, you can make your own antifungal ointment, mixing up to 1 teaspoon of nystatin powder in a small cup with a cream or ointment that is nonsensitizing and nonirritating to your skin. Keep it refrigerated.

YEAST "DIE-OFF" AND HOW TO MINIMIZE IT Before beginning nystatin (or other antifungal) therapy, it is essential to understand the die-off phenomenon. As yeast are killed, they can temporarily release more toxins into the circulation and make you feel worse before you feel better. Symptoms may range from mild to severe and include fatigue, nausea, headaches, flu-like aches and pains and malaise, itching, diarrhea, hives, and nearly any symptom the yeast are known to produce.

Not every individual will experience die-off, and those who do generally suffer only mild to moderate symptoms. Taking approximately 500 milligrams of vitamin C with each dose of nystatin may be beneficial. In addition, Advil or other ibuprofen medications will relieve die-off symptoms. (Avoid these medications, however, if you have ulcers, colitis, or Crohn's disease.)

I have found that the greater the constipation or transit time, or the longer the suffering from polysystemic Candida symptoms has continued, the more likely a die-off will occur, and the more severe it will probably be. If you fall into either of these categories—particularly if your bowel evacuations are not full and daily—it is advisable to prepare for nystatin therapy by doing a bowel-cleansing program for one to two weeks and continuing it along with nystatin therapy for three to four weeks. (Bowel cleansing, using simply a fiber/bulk agent like psyllium husk or flaxseed powder twice daily, is discussed in Chapter Eight.) Adding approximately 1 tablespoon of bentonite clay liquid to the bulk/fiber water mixture can enhance intestinal detoxification, but this is not essential. Be sure to drink four to six large glasses of water throughout the day. You can also start the yeast-control diet and acidophilus during this colon preparation period.

Once you begin nystatin therapy, with improved transit bowel time, yeast toxins will likely have less opportunity to find their way into the circulation. Consequently the treatment program will proceed more comfortably. In *The Yeast Syndrome* (Bantam, 1986) authors John Parks Trowbridge and Morton Walker suggest enemas if die-off symptoms are significant, and some sources recommend colonic irrigations to minimize the yeast and toxin load.

If die-off symptoms continue to limit your ability to tolerate antifungal therapy, you might try taking the bentonite or the bentonite and psyllium together with the nystatin as the clay can bind the toxins. Experiment and see what works best for you.

If die-off symptoms are too severe, halt the nystatin and work instead to increase your liver's ability to detoxify yeast antigens. Herbs such as barberry, golden-seal, and Oregon grape root (see Chapter Nineteen) activate the tissue macrophages in the liver that sequester yeast antigens. Berberine complex and Phyto-biotic, by Phytopharmica/Enzymatic Therapy of Green Bay, Wisconsin, contain these three herbs. At least two to three weeks of treatment with berberine products, along with bowel cleansing and the yeast-control diet, should help you better tolerate die-off symptoms.

If necessary, you can always lower the nystatin dose and lengthen the weekly dose intervals until you are more comfortable. Some physicians—not myself, however—suggest the opposite: increasing the dose and thereby accelerating the treatment program. Their theory is that small doses agitate the yeast, whereas larger doses deal an eradicating blow.

Switching temporarily to a ketoconazole (Nizoral) or fluconazole (Diflucan) may reduce yeast to the point where, within two to four weeks, nystatin may be well tolerated. These medications, unlike nystatin, enter the

bloodstream effectively and work systemically with very little die-off. However, they have a potential for toxicity, especially to the liver, and need to be monitored closely by your physician. I prescribe these drugs not only for managing die-off but also for particularly difficult cases (see the discussion on page 230).

Be aware that continued adverse symptoms from the use of nystatin may not be related to die-off at all, but a definite sign that you are allergic to the drug itself or that nystatin is simply the wrong agent for your body. A menstrual period may come early or late after a course of nystatin (or other antifungal agents). This is not usually an adverse effect, but an indication that the yeast's influence over your hormonal status is being altered. Consult a physician experienced in the treatment of polysystemic candidiasis.

TREATMENT TIME FRAME FOR NYSTATIN You should begin to experience significant improvement on nystatin by the third or fourth week. Many people feel better sooner, but some need to persevere several weeks longer before substantial improvement begins, particularly if there are coexisting conditions such as severe food or inhalant allergies, endocrinopathies, or chemical sensitivities.

If nystatin does contribute significant relief, continue its use at the normal dose level (½ teaspoon three times a day) **for at least three months**. Longer treatment is often necessary when lifestyle and dietary factors are not optimal, when concurrent conditions are not treated adequately, and when the immune system is slow to recover. **Most of my patients average four to six months of active treatment. A few have taken nystatin for twelve months or more.**

You will suspect that it's time to discontinue use when you can tolerate dietary infractions that used to set you back, and when it's been well over a month since you experienced any yeast-related symptoms. Nevertheless, you should not make this decision without the guidance of a health professional experienced in the treatment of yeast.

One additional point: I have seen nystatin work exceptionally well for some individuals and then, after several months of use, cause adverse symptoms such as abdominal pain and diarrhea. As with any medication, it is possible to develop a sensitivity or intolerance to nystatin. You would need to discontinue its use and replace it with a different antifungal agent.

Other Antifungal Agents

1. Caprylic acid. Many physicians, particularly naturopathic doctors, use caprylic acid products as the antifungal agent in a yeast-control program. Caprylic acid is a long-chain fatty acid naturally occurring in co-

conut. It is toxic to yeast and safe for humans when taken in prescribed dosage limits. It has the potential to trigger die-off, but generally less so than nystatin. **I often use it to prepare for nystatin therapy.** Sometimes I prescribe it along with nystatin, and sometimes it's the only antifungal I prescribe.

Most health food stores stock a variety of caprylic acid products. They come in 300- to 680-milligram capsules, sometimes less when combined with synergistic agents. I often recommend Mycopyry 680 by Neesby of Fresno, California. Start with one capsule once a day with a meal; increase the dose in three days to one capsule twice a day, then in three more days to one capsule three times a day. **Work up accordingly to a maximum adult dose of 1,300 to 2,000 milligrams three times a day with meals.** This means two to three capsules per dose.

If die-off does not seem to be a problem, you can accelerate more quickly to the full dose. But if it is an issue, go more slowly. You may need to stay at this dose up to sixteen weeks. In my experience, I have found that **approximately 20 to 30 percent of my Candida patients need no other antifungal agent besides caprylic acid.**

2. Herbal antifungal agents. Many herbs act as antifungal agents. I am familiar with several combination formulas and sometimes recommend them instead of caprylic acid or nystatin. In addition to countering yeast, they **also enhance immune function**; both actions are necessary for an effective yeast-control program. A.C. Formula (by Pure Encapsulations of Sudbury, Massachusetts) contains **barberry, grapefruit seed extract, undecylenic acid (from castor beans), lavender, tea tree oil, and red thyme.** I suggest one or two capsules twice daily with meals.

Phellostatin (a primarily Chinese herbal formula by Health Concerns of Alameda, California) contains **phellodendron, codonopsis, white atractylodes, anemarrhena, plantago, pulsatilla, capillaris, cnidium fruit, houttuynia dioscorea, licorice, and cardamom.** I suggest up to three tablets three times daily, best between meals.

Yeastplex (by Herb Technology/Khalsa Health Center of Seattle, Washington) contains **Chinese amur corktree bark, celandine, and citrus extract.** I suggest up to two to three capsules three times daily. Some health food stores and nutritionally oriented physicians carry some of these products. Or you can contact the companies directly.

Single antifungal herbal agents can also be added to the program, such as **pau d'arco/taheebo**, which is also immune enhancing (see Chapter Nineteen); **mathake tea** (terminalia catappa), a tropical almond from the South Pacific Islands available from Ecological Formulas/Cardiovascular Research of Concord, California; grape-

fruit seed or citrus seed extract, which has antibacterial and antiparasitic actions as well; or garlic.

GARLIC. This medicinal food contains two potent antifungal agents, allin (a precursor to allicin) and haeoni, the stronger of the two. Fresh raw garlic contains these active ingredients, as does garlic oil.

However, cooking or processing garlic into capsules, tablets, or liquid will usually cause a loss of the antifungal properties, unless the garlic is frozen cryogenically (freeze-dried) before being crushed. Aging the garlic before processing also appears to retain antifungal properties.

Use one to two garlic tablets with meals or work into your daily diet approximately three to four small cloves of garlic. Too much garlic, however, may injure red blood cells and produce some stomach discomfort. If garlic seems particularly helpful as part of your yeast-control program, and you are compelled to use more than recommended amounts for an extended period, consult your physician for a blood test to be sure the amount you use is safe. In addition to its antifungal properties, garlic enhances health in many other ways (see Chapter Nineteen).

BERBERINES. As another example of just how multifunctional herbs can be, consider berberine-containing herbs (barberry, goldenseal, or Oregon grape root). Berberine has effective antifungal properties and activates macrophages (immune system white cells). It has antibacterial activity as well, important for eradicating bacterial overgrowth in the small intestine, which some physicians believe commonly coexists with yeast overgrowth and causes consequences similar to those of the yeast mycelia.

Berberine inhibits the bacterial and yeast enzymes (decarboxylases) involved in the toxic amine production that contributes to leaky gut syndrome. In addition, this one single agent enhances all normal digestive secretions. Choosing herbal products with such a broad range of therapeutic activities will shorten active treatment time with pharmaceuticals and in some cases make them unnecessary.

3. Additional antifungal agents. Many practitioners promote the use of various other agents to kill or inhibit yeast overgrowth. These are protein-digesting enzymes, tanabilt, dioxychlor,¹⁸ food-grade hydrogen peroxide,¹⁹ intravenous hydrogen peroxide, and oral and intravenous ozone. I've spoken with individuals who have experienced "miracle" responses to some of these agents.

I've also spoken with people who have had poor responses. Question your health practitioner thoroughly about the efficacy and safety of any antifungal agent recommended. And, remember, the response depends on

accurate diagnosis and the recognition of other conditions that can influence the outcome of any therapy.

Agents That Counter Intestinal Imbalances

Lactobacillus Acidophilus and Bifidus. Friendly intestinal bacteria (lactobacilli) help discourage the growth of yeast. They serve as one of the primary components of the Candida-control program because of their ability to normalize the ecology of your intestines. Intestinal yeast overgrowth is one manifestation of intestinal dysbiosis (disordered intestinal microbial balance), and supplementing the diet with these favorable organisms is an important part of reversing this condition. I recommend a refrigerated lactobacillus acidophilus and bifidus supplement which most health food stores and some pharmacies carry in powder, liquid, and capsule form. For the powdered lactobacillus products, take initially ½ to 1 teaspoon two to three times a day, preferably thirty minutes before a meal or well between meals. After two or three months, use half that dose for maintenance. For capsules, initially take one capsule two times a day (once daily for maintenance). Lesser-strength and lower-quality products require higher doses. For milk-allergic individuals I recommend milk-free acidophilus/bifidus products.

In addition to oral use, acidophilus and bifidus can be used vaginally to treat and prevent vaginitis. Prepare as a douche (with 1 tablespoon unsweetened yogurt or 1 teaspoon acidophilus/bifidus powder dissolved in 1 quart of warm water), or inject the yogurt carefully into the vagina using an applicator or infant syringe. Or use acidophilus/bifidus capsules as vaginal suppositories. Some health practitioners recommend using acidophilus or bifidus powder in a retention enema. (See page 163 for a more detailed discussion of lactobacilli.)

SACCHAROMYCES BOULARDII Like lactobacilli, *Saccharomyces boulardii* produce lactic acid and inhibit the growth of yeast and unfavorable bacteria. I recommend it for cases where lactobacilli supplementation and antifungal agents do not seem helpful (particularly for diarrhea), and where antibiotic use has been a cofactor in yeast overgrowth. *Saccharomyces boulardii* is available in capsules. Use up to 500 milligrams three times daily. (See Chapter Eight for more details.)

FRUCTOOLIGOSACCHARIDES These are food-derived sugars that feed lactobacilli, encourage their repopulation, and assist the normalization of bowel function. They are not absorbed and therefore do not raise blood sugar levels. The product is inexpensive, and using up to 3,000 milligrams two or three times daily (1 teaspoon dissolved in a few ounces of water) may eventually lessen the need for more expensive lactobacilli supplementation. (See Chapter Eight for more details.)

A Program to Enhance Your Immune Function

Using antifungal agents without taking measures to improve and preserve your immune function may bring you only temporary relief from recurrent or chronic yeast-related illness. A comprehensive program to enhance and preserve immune function is often necessary to obtain lasting results. Such a program will include the following:

1. A whole-foods yeast-control diet as discussed earlier in this chapter and in Chapter Three.
2. Antifungal agents.
3. Medical/therapeutic agents that enhance immune function.
4. Personal and lifestyle adjustments.
5. Treatment of coexisting conditions to relieve the immune system of its burden.

Some individuals will require work in just one or two of these areas, but others will require work in all areas for the return of health and well-being.

Many substances can be drawn upon to help build and preserve immune function in yeast overgrowth sufferers: vitamins, minerals, trace elements, amino acids, essential fatty acids, herbs, mushrooms, chlorophyll products, homeopathic Candida drops, constitutional homeopathy, acupuncture, Candida vaccines, enzymes, staphage lysate, and some pharmaceutical drugs. You will find a discussion of specific immune-enhancing agents in Chapter Sixteen.

In my own practice, I generally start most patients on a high-potency yeast-free multiple vitamin/mineral supplement that contains many of the nutrients needed for immune function. Then, as needed, I add other agents specific for their needs. **Because vitamin A and the mineral zinc are so important in mucous membrane health and resistance and cellular immunity,** I may suggest additional amounts of these nutrients for resistant cases—up to 50 milligrams a day of zinc and up to 35,000 I.U. of vitamin A. **Taking 300 to 1,000 micrograms of biotin three times a day is recommended by many practitioners to inhibit mycelial formation of yeast (it also helps stabilize blood sugar levels).**

Alpha-linolenic acid found in flaxseed oil and gamma-linolenic acid found in primrose, borage, and black currant oils are essential fatty acids that promote the production of immune-stimulating prostaglandin hormones (see Chapter Three). Such hormones also act as anti-inflammatory agents and help reestablish normal metabolic conditions. **Free-form amino acid supplements** can provide immune system support and a quite valuable form of easily assimilated protein for individuals who have lost weight, are in weakened states, and/or do

not digest and absorb food very well. And if I do not start out a patient on one of the immune-enhancing antifungal combination herbal formulas, I will eventually suggest one.

In order to know what any one individual requires and therefore to optimize this most essential aspect of the treatment program, I need to evaluate each individual for signs and symptoms of nutrient and immune deficiencies, coexisting conditions, personal predilection and/or belief in a particular treatment choice, response to each stage of treatment, and so on. With such a wide choice of treatments available, it is indispensable to work with a health professional experienced in these mostly natural, nontoxic, immune-enhancing therapies. Optimally, such a practitioner will suggest a combination of multifunctional agents that on one hand will do the job effectively while, on the other hand, minimize the number of supplements needed, and thus keep costs down.

Personal and Lifestyle Changes

A large percentage of my patients do not require extensive use of immune-enhancing agents because of the emphasis I place on a whole-foods diet and habits of living that strengthen the body's resistance. Getting a handle on stress and learning a skilled relaxation exercise can increase immune factors that will help you overcome yeast overgrowth.

Much of my time with patients involves counseling to help them stop putting such a drain on immune strength. In this age of fast living, financial pressures, and social instability, I must always remind my patients about nature's laws, and those who abide by them seem to require much less specific immune-enhancing agents and, in fact, can bring the yeast treatment to a successful conclusion much sooner than those who do not. You will find further comments on personal balance and nature's laws in Chapter Sixteen.

More Pharmaceutical Intervention

If you are following treatment guidelines relatively well, yet are not making expected improvements, and if your history and symptoms and test results are too suggestive of yeast overgrowth for you to abandon treatment, you and your physician might consider the following:

1. Nizoral (ketoconazole), one tablet a day with a meal. **Nizoral is absorbed systemically** and attacks yeasts that have burrowed too far into the mucosa for nystatin to reach. Your physician should know that if you have a deficiency of stomach acid, **you may need to**

take supplemental hydrochloric acid in order to absorb Nizoral. If you do not respond to this drug, it may mean that there is hydrochloric acid insufficiency and not drug resistance.

Your doctor should avoid Nizoral if you have or have had a past history of hepatitis or other significant liver disease. Periodic liver enzyme monitoring is essential if you will be on this medication more than a month. I avoid this medication if another potentially liver-toxic drug is being used. Your doctor and pharmacist should know that Nizoral can interact dangerously with several common medications (erythromycins, Seldane, Hismanol, Propulsid, and probably Claritin); so avoid such combinations.

2. Diflucan (fluconazole) has been heralded recently as another potent systemic-acting antifungal that is effective in reaching burrowed yeast. It has less potential for toxicity than Nizoral. However, like Nizoral, the chances for a toxic liver reaction increase if other potentially toxic drugs are being used. It should not be taken in combination with Seldane, Hismanol, erythromycins, Propulsid, and probably Claritin. Close physician monitoring is essential. Take a 100-milligram tablet once a day if you are an adult under 125 pounds, or a 200-milligram tablet if you are over 125 pounds. Continue this medication for up to four weeks or more to treat recalcitrant Candida infections.

Diflucan therapy is costly, so consult your physician about tapering the dose later on to perhaps every third or fourth day while using other antifungal agents the days in between.

TREATMENT OF CONCURRENT CONDITIONS

In treating yeast overgrowth, you should investigate for coexisting conditions: intestinal parasites (especially *Giardia*), food allergy, leaky gut syndrome, inhalant mold allergy, hypochlorhydria, pancreatic enzyme deficiency, helicobacter pylori, hypothyroidism, adrenal exhaustion (or overactivity), other endocrinopathies, chronic viral infections/chronic fatigue syndrome, chemical injury or hypersensitivity, heavy metal poisoning (especially mercury toxicity from silver mercury amalgam dental fillings), bacterial overgrowth syndrome, and hormone hypersensitivity (particularly to progesterone).

Identifying and treating these conditions will be necessary for you to reach your full health potential. See the respective chapters and index entries for a discussion on these other conditions.

You may also need to determine if your regular sexual partner has a yeast overgrowth condition and is re-infecting you. Although I have found this phenomenon to be extremely rare in my practice, recognition and

treatment of this condition may be necessary to prevent unexplainable recurrences. If you are still symptomatic after what seems like sufficient Candida treatment and have ruled out concurrent conditions (particularly if you are still very sensitive to dietary yeasts and molds), you should be tested for Candida allergy. You may not need more antifungal agents, but rather Candida allergy shots, a candida vaccine.

POSTTREATMENT GUIDELINES

When you are able to discontinue nystatin (or whatever antifungal agents you've been using), remember the factors that led to the yeast overgrowth in the first place and take care not to repeat any previous patterns that would invite a recurrence. I've seen too many of my patients who started feeling cocky at the height of their recoveries and reverted to their old habits—too much sugar, alcohol, and fast foods; overwork; insufficient rest and relaxation; excess stress. Within three to four months they usually developed a far more serious Candida condition than before.

After your recovery, please continue to care for yourself and your immune system. There may be occasions beyond your control—when you must use antibiotics, for instance—but even then you will be able to avoid a yeast recurrence by proper diet and by taking one nystatin tablet (or 1/8 teaspoon of the powder) with each antibiotic dose. Tell your doctor how susceptible to yeast overgrowth you are and request a prescription for as many nystatin tablets as antibiotics. You can substitute antifungal herbs or one to two caprylic acid capsules for nystatin. Use an antifungal agent for at least two weeks more than the antibiotic. Acidophilus/bifidus is also strongly encouraged during your weeks of antibiotic use and for at least three weeks after the course is completed.

The use of oral cortisone (or any immunosuppressive drugs), or an extended course of an anti-inflammatory agent, can also cause a yeast recurrence, and these preventive measures are advisable here as well.

If, because of pressures or holiday festivities, you find yourself bingeing on sweets or eating them regularly again, it's best to compensate with antiyeast measures.

If you become pregnant, be sure to eat and live as healthfully as you can, and take acidophilus/bifidus and/or unsweetened yogurt. Miso, yogurt (if tolerated), and other foods with friendly bacteria are encouraged in all these circumstances.

You and your physician should be able to work out a long-term posttreatment guideline program. Follow the laws of nature as best you can, compensate with the antifungal agents and acidophilus when necessary, and

consider some immune-enhancing agents. Being immediately attentive to the recurrence of yeast-related symptoms will shorten subsequent re-treatment programs.

CURING YEAST OVERGROWTH— A WHOLE PERSON APPROACH

Any discussion of yeast overgrowth and its treatment provides an exemplary model of whole-person health care. Like many complex conditions, yeast overgrowth juxtaposes the areas of nutrition, immune competence, intestinal ecology, bowel and liver function, pharmaceutical agents, botanical and other complementary agents, environmental and lifestyle factors, stress control, and personal balance. Such a comprehensive approach is often the only way to return you to good health and to help you maintain it.

SUGGESTED READING

- Burton, Gail. *Candida Control Cookbook*. New York: NAL, 1989.
- Crook, William G., M.D. *Chronic Fatigue Syndrome and the Yeast Connection*. Jackson, TN: Professional Books, 1992, and *The Yeast Connection and the Woman*, Jackson, TN: Professional Books, 1995.
- Crook, William G., M.D., and Crook, Cynthia P. (illustrator). *The Yeast Connection: A Medical Breakthrough*. Jackson, TN: Professional Books, 1986.
- Crook, William G., M.D., and Jones, Marjorie, R.N. *The Yeast Connection Cookbook*. Jackson, TN: Professional Books, 1989.
- DeScheppar, Luc, M.D. *Candida, Its Symptoms, Cause,*

and Cure. Available from 2901 Wilshire Blvd., Suite 435, Santa Monica, CA 90403, 1987.

- Nolan, Donna. *Ending Fatigue and Depression*. Redmond, WA: McCormick and Co., 1987.
- Remington, Dennis, M.D., and Higa, Barbara. *Back to Health: A Comprehensive Medical and Nutritional Yeast Control Program*. Provo, UT: Vitality House International, 1986.
- Rockwell, Sally. *Coping with Candida*. Available from P.O. Box 15181, Seattle, WA 98115, 1984.
- Trowbridge, John Parks, M.D., and Walker, Morton. *The Yeast Syndrome*. New York: Bantam, 1986.
- Truss, C. Orian, M.D. *The Missing Diagnosis*. Birmingham, AL: C.O. Truss, 1985 (available from P.O. Box 26508, Birmingham, AL 35226).

RESOURCES

- Candida Research and Information Foundation, P.O. Box 2719, Castro Valley, CA 94546, (510) 582-2179 (provides referrals, a newsletter, books, meetings, and much practical information)
- Echo, Box 126, Delano, MN 55328 (promotes the use of food-grade hydrogen peroxide)
- Institute for Child Behavior Research, 4182 Adams Ave., San Diego, CA 92116, (619) 281-7165 (primary interest in nutritional, environmental, and toxicologic causes and treatment for autism and other mental illnesses; Candida is one link)
- International Health Foundation, P.O. Box 3494, Jackson, TN 38303 (provides referrals, educational seminars, a newsletter, and literature documentation on yeast overgrowth)
- Price Pottenger Foundation, 5871 El Cajon Blvd., San Diego, CA 92115, (619) 582-4168 (provides referrals, books, and much nutritional and health education)

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OPTIMAL WELLNESS

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