
Notes on The Yeast Problem

Essays and a yeast free diet

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Introduction

This booklet combines two essays about the yeast problem and a detailed yeast-free diet. The first essay "The Yeast Problem", presents an overview of the candidiasis syndromes as briefly as I could describe such a complex subject. The yeast-free diet is written to help liberate yeast sensitive patients from slavery to a list of "do's" and "don'ts" by offering a rationale for the various levels of strictness of yeast and mold avoidance.

The essay "What Every Budding Yeast Should Know About Humans", is based on a banquet speech I gave at the Yeast-Human Interaction Symposium in Birmingham in 1983. It touches lightly on some heavy issues about human beings that have come to mind as I have struggled with questions about what is really going on in the relationship between people and their yeasts.

Illness is a signal to change. In the midst of discomfort and uncertainty some individuals are able to make changes in their diet, or in their interests or occupation, or in their relationship with themselves or with other people, or in their spiritual awareness and then overcome illness to which others succumb. Change requires courage and information. I hope that the information in this booklet will help some of you find the way to changes you may need to make to get well.

Acknowledgments

My thanks go first of all to Orian Truss whose genius permitted the recognition of an epidemic that was unnoticed by a profession that often confuses discovery with heresy. I am grateful for his friendship and the example he sets for all of us in the way he treats his patients, his colleagues, and his ideas.

Erik Esselstyn, Leo Galland and Bob McLellan have contributed many of the facts and notions found in these essays. Thanks to my daughter Jennifer for her illustrations, to Sandra Kopell for the cover, to Natalia Sobko for help with editing and to Ann Cavanaugh and Bob Przymierski for design and shepherding of this booklet to completion.



THE YEAST PROBLEM



The Missing Diagnosis

Anne believed she had been attacked by a disease. The itchy, thick, scaly, red, ugly patches of skin broke out on her arms and legs after she was in the hospital for the treatment of an infection. She continued to have horrible looking skin for the next three years. Various doctors did not hesitate to name her problem: psoriasis. Nor did they speak of a cure. None of the treatments really worked and some that were suggested were dangerous. It seemed to her that she was stuck with it. A tall and beautiful ten-year old, she may have wondered if this disease was a punishment. Before her illness she had been praised for her perfect skin. Fairy tales sometimes tell us that beauty can be risky. Even at the very rational age of ten she wondered if the reasons this awful flaw had descended on her had something to do with the world beyond reason that is frequented by witches and fairies and younger children.

It seemed reasonable to her when I suggested that the problem might have to do with balance. If you are visited by a disease there may be reasons that cannot be undone. It's easier to think of restoring balance. I told her that we could check for her balance as regards the stuff (vitamins and minerals) people need to get from their outside world (food) and that we might ask her to change her diet to find something in her food that didn't agree with her. That sounded okay to her. Her enthusiasm increased when her rash improved noticeably after she was given supplements of vitamins and minerals to correct deficiencies revealed by blood tests. She was asked to avoid foods containing yeasts and took a medicine to reduce the number of yeasts that lived in her intestine. Her rash cleared by 90 percent - enough so that she felt in control of it. She knew how to improve the results if it was worth the hassle of more medicine or a stricter diet. After all, no one is perfect - although ten-year olds sometime come close.

Anne took this all pretty much in stride, but Nancy Miller, nurse-clinician who shared in Anne's care, and I were astonished. It was our first experience treating a person with psoriasis in this way. Nancy noted from the history she had taken that the psoriasis had begun following treatment with antibiotics. She favored following this evidence by pursuing the "yeast idea" that is raised by the association of Anne's problem with antibiotics. Yeast infections tend to come after antibiotics have killed the germs with which our yeasts compete for space on and in our bodies. Our experience with yeast allergy made us open to the idea of its association with almost any symptom, but it seemed far-fetched that so specific and mysterious an illness as psoriasis would have to do with yeast. I was more willing to believe that a "non-specific" stressfulness of Anne's previous infection and hospitalization had to do with the onset of her disease. I followed Nancy's more open-minded suggestion and went along with the idea of a yeast-restricted diet fol-

lowed by a prescription for nystatin to reduce the number of yeasts in Anne's intestine. Since that time we have had similar success in treating several patients with psoriasis in the same fashion.

Our experience with yeast's connection to many other diseases influenced the way we thought about the connection between yeast and psoriasis - that is, we kept an open mind. Depression; eczema; inability to concentrate; inflammatory bowel disease; multiple allergies to foods, inhalants, and chemicals; and a wide variety of other health problems are related to the so-called yeast problem. So it doesn't have to do only with the skin. Often it is the most important among the various causative factors behind such illnesses.

I had heard about the yeast problem from Dr. C. Orian Truss of Birmingham, Alabama. His description of cases treated over more than a decade convinced me to look carefully at patients with illnesses - of whatever kind - that respond to reduction of contact between the patient and yeast. Dr. Truss's book *The Missing Diagnosis* (P.O. Box 26508, Birmingham, Alabama 35226, 1983) is a comprehensive guide to a subject of which this article is a brief summary.

Getting a Rise From Yeast

The bread you just ate was full of a fungus that died as the bread baked. When alive in the dough, the fungus's cells made all the tiny bubbles that give rise to the loaf of bread. Without the yeast the loaf would shrink and harden in the oven. Without the yeast the bread would lack its special flavor and would lose nutritional value.

Yeast itself is nutritious: it manufactures (and smells like) many of the B vitamins, as well as other essential nutrients. A whiff of yeast takes me right back to a point in my childhood when my mother took yeast as a source of vitamins. At the time, yeast joined cod liver oil as something I planned to refuse once being a grown-up gave me that privilege.

The small amounts of yeast that give bread its good yeasty taste are not enough to add much directly to the nutritional value of the bread. Instead, yeast's contribution comes from its ability to release minerals present in the wheat. Zinc, for example, is easier for our intestines to assimilate if the wheat is "treated" with yeast. (Heat, moisture, and sprouting also aid in increasing the available mineral content of grains.)

The discovery of the use of yeast for baking must have waited for the beginning of wheat cultivation 7,000 - 11,000 years ago. Wheat (and rye wheat) is the only grain whose moist flour is sticky enough (from its gluten content) to permit bubbles to form. The other grains: barley, oats, rice, corn, millet, and triticale, cannot be used for making dough, but they can be used for making beer.

Getting High From Yeast

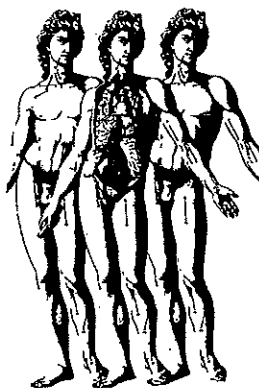
Wine and beer were known before recorded history and surely were discovered before people started farming. All that was needed was a pot with a tight lid. Inside, deprived of oxygen, yeasts would convert sugars of whatever fruit, grain, or honey (to make mead) to alcohol, as well as to carbon dioxide (bubbles) and water. The yeasts that do this chemical work are found on the surfaces of plants.

The earliest brewers did not have to have a yeast starter - every fruit, vegetable, or grain provides one on its healthy surface. Yeasts grow there as part of the normal surface population of microscopic beings that inhabit plant and animals. This "microflora" covers the surfaces of all living things, and contributes in various ways to the health of its host. Polishing a fresh picked apple removes some of the coating of yeasts that inhabit its healthy surface. These friendly fungi help protect the apple from other germs that make apples moldy.

Surface yeasts can be used to make an alcoholic beverage from any sweet plant, but breweries and wineries prefer to kill off the natural yeasts and replace them with a more reliable strain (originally from the surface of fruit), that gives a consistent taste and alcohol content. Yeasts (from the surfaces of plants) are also found floating in the air along with other mold spores. With a little luck, such an airborne yeast may be used for brewing or baking. San Francisco sourdough bread is made with a "wild" yeast that can be recovered from the air of the Bay area. Whether gotten wild or kept in a dough as a yeast starter, this yeast is just as yeasty as any leavened bread and cannot be used as a substitute by people who are allergic to yeast.

The Drunken Liar

On several occasions a man went to doctors complaining of neurologic symptoms: inability to concentrate and lapses of appropriate behavior. The diagnosis was elusive until a blood alcohol level was checked and found to be elevated. (Normal equals 0.) He emphatically denied consuming any alcoholic beverage and he, like many alcoholics, was thought to be a liar. Further investigation showed that he was absorbing alcohol produced by yeasts in his own intestinal tract. These yeasts were rewarding their host for his hospitality by consuming sugars from his diet and converting them to alcohol - as in a closed jar - instead of simply burning the sugars completely to carbon dioxide and water. A special mutant yeast and special circumstances in the intestinal anatomy of the victim of such a "disease" make this problem quite rare. There are, however, different versions of the problem in which the yeast uses other means to cause chemical confusion in its host. Close cousins of the surface yeasts of plants grow on most surfaces of our bodies, and imbalances in their number or activities of various kinds can provoke illness. The intestinal production of alcohol is, at present, only a fairly exotic, but telling, example of the toxic potential of this usually friendly germ.



Surfaces - In and Out

Look at yourself. If you stand naked before a mirror, you can see somewhere between 1 and 2 square meters (or yards) of surface skin. It seems at first that this is the major interface between ourselves and our environment. Like an apple, our skin is inhabited by a microflora of friendly germs, and yeasts are the ones that normally inhabit more of the different body surfaces than any other germ. Keep in mind that from the viewpoint of a germ the difference between armpits, scalps, and chests are as great as those between swamps, forests, and deserts; and it is striking that yeast germs colonize such diverse domains of our bodies. This pattern follows a similar flexibility shown by yeasts throughout nature.

Varied and expansive as our skin surfaces may be, they are dwarfed by our inner terrain. Our digestive tract is a series of folds, wrinkles, ridges, and finger-like projections whose collective surface area is roughly that of a tennis court. Unlike the lungs, another equally huge inner surface, the intestinal tract is normally inhabited by germs through most of its extent; and one of the most common, if not most numerous, is the yeast. The yeasts are among the first to climb aboard after we are born germ free, and they like any "good parasite" are a friend for life. The good they do us is not known, but it is reasonable to think that they may help protect us just as other yeasts do for the many other living things they inhabit.

Until recently harm done by yeasts has been thought of in terms of occasional invasion into parts of the body - blood, brain, deep tissues - or of common irritations of the skin, mouth (thrush) or vagina. I used to think that yeast infections only had to do with too many yeasts in places where they are normally found in small numbers, or with the spread of even a few yeasts into areas that are supposed to harbor no germs. Truss's descriptions, my own observations of hundreds of patients, and the reports of other physicians now make it clear that more complicated kinds of imbalance between people and their bodies' population of yeasts can be a major factor in serious and mysterious illness.

How Could It Be?

How could it be that illnesses of all sorts could be connected to our relationship to a kind of germ that normally lives on more of our inner and outer surfaces than any other? One that is also part of the normal surface flora of all living things? One that we have used since the discovery of brewing and baking to produce a major part of our daily food supply? One that provides valuable nutrients when consumed in its pure form?

I think that it could be due to two changes in the diet of modern humans. One is the lack of a proper balance of essential fats, vitamins, minerals, and amino acids, weakening the human side of the yeast-person interaction. The other is the introduction of antibiotics by prescription and in our food supply, which favors the growth of yeasts within us. The nutritional factor in the yeast problem is complicated by the tendency of yeasts to interfere with our metabolism in ways that make normal amounts of nutrients ineffective in supporting their various functions. A person may, then, start out being slightly susceptible to an overgrowth of yeast because of a subtle imbalance brought about by sub-optimal diet. Taking an antibiotic for treatment of an infection then tips the balance far in the direction of favoring the growth of yeasts in the intestine. The yeasts produce chemicals that enter the person's system and interfere with his or her chemistry in ways that produce further nutritional imbalances. Once begun, the cycle is self-perpetuating, and it tends to produce clues that can help its victim recognize the situation. These are:

- an increasing fondness for yeasty foods such as bread, wine, vinegar, beer, fruit juices, cheeses, and other aged or fermented items.
- a recognized intolerance to some yeasty foods, such as wine.
- a tendency to retain water so as to produce a feeling of puffiness, bloating, or swelling of the face, hands, feet, or lower abdomen.
- recurring fungus infections of the nails, skin, or vagina.
- increased sensitivity to a variety of chemicals such as diesel exhaust, cigarette smoke, perfumes, and, especially, moldy odors.
- symptoms affecting different parts of the body in ways that cross the boundaries between medical specialties and frustrate attempts to find a unifying view of things. Rectal itch, impaired concentration, and nasal stuffiness, for example, would be greeted by the respective specialists as unrelated.

- a history of antibiotics used for treating a regular infection such as strep or for long-term use as in the treatment of acne. (Remember that we all consume some antibiotics in meat, dairy, poultry, and some fish products.)
- a history of pregnancy or the use of hormones such as birth control pills, which, like pregnancy, tends to encourage yeast infections.



Animal, Vegetable, or Mineral?

So far I have described yeast in only a few ways: it lives on the surfaces of all living things, it leavens bread, brews wine and beer, it can overpopulate surfaces of our body, and release chemicals that injure us in complex ways. A little more needs to be said about what yeast is in order to make sense out of the details of diagnosis and treatment.

Yeast is a kind of fungus. Mildew, mold, mushrooms, monilia, candida, are all names that describe distant relatives (mushrooms) or the very yeasts that inhabit one's body (monilia, candida). These names describe a kind of living thing that is neither animal nor vegetable.

As a child on long car trips, I joined in games my family used to pass the hours. A cat seen in a window scored 20 points in a game that depended on both rural (cows = 1 point each) and urban (cat/window = 20) travel in the days of smaller roads. Twenty questions was another favorite. As you probably know, this game taught logic and depended on a binary system governed by yes or no answers to the twenty questions that led the family to figure out whatever someone else had selected for "guess what I am thinking of." Only the first question, "Animal, Vegetable, or Mineral?" - asked by whoever went first - was allowed to depart from the yes or no logic of the game. The question assumed that even children could understand the distinction between these categories in which mineral meant inert, and animal or vegetable meant different types of living or-once living things. The difference was never much of a problem even for skeptical seven-year-olds. The windshield was mineral more definitely than it gave a consistent yes or no to the "is it in this car?" question. The animal versus vegetable question was more clear-cut in the days before most synthetics. Fabrics were vegetable, leathers were animal, and nylon mineral. It was easier to decide whether the windshield was animal, vegetable, or mineral than whether it was inside or outside the car and this seemed to be a reasonable partitioning of all the possibilities.

Mushrooms would be vegetable - without a doubt, as any grocer would classify them. Like yeasts and other molds (of which mushrooms are but an above ground delegate of a large organization of subsurface filaments) mushrooms don't walk around or behave in any but a vegetable-like way. If anything, their reputation puts mushrooms at the far end of the vegetable spectrum. They are so mute.

On the other hand mushrooms and their relatives, the yeasts, have some very animal-like behavior when it comes down to chemistry. Plants live from the sun and soil, and animals need to consume other beings to survive. So do molds, mildews, mushrooms and yeasts. It is a big difference. Burning fuel (sugars, fats) with oxygen to produce a "smoke" of carbon dioxide (bubbles) and water is yeast's obvious activity, and in that sense yeast is very un-plantlike. So it is nei-

ther animal nor vegetable. The question is resolved scientifically by making a separate category for fungi.

I know yeasts as seen through the microscope. They look as docile and simple as vegetables. The more I get to know the aggressive side of their chemistry, the more I think of them as animals. The more I get to know the complex way they interact with our bodies, the less I think of them as strangers, and the more I think of them as part of us. It is especially important, in that sense, to view the yeast problem as a state of inner imbalance rather than an attack from the outside by a microbe or a disease.

Tippling The Balance

The quickest way to get some sort of a yeast problem is to take a lot of antibiotics. Within days after doing so, many people may experience symptoms related to a change in the flora of the intestine, mouth, or vagina. The antibiotic kills off many of the good germs (bacteria) that are the neighbors of yeasts throughout the body. Under normal circumstances there may be so few yeasts on most of the body's surfaces that they cannot be recovered by taking a culture. After 48 hours of tetracycline they can be cultured easily from everyone. The prevalence of the yeast problem may be mostly due to the widespread use of antibiotics prescribed for infections or acne. I suspect, however, that antibiotics in our poultry, eggs, milk, and meat contribute to the problem by tending to shift the germ population in many people in favor of the yeasts. Consumption of such foods may contribute to the origins of the problem in a given person, but avoiding meat, dairy, and poultry products doesn't seem to be essential to restoring balance.

Our Pentagon and State Departments



One kind of harm done to our body's defense system by an imbalance of yeast has to do with the way our immune system works. To speak of our immune system as if it were a well-defined part of the body gives a false idea of separateness of the different activities within us. The basic function - recognition of what belongs in us and what does not - depends on knowing where our boundaries are and how to recognize friendly outsiders such as food and the germs that normally inhabit the body. It further involves the destruction or elimination of foes, such as toxic chemicals and germs that do harm by making toxic chemicals within us. The rules for recognizing what is friendly, or self, and what is harmful or non-self, are provided by a group of cells in the body known as T lymphocytes. I think of these as the smarT cells or the staTe department of the body. They are presented with information about molecules found throughout the body by another group of gatekeeper cells - the macrophages. The T cells have representatives everywhere - especially near the openings and surfaces of the body - and each representative can send word to the others within minutes of discovering a known enemy.

The decision to make war or peace with outside molecules is passed on to another set of cells, the B cells, that make antibodies that cling to the invaders and help destroy them. This defense department is dumb in the sense that it re-

lies on getting the signal from the T cells, and sometimes fails to show much judgment on its own. Situations can arise in the body in which injury to T cells leaves the B cells unsupervised. Under such circumstances the B cells may mount a defense against friendly molecules, according to the rule: "if you don't hear from headquarters - make war." The wreckage from such ill-begotten wars result in symptoms that may affect any part of the body. Disease names - often just a translation into Greek of "Inflammation of the . . ." (colitis, arthritis, dermatitis, vasculitis) may describe this war in ways that make us think no common mechanism is involved.

T cells seem to have a particular relationship with yeasts. Proper functioning of T cells has to do with keeping yeasts in their proper place and number. It is as if the "state department" has a special force available to deal more or less directly with yeasts without needing as much intervention from the "military" (B cells) as is the case with most germs. Yeasts, on the other hand, appear to have a special ability to attack the T cells, to the point where the B cells notice the lack of supervision. So they make war against your breakfast, your lunch, your dinner, and even your own tissues. This is another way of saying that allergy to a wide variety of substances, including foods, environmental chemicals, and parts of one's own body has a basis in this imbalance between the function of B cells and T cells. Certain viruses such as "mōno," exposures to toxic chemicals and radiation, and other stresses have an impact on T cells similar to the one that seems to come from an imbalance of yeasts. T cell injury from such stresses may require months for recovery, and in the meantime the body is waging war on a variety of relatively harmless (molds, pollens, and dust) or even helpful (foods and one's own tissues) targets.

Sabotage

Another way that yeasts may do us harm is through the manufacture and release of chemicals that interfere with those made by our own bodies. Some of these chemicals are just plain poisonous - able, for example, to provoke seizures. Yeasts also make hormones that are look-alikes for human hormones. They may, then, carry a false message to a particular tissue in the body, or they may simply go and sit on the receiver of the message and prevent the true hormone produced by the body from having its desired effect. Like a dog in the manger, the yeast's look-alike hormone doesn't want to be there but keeps the true occupant out.

The combined effects of different hormones, poisons, and T cell confusion brought about through an imbalance of yeasts produces an infinite variety of symptoms in different people. The diagnosis of the "yeast problem" cannot be made definitely from any pattern of signs and symptoms, but only from a trial of therapy. A trial of therapy is of so little risk that it should be considered in any chronic illness, even if no "yeast clues" are present. Better tests to spot people with a yeast problem will become available, but I doubt that we will soon have a way of saying "no" to the question, "do you think that there is any chance that treating me as if I have a yeast problem would be of benefit?" Many people would jump at a 1 in 100 chance, if it meant solving an otherwise baffling serious chronic problem.

A Trial of Therapy

One of the toughest aspects of this whole business is the misunderstanding generated by needing to try something in order to know if it will work. Actually, every treatment is like this, but usually diagnosis means naming a problem with the expectation that a particular treatment is likely to work. Blood tests are often done despite very low odds that anything will turn out. Much less often do doctors

prescribe a treatment when the odds of success are very low. Many drug treatments carry substantial risk, so that the risk/benefit ratio is too top-heavy.

Besides, doctors don't like to appear dumb - if that is the impression given by trying a lot of things that may not work. I'm getting used to it though. Most patients understand that detective work may require following a few false leads, and are willing to undergo a trial of therapy for the yeast problem considering that the trial of therapy is of so little risk.

The first step in doing yeast detective work is a trial of avoidance of yeast in one's diet. Such avoidance is practiced annually by Jews in commemoration of the Exodus from Egypt when, according to tradition, the leaven was inadvertently left behind. It may be that an annual renewal of one's yeast starter has hygienic value as well. Over a period of time mutants may appear that would give a batch of yeast starter an off taste or undesirable chemical content. The medical reasons for a brief yeast-free diet is to find out if symptoms disappear with avoidance and reappear following "challenge" with yeast.

Bakers' and brewers' yeasts are cousins of the candida yeast that lives inside us. People with a yeast problem are often allergic to them also, and will show a clearing of symptoms after only five days off yeast foods. On the sixth day yeast may be reintroduced gently or as a "pig-out" on bread, vinegar, beer, cheese, juices, etc. If symptoms are provoked, there is at least reason to go on to the next step which might be a repeat five-day food yeast avoidance if there was doubt about the first one. The next step is nystatin. This drug is an antibiotic: a chemical made by one kind of germ, usually a mold, that kills other germs, usually bacteria (such as strep, staph, tuberculosis, etc.). Nystatin is an antibiotic that kills yeasts - and only yeasts. It doesn't dissolve in water, and even when large amounts are swallowed only small traces get into the blood stream. For that reason, it has just about no toxicity, such as one associates with almost any drug that enters the body.

I recommend the pure powdered form of nystatin, because the brownish coating on the tablets contains dyes and other substances that can sometimes cause unpleasant symptoms and confusion.

Herxheimer

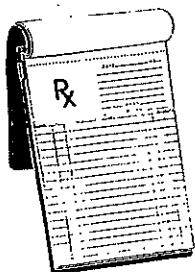
This name is attached to the backlash experienced when a large number of germs are killed off during the treatment of an infection. "Herxheimer reaction" is used to describe the sometimes very uncomfortable stage that people have to endure during the first days of treating their yeasts with nystatin. Nystatin kills yeast cells quite brutally, and they suddenly release in their host substances that produce a temporary toxic or allergic-like reaction. This reaction is not an allergy to the nystatin itself, because it clears up as the nystatin is continued. Some patients have so much discomfort, such as aching, bloating, headache, stuffiness or worsening of the problem for which they are being treated, that they have to discontinue treatment and choose among other options for managing the yeast problem.

Other Options

The other choices involve the risks associated with taking any "real medicine" that gets into your blood stream and can cause a problem in a susceptible person. One choice is to cover the symptoms of the Herxheimer reaction with a cortisone-like drug for a very short course. A serious case of poison ivy might be safely treated that way as cortisone tends to quiet inflammation whatever its

cause. Under such circumstances the risk of a few days of adrenal steroid hormone (cortisone) drugs appears not to have a top-heavy risk/benefit ratio. Still, some people do have a bad reaction to short-term cortisone, and it isn't good for the immune system, so I would use it to cover a Herxheimer reaction only when the stakes seem quite high. The other choice to be considered for a person in whom taking nystatin causes an intolerable Herxheimer reaction is to use a drug called ketoconazole. This is an "antibiotic" made not by molds, but by human chemists. It kills yeasts more gently, and seems to be associated with less severe Herxheimer reactions. However, it gets into your blood stream and can damage the liver in ways that usually show up on a blood test. This can be taken as a warning to discontinue the drug to permit healing of the injury, but there is still reason to weigh the odds and the stakes before proceeding. It is the most effective drug for a variety of fungal infections such as non-yeast jock itch, athlete's foot, and ringworm, as well as non-intestinal yeast infections. Its frequent safe use for such infections is reassuring when it comes to weighing the use of ketoconazole for treating a yeast problem in someone who has had a bad Herxheimer reaction to nystatin.

Recovering A Good Relationship With Yeast



Truly yeast-free diets or people are both impossible to come by. Yeasts and other molds are ubiquitous on the surfaces of fruits, vegetables, and grains, and they can only be avoided completely by eating only fresh dairy, meat, fish, and peeled fresh fruits and vegetables. So from a practical standpoint, the complete avoidance of yeasts and molds in one's diet is really not feasible. By the same token, eliminating yeasts totally from one's body is neither feasible nor desirable considering that yeasts probably benefit the body when a proper balance exists. Treatment of the yeast problem seeks not the eradication of yeast from the diet or the person, but rather a new relationship between the person and the yeast. Injections of yeast and mold vaccines seem to help reduce symptoms or silently help T cells recover a better interaction with our yeast flora, as well as the yeasts in our diet. Somewhere between an immunization and an allergy shot, a yeast vaccine may improve recovery in many people. How it works and how often this is due to placebo effect is not known. (The mind is very influential in T cell function.) Mold extract therapy has been one of the main weapons in the field of allergy for two or three generations. The yeast vaccine variation of mold treatment is so mixed up with other approaches that its usefulness is easy to observe, but difficult to prove. Even the better established mold extract treatment for airborne mold allergy has never been totally proven by long-term double-blind, placebo controlled experiments.

Time

Martha had been my patient for 10 years. At 33 she was the picture of health, and I had never seen her sick. Checkups and answers to questions had been all

that I had provided other than congratulations for the good care she took of her body with hard work, dance, good foods, and good coping. Then it all came apart. Irregular periods, abdominal pain, bloating, and fatigue led to the discovery of an ovarian cyst. When it resolved the other symptoms remained. They did not fit any particular pattern, and so it was hard to give a disease name to it, especially after the cyst had gone away. I followed the dictum "when confused take more history and listen very carefully." It turned out that her illness had been preceded by a dental problem for which she had taken a few days of antibiotics.

Six days of a yeast-free diet and challenge (pig-out) and she and I were convinced that we were on the right track. She took nystatin for weeks, gradually added yeast foods to her yeast/mold-free diet, never needed a treatment vaccine and was all better in the time it takes to heal a broken arm.

Other patients seem to need to continue treatment for years - that is, they are restored to health with some combination of diet, nystatin, and vaccine, but can't quit all of it. This raises the question of finding other factors that will help strengthen the immune system or restore balance in other areas.

Summary

An epidemic of illness visits our culture wearing the masks of many diseases and costumed in the symptoms of bad days and uncomfortable nights. This epidemic is related to the widespread use of antibiotics prescribed to treat infections, and used to feed cattle and poultry that we consume as meat, milk, and eggs. This combines with other factors to create an imbalance between our bodies and the normal population of yeast germs that occupy us through life - living on nearly all of our non-sterile surfaces, both inner and outer. The daily consumption of foods rich in other kinds of yeasts and molds and the inhalation of moldy air compounds a problem for which reducing intestinal yeast populations offers an answer. The following measures are useful steps to recovery: 1) avoidance of foods rich in yeasts and molds; 2) prolonged treatment with an antibiotic that only kills intestinal yeasts and is almost completely excluded from the blood; 3) vaccine injections; and 4) the reestablishment of balance in the general nutritional state of the individual.

Epilogue

I described Eddie in the previous newsletter centerfold article. He was sick in complex and painful ways that yielded only to a combined application of treating Vitamin A deficiency and avoiding foods and chemicals to which he was sensitive. Huge canker sores continued to plague him infrequently and mysteriously. His complicated problem seemed multifactorial enough without adding yet another unsuccessful trial to the many blind trials we had undertaken in our search so far. But it is hard to come up with enough reasons not to try nystatin in such a case. So we did. And it worked.

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Yeast Free Diet

YEAST-FREE DIET

The purpose of a yeast-free diet is two-fold. One is diagnostic and the other is for treatment. The diagnostic use of a yeast-free diet helps people discover whether or not they are sensitive to yeasts. When used in this way, the diet should be followed quite strictly and, as described below, may often be ended by a heavy consumption of yeast products to see if a reaction occurs. The second purpose of a yeast-free diet is to reduce or eliminate sources of yeasty or moldy foods in one's diet and to minimize allergic reactions to these things.

People who respond favorably to a diagnostic yeast-free diet often will go on to do other things related to the treatment of the yeast problem such as take nystatin or immunotherapy against yeasts or molds. Failure to show allergy to food yeast on an elimination and challenge of yeast does not always mean that other parts of the management of the yeast problem are unnecessary.

Remember that yeasts and molds are the normal surface inhabitants of most living things. Fruits and vegetables, when picked fresh, have a surface population of their own yeasts and molds. These are not necessarily the same ones that become abundant when food becomes moldy. Grains also have a surface population of normal molds which appear in the flour after milling. Storage of grains and flours leaves them susceptible to the overgrowth of molds which are inhibited by various chemicals now used in grains, flours and baked goods. Nuts and beans in the shell are not moldy when fresh, but the storage and transportation of nuts and beans from their original place of cultivation to the marketplace leaves them susceptible to the overgrowth of various molds.

The normal appearance of molds on the surface of plants and the little bit of moldiness that appears during storage and transportation of crops means that it is really impossible to eat a strictly yeast/mold-free diet, unless one consumes only eggs, the flesh of animals, and the interior of peeled fruits and vegetables. Even milk can be found to have fairly large amounts of yeast in it. There are some instances in which the need to find out whether a person is extremely sensitive to molds and yeasts found in food would lead to the necessity to consume - temporarily - a diet consisting of completely yeast and mold-free foods. We call this a strict yeast/mold avoidance and its use of a period of a few days or weeks would only be for diagnostic purposes. If symptoms cleared during the consumption of such a strict yeast/mold-free diet and then reappeared on ingestion of foods containing yeast or mold, the implication would be clear.

Usually a simplified yeast/mold-free diet is sufficient to make this point. Many foods consumed nowadays are heavily yeasty or moldy, and avoidance of these is often enough to establish the relationship between sensitivity to yeast/mold and various symptoms. A simplified yeast and mold-free diet focuses on avoiding the most yeasty substances normally found in a healthy diet. These include the following:

1. **Leavened foods:** *Breads, bagels, pastries, pretzels, crackers, pizza dough and rolls* are usually made with yeast as leavening. Biscuits, muffins and soda bread as well as waffles, pancakes and some cookies made with baking soda or baking powder are allowed. "Essene" bread is also ok. It is made with sprouted grain and no yeasts or baking powder/soda are used. Leaving aside the question of the mold which originally grew on the grain itself or developed during storage and transportation of grain products, the baked goods in which yeast has been used are considered yeasty, and the ones made with baking soda or baking powder are considered to be permitted on a yeast-free diet. (See recipes number 1, 2 and 3.)

Some flours are enriched with vitamins (see vitamin section) but for the simplified yeast-free diet, this can be overlooked. What about sourdough bread? *Sourdough bread is just as yeasty as any other leavened grain product.* The yeast used for making sourdough bread is a wild yeast that is usually superior to ordinary baker's yeast because it turns out lactic acid instead of alcohol. For the yeast sensitive person, however, sourdough bread offers no advantage and even when sourdough bread is labeled "yeast free" it should not be considered so from the standpoint of people avoiding yeasts and molds.

Wheat and rye are the only grains having enough gluten (the sticky protein) to allow for the development of the little bubbles that account for the sponginess of bread. Breads and crackers made from rice, oats, millet, corn and barley are usually successful only if some wheat flour is added. Products made with these grains are usually not leavened with yeast and can be consumed by the person trying to avoid yeast. **CHECK LABELS!**

II. Fermented and aged products: As noted in my article on the yeast problem, fermentation was discovered before baking and depended on the observation that the yeast naturally occurring on the skins of fruits would turn the fruit juice to wine if left in a covered container. For practical purposes all alcohol must be considered yeasty by the person trying to avoid yeast and molds. This means that medicines, beers, wines, hard liquors and alcoholic extracts such as vanilla extract must be avoided. Many yeast-sensitive people who experiment with yeasty foods after the diagnostic trial of stricter yeast avoidance is over, discover that they can consume high (100) proof alcoholic beverages with fewer problems than if they consume beers or wines. Distillation leaves some of the yeastier parts of the brew behind so that the end product is more refined and may be less troublesome to the yeast sensitive person. Remember that malt is a product of the brewing industry and products containing malt should be considered yeasty. *Cheese* is a fermented product in which the germs involved are a variety of molds and bacteria. Some of these are quite distantly related to the family of molds referred to as yeasts, and some yeast-sensitive people can eat even quite strong cheeses without difficulty. During the yeast avoidance that is designed to detect yeast sensitivity in people, all cheeses should be avoided. This even includes cheeses which are not aged. A cheese that is made without mold or fermented products can be made easily at home. (See recipe number 4.) Milk products known as "processed" are usually prepared with a substance called rennet. If real rennet is used in processing of cheeses, it is ok, but many artificial rennets are derived from mold products and therefore are not safe for the person trying to avoid yeast. Other milk products such as cottage cheese and sour cream may be made by adding vinegars or lactic acid to milk and are therefore "yeasty". Yogurt is a fermented milk, but the germ used to make yogurt is the lactobacillus or acidophilus germ. This germ is the healthy, normal inhabitant of the human intestinal tract and vagina, and is not related at all to yeasts or molds. Yogurt without the fruit can be consumed by people who are yeast sensitive even though the milk itself, as mentioned above, may have some yeast in it. You may peel fruit and add it to plain yogurt.

III. Juices: The juices of all fruits and berries contain yeasts that came from the skin. Ciders, apple juices, commercial frozen or reconstituted orange juices and the juices of berries, etc., have an impressive content of yeasts and can be extremely troublesome for yeast sensitive people. During the trial avoidance of yeasts, then, juices must be avoided. Fresh squeezed juices made at home from

peeled fruits, in ways that keep the surface of the fruit out of contact with the juice, are permissible. Freshly squeezed juices stored for a day or two in the refrigerator at a cold temperature does not usually present much of a problem in terms of its potential yeast content. Prolonged storage of fruit juices even though they are made at home would raise the same question that applies to all leftovers which tend, even in the refrigerator, to become moldy after a while. Canned pineapple juice seems to be one of the least yeasty juices and it may be tried after a person has more or less stabilized on a yeast-free diet. Apple juice made from peeled apples and orange and grapefruit juices are the main juices that can be made easily at home. It's worth noting that even the interior of fruits with unbroken skin can be found to contain live yeasts, reminding us that nothing is completely yeast-free, but from a practical standpoint this probably doesn't make much difference even to the quite yeast sensitive person. For a hot drink, lemon or orange can be squeezed into hot water. Regular tea is made from leaves that are fermented before they are dried, so tea may be a problem. It is not permitted on a yeast-free diet. Herb teas are made of leaves that may carry some normal surface molds, but they may not be bothersome except to very sensitive individuals. Coffee is not fermented, but many yeast sensitive people cannot tolerate coffee, whether or not it is decaffeinated. Remember that once you have already decided that you are sensitive to yeast, you will need to be your own judge as to how much you tolerate various foods that may contain some yeasts or molds. Everyone is different, and individual tolerances for coffee, tea, cheeses, juices, alcohol, etc., have to be determined on a trial and error basis by each person individually. For the person who is just beginning to do some detective work to figure out if he or she is sensitive to yeast-containing foods, strict adherence to the suggestions outlined here are necessary. It's too bad to go to the trouble of changing your diet for 5 days, and then at the end of it be confused as to results because of having consumed a little coffee or tea or other substances that may have affected the results of this little dietary experiment.

IV. **Dried fruits, condiments and sauces:** Remember that most sauces and condiments are made with some vinegar or products of fermentation. This applies to salad dressings, barbecue sauce, tomato sauce, soy sauce, miso, tamari sauce, mince-meat, horseradish, sauerkraut, pickles and olives. Dried fruits themselves are, of course, very "yeasty" because the drying process generally reduces the whole fruit to a small thing while the surface yeast has had a chance to grow a little bit during the drying. You may make a salad dressing with oil, lemon juice (in place of vinegar) and some spices. A homemade yeast-free mayonnaise is described in recipe number 5.

V. **Mushrooms:** Mushrooms are nothing but a big mold. They are, in fact, the product of molds that live in a lacy network underground and periodically push up a mushroom as part of their reproductive processes. The mushroom itself is relatively unrelated to yeasts and some yeast-sensitive people can eat mushrooms as food. During a trial avoidance of molds and yeasts, mushrooms would be on the list of things to avoid. The same applies to truffles.

VI. **Vitamins:** A number of B-vitamins are derived from fermentation. Remember the distinction between a yeast-free diet that is used to figure out how sensitive a person may be to yeast and molds in food and the one that may be used for long-term use by people who already know that they are sensitive. In the first instance, the diet is used to do detective work, and it's very important that the diet be fol-

lowed strictly so that we don't have to wonder after it's all done whether the reason nothing showed up was that it wasn't done carefully enough. You may take yeast-free vitamins. The trouble is that we found some vitamins which are labeled yeast-free are relatively bothersome to yeast-sensitive people. There really isn't any way to study the yeast content of vitamins except by observing the reaction in people who tried them.

VII. Sugar and Carbohydrates: Some yeast-sensitive people have a lot of trouble with carbohydrates of any kind and for most people the consumption of refined sugar is bothersome, especially when they are trying to sort out a difficult health problem. Any person going to the trouble of avoiding yeast is well advised to avoid refined carbohydrates, such as sugars, white rice, white flour and alcohols. Whether or not a yeast-sensitive person needs to go on a low carbohydrate diet is a matter of some controversy. It really comes down to the individual, and I do not generally advise people to reduce their carbohydrate intake unless other measures have failed to give improvement. To be on the safe side, restriction of carbohydrates is advised when first getting on a yeast-free diet and nystatin and then the extent to which this is necessary can be determined by liberalizing carbohydrate intake as time goes on. For those who do need to restrict their carbohydrate intake, an automatic consequence is the consumption of a relatively high-fat, high-protein diet which may have its own disadvantages in the long run. I would suggest that people on a yeast-free diet avoid sweet foods and save a strict limitation of carbohydrate for choices made in consultation with their physician on an individual basis. The question of whether fruits are troublesome to people with yeast sensitivity (apart from the question of yeast on the surface of the fruit) is also a matter of question at the moment. I do not recommend that people go on a very reduced fruit intake unless they discover by trial and error that this really makes a difference. For some it really does. It is likely that the refinement of carbohydrates makes more difference to the person than to the yeast. That is, refined carbohydrates lacking the nutrients in the product from which the sugar or flour was derived probably have a negative effect more by weakening the person than by feeding the yeasts specifically.

Yeast allergy is very common, but it is certainly not the cause of everybody's problems. It does have to be considered, however, among the possibilities for a wide variety of people with many different kinds of medical and emotional problems. Doing a 5-day avoidance of yeast is one of the simplest and most reliable ways to find out if such a factor may play a rôle in a person's health. After strict adherence to the 5-day yeast avoidance, a person may choose to "challenge" themselves with a relatively heavy load of yeast to see if it provokes symptoms. The challenge should be avoided if the response to being off yeast is so clear cut that no question remains as to the relationship between yeast in the diet and symptoms. If the response to the diet is confusing or minimal or without any change at all, a challenge of yeast containing foods such as bread and cheese and vinegar and juices may provoke symptoms enough so that a question still remains as to the extent of yeast sensitivity. The 5-day yeast avoidance and challenge is usually done when nothing else is being changed, and symptoms are observed from a few minutes to 2-3 days following restarting yeast in the diet. The period of delay and the amount of yeast that's used to challenge a person varies considerably from person to person. On the average, a person who has had a moderately impressive response to avoiding yeast but still wishes to check it out by challenging with yeast may wish to eat a piece of cheese, some orange juice, some bread

and maybe some vinegar. Usually within 4-8 hours definite symptoms reappear, but as noted above this time lag may vary considerably.

Remember that the yeast in one's food is only part of the issue involved in this whole business. Often finding out that a person is sensitive in some way to yeast in the diet is the way that leads us to looking at the relationship between people and the yeast that lives in their bowel and on other parts of the body. As described in the article, The Yeast Problem, this part of the interaction between people and yeasts is treated by taking a medicine that kills yeast (nystatin) and by trying to promote the growth of the good germs in the intestine - lactobacillus acidophilus. This is done by taking a preparation of lactobacillus powder which is very concentrated because plain yogurt made with this germ is not concentrated enough to introduce these germs into the bowel. The yeasts of our food, that is baker's or brewer's yeast, and other yeasts that live on plants do not generally live inside us when we eat them as food. They are killed in the process of baking or brewing or if consumed alive they simply die during the process of digestion. There are instances in which human beings do have baker's or brewer's yeast growing inside them, but in general the reason for avoiding food yeast is not because of any strong tendency it has to go and set up housekeeping within us, but only because there is a cross sensitivity between yeasts of all kinds. People who have trouble with yeast living in their bowel are frequently sensitive to yeast (dead or alive, cooked or uncooked) in their food.

The yeast-free diet consumed by people who have a yeast problem varies considerably from person to person. Most people discover what their limits of tolerance are on their own. Some yeast sensitive people can tolerate a fairly generous amount of yeasty foods without trouble, and others discover that they need to be extremely careful to avoid most sources of yeast and mold in their diet. This is discovered best by testing one's self. Allergy tests are not always accurate enough to measure the degree of sensitivity one may have to various kinds of yeasts and molds in their diet. It may take months or years for some people to come to a good understanding of exactly how much yeasty foods can be consumed and what the price of consuming them may be in terms of symptoms that follow immediately or within a day or so.

The yeasts and molds that have been discussed in connection to diet and body surfaces have other relatives that live widely in the environment. About 50 common mold spores are found in the air at various times in various locations, and these cannot be avoided easily. Measures for controlling environmental molds in and around your house or workplace can sometimes help a great deal. Carefully cleaning and dehumidification are the main methods to be used.

HOW TO DO A FIVE-DAY ELIMINATION AND CHALLENGE FOR FOOD TO FIND OUT IF YOU ARE SENSITIVE TO IT

A number of allergy tests are available to guide us in deciding whether or not we are sensitive to a particular food or other substance. When it comes to foods, however, the most reliable test is one of avoidance for a period of time followed by a challenge if there is some doubt as to the results achieved during the avoidance. The food to avoid may be something that is very easy to eliminate because it is found relatively isolated in one's diet. Seafood, certain citrus fruits, potatoes or other members of the so-called nightshade family are examples of foods that usually are not mixed with other products in processed or packaged foods. On the other hand, egg products, corn products, yeast and wheat and milk products are often presented not in their pure form, but are mixed in a variety of other recipes and food processing methods that makes their avoidance somewhat tricky. Once you are equipped with a list of foods that contain the substance you wish to avoid, then you must prearrange a 5-day period when you have relatively good control over your diet. A time when you are traveling or having to eat at friends' houses is not the best time to schedule for this sort of experiment. Plan ahead of time by doing some shopping and store up foods that will satisfy your needs and make the process as enjoyable as possible. Try not to replace the food avoided with a very large amount of some other food, but if you do so keep careful track of it on your food diary. Learn to read labels and watch carefully for ingredients that are shown on the food avoidance diet lists, so that you are able to recognize that whey comes from milk; that hydrolyzed vegetable protein is really not that different from MSG; and that vegetable gums often come from the bean family.

Once you are ready to start your 5-day avoidance, keep careful track of everything you eat on a food diary, such as the Gesell Institute food diary. After 5 complete days of avoidance of food or foods, if you are totally convinced that the experiment has shown absolutely no effect, simply return to eating a normal diet. If on doing so, you experience symptoms that indicate that going back to the avoided food is affecting you in some way, then the process may need repeating to try to prove the point one way or the other. If during the 5-day period you are completely convinced that avoided food has been responsible for troublesome symptoms and you do not wish to challenge by eating a lot of the food in question, that is ok. If, on the other hand, you have experienced some favorable change but are not sure whether it's because of coincidence or placebo effect, try going back to eating the food in question in a fairly big way by "pigging out" on it on the sixth day. If you have been avoiding wheat, try going back to eating a big bowl of wheat cereal or eating a lot of bread. If you have been avoiding milk products, simply drink a couple of glasses of milk. *If you have experienced a major change for the better in your health by avoiding a particular food, do not challenge it by pigging out in a big way because it may make you very sick.*

If you have been avoiding 2 or 3 foods during the time of avoidance, return to eating them at 2-3 day intervals, giving each food time to show its effects. If you get an adverse effect from one of the foods challenged, then you will have to get back off it and wait for the effects to disappear before trying the next food.

IRISH SODA BREAD

Recipe #1

This recipe makes 1 small loaf and is very easy to make. It is very good for sandwiches.

- | | |
|---|--------------------|
| 2 cups whole wheat flour | 1 egg beaten |
| 1/2 teaspoon salt | 1 tablespoon honey |
| 1 teaspoon baking soda | 1 cup yogurt |
| 1/8 teaspoon ground cardamom or 1 teaspoon crushed caraway (optional) | |

1. Stir the dry ingredients together. Preheat oven to 375 degrees.
2. Beat the honey and yogurt into the beaten egg; gradually pour this mixture into the dry ingredients. The combined mixture will be dry like a yeast bread dough. Blend it with your hands to work all of the flour in. If it is too dry, add a little yogurt; if too wet, add more flour.
3. Knead the bread for about 5 minutes.
4. Either shape the dough by hand into a flat loaf and place on an oiled baking sheet, or oil a bread pan and spread the dough into that. Cut two parallel slashes in the dough about 1/2 inch deep. This allows the dough to rise during baking without cracking.
5. Bake the bread at 375 degrees for 25 to 30 minutes, until it is well browned and sounds hollow when tapped on the bottom.

BANANA BREAD

Recipe #2

- 1/3 cup oil
- 2/3 cup honey
- 2 beaten eggs
- 4-6 ripe bananas
- 1 3/4 cups whole wheat flour
- 1/4 cup soy flour
- 2 1/2 teaspoons baking powder

Blend oil and honey, beat in eggs and bananas, add blended dry ingredients. Pour into greased 5 x 9 inch loaf pan and bake at 350 degrees for 1 hour.

BRAN MUFFINS

Recipe #3

1 cup whole wheat flour
1 cup of bran
3 teaspoons baking powder
1/2 teaspoon salt
2 tablespoons honey
1 beaten egg
1/3 cup milk
1 cup applesauce (homemade)
1/4 cup oil

Combine dry ingredients in large bowl. Set aside. Combine remaining ingredients. Add all at once to dry ingredients, stirring only until dry ingredients are moistened. Fill oiled muffin tins 2/3 full. Bake 375 degrees for 20 minutes.

RICOTTA CHEESE

Recipe #4

Bring 1 quart of milk to a rolling boil.

Squeeze juice out of 1 lemon.

Add juice to milk, boil for 1 minute, let cool.

Filter through cheese cloth to separate curd from whey. Make it wet or dry by squeezing the cheese cloth around the curd.

Flavor as desired with salt, garlic, pepper.

YEAST-FREE MAYONNAISE

Recipe #5

Place in blender 1 egg, 1/2 teaspoon salt, 1/2 teaspoon dry mustard, 1/4 teaspoon paprika, 1 1/2 tablespoons lemon juice and 1/4 cup oil (not olive oil). Mix at low speed adding an additional 3/4 cup oil in a slow, steady stream. Use spatula to keep mixture moving.

YEAST FOOD/DRINK CHECKLIST

Y = YES, OK TO EAT

? = READ LABEL

N = NO, YOU MAY NOT EAT

[Y] [?] [N] DAIRY PRODUCTS

[X] [] [] Butter
[X] [] [] Margarine
[] [X] [] Cheese
[X] [] [] Milk-Cow
[X] [] [] Milk-Goat
[X] [] [] Yogurt-Plain
[] [X] [] Yogurt-w/Fruit

CEREALS AND GRAINS

[] [] [X] Breads-Yeast & Sourdough
[X] [] [] Bread-Soda
[] [X] [] Cereals
[] [X] [] Pasta, Noodles
[] [] [X] Rolls, Buns
[X] [] [] Waffles, Pancakes, Biscuits
[] [X] [] Cakes, Cookies
[X] [] [] Barley
[X] [] [] Corn
[X] [] [] Grits
[X] [] [] Oatmeal
[X] [] [] Rice

MEATS, EGGS, POULTRY

[X] [] [] Bacon
[X] [] [] Beef
[X] [] [] Chicken
[] [X] [] Cold Cuts
[X] [] [] Duck
[X] [] [] Eggs
[X] [] [] Hamburgers
[] [X] [] Hotdogs
[X] [] [] Lamb
[X] [] [] Liver
[X] [] [] Pork
[] [X] [] Spam
[X] [] [] Turkey
[X] [] [] Veal

FISH

[X] [] [] All Fish
[X] [] [] All Shellfish

[Y] [?] [N] NUTS AND SEEDS

[X] [] [] Almond
[X] [] [] Brazil Nuts
[X] [] [] Cashew
[X] [] [] Chestnut
[X] [] [] Coconut
[X] [] [] Filbert Nuts
[X] [] [] Macademia Nuts
[X] [] [] Peanuts
[X] [] [] Peanut Butter
[X] [] [] Pecan Nuts
[X] [] [] Pistachio
[X] [] [] Walnut
[X] [] [] Sesame Seeds
[X] [] [] Serame Tahini
[X] [] [] Sunflower Seeds

Nuts vary considerably as to their "moldiness". It depends on how they are stored between being harvested and consumed. Usually nuts in the shell are safer. A fresh taste and odor are helpful indicators of a lack of mold.

BEVERAGES

[] [X] [] Alcohol
[] [X] [] Chocolate Drinks
[] [X] [] Coffee - Reg/Decaf
[] [X] [] Fruit Juices - Frozen, Concentrate, Canned, Bottled, Carton
[X] [] [] Fruit Juices - Fresh Squeezed
[X] [] [] Milk
[] [X] [] Sodas
[X] [] [] Spring Water
[X] [] [] Tap Water
[] [X] [] Tea - Black, Green, Herbal

SWEETS, SNACKS & DESSERTS

[] [X] [] Cake, Candy, Carob,
[] [X] [] Chewing Gum, Cookies, Honey
[] [X] [] Ice Cream, Maple Syrup, etc.

CONDIMENTS

[] [X] [] Catsup
[] [X] [] Mayonnaise
[] [X] [] Mustard
[X] [] [] Oils (except olive)
[] [X] [] Salad Dressings
[] [X] [] Vinegar

See Recipe

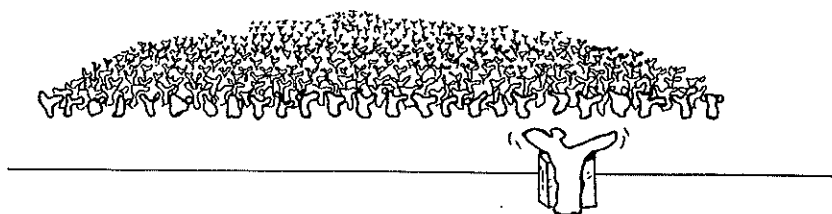
May be made with oil & Lemon.

[Y]	[?]	[N]	VEGETABLES
[X]			Artichoke
[X]			Asparagus
[X]			Beet
[X]			Black Eyed Peas
[X]			Broccoli
[X]			Brussel Sprouts
[X]			Cabbage
	[X]		Capers
[X]			Carrot
[X]			Cauliflower
[X]			Celery
[X]			Collard Greens
[X]			Corn
[X]			Cucumber
[X]			Eggplant
[X]			Endive
[X]			Escarole
[X]			Green Pepper
[X]			Kidney Beans
[X]			Kohlrabi
[X]			Leek
[X]			Lentils
[X]			Lettuce
[X]			Lima Beans
	[X]		Mushrooms
[X]			Mustard Greens
[X]			Okra
	[X]		Olive
[X]			Onion
[X]			Parsley
[X]			Parsnip
[X]			Pea
	[X]		Pickles
	[X]		Pimento
[X]			Potato -Sweet/White
[X]			Pumpkin
[X]			Radish
[X]			Red Pepper
[X]			Rhubarb
[X]			Soybeans
[X]			Spinach
[X]			Squash
[X]			String Beans
	[X]		Tempeh
[X]			Tofu-Fresh
[X]			Tomato
[X]			Turnip
[X]			Turnip Greens
[X]			Yams

[Y]	[?]	[N]	FRUITS (PEELED)
[X]			Apple
[X]			Avocado
[X]			Banana
	[X]		Blackberry
	[X]		Blueberry
[X]			Cantaloupe
	[X]		Cherry
	[X]		Date
	[X]		Fig
	[X]		Grape
[X]			Grapefruit
[X]			Lemon
[X]			Lime
[X]			Nectarine
[X]			Orange
[X]			Peach
[X]			Pear
[X]			Pineapple
[X]			Plum
	[X]		Prune
	[X]		Raspberry
	[X]		Raisin
	[X]		Strawberry
[X]			Tangerine
[X]			Watermelon

SPICES

All spices are OK to use in moderation, with the exception of Mincemeat.



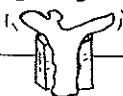
... What
every
budding yeast
should know
about humans

"What Every Budding Yeast Should Know About Humans"

Imagine, if you will, that you are a yeast. A single cell. It would take millions of you to be a pinch of baker's yeast or a patch of white stuff in someone's mouth (known as thrush) or an area of redness on a baby's bottom (diaper rash). To get a little change of perspective on humanity, imagine how yeasts might "see" us if they had the senses and mind to do so. Close your eyes for a moment for a glimpse of the dark world of yeasts and then open them to read on. This is what a speaker at a yeasts' convention about people might say on the subject, "What Every Budding Yeast Should Know About Humans." The speaker's name is Casper Candida and as he begins his speech, a million fermenting organisms hang on his every word.



Casper Candida addresses the assembled yeasts



Half an hour later, as he finishes, the audience has multiplied to half again its original size.

"Dear buddies and distinguished guests," begins Casper, "We yeasty fungi have the franchise to live on the surfaces of nearly every living thing on this planet. Human beings represent such a tiny part of our habitat that the Fungal Board of Special Studies hardly recognizes them as a subject worthy of research and provides no funding for human studies. Some of us feel that it is time to study these critters because they have recently taken a certain interest in us, and they are like us in certain ways: they are good chemists, they need to consume other living things to sustain themselves, they love sugar and they consist of single cells.

"They learned their chemistry from us by studying our fermentation. They took an interest in alcohol. We yeasts use alcohol as a toxin to defend ourselves from our enemies, and humans use it to intoxicate themselves and their friends. Some use it in large amounts to keep the lid on a troublesome human ability called consciousness. Apparently, even a little bit of consciousness can be too much for some people: it can bring a painful awareness. Our simplest of toxins can be used by humans to dull such unwelcomed experience. Humans still depend on us yeasts for the production of alcohol, but studying how we do it helped them learn their first lessons in chemistry, and now they are able to make a great variety of molecules in chemical factories.



A human being voluntary limitation of consciousness with yeast toxins.

"Metabolically speaking, yeasts and humans are not that different. Humans, like us, are also dependent on consuming other living things in order to survive. Their optimal diet consists of fresh foods in which the life forces are especially active - though in recent years their preferences have begun to turn toward nearly, or completely, dead foods such as sugar. Some humans try to subsist almost en-

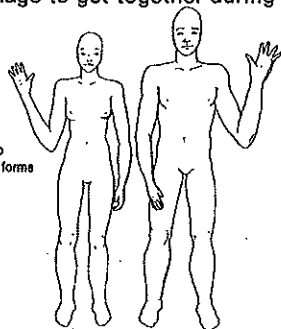
tirely on sugars, which are full of energy and devoid of life. Like us, humans burn their food, metabolizing it to carbon dioxide - and if not enough oxygen is present, they form lactic acid like our San Francisco cousins, the sourdough bread yeasts."

Casper, pointing to a large illustration, continued, "Humans, like yeasts consist of single cells. These come in two forms: one very abundant, called a sperm; and the other comparatively scarce, called an egg.



The total world population of even the more numerous sperms is, very small compared to us yeasty fungi. They are like our relatives, the soil fungi, who (when

times are good) make a big reproductive form - a fruiting body - called a mushroom to spread clouds of spores. Ova and sperms also manage to get together during good times to form a large fruiting body. It is the behavior of this reproductive stage of the human, known as a human being, that leads to the importance of what is to us is a numerically insignificant species. It is this form that has the ability to be conscious. Mind you, this conscious form is not the result of the addition of cells, but of their division. They do it pretty much the way we form a colony - cells dividing, but for them the resulting colony is enormous and complex, and it has vast surfaces where we yeasts are invited to live. Each surface has some stupid local bacteria living there, but we yeasts have branch offices everywhere ready to expand operations if the conditions are right. If you live on, or in, one of these human forms for a while, you notice ways that make humans very different from us yeasts. Different cells have quite different tasks, and some seem to be the slaves of others. Instructions for keeping the whole thing going properly are passed along from cell to cell by chemical messengers. If you follow the chain of communication, it appears that the cells that originate messages have two shapes, but one common feature and one common function. The common feature is relative permanence - they don't die off and become replaced every few days, weeks, months or years as the other cells do. The common function is memory - which seems quite appropriate for permanent cells, otherwise they lose their memory every time a few cells die.



"One set of these permanent memory cells is located all up at the top end of the creature in a place called a brain, and the other ones are scattered all over the place in little lumps called lymph nodes. The brain cells are handicapped by the need to touch the various cells over which they have command. But they manage to touch a hell of a lot of cells, so it works out pretty well. The other memory cells, the lymphocytes, seem to have a better deal. They are free to move about and they can command whole armies of other cells by releasing chemicals into the ocean of fluids contained in each human being. Together the brain cells and the lymphocytes have the job of remembering two kinds of things: identity and happenings. The identity problem is a big one because each human being has the job of being unique - one of a kind in all of nature. So the memory cells have to know who the person is and what objects, cells, or chemicals don't belong there. This is determined according to information presented to the brain memory cells by the senses and to the lymphocyte memory cells by another cell called a macrophage, a big, ugly guy who goes around checking identities."

Gasper paused and went on to say, "Imagine having to go through life getting all your chores done and at the same time worrying about who you are...and having to be different! 'Monotony is the yeast of life,' as the saying goes.

"The problem with dealing with happenings is not such a big one even though it means keeping a file on everything that has ever taken place in the life of a human. These human beings have so much space for memory of events that they never seem to run out - but they do have a problem getting the memories in and out of storage. This problem has to do with boundaries: keeping track of where the being ends and the rest of the world begins.

Human Being:
diagrammatic
view of holes
in upper end



"In order to tell how human beings solve this problem, you have to stand back and look at one from a distance. Note the holes, there are 7 at the upper end and 2 or 3 at the lower end, depending.

"The holes in the upper end, or head, are for the senses by which the brain cells can tell very grossly where one self ends and another begins. When human beings are referred to as being out of their

senses, real trouble is implied - for they have lost a certain capacity for gross self-discrimination. When a human being is referred to as being knocked senseless (as by a hard object or hard liquor) even more trouble is implied because the precious element of consciousness is missing. Together, self and consciousness - or self-consciousness - is what distinguishes humans from other critters. It permits each human to be unique.



Two human beings showing holes.

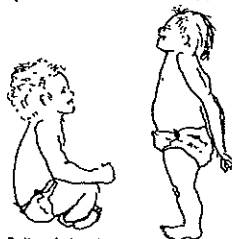
years, with happy results for us yeasts. These practices involve various kinds of tight clothing and encourage us to flourish on the skin of humans, and this encouragement begins on the first day of life when a diaper is applied as snugly as possible.

"We yeasts go wild in the vast perineal swamps of the newborn who is as yet only dimly aware of self. In this confused state, the baby is confronted with a decision about how well to get along with us. Is it better to put up an itchy fight or let us gain a foothold? The answer to this question may influence his or her lifelong arrangement with the yeasts that are to inhabit the body. Overrun, the infant may decide that that's the way it is supposed to be, or not be able to summon enough defensive forces to keep us yeasts in our right place and numbers. This is usually all it takes to get a foot in the door.

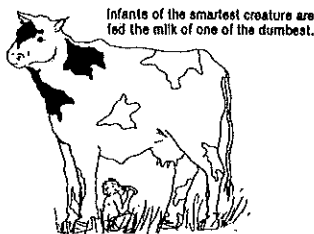
"The next thing they do with some of these newborn human beings is to feed them the milk from an entirely different critter. They choose one of the dumbest animals on the planet - a kind of walking stomach called a cow.

"Infant humans fed this milk have a hard time welcoming to their guts the very germ we yeasts fear the most - the long and lively lactobacillus acidophilus. Before being fed to baby hu-

"Let's get back to the holes. The ones at the bottom end have to do with self-consciousness too. But in a different sense that results in the human being wishing to keep these holes concealed, because it is there that humans figure they are the most unique. Practices associated with this wish have increased among human beings over the past thousands of



Bottom holes shown
covered with diapers.

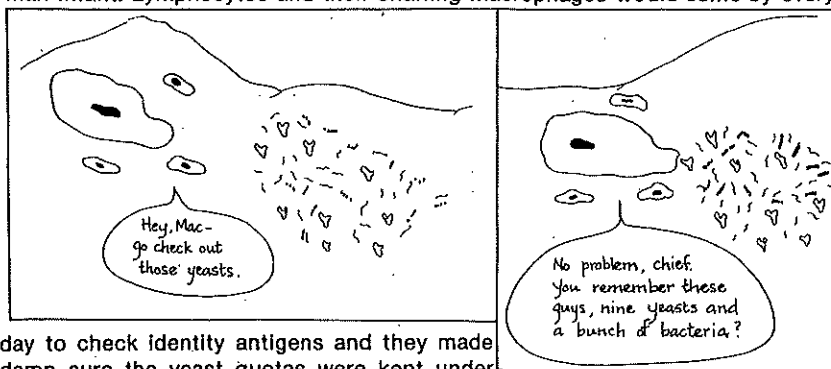


Infants of the smartest creature are
fed the milk of one of the dumbest.

mans, cow's milk is changed to make it more like human milk in certain ways, except that in this process the milk is killed. If you are a yeast looking for a good place to live, find a baby who is fed dead cow's milk and stay away from those babies drinking living milk from their mothers.

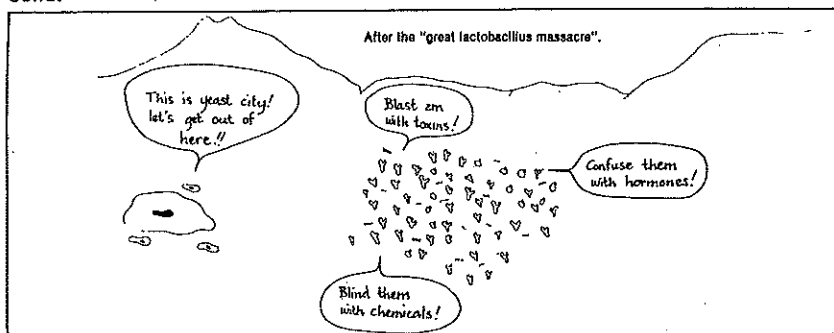
"If we are not on board in vast numbers by that point, the next thing they do is to give these Infants antibiotics. A little bit in their food and a lot to fight infections establishes a totally pro-yeast environment as whole pastures of innocent bacteria succumb. What a beautiful sight - millimeter after millimeter of mucous membrane with all the local flora dead or dying, and a chance for an almost exclusive franchise for us yeasts."

Casper wrinkled his cell membrane and went on. "I remember a story my 10⁸ uncle, Boris, told about his experiences in the colonies. He and a handful of yeasts were holding their own as a tiny minority in a small jejunal outpost in a human infant. Lymphocytes and their snarling macrophages would come by every



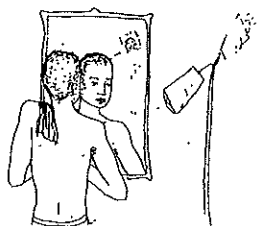
Lymphocytes and a macrophage on patrol.

day to check identity antigens and they made damn sure the yeast quotas were kept under control and that no one mistreated a lactobacillus. Then one day came what Uncle Boris called 'the day of the great lactobacillus massacre.' Literally billions died within hours after a rain of penicillin swept through the gut. At first the yeasts didn't know what to do - they were so stunned by the sight of this plague which otherwise left them untouched. By the time the budding was over, the landscape was yeast from horizon to horizon. Old Boris was there when the macrophage came around the following day. He was a particularly nasty one who liked to engulf yeasts just to show off to his mean, old lymphocytes. The mac - as he was called - barely showed us his cell membrane over the top of a ridge and then retreated along with some very sick looking, old lymph cells.



"After that, it was the yeasts who called the shots around that territory. They set up a factory for making human messenger molecules that kept that human being in a constant state of chemical confusion.

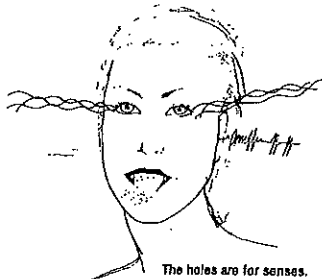
"Confusion...it can exist in human beings wherever messages are being sent or received. An incredible traffic in molecules is involved in the communication among all these billions and billions of cells. A single cell may launch dozens of messages at a time, meanwhile receiving messenger molecules at various pockets on its surface. We yeasts - renowned for our chemical proficiency - have relatively little difficulty getting into the act with a little clever forgery. The question is, 'where to get involved?' The solution lies in this whole human pre-occupation of being a self - an 'I' - a 'me' - complete with a social security number to prove it to others and a mirror to prove it to one's self.



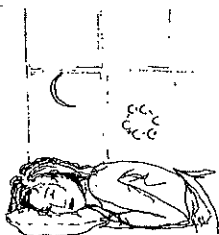
The senses - for checking self-identity.

connected directly to the brain where some of the memory and all of the consciousness is.

"The senses help the individual figure out where his or her boundaries are and to fill space and time with a picture of what is going on. Without the senses there isn't any consciousness and without consciousness the senses don't connect to anything. If they can't sense something, humans generally don't think that it exists so they have only known what we yeasts are all about for less than 10 human generations. Before that, they had some funny ideas about how wine and bread happened and they didn't give us proper credit. Very recently, some humans have gotten the idea that we are to blame for just about everything that goes wrong. This wouldn't happen if their senses worked better on tiny things, or if their macrophages reported directly to the brain where the consciousness is. But there's the problem with humans, not enough consciousness to go around. Here they are with these pretty good senses and a wonderful, huge memory of all that their senses and macrophages have taken in, and by comparison only a tiny consciousness to go with it.



The holes are for senses.



Human, sleeping -
a time for making molecules for later use.

many hours at a time, after which they have to stop and lose it for several hours and sleep while they restock.

"The daytime of consciousness is, then, one of a very destructive kind of chemistry where molecules are taken apart.

"The chemistry on which consciousness depends takes place at night. Molecules are put together to be taken apart the next day. By stopping regularly to suspend consciousness, most humans manage in the remaining hours to know only a fraction of the events conveyed through their senses and they don't even begin to have any consciousness about what has been stored in their lymphocyte memory. In fact, most humans don't even know they have a lymphocyte memory and they treat their lymphocytes even worse than they treat their brains.

"All-in-all, these humans are fragile critters. The cells that keep their memories are easily influenced by toxins that we make and their consciousness is fueled at great expense by an energy chemistry that is easy for us yeasts to interfere with it, because it is not too different from our own.

"If you don't want to get involved in such complicated ways with a human, just settle in on one of the lower holes and make them itch.

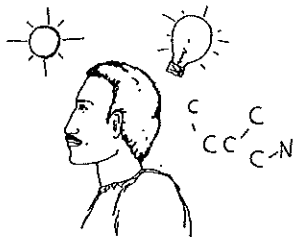
" 'This Itch is driving me crazy,' exclaimed a woman inhabited by my three hundred and eighty-fifth cousin, Cynthia. Cindy loves to tell the story. She was in this lady's vagina when a doctor said, 'Oh, this is just a little yeast problem...you will just have to live with it!' 'Live with it?' exclaimed the lady, 'I can't live with it...even after I get treated for it, it hurts to have sex.'

" 'Well, then, dear,' said the doctor, 'have a couple of cocktails before going to bed.'

" '...and if I do have sex, then afterwards it hurts to urinate,' said the lady.

" 'Well, that's just a little cystitis. We can clear that up with a course of antibiotics.'

"Hearing all this, Cynthia decided that humans are definitely going to be with us for a long time to come."



Human, awake -
consciousness requires taking molecules apart.