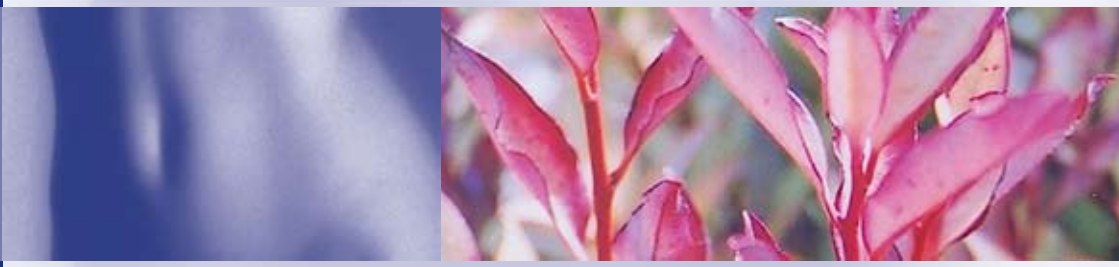
Active Horopito



New Zealand's answer to Candida

Christopher Lepisto N.D.

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Introduction

If *Candida albicans* is a yeast found in every healthy human, then what's the hubbub about? Isn't Candida a normal part of our digestive tract? And how do I know if Candida is even a problem for me? Chances are that you've heard of Candida before and you or someone you know are wondering if your health challenges are related to an overgrowth of this common organism. You may even realize that a history of antibiotic use, recurrent yeast infections, terrible skin rashes, vaginal itching, or a whitish coating in your mouth may all be related to excessive Candida.

I'm Dr Lepisto and I created this booklet to give hope to people suffering from Candida. As I talk frequently with people searching for yet another "magic bullet" to cure their health, I often remind them that we need to take a comprehensive approach to restoring a normal balance of Candida in the body. Because Candida is so persistent, we must reduce the amount of sugar and refined carbohydrates that we eat, drink plenty of fresh clean water, create good personal hygiene habits, minimize the use of antibiotics, as well as utilize a powerful natural supplement to reduce a large Candida population. If you are looking for information to help you put all the pieces together to see a lasting change in your health, then this booklet is for you. This booklet cannot take the place of personalized, professional medical advice, but it will help you to understand why Candida may be a challenge to your health. In addition, most significantly, this booklet will help you to start your road to wellness right now.

I was inspired to write this booklet after discovering the beauty of New Zealand and the power of its traditional medicines in my travels. I was desperately in need of some time and space away from the rigors of naturopathic medical school, and New Zealand seemed just the place. But as I traveled and kayaked through much of the incredible countryside, I discovered the principles of naturopathic medicine alive and well, and met a remarkable company in the heart-centered town of Nelson, Forest Herbs Research Ltd.

I was immediately impressed with Forest Herbs' dedication to preserving the medicinal heritage of the region and sharing it through cutting-edge research on their herbal products. I had extensive herbal training in Seattle at Bastyr University, but I had

never heard of New Zealand herbs. They were entirely new to me and quite obviously powerful medicinals that modern New Zealanders, the Maori, and their predecessors all respected for their healing properties. I could see that Peter and Campbell, president and marketing director respectively, were dedicated to their cause, and offered compelling evidence that the scourge known as Candida may have found its most powerful nemesis yet. This nemesis is the active Horopito herb, and it was the most powerful anti-Candida agent I had ever seen.

From my studies, I knew that Candida was a troublesome yeast affecting the health of many men, and especially women. I was taught that Candida was difficult to treat, that it often had recurrences compounded by the inability to eliminate the microbe effectively enough to give someone a chance to repopulate their delicate system with correct flora. In naturopathic medicine there seemed to be a "do the best you can" philosophy of eliminating the factors that cause Candida while hoping that the remedies employed would be effective enough to reduce the overgrown Candida population. There was a lot of research on products that showed some effectiveness, but none that was dramatic enough for me.

I found the research on active Horopito compelling. Compared to multiple other well known naturopathic remedies for Candida, it demonstrated the most potent effects without the heavy side effects of sledgehammer pharmaceuticals like fluconazole, itraconazol and nystatin. I had also known intuitively that herbs were an ideal way of treating infections, because many contained powerful anti-microbial substances already needed for the plants to survive in their own environment. I discovered that the Maori peoples of New Zealand had traditionally used Horopito for various medicinal uses, which were being confirmed by modern science. I was convinced to start using active Horopito in my own practice, and through the herb I brought with me the magic that I had discovered in the mountains, rivers and forests of New Zealand long after I departed. The success I achieved with active Horopito brought me to this place, where I now wish to share with you the evolving story of a most remarkable herb.

A Prehistoric Herb

How did the prehistoric Horopito shrub survive to this day? What qualities preserved it virtually unchanged for more than 65 million years?[1] This is how old some of the fossilized remains in New Zealand have been dated, and in this plant's superb natural chemical defense system lies the likely answer. Horopito developed antioxidants that allowed it to survive millennia of climate changes—the extremes of ice ages, global warming and volcanic dust winters that wiped out most of the early plant species. More importantly for us it developed chemicals in its leaves that offered excellent resistance to microbes like fungi and bacteria, as well as to larger creatures like insects and dinosaurs. It has been recently discovered that the main weapon in its plant chemical (or plant active) artillery is a very spicy substance known as polygodial, which will be discussed later.

Horopito is so ancient that it lacks the specialized water conducting vessels that are found in virtually all other flowering plants. This makes it very susceptible to drought and is the reason it naturally grows only in areas with a high and regular rainfall. In New Zealand, this usually means temperate rainforest conditions, which are also ideal for the growth of fungi. A keen observer walking through one of these forests will notice almost as many different fungi as trees. There are brilliantly colored little red and blue mushrooms on the ground, enormous plate fungi growing from the sides of half dead trees and rubbery ear fungi growing on rotten branches. What we see represent the sexual reproductive organs of the fungi, what could be called fungi flowers. Kicking a fallen log or digging a hole will reveal the network of threadlike mycelium that is the body of the fungi feeding on decaying material. Not many people realize that *Candida albicans* occurs in the soil as well as in humans. It belongs to the sub-section of fungi called yeasts.

The various fungi serve the vital purpose in forests of recycling dead and dying plants, but they will also attack and consume any live plant that is weak or vulnerable. Plant a strong, healthy citrus tree on the edge of one of these forests and it will succumb to fungi within months. A plant needs excellent resistance to survive in a New Zealand forest where fungal spores explode with every drop of rain. To survive against the mutations of fungi that have occurred over 65 million years it would surely have one of the world's best defense systems.

The Latin name for Horopito is *Pseudowintera colorata*. Pseudo–wintera is so named because early taxonomists recognized the similarity between Horopito and the South American *Drimys winteri* that provided the herbal remedy 'Winters Bark'. They are both members of the Winteraceae family, which are mainly found on the land masses that once made up the great southern continent of Gondwana Land—South America, Australia, New Zealand and New Guinea. The reproductive parts of the Winteraceae family are primitive, reflecting their origin among the first flowering plants. Horopito is particularly unusual in that its flowers come directly off the older stems rather than from among the leaves.

It is not surprising that New Zealand has such unique flora and fauna. Situated at the bottom of the South Pacific plants were able to evolve in isolation from other landmasses in a climate range from subtropical to glacial. The only mammals were bats, so the islands were a protected paradise for reptiles, birds and plants. Many birds even lost the ability to fly, a costly weakness when the first human settlers introduced rats and dogs about a thousand years ago. The Maori (migrants from the Pacific Islands) gave the name Horopito to all three species of *Pseudowintera* they found in New Zealand, and this sometimes causes confusion. However, it is only the very hot tasting *Pseudowintera colorata*, or Pepperwood, that possesses the extraordinary antifungal properties that are described in this book. Even among *Pseudowintera colorata* there is a great deal of variation. The most antifungal of them evolved in an isolated forest that fortunately survived the burning and clearing of the settlers. Seedlings from this area form the basis of the sustainable Horopito plantation that supplies most of the commercial demand.

Settler Medicine

The Polynesians were extraordinary navigators, having discovered New Zealand several hundred years before the first Europeans. By the time Captain Cook arrived they had attributed healing properties to many of the plants in their new land. Unlike the Europeans however, they regarded sickness as a spiritual as well as a physical condition. This view is shared by many indigenous peoples worldwide. The 'psychological' dimension of disease is only now being investigated and verified in the rationally minded West.

The Maori used Horopito to drive away evil spirits.[2] The tohunga, the priest or medicine man, who had knowledge of the spirit world, generally did this. He would explain omens and unusual natural phenomena by performing rituals to ensure successful harvests or warfare and drive out the demons possessing the sick. This frequently involved the use of plants, although they were as likely to be waved over the patient as taken internally. It would have been unusual for a tohunga to treat a patient with plants without also invoking an appropriate chant. The tohunga were always male. If there was a parallel herbalism being practiced by Maori women, it has not been recorded by the early anthropologists, who were also male.

Maori traditionally used Horopito for many complaints, several of which bear some relation to recent scientific discoveries about the plant's properties. The leaves were bruised, steeped in water and applied as a remedy for skin diseases like ringworm. The bruised leaves were also used as a poultice for chafing of the skin, or to heal bruises, wounds or cuts. According to one account from 1896, "The Maoris [sic] often take the leaf of the pepper tree, and after chewing it, apply it to a wound, which it is said to heal very soon, leaving a blue tattoo mark".[2] The leaves were chewed for toothache and the sap was used for gonorrhea. It was also recorded that women rubbed the crushed leaves of Horopito on their nipples so the hot taste would wean their babies.

Oral consumption of Horopito was also prevalent among early European settlers. Not until their arrival were there containers suitable to make effective extractions of the leaves. A decoction made by boiling Horopito leaves in water was taken for stomach ache. This remedy was known as 'Maori painkiller' or 'Bushman's

painkiller'. Early European settlers also used the leaves as a remedy for diarrhea. There are accounts of the bark being used in the nineteenth century as a substitute for quinine 'the stimulating tonic and astringent properties of which are little inferior to Winters Bark'.[2] A French nun, Mother Aubert, went to live among the Maori at the end of the nineteenth century and the native plant remedies she later created became commercially available and widely used throughout the colony of New Zealand. Horopito was one of the two ingredients in her patent medicine, Karana, and in a letter to the French Consul she described it as '…superior to Quinquina (quinine) in the treatment of chronic stomach sickness'.[2] Mother Aubert used the funds her medicines generated to run one of New Zealand's first homes for ostracized unwed mothers.

Forest Herbs' Story

In the late 1970s, Peter Butler exchanged his life as a historical researcher in New Zealand's largest city, Auckland, for building hiking tracks in a remote corner of the sparsely populated South Island. Peter and his wife bought a block of regenerating rainforest adjacent to the pristine Kahurangi National Park, an area where many of the wilderness scenes in the Lord of the Rings movies were filmed. They built a cottage in the bush from which Peter could walk to his work, where he used hand tools to form a public track through the beautiful Kaituna River gorge. When the track was finished he needed to provide a more sustainable livelihood for the young family that had come along so he cleared the scrubby parts of his land and planted kiwifruit vines.

They grew well in the lush climate and he pioneered growing them without chemical sprays and fertilizers when organic farming was still regarded as crackpot. However at that time the government organization, which controlled the export of all kiwifruit from New Zealand, would not allow organic kiwifruit to be separately identified, because they believed this would cast aspersions on the chemically produced crop. Frustrated, Peter looked around for another way to make a living off his small acreage.

Herbs were an obvious answer. Peter studied the standard herbal texts looking for a suitable crop. It puzzled him that virtually all the major herbs of commerce originated in Europe or North America. He realized that this must be just a cultural legacy, and that there were likely to be valuable medicinal plants growing undiscovered among the dense forest that surrounded his orchard. Using his historical research skills, he searched the records left by early European explorers and anthropologists for references to Maori medicinal plant use. Then he studied under a modern tohunga, who taught him some of the Maori herbal traditions. He learnt the belief that the particular area in which plants thrive indicates what they will be useful for in humans. For instance, herbs that grow up after a fire are those to use on a burn, because they can heal burnt landscape. Plants that thrive in cold damp areas are those most likely to help sicknesses associated with these conditions, like colds and 'flu. Similarly, if a plant thrives in a lush humid environment where the dominant threat is fungi, then it would be a good plant to use for a fungal rash or infection.

New Zealand scientists had periodically examined New Zealand plants for medicinal properties, particularly during the World Wars when there was a possibility of being cut off from northern hemisphere drug supplies. Later, the New Zealand government funded university research into plant properties, and it was through this that Professor John Walker and his team at the University of Canterbury in New Zealand discovered the extraordinary antifungal properties of Horopito.

Peter Butler was in a research library trawling through the published reports on New Zealand plant activity when he came across the Walker paper in the scientific journal Planta Medica.[3] He commissioned repeat assays at the University of Canterbury, which all came up with similar astounding results. The long history of Horopito use by Maori and European settlers indicated the herb was non-toxic but to confirm this he commissioned a toxicity study. The results were an all clear. Horopito capsules were sent to eleven New Zealand naturopaths who gave them to appropriate clients to trial.[4] These clients filled in detailed questionnaires about their experiences with the Horopito capsules and it was because of their overwhelmingly positive response that Peter formed Forest Herbs Research Ltd to produce product.

Initially all the Horopito used by Forest Herbs was hand harvested from populations growing wild on private land. Horopito is resistant to foraging by animals so it can grow abundantly in the right areas. Conservation was not thought to be an issue because the plant takes over the niche of the more palatable native plants that are suppressed through browsing. But anti Candida assays showed the wild leaf varied a great deal in effectiveness.

Forest Herbs embarked on the enormous task of sampling and assaying all the major populations of Horopito in New Zealand. This sometimes involved going to the tops of mountains to locate rare isolated pockets likely to have distinctive properties. All the samples were tested for biological activity against *Candida albicans* and the main active ingredient (polygodial) was also measured. There was a five times variation between the most and least active plant populations.[5] Even a few kilometers could make a difference. To this day Forest Herbs assay each batch of Horopito against Candida to make sure the leaf is active, using the pharmaceutical nystatin as

a reference sample. Only if the effectiveness of the leaf is within a defined band around that of nystatin is the Horopito regarded as 'active' and used in their range.

Word about active Horopito began to spread internationally and Peter realized the wild populations of active leaf would eventually be exhausted. The primitive plant takes years to recover from heavy harvesting. The decision was made to set up a nursery and try to grow the plants in hedgerows. The kiwifruit vines that had been organically nurtured on the Butler property were pulled out and the farm was progressively planted with Horopito seedlings grown on from the most active populations identified in the survey. However, no one had tried to grow Horopito as a crop before.

As well as being one of the oldest flowering plants, it is also one of the slowest growing. It takes about eight years before plants are vigorous and large enough to be harvested. It has been a difficult learning curve but now the farm, called Kaituna after the adjacent river and track, is lined with healthy rows of the beautiful yellow and red leafed plants. The temperate rainforest surrounding the world's only active Horopito plantation creates the ideal microclimate. The property has been farmed organically right through from the kiwifruit days. The plants are regularly mulched with cut grass and no chemical sprays or artificial fertilizers are used. Kaituna is organically certified through Certenz, which is affiliated with IFOAM, the international organic federation.

Forest Herbs Research has gone from supplying a few New Zealand naturopaths with Horopito capsules to supplying markets as diverse as Israel and Kazakhstan with a comprehensive range of active Horoptio anti-yeast products. A chance referral from a Harley Street doctor in the United Kingdom lead to the introduction of active Horopito to Italy, where it is now the number one herbal product for Candida and other fungal complaints. Vaginal pessaries containing active Horopito extract are among the products manufactured under license in Italy for the European market.

Forest Herbs has researched and patented the best non-toxic and stable method of extracting active Horopito leaf and incorporating the extracts in products for specific parts of the body. The extracts are used at different strengths depending on the target application. For instance the Trichophyton fungi that cause tinea (athletes foot) between the toes are very difficult to kill so the strongest extract is

incorporated in their foot and toe cream. Candida species can be adequately controlled by less concentrated active Horopito extracts. This is an advantage for intimate care creams which are applied to sensitive skin such as that around the vaginal area. The polygodial in active Horopito can create a sensation of heat to delicate mucus membranes, especially if they have been scratched raw in response to thrush infection, so the lowest effective concentration is desirable. Active Horopito extracts can also be used in liquid oral products, such as soft gel encapsulations, which often offer superior absorption to dry powder encapsulations.

Forest Herbs has a portfolio of patents and trademarks to protect its fifteen years of research, and to ensure that there is a funding stream to fully develop the potential of active Horopito, and eventually other New Zealand herbs. However, it remains a small family owned company with limited ability to promote its branded products internationally. The company expects future growth will be more through supplying part finished product for established natural health companies to market under their own brands.

Forest Herbs has a commitment to benefit the wider community through the expertise it developed while transforming Horopito from a local curiosity into a global herb. It is currently involved in a project to help the hill tribe people of northern Vietnam sustainably produce and market their traditional herbal medicines. The project is funded by NZAid and managed by Forest Herbs on a non-profit basis. Scientists in Hanoi and Wellington have discovered some outstanding benefits from little known jungle plants, which will be marketed to provide long-term livelihoods for the impoverished hill tribes' people. The methodology that is being developed in this project will be applied to similar situations around the world, enabling other indigenous peoples to safely and sustainably capitalize on their traditional plant knowledge.

Hard Science on Horopito

In 1982, a group of scientists from Canterbury University in New Zealand reported that they had isolated a substance called polygodial in the leaves of the New Zealand native plant *Pseudowintera colorata*.[3]

The Canterbury University team grew cultures of the yeast *Candida albicans* and measured the zone of inhibition in these cultures produced by discs of polygodial extracted from the leaves of *Pseudowintera colorata*. Their results showed that this extract was very effective at inhibiting the growth of Candida. They went on to show that in comparison to the antifungal pharmaceutical drug amphotericin B (which despite its high toxicity remains the standard therapy for most life threatening systemic mycoses) polygodial gave larger zones of inhibition, demonstrating that it was a more powerful antifungal. This work also showed that while the amphotericin B took some three to four days to exert an effect, polygodial suppressed Candida colony growth from day one.

Pseudowintera colorata, also known as Horopito, New Zealand Pepper Tree and Red Horopito, is a member of the Winteraceae family. It is the least specialized of all flowering plant families and it has many ancient features believed to be the same as those of the earliest evolving plants. The main biologically active chemical constituent of *Pseudowintera colorata* has been identified as the sesquiterpene dialdehyde polygodial, which has been shown to possess antifungal and anti-bacterial properties. It is known that polygodial is a component of the "hot taste" in peppery spices common in traditional Japanese cuisine.[6] Another sesquiterpene in Horopito, 9-Deoxymuxigadial, may also have pharmacological activity. Other constituents include essential oils such as pinenes, limonenes, humulene and eugenol, and the flavonoids quercetin, luteolin and proanthocyanidins.[7] Limonenes, natural insecticides, are demonstrating anti-cancer properties in recent literature, and are common to volatile oil-containing plants such as *Mentha peperita* (Peppermint), *Rosmariunus officinalis* (Rosemary), Oregano and *Vitex Agnus-Castus* (Monk's Pepper). Limonene is also known to induce the glutathione peroxidase pathway, a major anti-oxidant pathway in the body.

Polygodial has been shown to possess strong antifungal activity, comparable to amphotericin B, against yeast-like fungi *Candida albicans*, *Candida krusei*, *Candida utilis*, *Cryptococcus neoformans*,

Saccharomyces cerevisiae and also filamentous fungi *Trichophyton mentagraphytes*, *Trichophyton ruburum* and *Pencillium marneffei*.[8]

The antifungal activity of polygodial was generally not reduced by several susceptibility-testing conditions such as medium type, incubation temperature, inoculum size, and medium pH. Polygodial's antifungal activity was strongly increased in acidic conditions, however. Fungal friendly environments in the human host, such as the mouth, vagina and skin are often acidic and their colonization usually creates a micro-environment with even lower pH. Under these circumstances, polygodial can be expected to act as an effective antifungal agent.

Polygodial is not mutagenic, as determined by three variants of the Ames salmonella test[9] and further confirmed by the mammal-based V79/HGPRT method.[10] This is unique in that many other sesquiterpene dialdehydes possessing strong biological activity are mutagenic. In comparison with members of this group, polygodial exhibits the least cytotoxicity for compounds, which have antifungal activity.[9,11] Polygodial and closely related epipolygodial, controlled fungi (*Mucor miehei*, *Paecilomyces variotii*, *Pencillium notatum*, *Nematospora corylii* and *Saccharomyces cerevisiae*) at comparatively low concentrations. At higher concentrations they inhibited bacteria and algae. At about the same concentrations required to control gram-positive organisms (5–20 mcg/ml), they showed antitumour activity against Ehrlich ascites tumor cells and lyphocytic leukemia mouse cells.

Polygodial is fungicidal (kills yeast) in comparison to the actions of some of the azole derived antifungal compounds, which are only fungistatic (stop yeast growth) and are documented in the literature as having the potential to cause life threatening liver toxicity. Whilst some of the newer classes of antifungal are truly fungicidal in nature, they too have demonstrated their ability to be toxic in vivo. It has been reported in literature that the antifungal activity of polygodial is the result of structural disruption of cell membranes, leading to cell leakage and ultimately cell death. Radioactive monomer incorporation studies have shown no selective inhibition of uptake in polymers of DNA, RNA, protein or polysaccharide, as all uptake tapered off after sixty minutes.[12] Polygodial produces amounts of potassium leakage from yeast cells similar to those produced by Amphotericin B and miconazole.[13]

The seeds of *Pimpinella anisum* (aniseed) are used as a spice throughout the world and also as folk medicine in South America.[14] The oil of aniseed is one of the sweetest volatile oils. It is a true relaxant and has digestive soothing and general calming effects in both children and adults. Anethole, identified as an active principle in aniseed, has previously been demonstrated to have moderate antifungal activity. Though not potent enough to be considered for practical use by itself, anethole has been considered worthy of further investigation by virtue of being a natural product isolated from a food spice. Anethole has been shown to exhibit a significant synergistic effect on the antifungal activity of polygodial against *Candida albicans* and *Saccharomyces cerevisiae*. Activity increased sixty four times against *S. cerevisiae* and thirty two times against *C. albicans*. The authors of this work have concluded that 'since the control of opportunistic yeast pathogens is becoming increasingly important, the current study to enhance the total biological activity by combining two or more substances may provide a new approach to solve this problem. In particular, two phytochemicals isolated from common food spices, anethole and polygodial may be considered for practical application.' The idea of synergism is not new to herbal medicine. Both Chinese and Ayurvedic formulas often combine herbs to potentize their effects versus delivery of single herbs.

In 1992 an open study conducted by eleven New Zealand naturopaths for Forest Herbs Research Limited examined the therapeutic effect of capsules containing milled active Horopito and milled Anise seed in patients diagnosed with chronic intestinal candidiasis. The majority of practitioners reported they found active Horopito/Anise therapy more effective than other remedies they had recommended to their patients. Seventy six percent of patients reported an improvement in their symptoms.[5]

In 1997 the Pavlodar City Centre for Clinical Immunology and Reproduction compared twenty two patients taking capsules containing active Horopito and Anise seed with ten patients administered fluconazole (Diflucan®, Pfizer). All patients were diagnosed as having chronic, recurring intestinal candidiasis. A significant improvement was seen in 100% (n= 10) of the fluconazole group at seven days and in 90% (n=20) of the active Horopito group at fourteen days.[16] Although there is no evidence of teratogenicity, as a precaution *P. colorata* is not recommended during pregnancy. Active Horopito works rapidly against *Candida albicans* in

above
Nursery for active Horopito seedlings at Kaituna farm.
(iantraffordphotos.com)

below
Rows of organically grown active Horopito at Kaituna farm.
(iantraffordphotos.com)

above
Horopito's exceptional defense systems have enabled it to become one of the world's most ancient flowering plants, 65 million years old. The primitive flowers can be seen growing straight from the stem. (P. Butler)

above
There is a great variation in the anti-Candida activity among wild populations of Horopito. (P. Butler)

below
Kaituna Horopito farm is situated in the forest adjacent to the million acre Kahurangi National Park. (iantraffordphotos.com)

Minimum Fungicidal Concentration (%w/w) against *Candida Albicans*	
1% Horopito Leaf Extract, $scCO_2$ extraction University of Canterbury, Christchurch, New Zealand 14 November 2003	2.5
Olive Leaf Extract 12% oleuropein Cawthron Institite, Nelson, New Zealand 21 November 2000	5.0
Oregano Oil, 75–85% carvacrol University of Canterbury, Christchurch, New Zealand 20 October 2003	5.0

above
New Zealand's isolated position deep in the South Pacific has produced extraordinary flora and fauna.

below
Even a 1% solution of Forest Herbs' scCO2 Horopito extract can kill Candida growth at half the concentration of herbal alternatives.

the digestive tract. For this reason, those with Candida overgrowth sometimes experience a Herxheimer reaction (to dead Candida cells) in the first few days of therapy. This is typically characterized by a headache and a nauseous feeling, both of which are usually mild and transient.

Candida—a persistent pathogen

There is no doubt that an overgrowth of *Candida albicans* is a major challenge for many people today, especially women. Although a normal inhabitant of the human digestive tract from early infancy, this member of the yeast family is an opportunist looking for just the right conditions to grow and become a "persistent pathogen." In my practice as a Naturopathic Doctor, I have my patients fill out a complete questionnaire of their health history. Combining this information with the research on Candida, I began to notice a pattern of factors that tip the scale from Candida's normally innocuous presence into a major challenge to the immune system.

I had my patients ask themselves, how much sugar, refined carbohydrates and alcohol am I taking in? Do I have a craving for these foods? Have I been on antibiotics or birth control pills at any time for a month or longer? Do I notice that perfumes, dyes, soaps or cigarette smoke provoke symptoms and are they worse in damp or moldy places? Have I ever been pregnant? In patients that answered yes to many of these questions, I had the "aha" experience, my awareness switching on like a light bulb and pointing directly to Candida. On physical examination and testing, I discovered that frequently there were multiple signs of the yeast. Candida would show up as thrush in the mouth, as diarrhea or other irritation in the stool, as yeast in the vagina and as a beefy red rash on the skin, particularly in the warm and moist skin folds. And finally, I realized that many patients presenting with Candida were also sensitive to yeast and yeast containing foods like beer, bread and blue cheese. One patient of mine in particular was a classic picture of what we now call 'yeast syndrome,' and her case will be discussed later in the treatment chapter.

Let us explore further what is known about Candida and the effect of its overgrowth in our systems. The Candida infection is variously called 'candidiasis', 'candidosis', 'moniliasis' and in layman's terms, 'thrush'. Common symptoms that suggest candidiasis are 'spaciness', fatigue and depression. This is differentiated from systemic candidiasis, a potentially life threatening disorder of the blood. Systemic infection usually only occurs in seriously immune compromised people like those with HIV Aids. Autoimmune disease is, however, often present because Candida can make more than 70 antigens, which may lead to a host antibody reaction.

The more common manifestation of thrush usually occurs in warm, moist parts of the body, between the toes, in the groin and vagina, inside the mouth and throat. Thirty percent of people with Candida also have thyroid antibodies. In the attempt to deal with the Candida, the body is generating a reaction to itself (in this case the thyroid) which may be due to the "upstream effects" of a Candida presence. Candida produces over 70 waste products that are toxic to human systems, the most potent being acetaldehyde. Acetaldehyde may be responsible for suppression of immune T cells, increased permeability of vessels leading to poor blood filtering, irritability and depression, and decreasing the amount of amino acids, B vitamins and magnesium as the body works to clear it. Eliminating Candida may therefore decrease the total antibody load and decrease the autoimmune process.

Now let's look at some of the ways that Candida overgrows in the human body, the first being vaginal yeast infections. A full seventy five percent of women are likely to have at least one episode before they reach menopause, and forty five percent will have two or more. Women typically experience a vaginal itch and/or soreness in the vaginal area, a burning discomfort around the vaginal opening often worse at night, and dryness or discomfort during sexual penetration. In addition, there may be the presence of a thick cottage cheese-like vaginal discharge. Contrary to popular belief, a fishy odor is not a symptom of yeast infection, but of a more serious condition known as BV or Bacterial vaginitis. This should be treated by a health professional, whereas many cases of thrush are self diagnosed and treated.

Women are more susceptible to these infections if they are under stress from poor diet, lack of sleep or illness. Other predisposing factors are taking antibiotics or birth control pills or douching excessively. Although it may seem helpful, douching for relief can actually disrupt the balance of normal bacteria in the vagina and prolong the infection. Pregnancy, menstruation or diabetes can also change the nature of vaginal secretions to make vaginal yeast infections more likely. Although it is not considered a sexually transmitted disease, yeast infections are common among younger women (ages 20 to 40), especially after becoming sexually active. Menstrual difficulties such as loss of libido and premenstrual challenges can also accentuate their symptoms. This is differentiated from Premenstrual Syndrome (PMS) as there is no characteristic

symptom-free period following menstruation. Instead, symptoms are often present throughout the cycle.[17]

About five percent of women with vaginal yeast infections develop recurrent vulvovaginal candidiasis (RVVC), which is defined as four or more symptomatic vaginal yeast infections in a one-year period. Although RVVC is more common in women who have diabetes or problems with their immune system, most women with RVVC have no underlying medical illness. Finally, men (especially those with diabetes or Candida-infected partners) sometimes harbor the infection and should take treatment along with their partner.

Another way that Candida may overgrow is on the skin. Cutaneous (skin) candidiasis occurs in areas of skin that are moist and receive insufficient ventilation. Some common sites include the nappy/diaper area ('nappy rash') in babies; the webs of fingers and toes; the groin and the crease of the buttocks; the skin under large breasts and the fingernail beds. Young children who suck their thumbs and fingers are at higher risk of cutaneous candidiasis, as are individuals whose work requires that they spend long periods with their hands in water or wearing rubber gloves.

Candida may also overgrow in the mouth, known as oral thrush. Thrush is a common minor infection in babies and young children. It is a superficial, often recurrent, infection that affects moist surfaces around the lips, inside the cheeks and on the tongue and palate. It is generally not contagious but can spread to the esophagus. Esophageal thrush is often painful and difficult to treat effectively. If a woman has a vaginal yeast infection when she gives birth vaginally, her baby may contract it in its throat or digestive tract.

A more serious overgrowth of Candida spreads outside localized areas and is known as systemic candidiasis. Systemic candidiasis can affect people with severely compromised immune systems, usually as a side effect of HIV, cancer or transplant chemotherapy. In rare cases, the Candida fungus may invade the bloodstream through an intravenous (IV) tube, urinary catheter, tracheotomy site, ventilation tubing or surgical wounds. Typical organs that can be affected include the brain, eye, liver, lungs, kidney and heart. These usually only develop in people who are seriously ill or who have other health problems that weaken the immune system. Certain genetic disorders such as celiac disease can predispose the individual to

developing systemic candidiasis. There is evidence that toxic metals and chemicals such as mercury (found in dental amalgams and sometimes seafood), aspartame, MSG and others can kill friendly intestinal bacteria and weaken the immune response, leading to Candida overload. Most allopathic or "western" physicians restrict a diagnosis of Candida infection to the previously mentioned conditions. This is partly due to the fact that the accepted laboratory diagnosis for Candida commonly includes a Candida culture of the mouth, vaginal, or skin. However, conventional physicians typically find multiple vaginal yeast infections difficult to control. Many women are treated with repeated courses of potent antifungal drugs, often without lasting relief.

Many fungi, like bacteria, are also beginning to develop resistance to these medications. The key lies in the consideration of a far more controversial perspective—the presence of Candida overgrowth in the intestine. This is confirmed by antigen testing for Candida in the stool. It was Dr. W. G. Crook who first coined the term "yeast syndrome" as in the example above, to refer to a syndrome in which the predominant features are fatigue, a generalized malaise, gastrointestinal complaints, recurrent chronic infections, allergies, skin problems, decreased concentration, depression, irritability, and craving for sweets or carbohydrates. The condition is often referred to as "Intestinal Candidiasis" or "Candida-Related Complex." The underlying cause is considered to be an overabundance of yeast in the bowel and perhaps elsewhere.

Although the 'yeast syndrome' is still controversial there now exists substantial clinical and anecdotal evidence for its existence. Many patients who have been diagnosed with the syndrome do get better when they eliminate antibiotic use and follow a diet essentially devoid of sugar and yeast-containing substances. An overgrowth of yeast in the digestive tract can eventually result in yeast actually "translocating," or crossing the intestinal barrier and entering the bloodstream. Although physicians had previously believed this only happened in severely immuno-compromised patients (for example HIV and AIDS patients), recent studies have cast doubt on this theory, and suggest that translocation can take place in healthy animals and humans.
An overgrowth of Candida may result in varied signs and symptoms, but the most commonly reported include digestive upset (gas, bloating and diarrhea) as well as more systemic symptoms of fatigue,

depression, difficulty concentrating ("brain fog"), skin rashes and environmental sensitivities to perfume, cigarette smoke and the like.

Summary of risk factors for Candida overgrowth:

1. High intake of sugar and refined carbohydrates (a large food source for Candida).
2. Depressed immunity through stress and lack of sleep.
3. Nutritional deficiencies such as Vitamin B2 and B6, magnesium, iron (most important), calcium, zinc, and selenium.
4. Prolonged broad spectrum antibiotic use leading to decreased competition for space and nutrients. In a person with good immune function, a normal balance of bacteria in the gut (symbiosis) will return two weeks after antibiotic use. In those with cell mediated immune deficiency, return of normal symbiosis does not occur.
5. Other prolonged medication use: birth control pills, steroid hormones, immunosuppressant and anti-inflammatory drugs, chemotherapy drugs and ulcer medications or acid blockers.
6. Pregnancy
7. Menstruation
8. Diabetes or other altered glucose metabolism
9. Douching excessively
10. Infants born of vaginally-infected mothers
11. Skin burns, abrasions, wounds
12. Severe suppression of stomach acid (as in *Helicobacter pylori* infection)

Treatment Of Candida

Since yeast is a fungus, conventional treatment involves an anti-fungal medication. This approach to a Candida problem usually involves the use of powerful prescription antifungal drugs such as fluconazole, which may increase the risk of severe side effects such as liver toxicity.[20,21] Another antifungal, Amphotericin B, has been reported to increase urinary excretion of magnesium.[22] Would you risk potentially dangerous side effects if you knew a safe, natural, and well-researched option was available?

Alternatively, a natural approach begins by restoring the Candida population to a normal level without the use of risky pharmaceuticals. The infection must be treated in all areas that the Candida has colonized. In a study published in the Journal of the American Medical Association (JAMA), investigators established a direct correlation between vaginal yeast infection and the simultaneous overgrowth of Candida in the digestive tract. In the 98 consecutive cases examined, they found that yeast overgrowth was not restricted to the vagina alone, but also found in the digestive tract. The investigators concluded that, "…a 'cure' is not likely as long as the vagina remains the only treatment target." [23] So, it may be prudent for women who have a vaginal yeast problem to give serious consideration to treating the possible "intestinal reservoir" also.

In other sites, suppositories may be used for vaginal and anal infection. Oral and esophageal Candida may be targeted with products taken as a tea or mouthwash, or as a slowly dissolving lozenge. Conversely, if using an oral medication, a topical vaginal cream may be needed until the infection has disappeared. Active Horopito has been shown to be a safe and effective herb for Candida in all of these sites.

Women know only too well the discomfort caused by vaginal yeast and Candida problems. Happily, this condition is highly treatable in the majority of women, once the contributing factors are properly understood. Constant or intermittent vulval and vaginal irritation, itching, redness or swelling—it's a very uncomfortable and frustrating condition. But be aware, there may be ingredients lurking in the product you are currently using that make your condition worse, not better…Care does need to be taken over the selection of an appropriate topical agent for Candida—as long

ago as 1998 it was recognized that many women are sensitive to common constituents of creams used to actually treat such problems: propylene glycol, parabens, butylated hydroxyanisol, sodium lauryl suphate, methyl benzalkonium chloride, and fragrance.[24] The list reads like something out of a chemical laboratory, but all are used in products targeted specifically at women suffering from intimate itch due to yeast. These are not the "active" ingredients, but are included as preservatives or to enhance the feel and touch of the product. To complicate matters, a recent report is questioning the safety of the most common group of preservatives called parabens.

Researchers from the Department of Biology and Biochemistry of Brunel University in the United Kingdom have conducted a study and found that the alkyl hydroxy benzoate preservatives (methyl-, ethyl- and butylparaben) are weakly estrogenic. In other words, these preservatives have the ability to mimic the female hormone estrogen in the body. The study on this group of chemicals in products such as skincare, make-up and deodorants have found that the substances can cause adverse effects when injected under the skin of laboratory animals. Scientists believe that the parabens may be able to be absorbed through the skin of pregnant women where they act as an "alien" female hormone.[25]

It is estimated that ninety nine per cent of all cosmetic and body care products contain some form of paraben preservatives—surprisingly, many so-called "natural products" use parabens as a preservative. While not straightforward, it is possible to develop skincare products using alternatives. Forest Herbs Research is one of several small New Zealand companies who have spent years commissioning assays and stability studies to develop formulations completely free of synthetic chemicals, parabens and mineral oils. Forest Herbs use a natural preservative system containing such ingredients as natural source vitamin E, lactic acid and selected tea tree oils.

Natural creams can be at least as effective, and have similar shelf life to traditional creams. A study conducted by New Zealand naturopaths demonstrated that cream containing active Horopito extract produced an 88.5 percent improvement rate in individuals with genital Candida problems. In addition, it was reported that itch and irritation reduced within hours of first application.[26] So when you are choosing an appropriate product, be smart and look for

products that are free from all harsh synthetics—your body does not need them, and they may well be adding to your problem itch! The die-off of Candida can itself lead to a release of toxins such as acetaldehyde into the body, causing a 'flu-like symptom pattern in people known as a 'Herxheimer Reaction'.[27] Active Horopito is particularly effective in eliminating Candida and as such, this reaction should be considered as part of any Candida elimination protocol. Anise seed will help to minimize the die-off, as will plenty of fresh, clean water, rest, and gentle hydrotherapy such as a hot bath.

The underlying cause(s) of the Candida must be removed to establish and then maintain a healthy, balanced system. One of the simplest steps that people can take to minimize the risk of developing skin problems due to yeast and fungi is to avoid wearing tight clothing, especially underwear that does not allow sufficient ventilation, such as nylon or other synthetics. One study demonstrated that yeast infections are three times more common in women who wear nylon underwear or tights, than in those who wear cotton underwear.[28]

When it comes to controlling Candida in the long term, watching the diet is critical. In a preliminary trial, the avoidance of food allergens and subsequent treatment resulted in frequent resolution of chronic recurrent yeast infections.[29] While an extremely strict diet is hard follow, minor dietary changes such as eliminating sugar can make a significant difference for people with Candida. For reasons that are not entirely clear, many patients suffering from this problem have serious sugar and carbohydrate cravings that are almost of an addictive nature. One study reported on the severity and frequency of Candida-caused vaginitis, and compared levels of various sugars in urine of healthy women with levels found in women with chronic vaginal Candida infections. These researchers reported a higher level of urine sugar levels in Candida-infected women and a "dramatic reduction" as a result of reducing intake of dairy, sugar, and artificial sweeteners.[30]

Among women who reduced their intake of sugar, 90% reported no vaginal yeast infections during the following year. Placebo controlled studies have shown that natural agents can be successfully used to prevent antibiotic associated bacterial infections and Candida vaginitis, with few adverse effects reported. There is now significant evidence that administration of selected microorganisms

is beneficial in the prevention and treatment of certain intestinal infections, and possibly in the treatment of vaginal infections. Much of the benefit of these so-called "pro-biotics" has to do with their ability to prevent adherence and colonization of the Candida to the vaginal or intestinal mucosa.[31] In other words; preventing the attachment of Candida can prevent its over-population. The intake of bifidum bacteria concentrate capsules every day can dramatically increase the quantity of beneficial bacteria in the gut to help fight Candida infections. Acidophilus bacteria also can help to fight Candida in the upper intestinal tract. Preventatively, acidophilus has been shown to reduce the risk of Candida vaginitis when taken during courses of antibiotics.[32,33]

Studies have also shown that the daily ingestion of 150 ml of yogurt enriched with live *Lactobacillus acidophilus* is associated with an increased colonization of friendly bacteria in the rectum and vagina and a reduction in colonization of Candida populations.[34,35,36] This results in reduced episodes of bacterial vaginitis. However, yogurt should not be used with people having known milk sensitivity.

Garlic, Pau D'arco, Caprylic Acid, Golden Seal, Cinnamon, Echinacea,[37,38,39,40] and Oregano oil and Olive leaf extract have all been used to some effect to destroy yeast overgrowth. There are also many studies showing the antifungal properties of tea tree oil (*Melaleuca alternifolia*) against a wide range of fungal isolates including species of Candida. However, it is the New Zealand herb active Horopito and its extracts that currently show the most promise for a successful natural strategy to control this modern scourge.

April's Story—A Successful Case Study

April (named changed to protect her identity) is a 33 year old hairdresser who had been on multiple courses of antibiotics as a child and was currently on Allegra and Zyrtec because her itching was so intense. She had an active Candida infection in her vagina, an itchy red skin rash covering most of her body, and was complaining of fatigue, irritability and an inability to concentrate for long periods of time. She also had a craving for sugars and refined carbohydrates that she was indulging in much of the time. She could not afford laboratory testing so we went straight to treatment using an active Horopito product.

I started her on active Horopito capsules internally to clear the infection, eliminated sugar, refined carbohydrates and yeast/ mold containing foods from her diet, and supported her system with plenty of water. The dietary changes in particular were the most challenging. We also added hot baths with Epsom salt and lavender for relaxation, and started her on a pro-biotic formula of lactobacillus as a competitive inhibitor. With just these few changes, the effect on April was dramatic. Within two weeks, her skin and vagina cleared up almost completely with minimal itching, her mood improved "amazingly" over her previous symptoms, and her cravings for sugar and carbohydrates disappeared. She also realized that although she didn't like being exposed to chemicals daily as a hairdresser, she was better able to tolerate them. She even cut her Allegra and Zyrtec dosages in half. Because she felt so much better, she was able to put energy into eating better and spending more time with her children, who by this time had noticed that mom was in a better mood! After three months time, she was off her medications for itching entirely, and both she and I attribute a huge part of her recovery to active Horopito.

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Active Horopito

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