When a patient receives a diagnosis of celiac disease or gluten intolerance, either via laboratory testing or by process of elimination by the sufferer himself, complete avoidance of all gluten-containing foods will often bring improvement of many symptoms in a short time, sometimes as quickly as three days; others may require a month for positive signs to emerge. Finally understanding what was wrong can be a tremendous relief for someone who had likely been struggling with unhappy digestion for quite some time.

It is important to remember, though, that the impaired digestive capabilities of someone suffering from this autoimmune disorder will not automatically return to full healthy functioning by merely excluding gluten from the diet, nor will longstanding nutrient deficiencies be corrected unless they are actively addressed in a recuperation protocol designed with care and insight into the needs of the individual. Celiacs who have been severely afflicted should expect significant renewal of health only after one or more years of concerted effort.

Depending on how much damage this condition has caused by the time it is diagnosed – cases have often gone improperly diagnosed for as many as 12 years, and some as long as 30 – deficiency problems may have pushed one to a life-threatening condition. This was what had happened to my own father who had suffered from misunderstood digestive problems for decades.

Several years ago he had become dehydrated from a particularly long bout of severe diarrhea and briefly lost consciousness and fell from his tractor while far from the house in one of his fields. He made it back home and my mother immediately took him to the hospital where they routinely stuck him with an IV to rehydrate him.

He started to bleed without clotting. Vitamin K, responsible for blood clotting, is manufactured in the small intestine, and of course he had none, although no one at the hospital knew this yet. If he had nicked himself while unconscious in the field, he would have bled to death in about 10 minutes.

The Diagnosis

In the hospital he received transfusion after transfusion and was being talked into exploratory surgery by the head surgeon when my sister, a family practice physician living in Maryland, became alarmed and flew in to have a look herself. Pat had just been introduced to her first case of celiac disease in one of her own young patients, and had been enlightened to many of the intricacies of the disease by one of the leading experts in the condition at the University of Maryland. This stroke of serendipity literally saved my father’s life, since now my father’s years of symptoms finally made sense to all of us, and Pat got him an injection of vitamin K which stopped his bleeding in about half an hour.

Surgery was called off – in fact, my father left the hospital against the wishes of his doctors – but my father was very weak and unable at that time to digest anything at all without severe diarrhea.

The Prescription

Here another act of serendipity provided exactly what was needed at this crisis. During the winter, several months before my father’s fall, I had been pottering away in my kitchen experimenting with bone broths. I had become entranced by the extraordinary nutritive and recuperative properties of highly gelatinized broth made from the long simming of bones, and I wanted to have a good storage of it. I improvised my brews by adding astragalus root – a nutritive immune system enhancer – to some pots, and kombu (a brown kelp) to others for its contribution of minerals and soothing mucilage.
I added vinegar I'd made from shiitake mushroom stems – another immune system booster – in others, and nettles I'd grown on the burial ground of spent fish bones in another.

Nettles have so many nourishing and energizing attributes that one can barely enumerate them all, but I had been counting on their ability to pull minerals from the soil to augment my bone stocks. I only recently have come across a reference to their ability to actually promote the growth of intestinal villi! When the crisis came, I had over two dozen quarts of concentrated bone broths in my freezer. I took every one of them to my parents' farm in rural Michigan to feed my father.

Warmed bone broths (undiluted) with a bit of Celtic sea salt were the first things we gave to my father. He was hungry, so we made small meals of ground lamb and mashed potatoes with raw butter. In between meals he drank bone broth.

It wasn't too long before his diarrhea became less frequent and less severe, but his digestion was still quite precarious. He was gaining energy and insisted on taking care of his cows himself, so something was being absorbed, but his diet consisted of very few items at first, and contained no grains of any kind yet. On a necessarily restricted but nutrient-dense menu he continued to improve noticeably day-by-day, and he was so much better after a week that my sister and I felt we could return to our homes and that he and our mother would be all right continuing and expanding the healing regime together.

My father's case was a severe one, but some important lessons can be gleaned from the experience. First and foremost one must insist on utilizing high-gelatin bone broths for healing in all sorts of digestive and deficiency disorders. The colloidal mix of minerals and amino acids, while not complete nutrition, is easy to digest and also helps the body to digest whatever else is in the stomach with it. There are many references to the ability of gelatin (from bone broth) to heal and soothe intestinal mucosa.

I cannot recommend any commercially made soup stock on the market, however, for purposes of recuperation and healing. One simply must make this properly at home, using the very best ingredients, time and good thoughts. Concentrated broth can be used not only in soups, but in sauces, stews and ragoûts, and up to half the liquid in cooking grains. A mug of salted broth is a satisfying drink, and many other uses can easily be devised by the enterprising cook. The key is to liberally supply this alchemical elixir daily.

Other Foods

It is not uncommon for celiac sufferers to have difficulty with other foods besides grains. They may have milk or casein intolerance, or experience difficulty digesting fats. Legumes may provoke some problems, too, although well-cooked lentils with warming spices like cumin and coriander may be the safest to try after some months of healing.

It is possible that other food intolerances may pass with time and healing, but that outcome cannot be guaranteed. Our aim is to keep the digestive fire kindled and strong, so that means presenting foods that will support that goal. Soups, stews and ragoûts are all very valuable since their very preparation mimics digestion itself: several foods simmered slowly together in one pot. Meat, along with vegetables such as onion, carrot, potato, celery and sea vegetables, broth, wine and savory herbs produce a delectable meal – no one would consider it convalescent fare, but it is one of the best!

One caveat about vegetables: it is best to avoid the cruciferous tribe for quite a while. Cabbage, broccoli, cauliflower, radish, etc., are all wonderful foods, but they are hard to digest for anyone with a sensitive digestion. Luckily, they will likely be tolerated later on, but it may take many months. It is
better to start off with baked sweet potatoes, braised carrots, onions, leeks (in cooked form the alliums all have healing properties to the digestive tract), puréed potatoes, and braised celery. Spinach, beet tops, Swiss chard and rhubarb all contain abundant oxalic acid, which irritates the lining of the gut, and which the body neutralizes with calcium from the diet. Eating these vegetables will restrict calcium absorption, and they won't be good choices for the healing period.

Salads and raw vegetables will not sit well on the stomach early on in recuperation either, and certain constitutions will always have trouble digesting cold, raw vegetables, but salads may be well tolerated later on as occasional additions to meals. Raw avocado is an exception (it is full of enzymes) and can be mixed in with creamy scrambled eggs or creamy omelettes.

Here I'd like to emphasize that cold is the quality to avoid when choosing food to encourage digestive fire. It makes sense that you don't want to douse this vital fire, but it seems American culture is enamored of icy beverages and foods to an unhealthy degree. To protect digestive fire, do not drink or eat anything cold, such as milk or juice or yogurt right out of the refrigerator, and never put ice cubes in water or other beverages. Have your beverages at least at room temperature, although gently warmed raw milk is delicious either with other foods or alone, and is easier to digest. If you can arrange to do it, clabber your milk or make yogurt in small amounts. The taste is so much better while the product is still warm – I like to eat all we make within 24 hours without resorting to refrigeration, after which my stomach has lost all interest in it!

Raw fruit is also best avoided as raw pectin can irritate the digestive tract, although occasional small amounts of stewed fruits, fresh or dried and served with raw cream, can be enjoyed after healing is well underway, and dried dates are a nice enzyme-rich and nutritious treat to satisfy the sweet tooth experienced by many people suffering from mineral deficiencies. As for other sweets, raw honey is useful in moderation, and a "tea" made of unsulfured organic black strap molasses with raw milk will also provide minerals.

Grains Again?

So what about grains? While the celiac recovery plan continues to steer clear of any of the gluten-containing varieties, rice can be introduced not only as a substitute, but as a healing food. It is interesting to note that in traditional Chinese medicine very dilute, long-cooked broths of rice and water (called congee or jook) make up an entire class of healing foods for numerous disease conditions. Rice is cooked in up to nine times as much water in a slow-cooker for eight or nine hours, sometimes with added medicinal herbs, until the rice grains have dissolved completely and the broth thickens. Eggs, meat or vegetables are poached in this broth and served as a healing, very easily digested and tasty meal. It is highly recommended for convalescents, the very old and the very young.

Something along the same lines from French cooking is soubise, a slow oven-cooked casserole of rice, broth and a pound or more of sliced onions, with bay leaf and white wine. The rice cooks very slowly, absorbing the moisture of the dissolving onions along with the other ingredients. It is usually finished with heavy cream and served as a side dish or sauce.

Other grains to be introduced slowly and carefully are buckwheat, millet, quinoa, corn and oats – all prepared for maximum digestibility and neutralization of nutrient inhibitors. Oats and corn may not be tolerated at first, for various reasons, including possible contamination of the oats via harvesting and milling equipment also used for wheat, but may be tolerated with time.

Perhaps you've noticed I haven't mentioned any of the "gluten-free" products that now flood the market. They simply aren't necessary and distract one from thinking about real food. Purchase your
food in the raw ingredient form from people you know or sources you trust. Grow as much of what you eat as you can, even if it is only herbs in pots on a terrace.

** Tranquility **

Making your food yourself is the only way to ensure quality of the ingredients, which should always be the best you can find. Most importantly, cooking from scratch focuses your healing instincts on the home hearth.

A distressed digestion is calmed and supported too by regular mealtime routines. Reducing stress is good medicine for everyone, but perhaps especially in the case of digestive disorders since we feel our emotions literally in our guts. Make mealtimes rhythmical sanctuaries in the day, with appetizing aromas and attractive, calm surroundings. Mealtimes are for nourishment, and also for pleasure and peace and agreeable companions. This is not the time to be rushed, or immersed in noisy company, human or electronic. Plan a short period of rest after each meal, too. Tranquility and slowness point the way to health and longevity.

** SIDEBARS **

** Encouraging Findings on Sourdough Bread **

A study published in February, 2004 in Applied and Environmental Microbiology with the tantalizing title "Sourdough Bread Made from Wheat and Nontoxic Flours and Started with Selected Lactobacilli Is Tolerated in Celiac Sprue Patients," describes the results of an Italian research team which, encouraged by preliminary findings of their earlier work in vitro, designed an in vivo experiment to test their findings. The team's premise was that lactobacilli, chosen for their ability to hydrolyze or sever protein (gliadin) fractions might be key in processing wheat flour so that its toxic properties would be neutralized and therefore not harmful to celiac patients.

Their experiment included 17 subjects, all celiac patients who had been consuming gluten-free diets for at least two years and no longer exhibiting symptoms. The experimental bread was made from a combination of wheat (Triticum aestivum), oat, millet and buckwheat flours, 30 percent of which was wheat. The flour was mixed with a "broth" of four lab-obtained lactobacilli, a dose of baker's yeast and tap water in a continuous high-speed mixer. When the dough was allowed to ferment at about body temperature for 24 hours, almost all of the toxic peptide fractions in the wheat protein had been hydrolyzed. The bread was then baked and fed to the celiac volunteers (who also bravely ate breads made with plain baker's yeast as "controls"). After consuming the simple yeasted bread, analysis of the volunteers' gut permeability was made, which showed a change in permeability normally associated with celiac response. No such response was noted when the volunteers ate the 24-hour fermented sourdough bread. The authors of the study are cautiously enthusiastic about the results of this "novel bread biotechnology" and its implications for celiac patients.

The results of this study have been criticized by some as simplistic based on the premise that gut permeability is not the best (or only) indicator that damage may have been done by consuming the sourdough bread. Critics also surmise that only the four species of lactobacilli chosen by the researchers will perform the required protein hydrolysis. In other words, "Don't try this at home." While it remains uncertain as to whether or not undisclosed damage may have occurred by consuming the sourdough bread, it is actually a small miracle that the laboratory study worked as well as it did.

Native lactobacilli colonies found in mature sourdough cultures can easily number in the dozens, and could easily include the four chosen by the researchers (one of which was the common sourdough
organism L. sanfranciscinis). Lactobacilli are, after all, very common, mostly benign, often downright necessary, creatures, living on and in us as well as on decaying plant matter. In an established sourdough culture they form a stable and self-supporting relationship with one or more families of native yeast fungi. Bakers familiar with sourdough cultures also know that the relationship between the microorganisms and the types of flour used with them is important and affects the outcomes in the bread – rye culture works best with rye, Kamut® culture with Kamut®, and so on, indicating that the symbiosis is more complex than we might think.

A tangential quibble I have with the research lab procedure lies with their use of a high-speed continuous mixer to make their sourdough. Why didn't they just fire up the old cyclotron? In other words, sourdough bread, hardly a "novel biotechnology," requires no such high-energy input, and in fact can be ruined from machine mixing. The equipment used is typical of commercial applications in which no time is allowed for natural dough development, and additives and high energy force the flour to perform. Aside from mixing enough to incorporate all ingredients, sourdoughs do not need to be kneaded and should always be gently handled. The fermenting dough is the visible evidence of the microorganisms at work, developing gluten, softening the dough and denaturing anti-nutrients. Please, try this at home!

**Can Celiacs Ever Eat Gluten Breads Again?**

This is the burning question, one that provokes considerable debate. If the question is about regular commercial breads and other gluten-grain products, the answer is a resounding No!

Often after a gluten-free period, the celiac patient will feel so good that he believes there can be no harm in returning to old eating patterns. In the case of my father, after about a year and a half, he was feeling so good that he believed himself "cured". Against the wishes of my mother, Dad consumed one pancake at a farm gathering. In less than 48 hours, unpleasant symptoms of an allergic reaction began and did not fully disappear for almost two weeks. And that was with only a small amount of wheat.

Given the inappropriate, even violent, ways that wheat is processed today, it is a good idea for everyone to steer clear of these products, but those who have had celiac disease need to foreswear them for life – the risks are just too great, even when no symptoms are apparent.

But can those who have suffered from celiac disease enjoy genuine sourdough bread, properly prepared from rye or Kamut®? My father's experience suggests that the answer is yes, at least for some. While one conventional pancake brought back all the old symptoms, he can consume genuine sourdough without problems, indeed has been doing so for over five years without adverse effect.

Is he suffering from silent damage? Nothing indicates that he is. In his 80s, Dad still works hard every day on the farm, always cheerful, optimistic and open to new ideas. (A good marker of recovery, according to some former celiac sufferers, is a sense of "profound well-being.") Of course, he went through a long period of healing before he tasted the sourdough bread, and he does not overindulge.

While some critics may argue that long-rise sourdough breads could be doing silent damage beneath such apparent success, researchers are currently investigating the effects of long-term consumption of sourdough breads on recovered celiacs, and in coming years will be able to answer this question with enough certainty to satisfy the skeptics. For now, we know that properly prepared non-gluten grains can be safely introduced as wholesome additions to the diets of people who have recovered from celiac disease, and anecdotal experiences and preliminary research both indicate that breads
traditionally prepared from gluten grains, even wheat, may also in time serve as wholesome additions to the diets of many people who have recovered from celiac disease.

Rather than condemn celiac sufferers to a life without bread, how much better to offer a healing protocol followed for life with the right kind of bread. In fact, how much better for all of us to take our cue from celiac sufferers and consume only bread that has been prepared by artisans – with attention to detail and lots of time.

**Ultragrain White Whole Wheat – A Recipe for Trouble**

The US food processing industry looked into its crystal ball a couple of years ago, foresaw the imminent demise of the no-carb diet, and decided to be ready to cash in on a guilt-free version of Americans' upcoming emotional reunion with their old starchy sweethearts. The once-abandoned mainstays of the Standard American Diet were back, but now they were made of virtuous whole grains, specifically whole wheat. But wait! Not whole wheat whole wheat, which one humorous commentator likened in general appeal to "unshaven women," but the new whole wheat, developed in 2004 by ConAgra Food Ingredients, and dubbed Ultragrain White Whole Wheat.

From ConAgra's Food Ingredients website: "The response from the food industry, as well as the consumer response to Ultragrain has been unprecedented. Articles in USA Today, The Wall Street Journal as well as broadcast stories on MSNBC declared Ultragrain a product for the future. With the release in early 2005 of the new USDA dietary guidelines, whole grains were once again cemented as one of the pillars of a healthy US diet.

Since then Ultragrain has found its way into many products including breads, pastas, crackers, cookies, breakfast breads, mixes and many more. And hundreds of products including Ultragrain are now in development at food companies across America."

All the hullabulloo has to do with what the food industry must consider a win-win situation: the new (non-GMO) wheat hybrid and new patented milling process by ConAgra create a whole wheat flour with just about none of the qualities we associate with whole wheat, so customers used to the taste of refined flour products may virtuously purchase the new "whole wheat" versions and expect no unpleasant surprises. "It gives [consumers] permission to enjoy baked goods, knowing that there is sound nutrition behind them," says Don Brown, vice president of marketing for milled ingredients at ConAgra Food Ingredients.

Hard white wheat has been around for a long time, and, ironically, was one of those hard-to-find grains until fairly recently. White wheat carries the recessive gene for pigmentation, and in its natural state is the same nutritionally as hard red wheat, except for the lack of color in the bran. Because it lacks the red pigment, it also does not have the phenols which impart a slightly bitter taste to pigmented wheats (akin to the tannin in tea) and so the slight natural sweetness of wheat is more apparent. ConAgra, which spent almost 10 years on the hybridization of the new white wheat as well as its milling process, has produced, in Ultragrain, an even sweeter wheat with a thinner bran. The patented milling process pulverizes the grain to such a degree that the particles are practically microscopic, and the flour can be used in all commercial food processing applications that currently use refined flours.

You can laugh at the new Whole Grains Lucky Charms, or Sara Lee's Soft and Smooth Made with Whole Grain Hotdog Buns, or WonderBread's White Bread Fans' 100% Whole Grain Bread, with cumbersome names obviously meant to assuage fear and anxiety, but this new flour might be the really scary thing. With particles so small, increasing their exposure once eaten, and proper wheat
processing methods so inadequate in the commercial sector, this new flour looks like a huge dose of potential trouble and may initiate even more cases of wheat intolerance in the near future.

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About the Author

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Katherine Czapp was raised on a three-generation, self-sufficient mixed family farm in rural Michigan. After studying Russian language and literature at the University of Michigan, she is gratified to discover that the skills and experiences of her anachronistic upbringing are useful tools in the 21st century. She works independently as a three-season organic gardener and WAPF staff editor. She and her husband Garrick live the slow life in Ann Arbor, Michigan. To learn more about authentic sourdough bread recipes and to obtain a live culture starter, visit www.realsourdoughbreadrecipe.com.