

The Essentials of Enzyme Nutrition Therapy

Part 1/3

Food enzymes in raw food are vital for digesting that food, but their destruction during cooking is a key factor in today's rising levels of allergies and chronic degenerative diseases.

Extracted from Nexus Magazine, [Volume 10, Number 6](#) (October-November 2003)

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From our web page at: <http://www.nexusmagazine.com/>

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In August 1971, the US Department of Agriculture published "An Evaluation of Research in the United States on Human Nutrition; Report No. 2, Benefits from Nutrition Research". The US government spent approximately \$30 million analysing the relationship diet has to disease.

According to the study:

- *Major health problems are diet related;*
- *The real potential from improved diet is preventative;*
- *Benefits would be shared by all...especially by lower economic and non-white population groups;*
- *Major benefits are long range... Early adjustments of diet could prevent the development of undesirable long-range effects;*
- *There exist geographical, regional differences in diet-related problems.*

It's now known that within a very short time after its release, all copies of the report were seized by the federal government. It was not until the campaign in 1993–94 for the Dietary Health Education and Supplement Act that a copy was mysteriously forwarded to the grassroots organisation, Citizens for Health, to help in its fight to prevent the Food and Drug Administration from classifying food supplements as drugs.

Within any group that seeks control and power over a population, even health is a legitimate target. If you can manipulate the population's health or induce disease by modifying what they consume, you can create a pseudo healthcare system that seems to care but is busy making billions off disease that is relatively easy to prevent or cure through diet alone. With the multimillion-dollar backing of an industry, you can also discredit any alternative to current, popularly accepted treatments by labelling them "old wives' tales", "quackery" or "unscientific".

In 1988, "The Surgeon-General's Report on Nutrition and Health" addressed *the overwhelming evidence of the connection between diet and chronic disease*. In his report, then Surgeon-General C. Everett Koop wrote: "For the two out of three adult Americans who do not smoke and do not drink

excessively, one personal choice seems to influence long-term health prospects more than any other: *what we eat...* *The weight of this evidence and the magnitude of the problem at hand indicate that it is now time to take action.* In the cause of good health for all citizens, I urge support for this Report's recommendations by every sector of American society." (Italics added.)

As reported in the *Journal of the American Medical Association* (vol. 280, November 11, 1998), a nationwide survey on the use of alternative medical therapies revealed that "[e]stimated expenditures for alternative medicine professional services increased 45.2% between 1990 and 1997 and were conservatively estimated at \$21.2 billion in 1997, with at least \$12.2 billion paid out of pocket". The article concluded that "[a]lternative medicine use and expenditures increased substantially between 1990 and 1997, attributable primarily to an increase in the proportion of the population seeking alternative therapies, rather than increased patient visits per patient".

Not only in America but in other countries, the populace is demonstrating a preference to what are referred to as "alternative therapies". People are seeking natural therapies, drawing upon cultural heritages of healing aligned with their own philosophies and beliefs. These therapies include acupuncture, herbal medicines (both Eastern and Western botanicals), homoeopathy, Reiki and other so-called energy treatments, and nutrition.

It has become overwhelmingly clear that diet and lifestyle influence health and disease. Yet, within the field of nutrition, there are differing opinions on just what constitutes a healthy diet. This is most evident with popular books on diets which flood the market. Is the low fat/low protein, high complex carbohydrate diet that Pritikin advocated correct? Or is the Atkins diet with high protein/fat, low carbohydrate the one we should favour? Should we eat according to our blood type? What about raw versus cooked foods? Is soy good for you, or is it harmful? Do the media drive our choices through advertising? What about the "friendly" doctor staring from your television set, telling you how dangerous this herb or that vitamin is? Are nutritional supplements effective or not? The debate seems endless.

Over the last decade, sales of nutritional supplements have generated a US\$4 billion industry worldwide. Almost every month, new companies claim to have the "magic bullet" for what ails us. Multi-level/network marketing companies are quick to get on the bandwagon, knowing how much profit is available thanks to members of the baby-boomer generation who pride themselves on "looking good" and staying healthy, no matter what the cost. The rush to discover new drugs from medicinal herbs in Third World countries keeps pharmaceutical companies abreast of all that is under the sky.

Pioneers in Enzyme Nutrition Therapy

Within the field of nutrition, enzymes have become the buzzword. Every company now has its own "super-concentrated enzyme formula", and boasts how powerful it is and how it contains 10 times the enzyme power as the other company's product.

Yet, understanding enzymes and their role in human nutrition requires more than just knowledge of the chemistry. We also need to be familiar with the history and pioneers behind the development of enzyme nutrition therapy and the rationale behind its clinical use.

Historically, there is recorded evidence of diverse cultural groups developing foods high in concentrated enzymes. Many of these cultures discovered the health benefits of enzyme-rich foods because of trial and error and probably just plain luck, by leaving them out in the open for bacteria to work on them. Among these foods are fermented dairy products, such as yoghurt, kefir and various soured-milk products; fermented vegetables, such as European sauerkraut and Korean kim chi from cabbage; and soy products like miso and tempeh, which were first developed in Asia. In tropical countries, certain fruits such as papaya and mango were found to contain very high concentrations of enzymes, and have been used traditionally for the topical treatment of burns and wounds.

Nonetheless, it was not until the early 1900s that Dr John Beard, a Scottish embryologist, filtered

the pancreatic liquid of freshly slaughtered young animals for the active enzyme content. He reasoned from observation that young animals had to have greater and more powerful concentrations of enzymes because the energy required for growth was greater. Dr Beard injected this concentration into veins, gluteal muscles and sometimes directly into tumour sites of cancer patients. He observed the rapid shrinkage of tumour masses and cancer cell growth inhibition. Some patients experienced allergic reactions because the unpurified juice contained foreign proteins. In spite of this, more than half of the cancers completely disappeared, while other patients' lives greatly improved and were prolonged far beyond what was expected.

Dr Beard's enzyme treatment caused turmoil in the allopathic medical community in England. He was called a charlatan and received threats to close down his practice. However, patients of other doctors requested Dr Beard's enzyme treatment. To satisfy them, doctors ordered pancreatic juice from local pharmacists who, in turn, ordered it from the slaughterhouses. Doctors were sold pancreatic juice from older animals whose enzyme content was inactive. Unfortunately, the results were not successful and patients were very disappointed.

In all, Dr Beard treated 170 cancer patients and recounted his enzyme therapy in his book, *The Enzyme Treatment of Cancer and its Scientific Basis*, published in 1907.

Not much followed from the early part of the 20th century. Indeed, it was not until the 1930s that clinical use of enzymes began to pique the interest of a few physicians.

In 1930, at the First International Microbiology Conference, held in Paris, Dr Paul Kautchakoff, a Swiss doctor, presented a paper entitled "The Influence of Food Cooking on the Blood Formula of Man". In it, he explained how digestive leukocytosis occurred every time cooked food was ingested by subjects of differing age and sex. This phenomenon was observed in patients as early as 1843 and was considered a normal occurrence.

Digestive leukocytosis is the dramatic increase in the amount and activity level of white blood cells (leukocytes) in the blood due to a stimulus—that stimulus being undigested cooked food crossing the gut wall. With canned and cooked foods, the increase was moderate. With heavily processed foods such as packaged meats, the increase was identical to food poisoning! The only difference was the absence of the bacterium associated with food poisoning. Cooked foods are missing essential enzymes which prevent adequate digestion. Dr Kautchakoff made note that there was no increase leukocyte count/activity in subjects who ate only raw food. This is because *all raw food contains food enzymes which completely digest what we eat*.

From 1932 to 1942, Dr Francis Pottenger, Jr, of Monrovia, California, began one of the most intriguing clinical studies undertaken in the field of nutrition. His study ran for 10 years, covering four generations of over 900 cats. In this groundbreaking study, Dr Pottenger simply controlled the food cats were fed. The original group was fed raw, unpasteurised milk, cod liver oil and *cooked* meat scraps. The other two groups were fed uncooked meat/*pasteurised* milk and *cooked* meat/*pasteurised* milk respectively. The fourth group was fed uncooked, raw meat and raw, unpasteurised milk.

Dr Pottenger's observations should have shaken the foundations of modern medicine. Nonetheless his work, like that of so many others, has largely been ignored. He meticulously recorded his observations with exacting measurements and photographs. Here is a brief summary of his discoveries. In the group of cats fed only raw food, there were no chronic degenerative diseases! The cats lived to grow old and were easily handled. They primarily died of old age, living much longer than cats from the other groups.

In the first generation of the combination cooked-food groups, cats showed symptoms of chronic degenerative disease that we are familiar with: allergies, asthma, arthritis (both rheumatic and osteo), cancers, heart disease, kidney, liver and thyroid disease, dental disease and osteoporosis. The second generation manifested the same diseases, albeit even more severely. Most kittens were stillborn or born with disease, and died within six months in the third generation. By the fourth generation, the study ended because the cats were infertile and could not reproduce.

In drawing his conclusions, Dr Pottenger reported the underlying nutritional factor had to be a "heat-labile substance". Unfortunately, he had not deduced them to be enzymes, because so little

was known about them at the time.

In the early 1930s, a "special substance" was discovered in the blood of healthy individuals which was proficient at attacking and destroying cancer cells. However, this substance was found only very slightly or was missing altogether in patients suffering from cancer. Working during those years in New York, Dr Max Wolf became one of the most celebrated doctors of his time. He was fascinated to hear of this substance and began investigating on his own. He convinced Dr Helen Benitez to join him from her post in the neurosurgical department at Columbia University, and they performed thousands of tests to determine exactly what this substance was. They concluded it had to be enzymes.

Dr Wolf then had to isolate which of the many dozens of known enzymes were responsible for several activities, i.e., controlling inflammation, correcting degenerative disorders and breaking down cancer cells. After years of testing various enzyme mixtures on animals, with no harmful reactions, he was able to offer his enzyme therapy. It soon earned him a reputation with many famous clients in politics and the arts. Even a few Presidents and European leaders sought him out. He developed one of the most widely used enzyme products available—Wobenzyme™.

At the same time that Dr Pottenger was overseeing the clinical study in California and Dr Wolf was researching in New York, Dr Edward Howell of Chicago was questioning the use of cooked, processed food for human consumption. He found that heating food to 118°F (47.78°C) for more than 15 minutes destroyed all the enzymes. Obviously then, heating foods at higher temperatures for shorter periods also destroys enzymes. The current technology of "flash pasteurisation" of milk and juice is an example.

Enzymes are the only substances capable of digesting food. They exist in raw food in order to digest (break down) that food.

Enzyme Deficiency and Degenerative Disease

In 1940, Dr Howell posed the question, "Is chronic degenerative disease a matter of severe enzyme deficiency?" To this end, he spent the rest of his life researching and documenting clinical work throughout the world, and he answered his query with a resounding "Yes!"

In the early 1940s, Dr Howell created the first manufacturing facility for the production of plant-based enzymes. While Drs Beard and Wolf used animal-based enzymes produced from the pancreas of animals, Dr Howell used certain species of fungus to "grow" highly concentrated plant-based enzymes. This is where animal- and plant-based enzymes become markedly different in their clinical use. And this is where Dr Howell's observations and research have made all the difference in the world of enzyme nutrition.

Dr Howell wrote two books reporting his life's work: *Food Enzymes for Health and Longevity* and *Enzyme Nutrition*. Some of the most important revelations about enzymes, nutrition and physiology are contained in these pages. He noted that all mammals have a pre-digestive stomach; he called it a "food enzyme stomach". In humans, it is the uppermost portion of the stomach—the fundus or cardiac portion. It is here that enzymes found in raw food pre-digest what has been ingested. Enzymes secreted from saliva and other glands will likewise pre-digest some of the cooked food consumed. However, when cooked food is eaten, enzymes will be supplied from other organs to digest the cooked food. This produces a constant drain of enzymes from the immune system and other important organs. When this happens over a lifetime, organs fail and are overcome with "disease".

Howell discussed organ hypertrophy, noting that any organ or gland will grow more cells, becoming larger because the demand placed on it exceeds its ability to function. He found that, in particular, the pancreas in humans was 2–3 times heavier and larger in proportion to body weight as compared to the pancreas of other mammals. He attributed this to consumption of an excessive amount of cooked foods.

When enzymes are not present in the stomach for digestion, food passes into the duodenum, the upper portion of the small intestine, where enzymes secreted from the pancreas digest the food. This is the common teaching in medical schools. But what if the pancreas was not meant to be the major

digestive enzyme organ? What if digestion was meant to take place in the stomach, with enzyme-rich food?

Dr Howell cited studies suggesting this to be the case. Because food is not digested in the stomach as Nature intended, the burden then falls to the pancreas, causing it to hypertrophy. If the burden continues for long enough periods, it may lead to pancreatitis or other more serious ailments.

Howell referred to what he called "the law of adaptive secretion of digestive enzymes" — that the body will secrete exactly the right amounts and types of digestive enzymes depending upon what type of food is ingested. Eating a piece of cheese will produce more fat-digesting enzymes than would be produced if eating a piece of bread, which is primarily a starch and requires a starch-digesting enzyme.

Dr Howell remarked that during the early part of the 20th century when zoos were being developed to house captured wild animals, the death rate was very high. It was found that animals in their natural habitat ate everything raw. They were now being fed cooked foods and experiencing many new diseases unknown to their counterparts in the wild. It was found that the enzyme content of saliva from animals in the wild was either hardly there or missing altogether. On the contrary, captured animals fed cooked foods had very high enzyme content in their saliva. The animals were being forced to secrete enzymes from other organs to digest the cooked food. When their diets were changed back to mostly raw foods, the enzyme content in their saliva was reduced and the death rate dropped significantly.

Before Dr Howell passed away in the late 1980s, Dr Howard Loomis journeyed to Florida to spend time with him. He had been asked by Dr Howell's original manufacturing facility to formulate a professional line of enzymes. Dr Loomis had become frustrated with the use of nutrition in clinical practice. There seemed to be no rhyme nor reason in administering minerals, vitamins or herbs to those in his care. As he said: "A patient comes in with a cold and you give him vitamin C, and within a week he's feeling better. Another person comes in with a cold and takes nothing. Seven days later, she's fine." Everywhere one looks, the common discussion centres around deficiencies. "Oh, you have this or that mineral or vitamin deficiency: take some of these."

Nutrition today is practised much like pharmacology is. For every symptom, there is a corresponding deficiency. The solution, then, is to take more of a particular mineral or vitamin. It is a matching game, much like with pharmaceutical drugs. And while it is true that in certain cases a deficiency can relate to a symptom, it is not rock-solid evidence of a deficiency. "I have a deficiency in relation to what—another mineral or vitamin? Isn't it possible I have an excessive amount of something?"

Making Sense of Decades of Misdiagnoses

The progression of differing diagnoses over the last few decades is an example of how symptoms alone can be misleading when it comes to finding root causative factors in disease.

In the 1960s, one of the common diagnoses in Western societies was hypoglycaemia or low blood-sugar levels. Blood sugar is composed of glucose which is metabolised from protein by the liver. Doctors told their patients simply to eat more protein. And while it is true that low blood sugar can be the result of inadequate protein intake, no one ever suspected it could be the result of an inability to digest protein completely, i.e., a protein digestive enzyme deficiency. So even if you increase the patient's protein intake, what good is it doing if they cannot digest it adequately? Was it a *protein* deficiency or a *protease* deficiency which caused the low levels of protein leading to hypoglycaemia?

In the 1970s, vitamin B12 deficiency was a popular diagnosis. Many of the symptoms of B12 deficiency match those of hypoglycaemia. These include fatigue, inability to concentrate, irritability, headaches, confusion, tremors and even cold sweats. Patients were given vitamin B12 shots to alleviate the symptoms. A major concern with vegetarianism is the high incidence of vitamin B12 deficiency that's been documented.

One of the functions of protein in the blood is that of a "universal carrier". Protein transports vitamins, minerals, enzymes and hormones throughout the body. Not having enough blood protein

to transport these substances would lead a doctor to diagnose a patient with a particular imbalance or illness. The underlying assumption in the medical world is that patients' digestions are working fine—unless, of course, they complain to the contrary. Nevertheless, if patients have inadequate protein levels, even though blood tests are within reference range, they still may not be transporting or utilising vitamin B12.

Moving into the 1980s, most everyone had become infested with yeast/fungal organisms and/or parasites. Normally, various micro-organisms inhabit the digestive tract and are kept in balance by "friendly" micro-organisms like *Lactobacillus* and *Bifidobacterium*. Many of the symptoms of this new diagnosis were, again, very similar to hypoglycaemia and vitamin B12 deficiency.

When it comes to immune system function, protein is the most essential nutrient. White blood cells, cellular complements and many other aspects of this system are dependent upon protein. Enzymes themselves are composed of protein and minerals. Additionally, Dr Howell reminds us of this "vital force" inherent in enzymes. These microscopic entities we are dependent upon have something of an almost mysterious nature. Various white blood cells use enzymes literally to digest what they come up against in our bodies. These processes are known as *pinocytosis* and *phagocytosis*. After engulfing an offending pathogen or allergen, white blood cells secrete enzymes that destroy and digest it. If the majority of enzymes from the immune system are being redirected to digest food, how is it possible to maintain healthy immune system functions?

As the 1990s progressed, patients were told they must have an environmentally induced illness, which could include allergies and hypersensitivities. Patients were told to avoid everything they were allergic to and take enormous amounts of supplements. Usually this resulted in extremely limited diets and very expensive bills. New "energy" techniques were developed supposedly to remove blocked energy and rewire the nervous system to allow for accepting the allergen into the body without the overt reaction.

If we look at allergies from an enzyme point of view, it becomes apparent why so many of these techniques work only temporarily. Allergies are the body's reaction to something entering via the blood, skin, nasal cavity or other source. When something enters the body in a healthy person, the immune system is called upon to investigate and clear the allergen (substance) from the body. This happens without any notice. Because there are enough enzymes available in a healthy person, the allergen can be cleared unobtrusively. In someone with an allergic response to the same substance, the immune system is called to do the same work but finds it cannot handle the request. In a person who exhibits an allergic response, there are not enough enzymes available for the white blood cells to break down the allergen and rid the body of it. They then experience the typical histamine response, including reddening of the eyes or local tissue, heat, runny nose and pain.

People with allergies of an airborne source are typically those with a history of excessive sugar and simple carbohydrate intake. Someone with this problem has depleted their reserves of the enzyme amylase. Amylase is an IgG histamine blocker. Like bioflavonoids, amylase stabilises the mast cells and basophiles that release histamine as a reaction to the damaged area. Antihistamines are what these types of patients get from their doctors.

Finally, in the last five years or so, patients were tested for something called "Syndrome X", which happens to bear a striking resemblance to type II diabetes. Syndrome X patients exhibit excess weight, cardiovascular issues, lightheadedness and elevated glucose levels, among other symptoms. If this is actually another name for diabetes II, it should be apparent how symptoms are only one aspect of proper diagnostics.

What the examples above point to are signs and symptoms of distress in the body. Looking more deeply, one finds the same phenomenon exhibited in Pottenger's cat study and Howell's life research: namely, that signs and symptoms of disease are proof of chronic enzyme deficiencies! It is like coming upon a car accident and seeing the wreckage, but not knowing exactly how it happened. The medical profession is seeing evidence of enzyme deficiencies but is unable to correlate them to the actual disease. Governed by their training in schools biased towards pharmaceutical drugs, surgery, radiation and the latest in genome biotechnology and nanotechnology, doctors today are further away from realising the truth of how the body can go out of balance and end up in a

diseased state.

When Dr Loomis asked Dr Howell what the symptoms were for a particular enzyme deficiency, Howell did not have an answer. He had not linked up the signs and symptoms of enzyme deficiencies. Dr Loomis left with many unanswered questions and began the work that has developed into Enzyme Nutrition Therapy. After 20 years of clinical work in the field of enzymes, Dr Loomis is considered the foremost living authority. His trained associates continue adding to the body of work he pioneered. Enzyme Nutrition Therapy is a scientifically sound system of assessing enzyme deficiencies in patients. Loomis has taken Howell's baton, carried it to the next stage and continues to push it to a higher level.

Over time, as Dr Pottenger observed in his study of cats, the continued use of cooked, enzyme-deficient food not only leads to enzyme deficiencies but also to subsequent generations of subjects with disease that's more intense with each generation. Could this explain why 40 to 50 years ago childhood asthma and allergies were rare, but today they affect the majority of children? What about obesity? Or infertility? The percentage of infertile couples has risen sharply in the last several decades. And while environmental toxins may play a part in this, are we now not seeing the results of generations fed excessive amounts of cooked food—as Drs Howell and Pottenger foresaw? Without ever knowing it, Drs Howell, Pottenger and Wolf confirmed each other's work and left a legacy upon which Dr Loomis has demonstrated the solution to humanity's many ills—that enzymes are the key factors in health and healing, but their destruction by heat leads to chronic degenerative disease.

Enzymes – the Vital Labour Force

Dorland's Illustrated Medical Dictionary (28th edition) defines an enzyme as "a protein molecule that catalyses [increases the velocity of a chemical reaction...] chemical reactions of other substances without itself being destroyed or altered upon completion of the reactions". While this may seem to be definitive, it does not clarify why an enzyme can do what it does, nor how a protein can become an active enzyme. In other words, if an enzyme is simply a protein molecule, why not manufacture enzymes synthetically?

The trouble begins here because, to date, no one has successfully created an enzyme from synthetic material. Enzymes can only be created from living, organic material. It is evident that there is something more to enzymes than can yet be accounted for scientifically.

Dr Howell observed enzymes giving off a "luminescent glow" when actively working. He is famous for his statement, "Life itself could not exist without enzymes". He surmised that there is a "vital force" inherent in all living beings, as demonstrated by enzymes. For ages, humans have observed and deduced a "divine innate force" common to all living things. Animation of animals and plants separates us from the soil, dust and rocks on which we move around.

Enzymes are considered the "labour force" in living things. They are the only substances capable of doing work. They are busy putting things together or splitting them apart. They initiate, speed up, slow down or stop all biochemical processes in living beings. Enzymes are very specific in how they work on a substrate (the component upon which they work). This has often been referred to as a "lock-and-key system". The substrate is the lock, while enzymes are the keys that fit precisely into the lock. They can only work on the exact substrate.

Enzymes are classified into several groups. Hydrolytic enzymes are the most relevant in clinical nutrition, and they are of three major groups:

- 1) **Digestive enzymes**—manufactured by digestive organs to assist in digesting food;
 - 2) **Food enzymes**—found in all raw, uncooked food;
 - 3) **Metabolic enzymes**—manufactured by all cells to carry out their respective functions.
- Although there are many classes and sub-classes of **digestive enzymes**, there are four general enzymes considered here:
- **Amylase**—digests starches, including grains and starchy vegetables;

- **Cellulase**—breaks down plant fibre;
- **Lipase**—splits apart fats and oils into fatty acids;
- **Protease**—breaks down protein into amino acids and small-chain peptides.

Probably the most familiar of the amylases is lactase. People who are lactose intolerant are both deficient in and lack the ability to manufacture this enzyme.

All the above, except cellulase, are manufactured in the human body. Cellulase must come from the plants themselves, which is why it is so important to chew one's food thoroughly. Cellulase is trapped inside the fibre itself and must be liberated in the chewing process—otherwise, one experiences the gas and bloating common to those, especially the elderly, who cannot digest raw foods. Juicing fruits and vegetables also extracts cellulase from the fibre. But the need for plant fibre in a world where many are dependent on laxatives cannot be overstated and may outweigh unnecessary juicing.

All raw, uncooked foods contain the exact types and amounts of enzymes necessary for their breakdown (digestion). Fruit ripening is the consequence of enzymes slowly breaking down the fruit's contents. If it has gone too far before we consume it, we say it is "rotten". There are optimal times when fruit should be harvested and consumed. But due to "shelf life", fruit is picked unripe and left to ripen in the warehouse or grocery store. In this case, the vitamin, mineral and enzyme content is inadequate and not desirable from a nutritional point of view. One study found that plants gave up their enzyme structures to return the mineral portion of them back to the soil since it was lacking in minerals.

Enzymes are the most heat-sensitive nutrients. As mentioned earlier, food enzymes are generally destroyed when heated at 118°F (47.78°C) for longer than 15 minutes, and this happens whether the food is baked, boiled, broiled, canned, fried, pasteurised, roasted, steamed or especially microwaved. Dr Howell observed this and reasoned that enzyme-deficient food must force the body to use up metabolic enzymes to digest food. He compared it to a bank account. If you continually drain your resources and never replenish your holdings, at some point you are bankrupt. In the case of enzymes, degenerative disease occurs, with old age following soon afterwards. We are told all the time, "Oh, your symptoms are related to old age; better get used to it". Culturally, this seems true because we have observed it since childhood. We even expect to grow old with the accompanying health issues associated with old age because we have been told so.

Granted, our progression from infancy through adolescence and adulthood involves changes and the appearance of "ageing". But what if there were substances naturally occurring in the food and within our bodies that were responsible for the rate at which we grew older? Dr Howell equated that the length of life was proportional to the amount of enzymes exhausted in digestion. In other words, one's length of life is influenced by how much our metabolic enzymes are used to digest cooked food. Since enzymes are shifted from their metabolic uses, especially from the immune system, to digest cooked food, we will age faster. Could this be what Ponce de León was looking for in his legendary "fountain of youth"? Some researchers may have given us a clue.

In the 1980s, Dr Roy Walford of UCLA conducted numerous laboratory experiments on animals. He reduced their food intake and found that their length of life extended beyond what was considered normal. He suggested that all one had to do was not eat so much in order to have a healthier and longer life. Walford stated the obvious, but he may have missed the real point.

Dr Howell found that in fasting there is an increase in available enzymes in the body due to the lack of food, especially cooked food. In the absence of food, the body has more enzymes for repair and healing. As an example, there are approximately 64 different types of enzymes circulating in the blood to clear waste and prevent the build-up of plaque. When the body is short-changed of these enzymes, there will be an unnatural build-up of plaque. Why would there be a lack of these enzymes in the blood? When cooked food is eaten, enzymes for digesting it must be found somewhere in the body. It is here that metabolic enzymes are shifted from their normal functions to the role of digestion, leaving the body primed for future disease.

Signs of Enzyme Deficiencies

Symptoms of mineral and vitamin deficiencies occur relatively quickly. They are recognised to cause specific illness. Enzyme deficiencies, outside of genetic or birth defects, take longer periods to be noticed and have only begun to be recognised in some circles of the medical community.

What, then, are typical signs and symptoms of the more common enzyme deficiencies?

- **If you have problems digesting carbohydrates**, you may experience airborne-sourced allergies, diarrhoea, fibromyalgia or attention deficit disorder (ADD or ADHD).
- **If you cannot digest fats**, you may experience constipation, gallbladder problems, heart disease or hormone imbalances.
- **If you cannot adequately digest protein**, you may experience constipation, arthritis or other inflammatory conditions, anxiety or panic attacks, premenstrual syndrome or immune system disorders.
- **If you are unable to break down plant fibre**, you may experience constipation, eczema or other skin-related problems, recurrent yeast/fungal infestations or excessive weight gain.

The above conditions are also the result of diets high in those foods associated with the enzyme deficiency. In fact, the foods one craves are those that create dietary stress due to one's inability to digest them completely. They are also the foods one has either allergies or hypersensitivities towards because of the failure to be able to digest them, i.e., because of the deficiency of that particular enzyme.

People may crave certain foods because of the enzymes found within the food, which the body needs. But being cooked and destroyed, those enzymes do nothing for the craving—so we eat more of the same thing, telling ourselves we should not.

To be continued...

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Mark Rojek began researching alternative therapies in 1970. His studies included botanicals, mineral and vitamin requirements and diet. He interned in acupuncture with Dr Bell in Windsor,

Ontario, Canada, in 1973, and graduated in 1978 with a Bachelor of Science. He studied aromatherapy, kinesiology, massage therapy and classical homoeopathy in England. In 1986, Mark began formal studies in traditional Chinese medicine, especially acupuncture. In Chicago, he worked with several holistic physicians as a medical technician and maintained a private nutritional practice. Also in 1986, he met Dr Howard Loomis, foremost living expert in enzyme nutrition, and continues to work with him. He works with several doctors in Michigan who refer to him and seek his counsel. He continues to research, lecture and counsel clients in nutrition and diet.

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