“Life is an infinitely intelligent interaction of Electro-magnetic energies carried by chemical substances.”

Dr. F.K. Bellokossy

INTRODUCTION

It has been experimentally proven that all organisms receive cues from the local electromagnetic (EM) environment, which regulate their metabolic activities. In this way, organisms can be considered as an expression of the local environment with the genetic structure acting as a stabilizing element.

Further evidence that all organisms are derived from the environment comes from Dr. Andrew Weil who notes that most synthetic pharmacological substances are only semi-synthetic since they are nearly always based on a natural compound (the “active ingredient” of a plant or part of a plant) with a slight shift in the structure of the molecule. This is because humans do not generally respond well to purely synthetic substances, and in the case of psychoactive substances, the brain lacks the appropriate neurotransmitter to distinguish the substance and respond. (Dr. Andrew Weil is a trained medical doctor and a naturopath, a practitioner truly devoted to the principles of holistic medicine. He has written several books published world-wide, the most famous among them titled: Spontaneous healing. Alfred A. Knopf, Inc., New York, 1995).

HOW HEALTHY WERE “PRIMITIVE HUMANS”?

Is our view of “primitive life” accurate? Conventional opinion says that primitive humans were undernourished and plagued by illness. Obviously, primitive humans did not have the benefit of modern medical science, but did they need it at all? It is true that many more children died from infant diseases. However, taking into account the traumatic stress and accidents that befell primitive humans, a realistic assessment shows that otherwise, they were physically healthy. Our pre-agricultural ancestors were in many ways healthier than we are. We can examine the records of anthropologists, explorers, and others who came into contact with the remnants of our hunter-gatherer ancestors. We can study the skeleton and teeth of primitive people for evidence of vitamin and mineral deficiencies. The evidence suggests that humans before the advent of agriculture were stronger, bigger, and healthier. Generally speaking, when hunter-gatherers took to agriculture, their health declined.

No wonder, the ancient Greeks and Romans, by contrast to the modern way of thinking, celebrated the past. Their mythology told of golden age of peace and happiness. Every year, they celebrated the feast of the Saturnalia to commemorate the Golden Age and lament its passing.

We can even today learn about the health of primitive humans by studying people who still eat a diet and lead a lifestyle like our pre-agricultural ancestors used to. Among the Kitava islanders of Papau New Guinea, for example, death
from heart attacks and strokes is extremely rare. In a study of 213 Kitava islanders aged twenty to ninety-six conducted in 1991, all the adults had a low diastolic blood pressure (below 90 mm Hg). Instead of gaining weight after the age thirty (as the modern age people usually do), all the adults lost weight. The diet of the islanders consisted of fruit, fish, tuber, and coconuts. Rather than heart disease, the leading causes of death were infections, accidents, and complications from pregnancy and old age.

The medical doctor and missionary Dr. Albert Schweitzer wrote (1913) during his stay in Gabon, Africa: “I was astonished to encounter no cases of cancer. I saw none among the natives two hundred miles from the coast….. I can not, of course, say positively that there was no cancer at all, but, like other frontier doctors, I can only say that, if any cases existed they must have been quite rare. This absence of cancer seemed to be due to the difference in nutrition of natives compared to the Europeans.”

The explorer and anthropologist Vilhjalmur Stefansson, in the book: “Cancer- Disease of civilization” (Hill and Wang, 1960), recounts his unsuccessful search for cancer among the Inuit (Eskimo-people). His book mentions a whaling ship doctor named George B. Leavitt, who found but one case of cancer in his forty-nine-year career among the Inuit of Alaska and Canada. By the 1970s, after the Inuit had begun consuming a modern diet, breast cancer had become a frequent form of malignancy.

In a comparison between acculturated and less-acculturated Inuit, heart disease and high pressure were noticeably higher in the acculturated group. In a 1958 survey of native Alaskans, the subjects reported no symptoms of hypertension, but a similar survey taken eleven years later of native Alaskan women showed that their levels of hypertension had become comparable to those of Western women.

Among the Australian Aborigines, cases of diabetes were rare prior to the 1970s, but according to Professor Kerin O’Dea of Monash University, diabetes among Aborigines in the twenty-to-fifty age group is now ten times higher than that of Australians whose ancestors came from Europe.

Anthropologist Wilmon Menard, writing in the 1920s, relates how the Polynesians of the Marquesas Islands took to eating canned food and sugary confections because of the prestige that these European goods brought the people who ate them. The population of 100,000 dwindled to 2,500. However, when the price of copra (the dried kernel of the coconut) dropped and the Marquesans could no longer afford imported food, they returned to their traditional diet and soon reacquired their vigorous health.

Some of our best information about the primitive diet comes from a Harvard-trained dentist named Dr. Weston A. Price. He travelled to five continents in the 1930s to observe primitive people, their diet, and the state of their health. He travelled to the remote valleys of Switzerland and to the rugged Outer Hebrides islands. Dr. Weston Price lived with the Inuit of Alaska and with various Indian tribes in Peru. He recorded the lives of the Torres Strait islanders of Melanesia, the Polynesians, the Australian Aborigines, the Maori of New Zealand, and various tribes of people in east and central Africa. Wherever he went, he observed how the modern diet brought ill health and tooth decay to people who had before enjoyed excellent health with their natural diet.

HOW HEALTHY ARE WE, THE PEOPLE OF THE MODERN AGE?

Our body-physiology and biochemistry cry out for a diet of our ancestors. They ate a variety of foods, even by today’s standards. They ate an enormous variety of animals, wild grasses, vegetables, grubs, roots, insects, nuts, seeds, and so on. Biologist Gary Nabhan estimates that Native Americans who lived in the Southwest United States had eleven hundred plants in their diet. Hunter-gatherers were always on the move. They expended a lot of energy acquiring their food. They were anything but sedentary.

Then as the human population increased and the amount of wild game dwindled, a profound shift occurred. Humans became agriculturists. Where previously they had eaten lean meat from a variety of animals, they now ate a less healthy meat from a limited group of domesticated animal species. Cereal grains became the primary feature of the diet. People drank cow’s milk for the first time. Starchy fruit and tubers replaced tart fruit and wild grasses. The variety of food that people ate diminished because people no longer foraged for food in the wild but grew it themselves. Life became more settled and civilization as we know it began to develop and eventually flourish. And,
the worst in the shift of eating habits was yet to come. The most profound change in diet occurred at the beginning of the Industrial Revolution. As people moved from farms to the cities, a need arose for food that could travel long distances, and need be stored for long periods of time without spoiling. Moreover, with the population increases, the farmers who remained on the land had to feed many more people. This combination of more mouths to feed and the need for food that would not spoil easily gave rise to agricultural practices ad food-processing techniques. Nowadays farmers spray their crops with pesticides and herbicides in order to defend the crops from parasites. They use chemical fertilizers with high nitrogen content to increase the crop yields. Cattle are fed antibiotics and growth hormones. Fruit is gas-ripened. The packaged food industry serve up food made with strange combinations of refined flour, hydrogenated oil (margarine), corn sweeteners, and salt. Artificial preservatives and sweeteners disguise food that would otherwise be unpalatable. Refining removes much of the nutritional value from grain. The over-consumption of sugar, largely from soda pop and “sports” drinks has contributed to a rise in diabetes, osteoporosis, and tooth decay. At the same time, we have become sedentary. Whereas our primitive ancestors foraged near and far for their food, we need to travel only the distance from the couch to the refrigerator.

THE CONSENSUS BETWEEN THE QUANTUM PHYSICS AND BIBLICAL TEACHINGS “ONLY LIVE MATTER CAN NOURISH THE LIVING”

Now, the time has come for asking the right questions because modern age people suffer from real health problems on a large scale. The first question is - what was the secret of the health preserving effects of food eaten by our ancestors? Was it solely the biochemical composition of the food ingredients? Or, more probably there must have been something else in the ancient food that is lost in our technological era?

Until recently, an unending universal confusion existed concerning the paradoxical discoveries revealed by the scientists dedicated to the exploration of the mechanisms that govern the cellular responses. The main issue is the follows: How can so much information being processed so quickly throughout the body? Obviously biochemical reactions are to slow to accomplish such a vast task!

In the: “Whispering Pond: A Personal Guide to the Emerging Vision of Science” (Harper Collins UK, 1997), author Ervin Laszlo gives a recent version of what turns out to be fairly longstanding idea among scientists, that much of the physical world, - a living Nature in particular -, cannot be explained by current knowledge and that some form of energy field is needed to explain it. It is not a new idea, this concept dates back to the 1920s when the famous Russian professor of medicine and biophysicist Alexadar Gurwitsch empirically proved this surprising fact (in 1922) and postulated a morphogenetic field, a system-wide force field generated by the particular force fields of individual cells. Laszlo calls this a fifth field (referring to the four accepted universal fields: the gravitational, the electromagnetic, the strong and the weak nuclear fields) and suggests that the existence of this field might explain everything from the mysteries of the wave function in quantum mechanics, to the remarkable synchronicity found in Nature, even to psychic phenomena documented among people.

In fact, back in the 1920s, Gurwitsch had already established beyond any reasonable doubt that living cells and tissues generate an extremely weak, yet biologically active form of electromagnetic radiation in the ultraviolet range. The presence of this radiation according to his experience was somehow intimately connected with the nature of living processes themselves. Basically, Gurwitsch was able to show evidence of a weak but permanent photon emission of a few counts/ (s.cm²) in the optical range from biological systems, pointing out that it stimulates cell divisions. Gurwitsch was led to his experimental demonstration of what he called “mitogenic radiation” in a lawful and rigorous way, as a by-product of his attempts to hypothesize a universal biophysical principle (which among the others) would encompass the paradoxical, but otherwise undeniable correlations between events of cell division (mitosis) and other events occurring at widely separated locations within a living organism.

After long periods of neglect, even denial, small scientific groups scattered all around the world (in Russia, Australia, China, Italy, Japan, Germany, Poland, and the United States), working independently from each other, rediscovered the ultra-weak light emissions from living tissues
by use of modern photomultiplier techniques. Since then, numerous scientists unquestionably confirmed that **in the core of living cells there is indeed perceptible light.**

**WE ARE ALL BEARERS OF LIGHT**

The most famous among them was a team of German biophysicists under the direction of the professor Fritz-Albert Popp. These investigators conforming to the strictest requirements of the scientific method, in 1975, irrefutably corroborated the aforementioned postulate, and coined the expression **“bio photon”**. In general terms the term photon refers to a **“quantum of light”**. By placing the prefix bio in front of photons, with the intention of suggesting that these may be emitted by living matter (cells), the term bio photon was born.

Meanwhile, a group of German physicists, starting in 1972 at the University Marburg, hypothesized, that bio photon emission as subject of quantum optics has to be assigned to a coherent photon field within the living system, responsible for intra- and intercellular communication and regulation of biological functions such as biochemical activities, cell growth and differentiation. It has been shown that bio photon emission can be tracked back to DNA as the most likely candidate for working as the (main) source, and that delayed luminescence (DL), which is the long-term afterglow of living systems after exposure to external light illumination, corresponds to excited states of the bio photon field.

In addition, all the correlations between bio photon emission and biological functions such as cell growth, cell differentiation, biological rhythms, even cancer development, turned out to be consistent with the coherence hypothesis but could be only rather poorly explained in terms of free radical reactions.

Currently, there is no doubt about the existence of such intra-cellular luminescence. Sophisticated technology has developed powerful instruments capable of intensifying and measuring extremely minute light quantities, known as residual light, which prove unquestionably the existence of the bio photons.

It was also established that this biophysical force does not only pulsate in intensity, but also in frequency. This explains quite satisfactorily the dynamics of its inherent mechanisms of interactions, which unfold among the different organs.

The question that remained to be answered was: **why do our cells (and also the cells of all other living beings) emit light?**

Professor Popp explains: **“Our organism must replace nearly ten million cells each minute. It is obvious that the information required to accomplish such a vast task can only be processed at the speed of light. Apparently, such an overwhelming amount of signal traffic of data transference and processing within any living organism – be that human, animal, vegetal or of insects – is achieved through bio photons and that, with high precision. These most minute coherent rays of light are responsible for the maintenance and operation of the network of information linking all living cells in an organism, and likewise allow the continuous, unobstructed and intelligent updating of data.”**

Completely regardless of how improbable it may seem, light definitely does exist within our cells. In fact, light may be the basis of the cellular communication. **All living beings are” bearers of light” (Hung. = fényhordozó, Serbian = nosioci svetla).**

**THE SUN – THE SOURCE OF THE LIFE ENERGY ON PLANET EARTH**

However, modern men and women seemed to have lost touch with the powerful resonance within their own being whose source is linked to the photon power of the sun.

Then, in the 1960s, emerged the book titled: **“Solar Energy and Man as Antenna” (“Sonnenenergie und der Mensch als Antenne”)** and a series of lectures, both by seven-time Nobel Prize nominee Dr. Johanna Budwig.

Dr. Budwig first earned fame as an analytical chemist who developed key analytical techniques required for identifying types of fats. At one time, science was unable to identify key-distinct fats in foods such as omega-3s (found in wild coldwater fish, and linseed), the omega- 6 fats (found in grains, certain seeds and corn oil), and omega-9s (found in olive oil, linseed and avocado). Thus, the work of Dr. Budwig must be considered seminal in the advancement of nutritional science, particularly that of lipids.
However, Budwig’s firmly grounded scientific work led her to intuit- and, then, later **clinically validate**- much greater truths so profound that they bring together modern physics, biology and even the overall health of the modern humanity.

Dr. Budwig observed: “Sun rays reach the earth as an inexhaustible source of energy. The sources of power in mineral oil (petrol), coal, green plant-foods and fruits are based on the energy supplied by the sun’s radiation”.

Indeed, today we know that energy from the sun is in the form of **photons**, the fastest moving smallest units of elementary energy known. This concentration of the sun’s energy is accomplished by **ocean and land plants** into the compounds that comprise their cells and tissues. The **planetary flora** is able to carry out the process of photosynthesis and to use the sun’s energy directly. The energy of the sun is transferred into vegetable **Bio-Photons**. Herbivorous animals by eating the members of the plant kingdom have an ample supply of the sun’s bio photons. Our hunter-gatherer ancestors in their due time have had them in their food, also. But how do we, the proud people of the “brave new world” fair nowadays?

“Our own health may be improved when we eat foods which, **rich in electrons**, have themselves captured the power of the sun. A high amount of these electrons, which are on the wavelength of the sun’s energy, are to be found in seed oils”- observed Dr. Budwig.

“Scientifically”, she explained, “the oils are even known as **electron-rich**, highly unsaturated essential fats”.

Nutritionist **Jordan S. Rubin** remarked: “I also believe that when one consumes certain foods rich in saturated fats such as meat and dairy products from other animals that feed on greens and herbs we are getting a pre-packed rich source of these electrons”.

The great leap- Budwig makes, however, is the insight that modern men and women **must go back eating proper foods to capture this elementary power of sun for their vital health**. It is intriguing that the most protective organ systems in the human body, the central nervous system, requires the most unsaturated fatty acids, especially omega-3 fatty acids, for its cell membranes to function optimally. It is also interesting that Nature provides fatty acids in **cis-form** that

bands fatty acids into the shape of fish-hook, rather than the **trans-form** that would stretch the molecules into a more linear shape. The **cis-form intrinsically has more molecular electromagnetic tension, than the trans-form. Could it be that the cis-configuration is a way of **storing** within each molecule a special storage form of the sun’s energy?**

**OUR ELECTRON-DEPLETED MODERN DIET**

It has long been known that, unless heroic preservation measures are taken, once seed grains are crushed, they soon turn rancid (Hungarian = avas, Serbian = užeglo). Because of the high vulnerability of their electrons to oxidation, these precious oils, much like fruits or vegetables, are highly perishable (Hung. = tönkremennek, Serbian = propadaju).

**FOOD TECHNOLOGY (MEASURES)**

The husks and germ of grains began to be removed in the mid-1700s in Great Britain, extending shelf life (Hung. = ettarthatoság, tartósítás, Serbian = rok upotrebe), but removing their vital contents, they precipitated overt B-vitamin deficiency diseases such as pellagra (a vitamin B3- Nicotinic acid, nicotinamide, PPF= pellagra preventing factor -deficiency,), and beriberi (a vitamin B1- Thiamine-, Aneurine- deficiency,). The vital powers of these photon-rich foods were lost.

In early 1900s much of our wheat and other grain products were made into white flour by removing the **bran** (Hung. = korpa, Serbian = mekinje) and **germ** (Hung. = csira, Serb. = klica) and along with them most of the precious nutrients. What remained was the **junk-food** or rather the **anti-food**, our diet today is basically made of.

Along came the corn oil craze in the 1950s. The producers of the commodity launched a massive public misinformation campaign, taking out full-page advertisements in the nation’s medical journals. This campaign convinced medical doctors that corn oil, (unhealthily overloaded with omega-6 fatty acids!) could prevent heart disease. A sheer nonsense!
Another, even more wrong turn occurred with the advent of hydrogenation (a process of saturation of double hydrogen bonds), which turns vegetable oils into semi-solid fats, into margarine.

**NATURAL FOOD DIET AND BIO MAGNETIC RESONANCE HAND IN HAND**

Life, comprised of a complex chain of biochemical and physiological processes is activated and animated by an invisible bio-magnetic force. Apropos of this, Dr. F.K. Bellokossy of Denver Colorado, described life as an “infinitely intelligent interaction of electro-magnetic energies carried by chemical substances.”

Modern medicine has come to depend upon such high-tech diagnostic procedures as the electro-cardiogram (ECG), the electroencephalogram (EEG), the electro-myogram (EMG) to measure the electrical activity in the heart, the cerebral cortex and the skeletal muscles, respectively. If there were no electrical energy in the body, such tests would not be possible.

From the perspective of the bio-informatics (bio-magnetic principles), health is based upon the individual cells of the body *vibrating at a characteristic normal frequency*. Disease, on the other hand, represents an abnormal change in cellular vibration. The therapeutic application of appropriate electro-magnetic fields, biologically active water, lively (raw) food and medicinal herbs, is at the deepest level based on the principle of restoring normal cellular vibration.

This understanding should make electro-magnetic treatment very accessible to those who have an energetic approach to healing methods and it would include natural diet and carefully applied supplementation, traditional herbalism, traditional Chinese medicine (TCM), Ayurveda, some Western ‘holistically’ oriented mind-body therapies, and bio resonance therapy (BRT).

**Biologically active - food, &-supplementation and herbal medicine**

*Biologically- active- food* (BAF) and BAF-supplements describe a food and supplements, respectively, which are naturally concentrated to provide all the nutritional elements necessary for optimal health. Many of these foods are found in the first link of the food chain, i.e., the plankton, created from sunlight and water, and grass (i.e., wheat grass, barley grass etc.) made purely from soil and sunlight. Since they are so nutrient-dense, by consuming them a significant nutritional benefit is achieved.

These type of biologically active-food also contains *phytochemicals* that protect the body against many degenerative diseases such as cancer and cardiovascular disease (CVD). *Chlorophyll*, *beta-carotene in the plankton*, as well as *genistein and daidzein in the soy sprouts* are four of the most powerful anticancer phytochemicals discovered so far. In fact, there is not a degenerative disease that cannot be prevented through the increased consumption of these foods.

Most certainly, many people have experienced the benefits of eating “lighter”. Not just physical benefits, but benefits to consciousness and clear thinking. As we let go of the denser foods such as red meat and refined, processed foods, and include more fresh vegetables and fruits, other healthily prepared, biologically active food and food supplements in our diet, they start being a valuable bridge for the body to make the necessary transformations.

Lately, it is scientifically confirmed, that consuming foods vibrating over 72 MHz enhances metabolism and increases energy production. Unfortunately, the resonance of processed food will only be from 10 MHz to 30 MHz, in contrast to fresh, organically grown foods which will range from 30MHz to 80MHz. However, food and formulations prepared by special processes (the so-called Energy Field Formulations) give rise even to 121MHz, a frequency many researchers believe to be in harmonic resonance with the DNA. Organically grown food and carefully prepared food can be considered as biologically active food (BAF). BAF-supplements, on the other hand, are obtained when the organically grown food and/or natural herbs are treated by such manufacturing techniques which can preserve the vital living nutrients in their complex biological-, biochemical-, and biophysical- complexity. These formulas can preserve the captured photon powers of the sun. When any organic substance is in a harmonic field of itself, the opportunity is created for it to experience its highest potential. This potential is the awakening of the genetic intelligence of the Living Matter that births the reality of Oneness with all else that exists.
Similarly the traditional understanding of herbal medicine extends far beyond the mere classification of the biochemical constituents of plants. Imbued with their own unique cellular subatomic electromagnetism, plants are capable of carrying a positive and negative charge. These are appropriately described in traditional herbalism as ‘heating’ or ‘cooling’ energies and correspond to their therapeutic properties and flavours and more ambiguously to their various shapes, textures and colours.

Herbal medicine is the oldest system of medicine on the planet. Herbs (and vegetables) provide a substantial connection between food and medicine because they possess many of the same micro-nutrients as food such as vitamins, minerals and special substances currently recognized as ‘phyto-nutrients’.

Return to the natural sources of vital (“light-bearing”) energy

The advancements in quantum physics described earlier definitely contributed to the consciousness that the Mankind should turn back to the Maker’s diet. Strange as it may seem, every time we consume some natural and fresh food, or their carefully prepared components, we indeed also ingest light – which, in one way or another- triggers certain activities in our system to our benefit.

In other words, when we ingest fresh, raw, healthy food or a BAF-supplement, once assimilated, their individual components emit luminous signals that inescapably participate in the development and management of certain biochemical endogenous processes. That is, the greater is the capacity of light (energy) storage in our nourishment, the more powerful will be its beneficial influence on our cells.

THE ZENTHONIC FOOD SUPPLEMENT CREATED BY CALIVITA

In concordance with the postulates of the life-supporting benefits stemming from natural food and food supplements listed above, CaliVita is now introducing a new food supplement formula named *ZenThonic juice*. The objective behind the composition of this new food supplement product is to reach back to the Nature as close as possible. Without extolling and over-rating the virtues of ZenThonic juice let us have basic facts about the fruit *Garcinia Mangostana* and the other fruit components of the product.

**THE COMPOSITION OF ZENTHONIC FOOD SUPPLEMENT FORMULA**

<table>
<thead>
<tr>
<th>Nutrient per 30 ml: measure: g per 100 g</th>
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<tbody>
<tr>
<td>Garcinia mangostana juice concentrates</td>
</tr>
<tr>
<td>Red grape juice concentrates</td>
</tr>
<tr>
<td>Strawberry juice concentrates</td>
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<tr>
<td>Cranberry juice concentrates</td>
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<td>Apple juice concentrate</td>
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<td>Pear juice concentrate</td>
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<tr>
<td>Pear pure</td>
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<td>Blueberry juice concentrate</td>
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**MANGOSTEEN**

*Garcinia mangostana* L.

One of the most praised of tropical fruits, and certainly the most esteemed fruit in the family Guttiferae, the *mangosteen*, *Garcinia mangostana* L., is almost universally known or heard of by this name.

The mangosteen fruit is the size of a small apple, purple coloured, with a hard rind. The fruit of the mangosteen, capped by the prominent calyx at the stem end and with 4 to 8 triangular, flat remnants of the stigma in a rosette at the apex, is round, dark-purple to red-purple and smooth externally; 3.4-7.5 cm in diameter. The rind is 6-10 mm thick, red in cross-section, purplish-white on the inside. It contains bitter yellow latex and a purple, staining juice. There are 4 to 8 triangular segments of snow-white, juicy, soft flesh (actually the arils of the seeds). The fruit may be seedless or have 1 to 5 fully developed seeds, ovoid-oblong, somewhat flattened, 2.5 cm long and 1.6 cm wide, that cling to the flesh. Inside there are typically five to seven seeds surrounded by a sweet, juicy cover (or aril). The pulp (flesh)
is slightly acid and mild to distinctly acid in flavour, which is said to resemble a pineapple or peach in taste, and is reputed to be as exquisitely luscious and delicious food. In Asia it is sometimes called the queen of fruits in honour both of its flavour and its economic importance.

**ORIGIN AND DISTRIBUTION**

The place of origin of the mangosteen is unknown but is believed to be the Sunda Island the Moluccas; still, there are wild trees in the forests of Kemaman, Malaya. No one knows exactly where and when the mangosteen was first cultivated. The famous botanist, Julia F. Morton, believes it originated in the Moluccas and the Sunda Islands. Yet there are also wild mangosteen trees in the forests of Malaya. Some experts say the trees were first domesticated in Thailand or Burma. But in the 19th century, botanists brought seeds to Europe and America. Valiant attempts were made to cultivate the trees in Africa, the Caribbean and Central America. But the plant is considered “ultra-tropical” and sensitive. It cannot tolerate temperatures below 4.44°C, nor above 37.78°C. Nursery seedlings perish at temperature 7.6°C. Its domestication failed.”

In Jamaica, - says Dr. Morton- mangosteen is regarded as a very nice but overrated fruit; by their local patriotic opinion “not comparable to a good field-ripe pineapple or a choice mango.”

Table 1. Composition of Garcinia mangostana

<table>
<thead>
<tr>
<th>Food Value Per 100 g of Edible Portion*</th>
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<tbody>
<tr>
<td>Calories</td>
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<tr>
<td>Moisture</td>
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<td>Protein</td>
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<td>Fat</td>
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<td>Total Carbohydrates</td>
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<td>Total Sugars (sucrose, glucose and fructose)</td>
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<td>Fibre</td>
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<td>Ash</td>
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<td>Calcium</td>
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<td>Phosphorus</td>
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<tr>
<td>Iron</td>
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<tr>
<td>Thiamine</td>
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<tr>
<td>Ascorbic Acid</td>
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</table>

*Minimum/maximum values from analyses made in the Philippines and Washington, D.C.*

Phytin (an organic phosphorus compound) constitutes up to 0.68% on a dry-weight basis. The flesh amounts to 31% of the whole fruit.

**OTHER USES**

The rind is rich in pectin. After treatment with 6% sodium chloride to eliminate astringency, the rind is made into a purplish jelly. Mangosteen twigs are used as chew sticks in Ghana. The fruit rind contains 7 to 14% catechin tannin and rosin, and is used for tanning leather in China. It also yields a black dye.

**USES IN TRADITIONAL (FOLK) MEDICINE**

For many years dried mangosteen fruits have been shipped from Singapore to Calcutta and then on to China for medicinal use. As to its many uses in folk medicine, here is what botanist Julia Morton has written:

“The sliced and dried rind is powdered and administered to overcome dysentery. Made into an ointment, it is applied on eczema and other skin disorders. The rind decoction is taken to relieve diarrhoea and cystitis, gonorrhoea and gleet [a watery discharge] and is applied externally as an astringent lotion. A portion of the rind is steeped in water overnight and the infusion given as a remedy for chronic diarrhoea in adults and children.

“Filipinos employ a decoction of the leaves and bark as a febrifuge and to treat thrush, diarrhoea, dysentery and urinary disorders. In Malaya, an infusion of the leaves, combined with unripe banana and a little benzoin is applied to the wound of circumcision. A root decoction is taken to regulate menstruation. A bark extract called ‘amibiasine’, has been marketed for the treatment of amoebic dysentery.”

For centuries the traditional medical healers of India, China, Malaysia, Thailand the Philippines and Vietnam have employed Mangosteen for its health benefits. In the last 150 years the plant has been transported to Africa, the Caribbean, Australia and South America where both researchers and medical practitioners alike have studied and utilised its healing and protective properties.
In India, Thailand and China, preparations from the rind are used as antimicrobial and anti-parasitic treatments for dysentery and other forms of infectious diarrhoea.

The plant’s astringent qualities are useful in preventing dehydration and the loss of essential nutrients from the GI tract of diarrhoea sufferers. The Chinese and Thais also take advantage of the mangosteen’s antimicrobial and antiseptic properties to treat infected wounds, tuberculosis, malaria, urinary tract infections, syphilis and gonorrhoea.

It has long been recognised in Asia that the Mangosteen has apparently powerful anti-inflammatory powers and is reported to be effective in treating eczematous and other hyperkeratotic skin conditions.

In the Caribbean, known as “eau de Creole”, a tea made from Mangosteen is used as a tonic for fatigue and malaise, universal symptoms experienced by millions around the world.

Brazilians use a similar tea as a de-worming agent and digestive aid. In Venezuela, parasitic skin infections are treated with poultices of the fruit, while Filipinos employ a fruit extract to control fever, and to treat thrush, diarrhoea, dysentery and urinary disorders.

In Malaya, an infusion of the leaves, combined with unripe banana and a little benzoin is applied to the wound of circumcision. A root decoction is taken to regulate menstruation. A bark extract called “amibiasine”, has been marketed for the treatment of amoebic dysentery.

We can conclude then that mangosteen has many uses in folk medicine, and as such, it can join a fairly long list of plants that can be considered as promising sources of new medicines.

**THE XANTHONE CONNECTION**

**XANTHONES IN MANGOSTEEN:**

- 1,3,6,7 tetrahydroxyxanthone
- 2,4,5-trihydroxy-1-methoxyxanthone xanthones
- 1,2,3,4,5,8-tetraoxygenated xanthone
- 3-methylbut-2-enyl xanthone
- Garcinone A, B, C, D, E
- Gartanin
- 8-deoxygartanin
- 5,9-dihydroxy-2,2-dimethyl-8-methoxy-7-Calabaxanthone
- Demethylcalaba-xanthone
- 1-isomangostin
- 3-isomangostin
- 1-isomangostin hydrate
- BR-xanthone-A
- 2,3,4,6-pentahydroxybenzophenone (malacurin)
- Alpha mangostin
- Beta mangostin
- Gamma mangostin
- Mangostanol
- Garcimangosone A, B, C
- Mangostenone A xanthones

What is remarkable is that the mangosteen—not just the inner flesh, but the whole fruit—represents the single greatest known supply of these beneficial xanthones. The pericarp, or rind, of the mangosteen is particularly rich in xanthones, which represent the next generation of powerful phytonutrients; phytonutrients that will change the future of dietary supplements.

Dr. Morton writes that "the rind of partially ripe fruits yields a polyhydroxy-xanthone derivative termed mangostin, also beta-mangostin. That of fully ripe fruits contains the xanthones, gartanin, 8-desoxygartanin, and normangostin. A derivative of mangostin, mangostin-e, 6-di-0-glucoside, is a central nervous system depressant and causes a rise in blood pressure."

Much is made of the xanthone connection. According to web site references: “There are over 200 xanthones in nature. Each xanthone can have specific effects on the body. What is remarkable about the mangosteen is that there are over 40 xanthones identified in the pericarp, or rind making it the single most xanthone-rich source in the world. Only six of the xanthones has been studied in depth. While we do not know fully why the mangosteen works on such a wide variety of physical conditions, we know it has to do with being the world’s most potent source of xanthones. Each xanthone has its own effect, and when combined, they take on a synergistic quality that supports the health of the entire body.”

It is undoubtedly true that there are many xanthones (a kind of antioxidant) in mangosteen. In fact, according to the Merck Index (11th Ed., p. 5613) the first scientifically defined substance to be derived from mangosteen was the xanthone
mangostin. This was isolated by a German scientist named Schmid in 1855. In 1979, mangostin was found to have significant anti-inflammatory and anti-ulcer effects in rats (Shankaranarayan 1979). Yet although mangosteen’s xanthones have been known for almost 150 years, there are still only 19 PubMed articles on these xanthones and none of these articles concerns the use of xanthones in the actual clinical treatment of human disease. But let be honest! School medicine is usually very conservative as far as the clinical testing of substances not yet declared as official medication is concerned.

However, xanthones are not the only active substances in the mangosteen. Polyphenols and cathechins, powerful antioxidants and anti-tumour agents, are also present in significant quantities. Other key ingredients, polysaccharides, are apparently responsible for the antibacterial and antifungal effects of the fruit. Finally, potassium, calcium, phosphorus, iron, vitamins B1, B2, B6 and C are found in the fruit as well.

A more complete listing of constituents is given at ethno botanist Dr. James Duke’s informative and useful Phytochemical and Ethno botanical Databases (Duke 2004). Dr. James Duke, who retired in 1995, is perhaps America’s foremost ethnobotanist. He worked for 35 years for the USDA and the University of Maryland. He is a prolific writer and he continues to write even in retirement. He has been on the scientific boards of a number of corporations over the years and has consulted extensively for multiple corporations in the herbal industry as well.

Essentially, Dr. Duke has chemically analysed a wide selection of natural products used as supplements. Based on the chemical constituents, he has listed the known effects of the ingredients. Inferentially, this provides a guide for other scientists (or the interested lay public) to direct further scientific research into the health potential of the various plants.

Dr. Duke lists, with presumptive daily dosages, the expected (based on his or other experts’ examination of the mangosteen’s fruit constituents) health benefits. The full list of benefits is mind-boggling and contains 138 separate qualities. Here are the several beneficial actions observed in the great majority of people consuming mangosteen:

1. Anti Lipidemic (Lowers LDL);
2. Anti-hypertensive (Lowers Blood Pressure);
3. Prevents Atherosclerosis (clogging and hardening of arteries);
4. Cardio-protector (Protects heart muscle);
5. Hypoglycaemic (Lowers Blood Sugar);
6. Anti-Obesity (lose weight natural);
7. Anti-Parkinson, Anti- Alzheimer action and beneficial in other forms of dementia;
8. Anti-Depressant, Anti-Anxiety, in the same botanical category as St. John’s Wort;
9. Anti-Fungal;
10. Anti-Bacterial;
11. Anti-Viral, used to treat dermatitis, wound infections, ringworm, acne;
13. Anti-pyretic (Fever Reducer)
14. Immune stimulant (stimulates an immune response);
15. Anti-Diarrheal;
16. Anti-Periodontic (Fights gum disease);
17. Anti-Glaucoma;
18. Anti-Cataract;
19. Anti-Fatigue;
20. Anti-Ageing;
21. Anti-Tumour;

*MThe interested reader may choose to consult the database directly at www.ars-grin.gov/cgi-bin/duke/farmacy.pl

MANGOSTEEN AND THE ORAC VALUES

ORAC stands for - oxygen radical absorbance capacity - a measure of the antioxidant value of a substance. The ORAC values for most fruits and vegetables have been determined by standard laboratories and published in scientific journals. According to some website references mangosteen has an ORAC value of 17,000 to 24,000!? In comparison - 100 grams of prunes have an ORAC value of 5,770. The prunes had - so far – a reputation as a real ORAC champion. If we assume for the sake of argument that the figures cited are indeed accurate, it must be pointed out that merely having an astronomically high ORAC value does not in and of itself confer any particular advantage. Not all antioxidants that are confirmed as present in the laboratory can be absorbed by human beings. And there is a limit to how much we can benefit from an increased intake of antioxidants.
According to Dr. Ronald Prior of the US Department of Agriculture Research Service at Tufts University, Boston, Massachusetts, “a significant increase in antioxidants of 15 to 20 percent is possible by increasing consumption of fruits and vegetables, particularly those high in ORAC value.” However, in order to have a significant impact on plasma and tissue antioxidant capacity one can only meaningfully increase one’s daily intake by 3,000 to 5,000 ORAC units. Any greater amount is probably redundant (superfluous). That is because the antioxidant capacity of the blood is tightly regulated, says Dr. Prior. Thus there is an upper limit to the benefit that can be derived from antioxidants. Taking in 25,000 ORAC units at one time (as reputedly occurs with mangosteen) would be no more beneficial than taking in a fifth of that amount: the excess is simply excreted by the kidneys.

**So, what is wrong with that, if the mangosteen, is really such a potent antioxidant? It certainly can do no harm. What the body can utilize, will be used, and the “extras” will be excreted. Why are medical experts always so concerned and suspicious of the natural health benefits?**

**REALITY CHECK**

Dr. J. Frederic Templeman, MD, a Georgia family practitioner who has written a small book on mangosteen refers to 44 scientific publications on this topic but there are just 29 articles on the topic of Garcinia mangostana in PubMed, the US National Library of Medicine database of fourteen million citations. A total of four of these studies relate to cancer. In one test tube experiment it was shown that a xanthone found in mangosteen kills cancer cells as effectively as many chemotherapeutic drugs. It also appears (on the basis of limited data) that compounds found abundantly in mangosteen can inhibit the harmful Cox 1 and Cox 2 enzymes, and can also induce programmed cell death (apoptosis) in aberrant cells (Ho 2002). Mangosteen thus joins a fairly long list of naturally derived compounds that might potentially have some anticancer activity.

These 29 articles do not constitute a wealth of data –so far. For example, by contrast, PubMed lists over 2,300 articles on the topic of vitamin C and cancer, 125 of which refer to clinical trials. There are a similar number of studies on vitamin E and cancer. There are 835 studies of melatonin and cancer, and a truly impressive 16,000 on polysaccharides and cancer, including 536 clinical trials and 277 randomized controlled trials (RCTs). However, we have to be fair toward mangosteen. In the Western world, it is introduced only recently, therefore it can not compete with such a doyens like vitamins - C or -E.

Much of the science behind xanthones is predominantly available to those in the medical community until recently. Many of the clinical studies on xanthones have been done in universities and testing facilities throughout Asia and have recently started to catch the attention of Western researchers.

Compounds found in plants have long been of great interest to cancer researchers. We must never forget that about one-fifth of all chemotherapeutic agents - including Vincrietine, Vinblastine, Etoposide, Teniposide, and Taxol- are ultimately derived from plant sources. Many of these took a long time to pass through the regulatory process, since serious research into botanical medicine often goes begging for financial and to be plundered by less scrupulous organizations.

**We can state without exaggerating, that naturally prepared fruit drinks are healthful beverages, but good health is achieved through a combination of many factors, hereditary as well as environmental.**

**OTHER ORGANIC BERRIES - CONSTITUENTS OF ZENTHONIC**

The delicious-tasting fruit blend of ZenThonic listed above contains certified organic, low-temperature dried concentrates of blueberry, cranberry, apple juice, cherry and pear juice, raspberry, strawberry. It is a whole food concentrate – and it is power-packed.

Berries are some of Nature’s richest sources of antioxidants. Organically grown blueberries, strawberries, raspberries and blackberries contain powerful disease-fighting phytochemicals such as ellagic acid, quercetin, vitamin C, and anthocyanins. Berries are also high in fibre.

As with onions and apples before them, a number of berry varieties have now been identified as good sources of the flavonoid quercetin. Flavonoids are potent water-soluble compounds not produced in the body. They are thought to
combat oxidation, the process by which cell-damaging free radicals accumulate.

Quercetin is best known for its ability to prevent the cholesterol oxidation, thereby decreasing the chances of atherosclerosis and ultimately heart disease. Its antioxidative powers also have been shown to improve vision and prevent cataracts.

In a relatively recent study published in the European Journal of Clinical Nutrition, 20 men who added by which cell-damaging free radicals accumulate. by which cell-damaging free radicals accumulate. 100 g a day of blackcurrents, lingonberries, and bilberries to their diet for eight weeks raised their blood quercetin levels between 32 per cent and 51 per cent more than 20 men who ate a regular diet.

To date, the best-known berry sources of quercetin appear to be cranberries (Hung.= vörös áfonya és nem tőrégáfonya, ahogy tévesen fordítják, Serb.= brusnice), lingonberries, bilberries (or European blueberries) (Hung. =kék áfonya; Serb.= borovnica) and black currants (Hung.= Feke te ribizli; Serb.= Crne ribizle). Since heating, freezing, and juicing berries can destroy many antioxidants, it is best to eat them in their most nutrient-rich raw form.

THE ORAC-RICH FRUITS
NATURE’S CELLULAR PROTECTION

Research has shown that many degenerative diseases are the direct result of free radical damage in the body. Free radicals are considered a major component in ageing and disease progression. The destruction of healthy cells may easily be avoided by adding powerful antioxidant nutrients to your daily diet.

In today’s fast-paced world it is nearly impossible to obtain the concentrations of nutrients required to positively influence one’s health on a daily basis. The ZenThonic formula composed of Garcinia mangostana and a proprietary blend of fruits is a whole food supplement which can assist in attaining vibrant health at the cellular level.

There is a test conducted at Tufts University called ORAC – short for Oxygen Radical Absorbance Capacity- that measures the ability of foods, blood plasma, and just about any substance to subdue oxygen free radicals in the test tube. Studies at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University in Boston suggest that consuming fruits and vegetables with a reasonably high – ORAC value may help slow the ageing process in both body and brain. Early evidence indicates that this antioxidant activity translates to animals, protecting cells and their components from oxidative damage. Getting plenty of the foods with a high-ORAC activity, such as spinach, strawberries, and blueberries, has so far raised the antioxidant power of human blood, prevented some loss of long-term memory and learning ability in middle-aged rats, maintained the ability of brain cells in middle-aged rats to respond to a chemical stimuli, and protected the capillaries (tiny blood vessels) against oxidative damage.

The ORAC values of fruits and vegetables cover such a broad range, that by eating only the ones with lowest values, the overall ORAC intake will reach something about 1,300 ORAC units. Or, by eating seven types of fruits with high ORAC values, the overall ORAC capacity of one’s blood can reach 6,000 ORAC units. For example, one cup of blueberries alone supplies 3,200 ORAC units. Based on the evidence so far, experts at USDA and Tufts University suggest that daily intake should be increased to the amount between 3,000 and 5,000 ORAC units in order to have a significant impact on plasma and tissue antioxidant capacity.

Table 2. Fruit Antioxidant Scores (as ranked by USDA scientists at Tufts University)

<table>
<thead>
<tr>
<th>Fruit</th>
<th>ORAC Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dried Plums</td>
<td>5770</td>
</tr>
<tr>
<td>Strawberries</td>
<td>1546</td>
</tr>
<tr>
<td>Pink Grapefruit</td>
<td>483</td>
</tr>
<tr>
<td>Raisins</td>
<td>2830</td>
</tr>
<tr>
<td>Raspberries</td>
<td>1220</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>252</td>
</tr>
<tr>
<td>Blueberries</td>
<td>2400</td>
</tr>
<tr>
<td>Plums</td>
<td>949</td>
</tr>
<tr>
<td>Apples</td>
<td>218</td>
</tr>
<tr>
<td>Blackberries</td>
<td>2036</td>
</tr>
<tr>
<td>Oranges</td>
<td>750</td>
</tr>
<tr>
<td>Pears</td>
<td>134</td>
</tr>
</tbody>
</table>

It is notable that dried plums *(Hung=aszalt szíva, Serb. = suve šljive) may be an important defence against ageing and its associated diseases, according to researchers at the Center on Aging.
at Tufts. Their antioxidant ORAC score of prunes was 5,770, more than double the next highest fruit antioxidant. And, as quoted earlier mangosteen has an ORAC value of 17,000 to 24,000! Epidemiological and clinical studies, as well as empirical data are needed in order to validate the true benefits of these extraordinary ORAC-scores.

The fruit (natural antioxidant) combination in ZenThonic juice has potent immune – enhancing properties.

The extensive ORAC (Oxygen Radical Absorbance Capacity) analysis performed at Tufts University in Boston mentioned earlier showed high scores in the ability of these fruit extracts to significantly protect cells and their components from oxidative damage. They were also shown to help slow the processes associated with ageing in both body and mind (brain function). High ORAC foods have been found to raise the antioxidant capacity of human blood 10-25%, helping to increase learning ability and prevent the loss of long-term memory.

THE PROPERTIES OF THE INDIVIDUAL FRUIT COMPONENTS

**Apple Extract:** Contains highly bio-available polyphenolic antioxidants that can play a key role in slowing the degenerative processes related to ageing, as well as *phloridzin*, which aids in blood sugar management.

**Blueberry Extract:** Research has shown that the antioxidants in blueberries help to reduce glucose absorption in the intestines, increase glucose metabolism, prevent blood sugar imbalances, reduce cholesterol levels, fight free radicals, and aid in the prevention of degenerative diseases. Potent antioxidants including *chlorogenic* and *caffeic acids* found in blueberries, may slow the effects of age related neuro-degeneration.

**Cranberries.** For time immemorial nuns have been recommending *cranberry* as a curative for the infection of the urinary tract, although they had no knowledge of its active principles. Marwan and Nagel have documented that cranberry extract is effective against Pseudomon fluorescens and Saccharomyces Bayanus, but what is even more important, they have revealed that the purplish-red –bluish pigments – proantocyanidines and flavonols - are the principal antimicrobial factors in that extract (55,56). Apart from the already described mechanisms, bioflavonoids are partly metabolized in the gastrointestinal tract into certain organic acids such as *phenyl-acetic* and *phenyl-propionic acids*, which, then, produce an anti-microbial activity against a whole range of various microorganisms. Similar effects have also been detected in a different class of flavonoid metabolites: the phenyl-gama-valerolactons.

**Grape Extract:** Utilizing the whole fruit, skin and seeds, extracts contain powerful antioxidants including *proanthocyanidins*.

**Raspberry Extract:** Abundant in vitamin C, fibre, and ellagic acid – a naturally occurring phenol that helps detoxify tumour-causing agents, reduce birth defects, promote wound healing, and prevent heart disease.

The *ellagic acid* is a condensation dimeric product of gallic acid (3,4,5,-tri-hydroxy-benzoic acid) found in fruit, especially in raspberries. It protects DNA from structural deterioration and, enhances the carcinogene- neutralizing activity of liver cells. Ellagic acid induces the second-phase cellular detoxicating enzymes of the liver (i.e, glukuronol transferase, glutathion-sulphotransferase, acetyl-transferase, methyl-transferase and conjugase) which neutralize the active carcinogens. It has been proved that ellagic acid links to the DNA and prevents its structural deterioration under the harmful (mutagenic) effects of carcinogens. In this way, by an additional inhibition of procarcinogenic activity (preventing their transformation into a cancerogen) on the level of cytochromes P450 - ellagic acid protects DNA structures from damage and improves the reparative functions of the non-specific endo-nucleases. In addition to this, it increases the anticancerno- genic neutralizing activity of the liver cells. Ellagic acid, found in strawberries, grapes and raspberries, also neutralizes carcinogens before they can invade DNA.

**Fibre**

The consumption of dietary fibre from sources as properly prepared seeds, legumes, grains, and fruits is extremely important. **Dr. Dennis Burkitt** was the first individual to bring the importance of consuming adequate dietary fibre to the forefront. In his travels around the world, Dr. Burkitt found that natives who consumed high amounts of fibre between 35 to 75 grams per day were
free from many of today’s common ailments including constipation, haemorrhoids, irritable bowel syndrome (IBS), heart disease, inflammation, and more.

**SUMMARY:**

- ZenThonic contains certified organic antioxidant-rich fruit extracts
- Helps fight free radicals in the body
- Contains powerful antioxidants: Ellagic, Chlorogenic and Caffeic acids
- May slow processes associated with ageing
- Helps protect against oxidative damage
- Generally increases nutrient bio-availability

**CONCLUSION**

Remember, the body has a natural tendency to ward off disease and remain healthy and stable. This natural internal stability is called “homeostasis”. Despite homeostasis, the body can still get sick. However there is a scientific - based help in your quest for overall good health and wellness.

Biologically active food (BAF), and BAF supplements – such as ZenThonic, Ocean 21, Noni juice, Nopalin, Rhodiolin, Green Care, Spirulina max and others – alongside with the electromagnetic device, BioHarmonex are intended to enhance the bio informatics of the organism, restore its homeostasis and to help improve the efficiency of specific biological processes in the body. If biological processes are more efficient, then it is likely the body will be able to maintain health, ward off imbalance, illness and premature ageing.
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