

Nutrition, Minerals & Disease



By Elmer G Heinrich



**“Where has all
the goodness gone?”**

“A Great Book About Mineral Depletion” -Alan L. Jacobson, M.D., F.A.C.S.

Nutrition, Minerals & Disease

by Elmer G Heinrich



“A Great Book About Mineral Depletion” - Alan L. Jacobson, MD., F.A.C.S.

Nutrition, Minerals & Disease

A comprehensive outlook on
soil and food
mineral deficiencies

By Elmer G Heinrich

Medical Advisor: Dr. Alan Jacobson

Published by: Elmer G. Heinrich
Irrevocable Trust

Copyright © 2013

All rights reserved. NO part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any other information or retrieval system without the written permission of the publisher.

Printed in the United States of America.

Elmer G. Heinrich
Irrevocable Trust

Notice: This book is meant to make you aware of mineral deficiencies and to supplement the advice and guidance of your physician. No two areas of the world are the same as far as soil health is concerned and mineral content varies from region to region. Therefore we urge you to consider mineral supplementation with a complete spectrum of natural plant derived minerals from Mother Nature.

FORWARD

Mr. Ed Morgan, an astute and refined gentleman from Salt Lake City, Utah, introduced me to Plant Derived Minerals in 1982. Recognizing my ambitious attitude along with my desire for health and fitness, Ed was adamant that I allow him to tell me what he knew and had heard about these unusual minerals. He said, "Judging from the way you like to sell, I believe you should be promoting these minerals". I said, "Ed, why would I want that type of competition? I can purchase minerals from thousands of locations throughout the country ". He said, "The kind of minerals I'm talking about cannot be purchased anywhere on the retail market. These minerals are different and they provide unusual and extremely effective health benefits and someone like you needs to introduce them to the world!

I was not aware of and had not heard of plant derived minerals. Ed began to tell me some of the wildest stories imaginable. He said he had been familiar with these minerals for more than thirty years and that they had been used on a small scale by thousands of people since 1931. He told me of people getting rid of allergies, arthritis, type 2 diabetes, high blood pressure, migraine headaches, ulcers, obesity and about anything else you can think of. I found his presentation quite amusing and laughed it off without a

second thought. After all, I had already heard numerous sales pitches of this nature on products that weren't one-tenth as effective as their presentations or advertising indicated.

Eventually, in order to appease Mr. Morgan, I ordered four quarts of the liquid minerals and consumed one ounce per day as he suggested. I had a rude awakening and could not believe what was occurring. I experienced a significant change in my body after being on the minerals for one month. Changes were even more noticeable after ninety days. This is when I realized that this product was different and that the public had to be introduced to it in order to improve the country's general overall health. I interviewed numerous people who had been taking the minerals for more than one year. I made my decision to promote the minerals after these interviews.

I began to research minerals and their availability and was surprised to learn that very few people, including the supposed experts, knew anything about minerals or their importance for human health and survival. A bigger surprise was that hardly any of the general public knew or realized there are more than 18 or 20 minerals on earth. Everyone was well aware of vitamins but had virtually no knowledge of minerals.

My company began to introduce and sell plant derived minerals in 1983. Since then, several million people have experienced some of the same benefits Ed Morgan had mentioned to me in 1982. Thousands of testimonials have been received from all over the world. Many claim some of the most unbelievable health improvements possible.

I have traveled to many countries, during the last twenty years, to study soil mineral depletion and to visit hundreds of people who had personal experience consuming the minerals. I am amazed by what I have heard after face-to-face contact with these people. Their positive testimonials are boundless and they are convinced sickness and degenerative disease is a direct result of lack of minerals. This is the reason I have written this book while continuing to study, research and gather information about minerals and their role in building and maintaining the body while allowing for a pain free and long life.



ENDORSEMENT

Mr. Heinrich's book, *Nutrition, Minerals and Disease*, describes the evolution of mineral deficient foods. He explains that despite the fact that many people in the developed world who take vitamin/mineral supplementation are still found to have clinical and sub-clinical mineral deficiencies. In fact, most mineral supplementation is poorly absorbed or toxic in nature. Noting this dilemma, Mr. Heinrich explains how nature has once again provided us a natural solution to this problem in the form of hydrophilic, nonmetallic organic based minerals. This is a clear concise book, useful to both the lay and professional population. The knowledge imparted to the reader empowers us to further enhance our health, and well-being.

Alan L. Jacobson, M.D., F.A.C.S



FROM THE PUBLISHER

Dr. Alan Jacobson's board certifications include: Otolaryngology Head and Neck Surgery and Facial reconstructive cosmetic Surgery. He practiced in New York City for eight years and California for one year, combining private practice and academic medicine before relocating to Palm Beach Florida and establishing the Physician Skin Care and Plastic Surgery Center. Since graduating for Albert Einstein College of Medicine in New York he has held teaching positions as Clinical Instructor, Mt. Sinai School of Medicine, New York, Assistant Clinical Professor, Columbia College of Physicians and Surgeons and visiting Associate Professor at University of Pacific School in California. He also held the position of Senior Editor or Consulting Editor in three different Medical textbooks. He is licensed as an M.D. in New York 1979, California 1986 and Florida 1987. Dr. Jacobson is widely published in both textbooks and medical journals and has been invited as a lecturer and teacher both nationally and internationally. Dr. Jacobson is available through email at dralanjacobson@aol.com or by calling 561-624-0900.



DEDICATION

Few Men have ever had the opportunity to be married to a pure and extraordinary Angel. From the first moment I saw her reflection in a mirror, I knew she was going to be my lifelong partner. I thank her for being a strong and understanding spouse throughout our marriage.

With great affection and profound love and respect, I dedicate this book to my esteemed wife and lover, Shirley Heinrich who lives by the three "Rs". That is "Respect Yourself, Respect Others and be Responsible For What You Do".



TABLE OF CONTENTS:

- 1 **Chapter 1**
The Fundamental Source Of Life
- 19 **Chapter 2**
The Soil's Breath And Photosynthesis
- 23 **Chapter 3**
The Soil Depletion Of Minerals Is Real
- 37 **Chapter 4**
Supplementing Is Advisable
- 55 **Chapter 5**
There Would Be No Life Without Minerals
- 75 **Chapter 6**
Heart Disease, Osteoporosis, Osteoarthritis and Bursitis
- 89 **Chapter 7**
Diabetes And Obesity
- 101 **Chapter 8**
Vitamins, Antioxidants, Amino Acids, Fiber
And The Purpose They Serve
- 115 **Chapter 9**
The Toxic Minerals Belief
- 135 **Chapter 10**
A Safe And Sane Way To Eat
- 149 **Chapter 11**
The Depletion Continues Worldwide
- 159 **Chapter 12**
Sensible Tidbits, Antidotes And Observations
- 175 **Chapter 13**
What Kind Of Minerals Should We Consume?
- 185 **The Perfect Mineral Cleansing Diet**

Chapter 1

THE FUNDAMENTAL SOURCE OF LIFE

Earth is a terrestrial planet, a solid sphere of rock with a metallic core. It must have been a vision of hell in the beginning, an elemental place of rock and gases, where the sun was fainter than now and the moon, orbiting at less than a tenth of its current distance, looked immense. The terrain was unimaginable, all scalding rock, unbearable heat and choking fumes. Since then, its surface has cooled, continents have drifted, mountains have risen and eroded and life has emerged benign and green. Nearly all visible traces of the early planet have been wiped away. Plant life emerged before land life came about and scientists believe all land life in the beginning was vegetarian. Can you imagine how unbelievably nutritious plant life must have been? The earth was new! There were at least eighty-four minerals everywhere near the earth's surface so plants had to be extremely nutritious.

This type of plant nutrition existed for millions of years but eventually the earth succumbed to wind and rain erosion, continuous plant growth and hundreds of years of man's unwise farming practices and then chemical fertilizers.

As time passed, the earth's surface minerals became depleted. This depletion began thousands of years ago, but was dramatically accelerated two to three hundred years ago

Elmer G. Heinrich

and now it is like a plague. The soil near the top three feet of the earth, where our plants grow, is severely devoid of minerals compared to millions of years ago. When you test surface soil today, from anywhere in the world, you find no more than 20 minerals. When you test earth or volcanic ash from a much deeper zone, you find anywhere from 60 to more than 100 minerals. This provides proof our surface soils are deficient in minerals. If soil is deficient in these vital organic molecules, our plants and foods will be deficient in these organic molecules. You don't need a PhD in realism to understand this problem. We must come to our senses and understand that the nutritional quality of our food source and consequently the health of humans and the animals eating that food is determined by soil fertility.

The longevity and vitality of your life is relative to your lifestyle, activities and health. Much of your health depends on the nutrient value your body receives. We are what we eat so all of us should be alarmed by research that suggests the nutritional value of modern foods isn't just declining, it's collapsing. This research is a warning of imminent approaching danger! We are losing our minerals, the fundamental source and the basic building blocks of life. I'm not just referring to processed foods. I'm talking about fresh fruits and vegetables and basic foodstuffs such as milk, cheese, beef, chicken and grains.

Farther on I will produce evidence that during the last 60 years, the level of iron, a vital mineral for good health, has dropped 55 percent in the average rump steak. During the same period magnesium plummeted by 21 percent and

Nutrition, Minerals & Disease

calcium has also significantly lowered. In fact, every mineral, except the three used to fertilize today's farmlands, has lowered anywhere from 10 percent to 40 percent from 60 years ago.

Life as we know it requires liquid water, energy, organic and inorganic molecules. These inorganic molecules are minerals, the very source of physical life. However, they are disappearing from our soils at an alarming rate and this may be contributing to severe health problems around the world. The minerals that create the very specific lattice structures found in the mineral kingdom create the same structure within our physical framework. They are specific for healing as well. In the embryonic state, if some of these vital components are missing, then the physical body will be missing what it needs to build the various organs and structure. Everything is mineral dependant!

We need to take notice that our foods are nutritionally bloated with chemical fertilizers that attempt to invigorate mineral depleted soils. Down on the commercial farm, quantity now triumphs over quality at every turn and, in their desperation to make even a halfway decent living, many of today's farmers, pushed by their supermarket masters and agro co-ops to produce high yields through agro farming, at low cost, seem to have forgotten that there was a reason their grandfathers farmed in a different way.

The nutritional value of food usually drops in direct relationship to the increase in bulk production. The public has become aware of this problem and they are beginning to

Elmer G. Heinrich

be more aware of the importance of vitamins and minerals and the lack of them in foods. Even the food value of organically grown foods is not what people think and expect because they come from partially “empty” plants deprived of the necessary minerals in the soil. The nutritional value of food raised today is lower than ever in history, and it will continue its rapid decline in the future.

Soil is our natural and primary health care provider. It is the source of more than 98% of human nutrition. If it is unhealthy, it only makes sense that we will be unhealthy! Simply speaking, the topsoil of the world is depleted and sick from overuse. Therefore, the long-term prospects of diminishing nutritional value of our foods are alarming! The problem is real and what is even more alarming; there is nothing we can do about it!

The imminent catastrophe of global warming has been recognized. Al Gore’s book, “The Inconvenient Truth” brought global warming to the forefront and hopefully World Governments will make a concerted effort to address this problem. There is another “Truth” that is not being addressed by World Governments and the integrated agro farming corporations; the truth of the imminent collapse of our global food source. This is positively, **The Untold Truth!** Most people believe global warming could be reversed if every country put forth the initiative to reduce the elements that threaten our atmosphere. But, what are World Governments going to do to re-mineralize the soils? Absolutely nothing. This is impossible on a worldwide

Nutrition, Minerals & Disease

scale. Yes, farmers could fallow and let their land lay idle for a year or two. This would improve the food somewhat but it would not put back the minerals that are depleted. They are gone and they likely will never be back in the top three feet of the earth's surface where our plants grow until the earth encounters another ice age, and according to some experts, that is probably about 90,000 years away.

Despite all the apparent advances in broad acre industrial agriculture, the nutritional qualities of our basic foodstuffs have been declining rapidly during this century. Many of our modern day farmers are on a treadmill of dependency on fertilizers, pesticides, insecticides and plant food that creates unnatural growth and very little nutrition due to a lack of minerals in the soil. The food and farm industries don't like to hear about mineral depletion in soils, but the new findings are totally in line with other prominent research that leads to one shocking conclusion. Chemically dependent modern farming methods do not produce totally nutritious food for several reasons. In the first place, they are not designed to and can't because of the mineral depletion problem.

These mineral deficiencies exist all over the world. The Government of the United Kingdom acknowledges this and is not ashamed to admit they have a mineral depletion catastrophe. In 2000, the Soil Association quoted figures from the Department of Environment, Food and Rural Affairs, that trace minerals in the UK fruit and vegetables had fallen by 76 percent. Similar figures from the United States Department of Agriculture indicated that this wasn't

Elmer G. Heinrich

just a British problem. Soil mineral depletion presents the greatest overall challenge which humans have yet faced. We can't wait generations to mess around with this calamity. We must take steps now to slow down the mineral depletion problem. But, what can we do?

The minerals on earth were forged in the nuclear furnace of the sun. These periodic elements were distributed in varying amounts and at different levels within the earth's crust and mantle. Because minerals cooled and solidified at different temperatures, they can be found in pockets or seams, in different amounts and different depths and locations throughout the earth.

After millions of years of gradual cooling, the mountains and rock formations were physically crushed by ice flows producing rich clays and loams and the multiplicity of soil types we find across the globe. In those days there were abundant amounts of minerals and the early plants were rich in nutrition. That's not the case today! As land dwellers, our main link with minerals is through a diet of plants that are able to extract and assimilate metallic minerals from the soil as they grow. Our secondary link is from meats of animals that eat plants. Minerals are extremely important for our well being, yet they have always been taken for granted, and few of us have given them a second thought. Until a few years ago, no one knew of or cared about the importance of these essential building blocks that make up about 96 percent of our bodies. Now that minerals are enjoying tremendous success in the supplement marketplace, it is

Nutrition, Minerals & Disease

only prudent that users learn more about them. Mere knowledge of minerals and their importance may shed new light on why they are so necessary for us to stay healthy. Minerals are the key, for without them, nothing else, including vitamins and enzymes, will benefit our health.

We have all heard the expression, **“life is elemental”**. Elements are minerals! Minerals are one of the deep secrets of Life! They are the frequencies of creation for the material world in the universe in which we live. They actuate all the organ structures and are the foundation for all organ and cellular structures in the body. Minerals are the builders of our systems.

Health is not just the absence of disease, but more so the presence of physical and mental well-being. By going back to basics we can reclaim our health and perhaps work toward its optimum level through elimination and avoidance of toxins and infective agents, eating more balanced healthy live foods, vitamin and especially mineral supplementation, proper exercise and stress relief.

Excellent health should be for anyone who has a goal and wants to meet that goal. That should include all of us! We should be healthy, vibrant and strong throughout our adult lives. If we lack a number of minerals, that is an impossibility! Also, we must not forget that in order for minerals to provide their utmost benefit, we may need to make some lifestyle changes.

Elmer G. Heinrich

Extending your life and growing biologically younger is now a rational desire because we have reasonable processes that will do just that. The growth of the anti-aging industry has been phenomenal! The baby boomers are at the stage in their lives where they are concerned about their health and have a sincere desire to look and feel younger as well as the desire to live longer and healthier. This is possible if the proper life changes are made. These changes may include a food selection change, better drinking water, more stretching and exercise, less stress, more rest, less smoking, less drinking, and taking fewer prescription drugs. Physical, mental and spiritual health is linked to one's lifestyle so lifestyle changes may be necessary. A complete spectrum of minerals is the benchmark for ultimate and total nutrition, but not the total answer to excellent health.

In order for us to understand the importance of minerals, we need to first understand how minerals are composed. While vitamins are organic compounds, the minerals most people are familiar with, are inorganic (non-carbon) elements that come from the earth as natural occurring, homogeneous metallic substances with a specific chemical composition and characteristic crystalline structure, color and hardness. These minerals are known as hydrophobic (metallic minerals) and they are composed of different elements. For example, the mineral silica is composed of the elements silicon and oxygen. After digestion, non-carbon metallic minerals participate in a multitude of bio-chemical processes necessary for the maintenance of health in human beings and all living species that inhabit our planet. Biologists

Nutrition, Minerals & Disease

estimate that there are as many as 100 million life form species on earth and each is dependent upon minerals.

Nearly everything on earth is comprised of minerals. Your ring, belt buckle, lampshade, stove, wallpaper, flooring and your automobile would not exist if there were no minerals. God made man from minerals and man requires minerals for his mere existence. Do you remember this from the Bible? "From dust thou came and to dust shall thou return."

Every living creature has a mineral requirement. There would be no life without minerals! Minerals carry the vibrations of life. They control millions of chemical and enzymatic processes and reactions that occur in our, 100 trillion cell body at all times. The same is true for animals. This knowledge should make us aware of the importance of minerals for mankind's survival.

Although some are very rare, there are more than 115 mineral elements found on earth and about 94 of these can be found naturally in different parts of the world or in volcanic ash. Four of these make up 96% of our body, namely carbon (18%), hydrogen (10%), oxygen (65%) and nitrogen (3%), all in the form of macronutrients consisting of water, protein, carbohydrates and fat. The remaining 4% of our body is basically made up in part of 70 or more minerals, many of which are not in our bodies anymore and most of which are no longer readily available in our soils.

Elmer G. Heinrich

The world governments and scientific communities have grouped minerals into two categories. Those that are considered to be required in our diets in amounts greater than 100 milligrams per day are called major minerals. Those that are considered to be required in our diets in amounts of less than 100 milligrams per day are called trace minerals. Both major and trace minerals are in the same class. The only difference is the name and the recommended daily intake (RDI) required, according to the World Health Organization and The U.S. Food and Nutrition Board.

There are only seven major minerals. They are **calcium, magnesium, potassium, phosphorus, sulfur, sodium and chlorine**. Our bodies should contain significant amounts of each. Trace minerals, also known as trace elements, are present in the body in very small amounts. It is thought that each makes up less than one hundredth of one percent of our body weight. Of the 115 minerals on earth, about 90 are most recognized. Of these, 64 are metallic solids, 6 are metalloid, 4 are non-metallic, 5 are liquid and 10 are of the gaseous nature. These elements are listed as follows:

Metallic Solids (64) aluminum, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, cerium, chromium, cobalt, copper, dysprosium, erbium, europium, gadolinium, gold, hafnium, holmium, indium, iodine, iridium, iron, lanthanum, lead, lithium, lutetium, magnesium, manganese, mercury, molybdenum, neptunium, neodymium, nickel, niobium, osmium, palladium, platinum, plutonium, potassium, praseodymium, rhenium, rhodium, rubidium,

Nutrition, Minerals & Disease

ruthenium, samarium, scandium, silver, sodium, strontium, tantalum, technetium, terbium, thallium, thorium, tin, titanium, tungsten, uranium, vanadium, ytterbium, yttrium, zinc, and zirconium.

Metalloid (6) silicon, germanium, antimony, selenium, tellurium and polonium.

Non-Metallic (4) boron, carbon, phosphorous and sulfur.

Liquid (5) cesium, francium, mercury, gallium, and bromine.

Gaseous (10) hydrogen, nitrogen, oxygen, fluorine, chlorine, helium, neon, argon, krypton and radon.

All the minerals listed were available in our soil during prehistoric times. This is not the case today. Maybe this is the reason nutritional experts who represent world governments point to only 12 or 14 minerals as being necessary for average health and to another 8 or 10 minerals as possibly providing some benefit. I have always wondered why they have never studied the probable necessity of all the other easily recognized minerals on earth! If God put 90 or more minerals on earth and man is comprised of minerals, why are we only utilizing 15 or 20 at best? Is it possible these other minerals were, and continue to be overlooked because they just aren't available in the surface soil where plants grow? In my opinion, this is a very interesting question and one that could be answered with a resounding "yes"!

Elmer G. Heinrich

There has been a lot of controversy about vitamins and minerals and the daily amount necessary for good health. Many physicians and many persons live with the mistaken notion that the average recommended diet of 2,000 calories somehow magically supplies all the nutrients essential for a healthy life. If you believe that, you will die prematurely and never enjoy the good health God intended for you to enjoy.

I hear experts basing good health on a 2,000 calorie per day diet. Several times in the past, I have offered money to any physician or person who can supply a diet averaging 2,000 calories per day that also supplies all the established RDI of essential nutrients. I was never challenged because it cannot be done!

When you think about it, minerals are bound to play an important part in our lives. After all, rocks are the parent material for the soil that is the main source of nutrition for plants, animals and ultimately humans. While deficiencies of a single mineral are quite common, what happens if we are marginally low in a number of minerals? We have less energy, we are fatigued and rundown, we have headaches, and we feel bad because we are running on empty. These effects can be easily seen when studies are conducted on those persons who are pure vegetarians, those who consume a large amount of junk food or those with poor diets in the absence of adequate mineral supplements.

Also, it is a known fact the absorption of many vitamins and minerals declines with old age. Certain diseases exist because people have difficulty absorbing nutrients and if

Nutrition, Minerals & Disease

they lack minerals the problem is amplified. As the body ages, the assimilation process slows down and the immune system begins to weaken. Additionally, extreme exertion, stress and exposure to environmental pollution raise our requirements for minerals, especially zinc, calcium and iron.

I am amazed at the number of people who are not aware of the importance of minerals relative to good health. Many people seem to be resigned to the premise that you've lived a full life if you die at the average age of 78. This type of thinking is pitiful! People need to change their thought pattern. They don't have to die at 78 years of age just because their parents died at 78.

My extensive travels to more than 40 countries have reaffirmed my belief that the world's population must be mineral deficient because the people are not consuming a full spectrum of minerals on a daily basis. This stems from the lack of minerals in our present day foods, as numerous research teams have reported. Our diet remains the number one source of minerals, so it's easy to understand why foods must have a good source of minerals. As plants grow, they take up minerals from water and soil as plants have done for millions of years.

Elmer G. Heinrich



“To grow and reproduce, plants take up minerals from water and soil, as plants have done for millions of years”.

According to science, millions of years ago the soil near the earth’s surface was saturated with a multitude of minerals. At least 84 minerals were ubiquitous and some areas of the planet did possess as many as 115 minerals. Science has proven the plants of prehistoric times were rich in minerals because there was an abundant supply for them to feed upon from the prehistoric soil.

When a plant grows, it draws the available minerals from moisture and the soil reached by its roots. If the soil contains only a few minerals, the plant will only draw a few minerals. We know the mineral content of plants has been severely altered throughout the last several million years and drastically altered during the last several hundred years.

Nutrition, Minerals & Disease

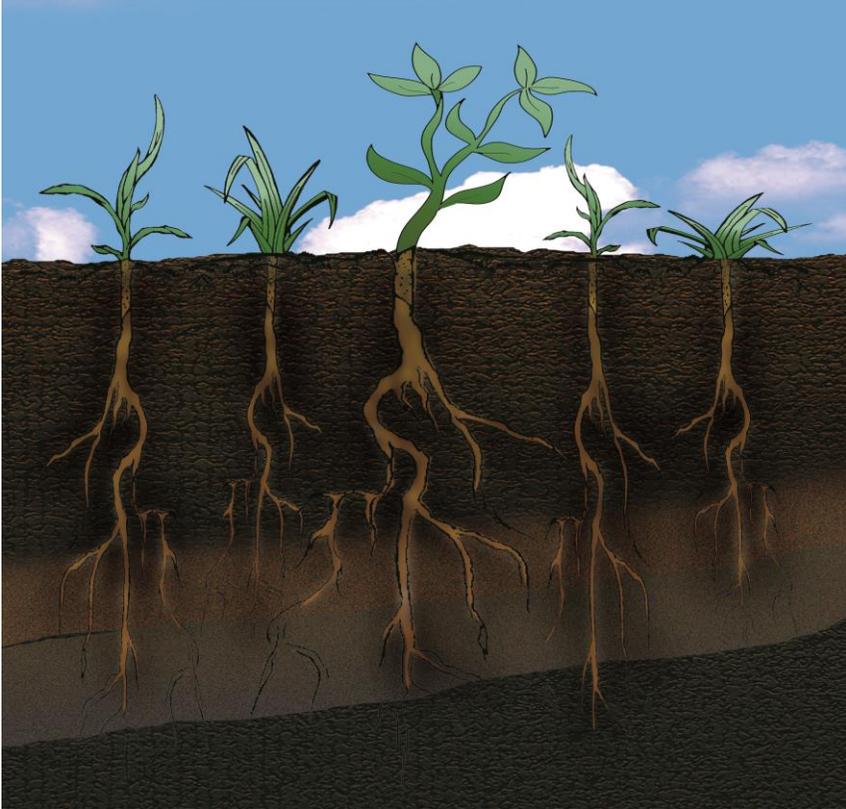
When man began to till the soil, wind and rain erosion began to take its toll along with continuous cropping that gradually caused the soils to possess fewer and fewer minerals. Unfortunately, these millions of years of erosion and centuries of unwise farming practices have made good, mineral rich soil a scarce commodity. Soil tests from all over the world have revealed that our soils are severely lacking in minerals. This in turn produces mineral deficient plants with greatly reduced nutritional value for us humans and the animals we eat.

Man developed chemical fertilizers in the early 1900's by making or mining concentrated forms of nitrogen, phosphorus and potassium rather than using living compounds as they exist in nature. These living compounds include manure and humus which is a natural food for a rich diverse blend of organisms living on and within the soil like beetles, worms and other invertebrate creatures, along with fungi, molds, yeasts, algae, insects and other tiny microbes. These organisms add to the earth's carbon pool, which is very important for sustained soil health. Without an abundant supply of these compounds, our soils become barren and can barely sustain life.

The health and survival of all plants, domestic or wild, depends on the health of the soil and its ability to provide a constant supply of carbon and minerals. If it lacks the proper amount of minerals it won't produce healthy plants. The nutritional value of a plant is relevant to the conditions in which it was grown. The temperature, amount of sunlight,

Elmer G. Heinrich

humidity of the atmosphere, water and oxygen supply in the soil and other factors of the general environment, all play a role in a plant's maturity.



“A plant's metabolism depends on good, rich soil.”

Minerals are the necessary components required for chemical reactions involving metabolic processes. Life processes cannot exist without minerals. In the course of a

Nutrition, Minerals & Disease

plant's metabolic processes, innumerable substances are formed such as sugars, starch, cellulose, acids, lignin, tannins, amino acids, proteins, amides etc. However, with few minerals in the soil from which the plant can draw, it doesn't have a good chance of metabolizing these substances or of being healthy even if all the other relevant conditions are perfect. If there is a lack of minerals in the soil, few of the necessary components of good soil exist so plants become stunted, sick and devoid of much of the food value they contained in prehistoric times.

If we only go back 60 or 70 years, we find 30 percent more minerals in the soil as compared with what we find today. You can ask any old time cattle rancher about mineral depletion. He will tell you that his cattle survived and were very healthy from eating the cow feed that was grown fifty years ago. No supplements were required! Today's cattle must be supplemented or they will be malnourished, become stunted, sickly, lose their hair and abort their calves, all because of a mineral deficiency in the soil.

When man began using artificial fertilizers that contained ammonia, nitrogen, phosphate and potash, it was learned that crop yields could be greatly increased. But what appeared to be a blessing has turned out to be a curse. According to the Complete Book of Minerals for Health by Rodale Press, manmade, inorganic fertilizers upset the delicate balance of minerals and organisms in humus rich soil by killing off some of the beneficial organisms and bacteria, and lacking in these naturally occurring minerals,

Elmer G. Heinrich

they are less available to plants. Inorganic, synthetic and ammonium-based fertilizers along with herbicides and pesticides kill the precious microorganisms that are absolutely essential to the creation of organic complexes in the soil. Nitrogen fertilizers often used in agriculture cause an accelerated depletion of the soil's organic resources. This results in a net loss of humus and a reduction in the soil's fertility. Inorganic and organic! What is the difference? Organic means "carbon based", which defines most living species.

Chemical fertilizers can also saturate plant roots with too much of one nutrient making it difficult for plants or crops to pick up and absorb other minerals they need so badly. If minerals are not available to be pulled from the soil by plants, the nutritional value of our food is drastically diminished. This is the reason, according to Dr. Linus Pauling's teachings; the world is so unhealthy today. This is also the reason the world has a higher percentage of sick people each year and this number will continue to escalate every year hereafter because whether we like it or not, minerals will continue to diminish in our soils.

Chapter 2

THE SOIL'S BREATH AND PHOTOSYNTHESIS

Studying the mysteries of life below the surface of the earth is revealing in many aspects. Soil seems like passive stuff, but when you assemble data at the planetary scale, the soil reveals itself as one of the most active organs in the earth's body. Everything that lives is a product of the soil. Organisms living on and within the soil such as beetles, worms and other vertebrate creatures, along with fungi, roots, bacteria and other microbes, produce a ceaseless flow of carbon dioxide as they respire. This flood of colorless and odorless gas, known as the soil's breath, enters the atmosphere and annually exceeds, by more than ten times, the amount of carbon dioxide emitted by all human activities, including the burning of fossil fuels!

For thousands of years, before there were factories, before vast tracts of forests were cleared or burned to grow crops and graze herds of cattle, the various flows of the global carbon cycle were closely balanced. The amount of CO₂ or carbon dioxide (the tiny component gas in our atmosphere) that passed from ocean to atmosphere matched that from the atmosphere to ocean. The carbon from atmospheric carbon dioxide incorporated into plant tissue during photosynthesis was matched by a return flow from the respiration of bacteria, animals, and fungi. But now the scales have been

Elmer G. Heinrich

tipped, thanks to industries, homes and cars that spew out carbon dioxide as a combustion by-product of their appetites for fossil fuels. The atmosphere's store of this potent greenhouse gas has been growing, and this new carbon dioxide spreads through the byways of the global carbon cycle, curtailing the constant circulation of carbon atoms that are essential to life on earth. No one knows for sure just how much new carbon the cycle can absorb without being thrown out of whack or just where the new carbon will wind up. However, this is something all of us need to concern ourselves. During the last ice age, the CO₂ was 180 ppm and the earth was frozen. This freeze lasted for about 10,000 years and it took the earth more than 1,000 years to warm up again. After another hundred years, the earth got back up to 280 ppm of CO₂ which provides the warmth that our bodies feel today. The people of the world have now pushed it up to around 385 ppm, which is edging towards disaster. 19 of the 20 hottest years ever, occurred since 1980. The hottest year, during the last 100 years was 205. Experts say if we continue at the present rate, CO₂ will reach 500 ppm within the next 100 years, and if that should occur, they say 80% of the world will starve due to a lack of food. This increase will further degrade plants that grow from the earth, which means even fewer minerals can be obtained from plant growth.

Soil has largely resisted scientific efforts to decipher much of its inner dynamics, but we do know that almost all the earth's store of soil carbon is found within the top three feet. Furthermore, about a third of the gaseous carbon emitted from soil comes from its uppermost layer of decomposing

Nutrition, Minerals & Disease

litter. This litter, consisting of fallen tree leaves, twigs, older overgrown stems of moss and rotting seed casings etc., is mined by fungi, worms, bacteria and other denizens of the surface soil. If the soil has an adequate amount of minerals, these organisms and their predators metabolically burn the carbon in the high-energy molecules of litter and release it, linked to oxygen as carbon dioxide.

Carbon is necessary for the process of photosynthesis to complete its earthly function. Photosynthesis is the process by which chlorophyll containing cells in green plants convert incident light to chemical energy and synthesize organic compounds from inorganic compounds, carbohydrates from carbon dioxide and water, accompanied by the simultaneous release of oxygen. Simply speaking, photosynthesis converts insoluble, toxic heavy metals (Metallic minerals) into soluble, non-toxic (plant derived minerals) by attaching a hydrogen molecule to the converted mineral. This is known as hydrogenation.

The carbon in humus is what makes soil dark, crumbly and spongy. Humus also gives soil its luscious earthly aroma. About half of the gaseous carbon comes from the respiration of roots. Unlike cells in leaves, root cells do not use up carbon dioxide in photosynthesis. Instead, like breathing animals, they are overall emitters of the gas. This root respiration is one reason that gases within the soil of a mid-western wheat field, in summer, contain a concentration of carbon dioxide more than a hundred times that of the atmosphere. Whatever the source of the soil carbon,

Elmer G. Heinrich

microbes spend their short lifetime transforming it into carbon dioxide. The short lifetime is further reduced, as are microbial families, if the soil lacks the proper number and amounts of minerals to establish an abundant, healthy and active microbial environment.

Generally, the more you eat, the wider the girth. And all else being equal, a soil fed more organic matter by its plants will contain more soil carbon. But all else is rarely equal! Some people remain skinny as rails no matter how many milk shakes they consume, while others become obese even on highly reduced diets. The difference is in the rate of metabolism. The same is true with soil. If it lacks minerals, its ability to metabolize the organic matter to properly feed the organisms and microbes, its carbon is reduced and the result is unhealthy soil. Unhealthy soil produces plant and food with lessened nutritional value.

Chapter 3

THE SOIL DEPLETION OF MINERALS IS REAL

I am surprised at the number of nutritionists, medical doctors and even some governmental officials who do not know or want to acknowledge that the mineral depletion of our soils has lessened food value. This has prompted me to publish important portions of a report and study done by two prominent English Doctors and Food Scientists. They are R.A. McCance and E.M. Widdowson. This is a study on the mineral depletion of the foods available to the United Kingdom over a period from 1940 to 1991. The data used as a basis of this study was published in five editions, initially under the aethesis of the Medical Research Counsel (1940, 2, 3, 4) and later, the Ministry of Agriculture, Fishery and Foods (5, 6) and the Royal Society of Chemistry.

Part of the analysis includes the mineral content in milligrams per 100 gram portions of that food. The analysis provided information on the amounts of Calcium, Magnesium, Potassium, Phosphorous, Iron, Copper and Sodium. It was found that only certain foods within the categories of Vegetables, Fruits and cuts of Meat could be readily traced over this 51-year period.

Elmer G. Heinrich



“English Doctors and Food Scientists traced mineral depletion in foods over a period from 1940 to 1991.”

Their analysis shows that each subgroup of food they investigated, demonstrated a substantial reduction in mineral content over the term of the investigation. Thus from 1940 to 1991, the amount of minerals found in food has been a substantial loss.

Their Background: In 1926, Dr. R.A. McCance undertook, with a grant from the Medical Research Council, to analyze raw and cooked fruits and vegetables for their total ‘available carbohydrates’. So began a program of analysis which resulted, in 1940, with the publication of the Medical Research Council’s, Special Report No: 235 entitled “The

Nutrition, Minerals & Disease

Chemical Composition of Foods". This report represented the culmination of a comprehensive research program on the chemical composition of foods available to the British public. 100 grams of different Vegetables, Fruits, Cereals, Meats, Seafoods, Beverages, Beers, Sugars, Preserves, Sweetmeats, Condiments, and Dairy Products were analyzed for their organic and mineral content, as well as portions of traditional British food recipes including Cakes, Pastries and Puddings.

This, then, was the first determined effort by a number of dedicated Doctors and Food Scientists headed by McCance and Widdowson to establish definitive standards by which to quantitatively compare and contrast individual dietary intakes. The following is rather scientific in composition and is their actual, unedited published report.

The 1st Edition was subsequently updated by the Medical Research Council in 1946 and 1960, and as new foods became available, analytical procedures improved and new information regarding constituents of food (e.g. vitamins/amino acids, etc.) were considered as being needed. Over the next 30 years, the need to continually update information resulted in the 4th and 5th Editions, which were published in 1978 and 1991, respectively under the title of 'The Composition of Foods', this time under the auspices of the Ministry of Agriculture Fisheries and Food in conjunction with the Royal Society of Chemistry.

Elmer G. Heinrich

On comparing and contrasting the 1940 figures with the 1991 figures, quite a number of variables exist; enough in some instances such as cereals, to make comparisons meaningless.

Equally, there is a wealth of data variables, which provides very real insights to the change in food values over the 51 year period. The 1940 data often incorporates work published in 1929, 1933 and 1936; similarly the 5th Edition published in 1991 contains data that originates in 1987.

The Food Analysis: In the first Edition, the foods were analyzed for water content, total nitrogen, protein, fat, available carbohydrates, mineral content and acid base balance. In the context of this report, only the mineral analysis was of interest and considered. The minerals assayed for were Sodium (Na), Potassium (K), Magnesium (Mg), Calcium Ca), Phosphorous (P), Iron (Fe), Copper (Cu), Nitrogen (N) and Chlorine (Cl). The amounts were recorded in milligrams per 100 grams of the food. Details such as a description of the food, where it was sourced, how many samples were used, its preparation (who/with, peel/top leaves, etc.) and its condition, raw or cooked (and if so, how and for how long), was often recorded for each item of food. In this way, like could be compared to like with regards to the variety of food and the cooking time. With foods where both raw and cooked values were given, the raw value was the one selected.

In later Editions, information on the dietary fiber, energy values and the vitamin content of foods was incorporated; the nitrogen content was dropped and a more complete

Nutrition, Minerals & Disease

breakdown of the amino acid composition was given. Zinc analysis was conducted in the 1978 Edition and Selenium, Iodine and Manganese in the 1991 Edition. Obviously, the analytical procedures changed for the years between 1940 and 1991. However, to quote the Forward of the 5th Edition, “Those methods (of 40 years ago) were no less accurate than the modern automated ones, but they took a much longer time to analyze”.

Presentation of information: The vegetables selected represent those that were described by the authors as being of the same variety, e.g. runner beans (raw) in 1940 with runner beans (raw) in 1991. Many of the vegetables on the original lists were not subsequently analyzed i.e. artichokes, butter beans, celeriac, endive, etc. While others such as peppers, yam, plantain, okra, garlic, fennel, etc. were only analyzed in later years. Of the original 28 raw vegetables and 44 cooked vegetables detailed in the 1st Edition, 27 vegetables (together with mushroom) could be traced through the 5th Edition. In order to make the summary of results easier to read, these vegetables were grouped in order of their dominant characteristic, i.e.: bulb, root, etc and the results presented in Table 1. The individual values are presented in Appendix 3. In addition to the individual percentage change in the minerals Na, K, Mg, Ca, P, Fe and Cu, the change in the ratios between Ca:P, Na:K, Mg:Ca and Fe:Cu were also calculated. Where the vegetable has been boiled, it is usually in distilled water, normally with no salt. It is interesting to note the change between 1940 and 1991, in what was considered an appropriate time to cook a

Elmer G. Heinrich

vegetable, i.e. for broccoli in 1991, it was 15 minutes, and in 1940 it was 45 minutes! When comparing the results of the analysis, it is pertinent to bear this in mind. In the 1960 and 1976 Editions, Zinc was assayed for the first time: where this value has been given, it has been included in the table at the appropriate date. Also, within the 3rd and 4th Editions, certain 'new' vegetables were analyzed.

Fruits - In a similar manner to the vegetables, 17 fruits were 'followed through' from the 1940 to 1991 Editions and changes in their individual mineral content recorded and presented in a summary sheet.

Meats - With regards to comparing Meat, Poultry and Game (1940) with Meat and Meat products (1991), there were, surprisingly, only 10 items that were readily comparable. This situation was created, to quote from Edition 5, "The conformation of farm animals had altered and methods of butchering had changed since the 1930's."

Elmer G. Heinrich

to leave the fields to 'fallow'. It was discovered early in the 1900's that Nitrogen, Phosphorous and Potassium were the main minerals required for plant growth. These minerals, together with adequate water, light, and carbon dioxide seemingly allowed for optimum growth. Consequently, since the 1920's, NPK fertilizers have been routinely added to agricultural soils in the UK. Calcium, in the form of lime and Iron are also sometimes added to fertilizers.

The base figures used in the tables presented must, therefore, not be considered as a 'true, unadulterated' representation of the mineral content of any specific vegetable. In this regard, it is interesting to note that in their introduction to the vegetable section of the 5th Edition, the authors' state, "Any differences arising from the method of cultivation, for example 'organic' methods appear to be small and inconsistent". Also, in the introduction of the 5th Edition, page 1, the authors' acknowledge, "the nutritional value of many of the more traditional foods has changed. This can happen when there are new varieties of sources of supply for the raw materials with new farming practices which can affect the nutritional value of both man and animal products". Despite these remarks however, the summary provides evidence of an alarming change over 51 years. This data illustrates that there has been a severe depletion in the mineral content of the vegetables available.

During this time, there has been an average:

Loss of 49 percent of their Sodium content

Loss of 16 percent of their Potassium content

Loss of 24 percent of their Magnesium content

Nutrition, Minerals & Disease

Loss of 46 percent of their Calcium content
Loss of 27 percent of their Iron content
and a massive **76 percent loss** of their Copper content.

Perhaps not too surprisingly, given the regular use of NPK fertilizer, the only exception is Phosphorous, which shows a 9% rise. These losses include the analytical results of vegetables, which were boiled at least twice as long in 1940 as in 1991 with the probable ensuing greater loss of mineral content. The individual analysis tables provide insights as to the ranges of highs and lows within these figures. The greatest individual mineral losses (mg per 100 gm sample):

Sodium - Runner Beans 6.5 to trace (nearly 100% loss)

Potassium - Spinach (boiled) 490 to 230 (less 53%) Potatoes
568 to 360 (less 36%)

Phosphorous - Spinach (boiled) 93 to 28 (less 70%) Potatoes
0.15 to 0.8 (less 47%)

Magnesium - Carrots 12 to 3 (less 75%)

Calcium - Broccoli (boiled) 160 to 40 (less 75%) Spring Onion
125 to 35 (less 74%)

Iron - Spinach (boiled) 4 to 1.6 (less 60%) Swede 0.35 to 0.1
(less 71%)

Copper - Spinach (boiled) 0.26 to 0.01 (less 96%) Watercress
0.14 to 0.01 (less 93%)

Elmer G. Heinrich

Perhaps two of the most concerning results relate to two regularly used vegetables in the British diet, 'Old' Potatoes and 'Old' Carrots. During the 51 year period, carrots lost 75% of their Magnesium, 48% of their Calcium, 46% of their Iron and 75% of their Copper, while the traditional 'spud' lost 30 percent of its Magnesium, 35 percent of its Calcium, 45 percent of its Iron and 47 percent of its Copper. Likewise, you would have needed to eat 10 tomatoes in 1991 to have obtained the same copper intake as one tomato would have given you in 1940.

In addition to the overall mineral depletion changes recorded, there has also taken place significant changes in the ratios of minerals to one another. Given that there are known critical ratios of certain minerals within our physiology (Ca:P, Na:K, Mg:Ca, Fe:Cu), the changes in these ratios were calculated for each individual vegetable. An overall summary is given below:

(1940 - 1991)

Ca:P 1 : 2 1 : 1

Na:K 1 : 10 1 : 17

Mg:Ca 1 : 4.8 1 : 3.4

Fe:Cu 1 : 10 1 : 30

The figures, therefore, represent a significant change in the ratios between the minerals, which in turn could well have a significant influence on our health through the body's biochemistry.

Nutrition, Minerals & Disease

Vegetables (1978 - 1991), unfortunately, only 7 vegetables could be traced over this 13 year period. The results are again disconcerting; during this time there has been an average:

Loss of 39 percent of their Sodium content

Loss of 16 percent of their Potassium content

Loss of 14 percent of their Phosphorous content

Loss of 33 percent of their Magnesium content

Loss of 40 percent of their Calcium content

Increase 6 percent of their Iron content

Loss of 72 percent of their Copper content

Loss of 59 percent of their Zinc content

Fruit, The analytical results of 17 fruits traced through from 1940 to 1991, a summary is given below:

Loss of 29 percent of their Sodium

Loss of 19 percent of their Potassium

Loss of 2 percent of their Phosphorous

Loss of 16 percent of their Magnesium

Loss of 16 percent of their Calcium

Loss of 24 percent of their Iron

Loss of 20 percent of their Copper

Loss of 27 percent of their Zinc

Elmer G. Heinrich

Unlike a vegetable, when a fruit is harvested, the whole plant is not taken. Consequently, the changes evident are not so startling. Nevertheless, there are significant overall losses in mineral content. Also, when individual fruits are considered, you would have needed to eat 3 apples or oranges in 1991 to supply the same Iron content as 1 apple in 1940. It is also pertinent to note that the 10 fruits assayed for Zinc in 1978 show an overall 27% loss in their 1991 values. Blackcurrants, Olives and Tangerines have the same values in 1991 as given in 1940.

Meats, 10 items of meat could be compared. It is interesting to note that some analysis given in the 5th Edition are exactly the same as given in the 1st, these include Pork Loin (grilled), Rabbit, Veal Filet, Venison (roasted), Tripe (dressed), Sheep's Tongue, Ox Tongue, Grouse, Goose, Partridge, Pheasant and Pigeon. A summary of the mineral losses is given below; there has been an average:

- Loss of 30 percent** of their Sodium
- Loss of 16 percent** of their Potassium
- Loss of 28 percent** of their Phosphorous
- Loss of 10 percent** of their Magnesium
- Loss of 41 percent** of their Calcium
- Loss of 54 percent** of their Iron
- Loss of 24 percent** of their Copper

Nutrition, Minerals & Disease

Again, there is a significant loss in all minerals assayed for, which could reflect the fact that these animals were fed on produce that itself is mineral depleted! The alarming 41% loss in Calcium could be a spurious reading due to the difficulty of extracting all bone from the flesh in the original analysis but the 54% loss of Iron cannot be so readily explained. Copper in meats and meat products were not routinely assayed for in 1940. Therefore, no data was available for the report.

Elmer G. Heinrich

Chapter 4

SUPPLEMENTING IS ADVISABLE

Based on the information from the previous chapter, it's plain to see that there definitely was a depletion of minerals in our foods as years passed. This test was done in 1991 and presumably, we'd get results revealing another 10% to 15% reduction if similar tests were conducted today. The world that has proven powerless to improve our food supply must open its eyes in the near future. Government officials must recognize that each decade our foods have fewer minerals, and fewer minerals means more sickness, more hospitals and greater health care costs.

Where can we get the minerals we need if they are not available in our food supply? Well, about the only method available is to initiate a program of mineral supplementation. That is, take dietary food supplements containing a large number of minerals. Various mineral supplement formulations can be purchased from hundreds of suppliers under literally thousands of labels. However, what the industry considers a large and adequate supply of minerals usually is no more than 14 minerals at best. The most highly advertised mineral supplement on the U. S. market today contains only 14 minerals, as listed on the label, and they are metallic minerals or what some experts refer to as 'heavy metals'.

Elmer G. Heinrich

Most of the more popular mineral formulations available contain no more than 16 minerals because they are derived from ground up rock and soil and ancient sea beds like the Great Salt Lake in Utah.



“Rocks and ground up soil contain heavy metals (metallic minerals) as found in many nutritional supplements”.

This type of mineral is known as a metallic, hydrophobic mineral! Hydrophobic means “water hating or water fearing”. Basically, a hydrophobic mineral will not bond with water because it is not water-soluble. These compounds are repelled by water and some are positively charged while others are neutral, meaning they have no electrical charge.

Nutrition, Minerals & Disease

The type of mineral that comes from a plant has been assimilated or digested by the plant through photosynthesis, and is known as a water-soluble, plant derived, hydrophilic mineral. Hydrophilic means water loving. Such compounds have an affinity to water, are negatively charged and usually have polar side groups to their structure that will attract and bond to water.

Water consists of two hydrogen atoms joined to one oxygen atom, all in a triangular pattern. The oxygen is negatively charged while the hydrogen end is positively charged. This causes the water molecules to attach to each other and form a hydrogen bond. Life itself is the simple joy of hydrogen bonding with oxygen. This is one of the elemental reasons the earth is our home. Hydrogen bonds are very important to living things as those bonds allow the strands of DNA to hold together, proteins to form and water to behave as it does with the hydrophilic plant minerals, as they blend together. The hydrophilic type (plant derived) mineral is, by far, to be the most beneficial for all living creatures.

Metallic Minerals vs. Plant Derived Minerals

How do they differ?

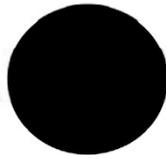
Metallic Minerals

- A. Come from ancient sea beds, ground up rock and soil.
- B. By their metallic nature, they are either neutral or possess a positive electrical charge.
- C. Are dead minerals, not enzymatically alive, therefore not capable of providing nutrition until they are assimilated - the normal digestive cycle is 15 to 21 hours.
- D. Only from 5% to 8% are assimilated.
- E. Depending on the mineral, they are 200 to 10,000 times larger than plant derived minerals.

Plant Minerals

- A. Come from plants that are grown in the soil.
- B. By plant assimilation, they become water soluble and always possess a negative electrical charge.
- C. They provide nearly instant nutrition because they were pre-digested by the plant. Plant minerals are enzymatically active and alive like minerals from raw fruit and vegetables.
- D. Are nearly 100% assimilated.
- E. 1 teaspoon of cold water leached plant minerals solids has a surface area equal to approximately 55 acres of land.

Hydrophobic
Metallic
Mineral



Hydrophilic
Plant
Mineral



The few metallic minerals that come directly from the upper crust of the earth are not bio-available! They are hard to digest or assimilate because they are metals. Many nutritional experts, doctors and food chemists believe no more than 5% or maybe up to 8% of metallic, hydrophobic minerals are actually assimilated by the human body. This lack of assimilation occurs because the hydrochloric acid in

Nutrition, Minerals & Disease

our stomach isn't strong enough to totally dissolve metals during the average 15 hour human digestive cycle. The balance, or up to 92%, merely passes through the waste system without benefit.

As stated earlier, minerals are the very source of physical life! Minerals, even if they are metallic, are of significant value to balance and metabolize our bodily functions. However, you could not live on soil or rock because it is not alive or enzyme active like plant derived minerals from raw plants. Plant derived minerals that have not been altered by manmade chemicals are, from a medical standpoint, active or living minerals and they deliver rich satisfaction.

What about vitamins? Vitamins, like carbohydrates, proteins and lipids are components of the chemical element known as carbon. Most of us have been hearing about vitamins since we were children. And even today we hear authoritative sources say, be sure to take your vitamins, but, seldom do you hear anyone say, be sure to take your minerals. Your mother probably reminded you to take your vitamins, but I doubt she ever mentioned minerals. She didn't mention minerals because she wasn't aware of the necessity or importance of minerals. Few people were aware of the importance until about forty or fifty years ago. Geritol was the first product that really got the public's attention because it was touted as being the mineral supplement that provided abundant IRON for what they call "tired blood". Even today many doctors and nutritionists don't realize there is a mineral deficiency in foods. They only think about and recommend vitamins because that's what they were taught.

Elmer G. Heinrich

Vitamins are sometimes expected to do more than they are capable of doing. Our bodies can go far longer suffering with a deficiency of vitamins than they can with a deficiency of minerals. Did you know all the vitamins in the world would do us little good without minerals? The minerals in our bodies are so important that the body goes to complicated, even desperate lengths to maintain their balance. If a cell is deficient in a single mineral, it will suffer from a loss of several minerals.

We know that vitamins are complex chemical substances and that each of them is of importance for the normal function of a specific structure in the body. They are organic molecules that often serve as co-factors or parts of co-enzymes and therefore have catalytic functions. A vitamin can be broken down into its basic elements that are carbon, oxygen and hydrogen. Vitamins are grouped into two compounds. One is water-soluble and the other is fat-soluble. Basically, vitamins are a group of chemically unrelated organic nutrients that are essential in small quantities for normal metabolism, growth and physical well-being. Vitamins must be obtained through diet since they are either not synthesized in our bodies or are synthesized in inadequate amounts.

Nutrition, Minerals & Disease



“A reasonable amount of exposure to sunshine provides a good source of Vitamin D.”

Many people throughout the world are chronically Vitamin D deficient, especially during the winter months. People of color, or non-Caucasian, are vulnerable because dark skin blocks many of the UVB rays. Even more of a problem for dark skinned people is the fact that the only common food that provides significant Vitamin D is milk, and over 75% of people of color, are lactose intolerant and drink very little milk. Cows' milk, without fortification, on average has 40% less Vitamin D than it did forty years ago. A lack of Vitamin D can cause a pot-belly, constipation, rickets, convulsions, poor teeth and curvature of the spine. Protein in milk is also down nearly 25% compared to forty years ago, all because of a mineral depletion in the soil.

Elmer G. Heinrich

Fortunately, today's plants do supply a reasonable amount of vitamins. However, if you lack Vitamin A, you may have dry skin, kidney and gall stones, sinus problems, digestive problems and many more symptoms. A lack of Vitamin B can cause chronic tiredness, loss of vitality, poor appetite and nervousness. A lack of Vitamin C can cause shortness of breath, headaches, tender joints, low resistance to infection, restlessness and digestion problems. You will find much more on vitamins and what benefits they are known for, further on.

Many people have a misconception about vitamins. Thousands have told us they will only use food supplements with "natural vitamins." The so-called natural vitamin does not exist in supplements. Natural vitamins only come from plants. All commercially developed supplement vitamins are synthesized in a laboratory. Therefore, they cannot be called "natural vitamins".

There is a harmony between vitamins and minerals and even though vitamins are nearly ineffective without minerals, they both are necessary. Minerals are quite different from vitamins in their structure and the work they do, but the two enjoy an excellent working relationship. According to Rodale's Complete Book of Minerals for Health, "minerals create a healthy environment in which the body, using vitamins, proteins, carbohydrates and fats can grow, function and heal itself." The portion "heal itself" is most noteworthy. I believe "healing itself" is entirely possible if a

Nutrition, Minerals & Disease

body gets more than the 7 to 14 metallic minerals found in most supplements or the 16 to 20 plant derived minerals found in today's foods.

It's a known fact that a complete spectrum of minerals promotes better health as it adjusts the pH level of bodily tissues. What is a complete spectrum of minerals? It only makes sense that a mineral composition or a mineral solution cannot be considered a "complete spectrum of minerals" unless it contains at least 70 minerals, if there are 70 or more minerals available. This large number of minerals has to include many of the "rare earth" minerals or there would not be a total of 70.

From my experience, I believe the rare earth minerals are necessary, in addition to the more commonly known minerals, to stabilize the acid level in tissues. Most all bacteria and viruses and even tapeworm thrive in and prefer an environment of high pH or alkaline nature. A complete spectrum of minerals lowers the pH in our digestive system, which raises the hydrochloric acid level, thereby inhibiting bacterial and viral replication. Both extra and intracellular fluids function properly only because of a carefully maintained ratio of minerals, in conjunction with vitamins, in an acidic solution. The interaction of the two enables the body's cells to take in nutrients and dispose of toxins that are the byproducts of that metabolism.

I also believe a complete spectrum of at least 70 minerals are crucial for proper cell formation, fluid balance and for the production of coenzymes. The actions of muscles and nerves

Elmer G. Heinrich

are diminished or eliminated if you lack even a few minerals.

We live in a toxic world today. The price of man's development and advancement in science and technology and the continuous growth in the world population, to the ignorance of many, has brought forth pollution, depletion, destruction of the earth's environment and extinction or mutation of some life forms.

Yes, you are living on a toxic planet and it's getting worse every day! In America alone, each year approximately 2,000,000,000 (two billion) pounds of toxic chemicals are released into the air we breathe. Each year approximately 1.5 billion pounds of pesticides and herbicides are sprayed on the food crops in America. Naturally, the body can become toxic from the environment, but it can also become toxic because of a loss of energy due to one's lifestyle, mood and general attitude or outlook on life.

The drinking water, analyzed from aquifers, in the U. S., combined, has been proven to contain over 2,000 toxic chemicals that are believed to cause cancer and nervous disorders. There are now more than 100,000 chemicals in use and more than 1,000 new ones being added each year. The toxicity humans are exposed to is astounding. Couple this with the normal body toxicity, even in a normally clean environment, and it's plain to see we have severe toxicity problems that need to be addressed. We tolerate toxins in small amounts but the cumulative effect over time can be disastrous. That's the reason we need more minerals because

Nutrition, Minerals & Disease

minerals are very important in detoxifying the body. This importance is recognized by the medical profession because main stream medicine has been using IV mineral therapy to treat heavy metal toxicity.

A lack of minerals inhibits detoxification. Detoxifying occurs whenever the body begins to expel and eliminate anything that causes the body to be toxic. This can and does occur naturally, but if you lack even a few minerals, the detoxification will never be thorough and complete. The poisons will only be completely expelled if you have many more minerals than what you can obtain from today's foods and from most commonly known and nationally advertised mineral supplement brands.

A strong immune system depends on a clean, detoxified body and this can only be obtained from thorough excretion of wastes and anything that is not fully compatible with your bodily functions. Normal detoxifying, at a physical level can range anywhere from extremely mild bowel or kidney movement, skin rash, aches and pains to very intense discomfort. This normally subsides within a few days. In the area of detoxification, a complete spectrum of at least 70 minerals makes an incredible difference.

Recently, we've begun to hear a lot about enzymes and antioxidants and their importance. Enzymes are extremely important for our metabolic functions but again they do us little good without minerals. Body enzymes are produced by the pancreas for the utilization of digestion. The pancreas also produces insulin that regulates sugar metabolism. The more our system lacks enzymes, or the minerals to excite

Elmer G. Heinrich

them, the more the pancreas has to work overtime to produce the needed enzymes to assimilate the food eaten. If the pancreas fails to keep up with the production of enzymes and the needed insulin, we become sick, struggling with blood sugar problems, inflammation, toxicity and digestion problems.

Some enzymes and vitamins are helpmates to minerals. Some minerals are eager workers, but to perform best they need an enzyme or a vitamin or two to stir them into action. As an example, vitamin C can triple iron absorption. Calcium absorption is impossible without vitamin D and some magnesium. But, remember, vitamin D is of little value in absence of the proper amount of minerals. Many minerals act as coenzymes, the so-called catalysts in chemical reactions with vitamins. This means they function as spark plugs, starting chemical actions in our bodies where billions of chemical reactions take place every day. For example, calcium and potassium, when balanced, are necessary for all of life's bodily functions. Iodine is necessary for the production of thyroid hormones, and iron is required for the production of blood cells, just to name a few.

At this point you may ask yourself a question. Is all this publicity about mineral deficiencies and the lack of minerals really true, and if so, which minerals and what kind of minerals should I be using, or should I even consider taking additional minerals? In my opinion, at least part of your question can be answered with this little story.

Nutrition, Minerals & Disease

Many movies have been made about the migration of the American settlers in the early 1800s. We all know they had to cross the great plains of the United States. What we don't know or realize is that few of these people settled in one place for a long period. Every few years, they would have to pick up and move. They'd start a small farm in the Midwest such as Iowa, Missouri, Kansas or Nebraska with a milk cow, a couple of pigs, maybe some sheep and a few children.

After a few years, Dad would always be constipated and the cow would quit giving milk. The cucumber plants, tomato plants and farm crops would not grow, so they would almost starve. If they were lucky enough to make it through the winter, they'd load all their belongings into a covered wagon and move west with the milk cow in tow. When they found a suitable place, they started another farm. In a few years, both Mom and Pop would be constipated all the time. The crops, cucumbers and tomatoes would quit growing and the cow would again quit giving milk. And, if they survived the winter, they'd load everything in a wagon and move farther west again.

What was the problem? The soil was being depleted! If they didn't have enough land to allow some to be idle from time to time, the land would become barren due to a lack of minerals. Crops and plant growth took too many minerals out of the soil due to continuous year to year planting and the lack of fertilization.

Elmer G. Heinrich

The only way to eliminate this problem was to own a piece of bottomland near a river. Only the lucky farmers lived on the bottomland. When it flooded, they'd get new topsoil and silt and additional minerals from miles upstream. So, if they were fortunate enough to have bottomland, they didn't have to move. Why? The fertilizer would come to them during the flood. But if they were out on the prairie with no river or bottomland, they would be required to move on because the entire family would become malnourished and nearly starve due to poor food or no food at all. All of us have heard of the great Nile River in Egypt or the Mississippi river in the United States. We remember hearing about the magnificent crops raised on the land near the river banks. This occurred only because during floods, topsoil containing minerals from upstream were deposited on the land which was downstream.

This continual moving process by the early settlers occurred many thousands of times during the last 200 years. This was necessary because the early settlers were actually strip-mining the nutrients from the soils. And if there were little or no nutrients in the soil, their crops and gardens could not produce due to a lack of nutrients. Depleted soils cannot possibly supply adequate nutrients to our food chain as the preceding story revealed. The soils of the world are becoming more depleted each year.

Nutrition, Minerals & Disease



Commercial fertilizers were introduced in 1908. Was the soil depletion problem solved? Not by a long shot! Study any commercial fertilizer by reviewing the ingredients listed on the package. You will see nitrogen, phosphorus and potassium (NPK) and most times, nothing more. It's a known fact that you can raise most crops and plants with what little nutrients are still in the soil, and NPK.

Most farmers never fertilize with more than 4 minerals. In the first place, more than 4 to 6 minerals would be nearly impossible to obtain. Secondly, if they were obtainable and if farmers attempted to put that many back into the soil, they would soon be bankrupt. We now understand that, along with NPK, no more than 12 or 13 minerals in the soil are required to raise large, red, juicy tomatoes, but many times if you were blindfolded while eating, you would have trouble identifying the tomatoes due to a lack of taste. The lack of taste is due to a lack of minerals that cause a lack of "Brix"

Elmer G. Heinrich

which is a lack of sugar. This lack of minerals is the reason you would have to eat four carrots today to get the same amount of minerals as one carrot supplied 60 years ago. Soil depletion is the only reason today's plants contain no more than 16 to 20 minerals on average, compared to more than 70 minerals thousands of years ago.

According to research in the animal husbandry field and The National Science Foundation, for animals to be completely healthy, they require at least 45 minerals, 12 essential amino acids, 16 vitamins and 3 essential fatty acids. However, the average land grown animal feed only contains on average about 18 minerals, and when mineral levels are down, so are amino acids and essential fatty acids.

According to Gary Price Todd, M.D., the human body requires at least 60 minerals for optimal health and basically the same other essentials as animals. But, as stated earlier, only about 18 minerals are available in any kind of quantity in most of the food we eat today.

We know plants can make vitamins, amino acids and varying amounts of fatty acids if they are healthy from being grown in soils containing abundant minerals. If the soil lacks minerals, the plant is stunted because a plant cannot make minerals. Dr. Gary Price Todd says, "Sick soil causes sick plants, which causes sick animals, and ultimately sick human beings".

Nutrition, Minerals & Disease

One reason our plants are sick is due to pesticides and insecticides. Fifty years ago, it was necessary to develop these poisons in order to kill off insects and pests in an

effort to prevent them from destroying crops that were weak due to a lack of minerals. Had the plants been healthy like they were in prehistoric times, the insects would not have bothered them. Most scientists and agronomists conclude that a healthy, vigorously surviving plant can adequately defend itself against any of nature's attacks, including insects and worms. This can occur only if the plant has numerous minerals available to draw from the soil.

We are learning a lot from rain forests throughout the world. Man has, for the better part anyway, not been able to mess with the environment in these forests, and the diverse plant and animal species survive and flourish very well there. There are several reasons for this. The trees are deep rooted so they are able to pull minerals from ten meters below the surface, and the minerals in their leaves and branches re-fertilize the land year after year. The droppings from animals and birds are also very rich in minerals, and act as a good fertilizer for the plants and trees.

The impact of modern farming practices with the resultant depletion of soil mineral content can now be measured and verified in Brazil, where major swaths of rain forests have been cut down and replaced by giant Agro farms.

Elmer G. Heinrich

Chapter 5

THERE WOULD BE NO LIFE WITHOUT MINERALS

Everyone seems to be seeking ways to become and stay healthy. They are looking for better and more nutritious foods and many are beginning to shift away from drugs. Many people have become dissatisfied with the care and advice provided by their physicians and the apparent reduction of physician services. Many patients are beginning to acquire this aid independent of their physicians. Surprisingly, they are looking for more mineral rich foods.

The nutritional value of the food we do or do not eat influences the way we think. It influences the way we work and play, is the deciding factor in childhood development and goes further by influencing the way we age. Minerals, in one way or another, influence every biological function of the human body. Minerals, as catalysts to other nutrients, are an absolutely essential component of our immune system. Minerals play a very important role in our living, breathing, active bodies. Here are a few examples of the more important minerals necessary to maintain reasonably good health:

Elmer G. Heinrich

ALUMINUM is the second most abundant mineral element on earth and it is everywhere including the atmosphere, water and in virtually all the plant food and meat that humans consume every day. It is one of the best minerals for pancreatic function and is thought to contribute greatly to brain function. As aluminum sulfate, this trace element improves digestion and absorption of nutrients through increased gastric acidity and stimulation of pancreatic secretion. Of course, the Aluminum you want to consume is that which comes through plants or food, not the metallic form from the earth that is used to make soup pans!

ARSENIC is another trace mineral that can be found, virtually, in all plants, bread, cereals, fruits, starchy vegetables, meat, fish and milk. Be sure to consume only plant derived arsenic because the metallic form is deadly. Arsenic is thought to be an essential mineral that activates some enzymes in vitro, probably by acting as a substitute for phosphate. It induces certain enzyme proteins known as heat shock or stress, proteins in isolated cells, enhances DNA synthesis in non-sensitized human lymphocytes, and those stimulated by phytohemagglutinin.

BORON is a naturally occurring trace mineral found in our food supply in the form of oxygen containing borates. It is known to be essential for healthy bone and joint function and it aids in the absorption of calcium, magnesium and phosphorus. Without boron, the absorption of these important minerals is underutilized. It affects the

Nutrition, Minerals & Disease

metabolism of steroid hormones and may also play a role in converting Vitamin D to its active form and thereby increasing calcium uptake and deposition into bone. It also increases male sex hormones, and it may reduce hypertension. A deficiency in Boron contributes to the development of osteoporosis, kidney stones and decreased mental alertness.

Kidney stone problems are on the rise throughout the world, and this is blamed on a lack of minerals, especially boron, potassium, and vitamin C. Kidney stones result from salts crystallizing in the kidneys, often triggered by dehydration causing painful blockages. In addition to a lack of minerals, global warming could trigger a rise in kidney stones, resulting in 1.6 million new cases in the states by 2050, University of Texas researchers say. Warmer southeastern states get 50% more cases than in the northeast, forming a belt of high risk states. The study says global warming will drive this “kidney stone belt” north. According to the USA Today, July 15, 2009, the cost of treating kidney stones will rise 25% by 2050, an increase of about \$900 million compared to 2000.

Calcium is essential for all organisms and is found in the cell walls of plants, all calcareous tissues and the bones of all mammals. Calcium is the fifth most abundant mineral element in the earth’s crust. Calcium is also the most abundant mineral in the human body comprising approximately two percent of the adult body weight. 99% of calcium is found in the bones and teeth, 1 % in the blood, lymph and other fluid, cell membranes and inside the cells.

Elmer G. Heinrich

Calcium is a construction worker so to speak. It is a builder. Calcium gives bones and teeth their strength and rigidity, and also helps nerves function properly. As a construction worker, it builds strong bones. It is important to know that calcium, to be absorbed, must be in water-soluble form by the time it reaches the small intestines. Calcium needs acid for proper assimilation. Without the proper strength acids, calcium is not dissolved and cannot be utilized. This is one reason a complete spectrum of minerals, with a low pH, is so important. But even more importantly, if utilized properly and in early stages after the foundation is firm, calcium will help build strong bones that will endure a life of havoc.

To save your daughter or granddaughter from bone crippling osteoporosis in old age, you should begin giving her extra minerals, especially calcium, between five and ten years of age. That startling advice comes from research by pediatrician Steven A. Abrams at Children's Nutritional Research Center in Houston, Texas. It's critical that young girls get lots of minerals and extra calcium several years before they reach age 11. That's because "most bone forming activity occurs in the years just before and just after the start of puberty," which on average is age 10, says Dr. Abrams. Menstruation usually begins two or three years later. By age 15, most bone forming activity has come to a halt, he says.

Nutrition, Minerals & Disease

The higher the bone mass, the lower the odds of osteoporosis later in life. As we get older and become less active, bone density becomes a problem. Being inactive accelerates bone loss. Calcium and bone density or hardness go hand-in-hand. Calcium rich bones are extremely hard! As an example, a normal calcium rich human thighbone is stronger than concrete.

When it comes to calcium, in addition to young girls, the mark is that most women of the world are malnourished. For menopausal women, the intake gap of supplements can easily be as wide as 900 mg, in part because of a decrease in estrogen. It's that bone density loss that contributes to osteoporosis, a condition in which the bones have thinned and weakened to the point where they can be broken very easily. Post-menopausal women normally lose 1% of their bone per year if they are not on a strict supplement regiment of minerals and especially calcium.

My family has personal experience with osteoporosis. My mother died from the disease. Her bones were so brittle; she actually broke ribs from turning over in bed. This made me more determined than ever to make sure this doesn't happen to my grandchildren. A full spectrum of 75 plant derived minerals has been at their disposable since they were one year of age.

Osteoporosis can occur when the deterioration of old bone cells outpaces the formation of new bone cells. Many people associate osteoporosis with bone breaks but it is not the bone break that causes all the problems! It's what occurs

Elmer G. Heinrich

afterwards. The fracture can trigger a chain of unfavorable events. When a person is bedridden, they become weaker and more susceptible to viruses and infections. As a result of less exercise, their arteries become less elastic and more prone to clogging and injury. All of this makes them more vulnerable to dangerous diseases and infections because of a weakened immune system.

Although it's regarded as a woman's condition, 20% of osteoporosis sufferers are men. Men tend to develop osteoporosis a few years later than women, because initially they have more bone mass. But as they reach old age, they lack both the mass and the sufficient estrogen and testosterone to help build new bone. However, you can actually stimulate bone growth at any age if you consume plant derived calcium along with sufficient strontium and a significant amount of easily assimilated minerals.

Osteoporosis and many other diseases are preventable. Our world needs clear pathways to slow, stop and reverse osteoporosis and numerous other diseases, as well as food intolerances and allergies etc. As humans, it's our responsibility to advocate an International Committee, without political ties, to research and establish some sort of framework to curtail mineral depletion of the soil. If this could be done we could reverse and eliminate many illnesses and ailments.

Through the eyes of the human element, it's easy to see that the present is the most important part of the future. We need more minerals in our foods. Many ailments and sicknesses

Nutrition, Minerals & Disease

result from a lowered immune defense. Degenerative diseases such as high blood pressure, diabetes, Alzheimer's, strokes and cancer are inaccurately attributed to age. They may all be avoidable if we have the proper daily nutrients. Research suggests that the consumption of MSM (Methylsulphonylmethane), Glucosamine and Chondroitin sulfate, along with a full spectrum of minerals, has successfully arrested and reversed degenerative arthritic conditions in humans and animals. A full spectrum of minerals and a combination of nutrients will help increase flexibility, relieve pain and inflammation.

Many more minerals than what are available from foods or commercial metallic formulations are necessary for everyone, at all ages. Remember to supplement your calcium intake with adequate amounts of vitamin D, which is necessary to assimilate the calcium.

Some calcium poor symptoms include slow blood clotting, sluggish blood circulation, muscle twitching, brittle finger nails, growth retardation, rickets, afternoon headaches, lack of sex drive, varicose veins, hemorrhages, soft bones, cysts and sores that do not heal well.

Iron is part of a substance called hemoglobin, which carries life sustaining oxygen to our cells. Hemoglobin binds oxygen from lungs to tissues and CO₂, and vice versa. Iron is required by enzymes in many functions for cell division, growth and DNA synthesis and protein metabolism, thyroid hormone production, neurotransmitter and immune system function. Iron, along with copper, appears to have

Elmer G. Heinrich

participated very closely together in the evolution of aerobic life, maybe as long as three billion years ago! Iron is poorly absorbed by humans, and the condition most commonly associated with iron deficiency is 'iron deficiency anemia'.

Iron is stored in the bone marrow and liver. Symptoms of iron deficiency include listlessness, hair loss, eye inflammation, itching, fatigue, memory problems, heart palpitations, tendency to head colds, dull hearing during menstruation, anemia, asthma, burning of soles of feet, swollen ankles and pains in shoulder joints, as well as cold hands and feet.

Copper is necessary for enzyme activities such as food digestion. Copper is an essential trace element in the body and is a universally important co-factor for many hundreds of enzymes in cellular energy production, connective tissue and collagen formation. It also plays a significant role in respiration. Copper may help prevent cancer, especially of the liver. Copper is involved in healing. It is necessary for hair, skin and cell growth. Copper deficiency is widespread and numerous diseases caused by a copper deficiency are quite common. Copper deficiencies have also been linked to loss of hair, connective tissue defects, nerve problems, heart disease, lowered resistance to colds, skin and respiratory problems and pernicious anemia.

COBALT is a component of Vitamin B12. It is stored in the muscles, bone, liver and kidneys. It functions in the synthesis of DNA, production of red blood cells, enzymes reactions, formation of the myelin sheath, and maintenance

Nutrition, Minerals & Disease

of nerve function and detoxification of cyanide. Deficiency of this results in pernicious anemia, nerve disorders, weakness, nausea, bleeding gums, poor balance, confusion and dementia.

FLUORIDE is controversial because many people frown upon it for being used by many municipalities in their water supplies. Although it is not classified as an essential mineral, it may be beneficial in strengthening bones and teeth. Natural plant derived fluoride is found in all meat, fish, cereals and fruit. Deficiency may lead to tooth decay and excess mottling of teeth, dermatitis and bone abnormalities, and perhaps an increase in uterine cancer.

GERMANIUM is a trace mineral that boosts oxygenation of cells and tissues. It may aid the immune system, detoxify poisons, treat rheumatoid arthritis, food allergies, candidacies, and promote wound healing

MAGNESIUM is one of the major minerals, and it is abundant in tissues, bone and muscles. It activates more than 300 enzyme reactions and acts as a co-factor for the energy storage molecule known as ATP, protein synthesis, DNA manufacture, fatty acid synthesis, anaerobic breakdown of glucose and the removal of toxic substances such as ammonia from the body. You will understand the importance of magnesium for good health when you study the deficiency symptoms. They include irritability, personality changes, anorexia, weakness, tiredness, convulsions, nervousness, muscle cramps, tremors, tongue jerks, involuntary eye movements, unsteady gait, irregular

Elmer G. Heinrich

heartbeat, palpitations, hypoglycemia, tetany, hair loss, swollen gums, arterial damage and hypocalcemia. Inadequate intake of magnesium has been linked to various diseases, including atherosclerosis, heart attack, Prinzmetal angina, ischemic heart disease, cell degeneration, necrosis, calcification, cardiac dysrhythmias, mitral valve prolapse, hypertension, diabetes, dyslipidemia, osteoporosis, migraine headaches, pre-menstrual syndrome, asthma, kidney stones, HIV infection, energy deficiency, muscle cramps, toxemia of pregnancy, sleeping problems, candida infection, gastric cancer, allergies, chronic fatigue syndrome, anxiety, bulimia and anorexia nervosa.

MOLYBDENUM is another essential trace mineral that is found in the liver, kidneys, bone and skin. It is a transition mineral that forms oxides and is a component of enzymes, xanthine oxidase and aldehyde oxidase, which performs in the production of uric acid. It is also involved in carbohydrate metabolism, iron utilization and alcohol detoxification. A lack of molybdenum is connected to headaches, anemia, nausea, vomiting, mental disturbance and an increased risk of stomach and esophageal cancer.

NICKEL had been thought to be toxic for years, but if it comes through a plant, it has been attached to a hydrogen molecule and is not only very safe but is extremely beneficial. The exact role is unknown, but nutritionists and doctors realize it produces results in many areas. It may play a role in genetic material, protein structure, hormone function and glucose metabolism. It may have an effect on the function of Vitamin B12 and foliate. In animals, nickel

Nutrition, Minerals & Disease

deficiency decreases growth, leads to dermatitis, pigment changes, liver and reproductive damage.

SILICON is the most abundant mineral on earth's surface. It is present in bone, blood vessels, cartilage, tendon, skin and hair. Here again, no one knows for sure, but it is thought to be a very essential mineral for humans. It may be involved in the growth of bone crystals, calcification, formation of cartilage and connective tissue, and it may help maintain elasticity of arterial walls. Studies from the 1970's state that inadequate dietary silicon may contribute to atherosclerosis, hypertension, bone disorders, Alzheimer's disease, and even the aging process. Silicon is one earth bound mineral that is regarded as non-toxic in its metallic form.

Sulfur may be one of the most important minerals for humans. It is one of the seven major minerals and it is a non-metallic mineral, widely distributed in nature. It is a component of collagen and keratin that gives strength, shape and hardness to connective tissues, bones, teeth, skin, hair and nails. It is an important structural atom in many proteins and small organic molecules. Sulfur is involved in the quality and maintenance of many types of tissues and structures within the body. It combines with nitrogen, carbon, hydrogen and oxygen to build protein, a main ingredient of muscles, skin and organs. It helps cells utilize oxygen that is necessary for blood clotting and enzyme production.

Sulfur has been called the "beauty mineral" because it enhances those body externals. Sulfur also plays an

Elmer G. Heinrich

important role in the production of insulin. Diabetics should consume a goodly amount of sulfur. Many type 2 diabetics have virtually eliminated the disorder after consuming a comprehensive natural mineral formulation containing large amounts of sulfur for six to twelve months. Sulfur has also been used with favorable results in treating arthritis because it is an integral part of the amino acid, cystine. It aids in healing surface wounds and skin disorders such as psoriasis and eczema. Many nutritional experts believe none of us get enough sulfur and they believe the RDI should be increased by at least ten times. Look for foods and mineral products that contain high amounts of sulfur.

Sodium and Potassium--Potassium is one of the major minerals and it regulates water balance and aids in digestion. If it were not for sodium and potassium, we would bloat or swell up with water or we would dehydrate, dry out and die. Potassium is an extremely important mineral for regulating bowel and urinary function. It maintains water balance in cells and tissues, preserves normal function of nerve cells in impulse conduction, skeletal and cardiac muscle cells and in muscle contraction. These two minerals work together in harmony. Many people mistake and associate sodium with salt. Sodium is one of the seven major minerals and the RDI for an adult is 2,400 milligrams per day. **Sodium is not salt!** Salt is made up of sodium and chloride. Sodium and potassium poor symptoms are numerous, such as gout, indigestion, constipation, paralysis, hypotension, cardiac dysrhythmia, convulsions and stomach ulcers.

Nutrition, Minerals & Disease

Phosphorus is also an extremely important essential major mineral and second only to calcium in the body, but it receives little attention from many nutritionists because, supposedly, it's abundantly available in all foods. Due to soil depletion of minerals, this is not necessarily true today. Our bodies contain about two pounds of phosphorus that, when tied to calcium, helps give strength and rigidity to bones and teeth. It also controls energy release.

Phosphorus has more functions in the body than any other mineral. Even though it is one of the minerals farmers use for fertilizer, phosphorus is hard for the plant to metabolize and many foods lack this important mineral. A lack of phosphorus causes us to overeat. In fact, according to the Complete Book of Minerals for Health, if our body has too little phosphorus, we'd have to eat practically nonstop just to maintain basic metabolism. Maybe this is a reason for so much obesity around the world! Many nutritional experts believe the reason so many people are overweight is because they are deficient in minerals in general, and severely deficient in phosphorus. They continually eat more and more attempting to satisfy a craving, which is caused mainly by a lack of phosphorus. The excess food makes them become more overweight, which in turn requires more minerals to function, thereby requiring more food in an attempt to satisfy an even greater craving. This can continue to perpetuate.

Elmer G. Heinrich

Most overweight people have a toxic body, and a complete spectrum of minerals can greatly reduce that toxicity. Thousands of people have gradually lost weight naturally, after they began to consume a full spectrum of 70 or more minerals on a daily basis. Minerals help people detoxify and they digest their foods much more thoroughly. Better digestion means more energy, less sluggishness, more motivation, better attitude and less constipation etc. We all know how lousy we feel when we are constipated.

Our body is made up of about 100 trillion cells, each one bustling with activities that depend on Manganese in the form of macronutrients, namely water, protein, carbohydrates and fat. Manganese is an essential trace mineral and is found highest in bones, liver, kidney and heart. It acts as a co-factor for enzymes that are necessary for energy production, glucose metabolism, glycogen storage, protein digestion, cholesterol, fatty acid, DNA and RNA synthesis. It is a metabolizing enzyme activator and bone formation booster. It works very well with vitamin B1, E, calcium and phosphorus to build strong bones, arm, leg and heart muscles. Only about 5% of manganese is assimilated or absorbed by the body, so make sure you take enough to ensure your body is getting the amount it needs. It is necessary for growth, nervous system maintenance, bone and joint development and maintenance, blood clotting factors, female sex hormone and thyroid hormone function. It prevents glandular dysfunction, dizziness and poor muscle coordination.

Nutrition, Minerals & Disease

Selenium is not only an important mineral; it is one of the best antioxidants in the nutritional field. It is pitifully overlooked by the health industry. It is part of glutathione peroxidase, an enzyme that metabolizes free radicals formed from oxidation of polyunsaturated fatty acids. It is extremely powerful in protecting red blood cells and cell membranes. It is involved in normal liver function, protein synthesis and protects against toxic, metallic minerals such as arsenic, cadmium, mercury and lead. It promotes male sexual reproductive capacity and maintains healthy eyes, hair and skin. It prevents premature aging and arteriosclerosis. It helps build tissue and skin elasticity and much more.

Chromium is a mineral that is not included in many nutritional products, but one of great importance overall. It is essential for normal sugar metabolism. It is a component of a compound called glucose tolerance factor (GTF) that works with insulin to move glucose into cells. It functions as a good insulin regulator, helps keep the circulatory system clean, and improves thyroid and adrenal gland function. A deficiency in chromium can lead to sugar metabolism disorders, hyperlipidemia, diabetes, weakness, depression, atherosclerosis, frequent urination and fatigue.

Iodine is an essential trace mineral. It is probably the most misunderstood of all minerals. It is a component the thyroid hormones, thyroxin and triiodothyronine need in order to determine the metabolic rate of the body. Thyroid hormones are vital for growth and development of all organs. The thyroid is involved in protein manufacture, cholesterol synthesis, carbohydrate absorption and the conversion of

Elmer G. Heinrich

carotene to vitamin A. It is necessary to protect the thyroid gland. It works on its own, and no other vitamin and mineral is known to increase its effectiveness. Without Iodine, a person will experience thyroid and goiter problems.

Chlorine is another one of the major minerals! Chlorine's intended use from Mother Nature was not to disinfect our water or swimming pools, but to help digest our foods. Chlorine is found in virtually all of our foods. It functions as an electrolyte, combining with hydrogen to make stomach acid. As a part of hydrochloric acid, chlorine rallies the digestive juices of the stomach to help digest proteins. A combination of hydrochloric acid along with powerful digestive enzymes, gobbles up food particles, mashing them into a semi-fluid pulp called chyme, which is squirted into the upper intestine for final digestive breakdown.

Chlorine helps detoxify the liver, and it's a terrific stomach anti-parasitic. It helps eliminate anaerobic bacteria. Here is something of importance relative to chlorine in plants and food. Chlorine in water is entirely different than chlorine in food. Chlorine used to disinfect water is an activated form of chloride with absolutely no nutritional value, and the chlorination of water may in fact cause some serious health problems. A deficiency in chlorine results in alkalosis, as from vomiting, diarrhea and excessive sweating.

Nutrition, Minerals & Disease

VANADIUM is an essential trace mineral with about 100mcg found in blood, organ tissues and bone. It has a significant role in inducing the production of reduced glutathione content in the liver and specific extrahepatic tissues. It acts as a co-factor for enzymes involved in blood sugar and lipid metabolism, bone and tooth development, fertility, thyroid function and hormone production. Vanadium deficiency has not been identified in humans. However, deficiencies in animals causes infertility, anemia, iron metabolism defects, poor bone and cartilage formation.

ZINC is an essential trace mineral that totals around 3 grams in our body. The highest concentrations are in the prostate and sperm, in men, and in the red and white blood cells. Without Zinc, prostate problems could become huge for men. Zinc functions in over 200 enzymatic reactions with a key role in synthesis and stabilization of genetic material necessary for cell division and degradation of carbohydrates, lipids and proteins for tissue growth and repair. It helps rid the body of free radicals. It is necessary for normal skin, oil gland production, hormone activation, fetal growth development, mother's milk production and production of brain neurotransmitters. It is necessary for the release of vitamin A and is the most abundant trace mineral in the eye.

The previous review of some of the more recognizable minerals is important, but we must think about some of the rare earth minerals most people don't recognize. Just because few, if any, tests or studies have been conducted, they should not be overlooked. I truly believe these "unheard of" minerals play a very important part in overall

Elmer G. Heinrich

good health. Just because they have never been fully tested and entered on the RDI (Recommended Daily Intake) chart doesn't mean they are not extremely beneficial for all living creatures.

Here is a list of the "few" recommended minerals and their recommended daily intake (RDI) for adults.

Calcium	1000 mg	Iron	18 mg
Phosphorus	1000 mg	Iodine	150 mcg
Magnesium	400 mg	Zinc	15 mg
Selenium	70 mcg	Copper	2.0 mg
Manganese	2.0 mg	Chromium	120 mcg
Molybdenum	75 mcg	Chloride	3400 mg
Sodium	2400 mg	Potassium	3500 mg
Boron	20 mg	Fluoride	10 mg
Nickel	1.0 mg	Selenium	400 mcg

The Recommended Dietary Intake (RDI) was developed in 1940 by the U. S. National Academy of Sciences, and was renamed the Food and Nutrition Board in 1941. The board revises the RDI's every five to ten years. The daily dietary intake level they establish is considered sufficient to meet the requirements of 98% of healthy individuals in each life- stage and gender group.

You will note that the Food and Nutrition Board only recognizes 18 minerals, as does The World Health Organization. I totally disagree and from my experience in monitoring thousands of people for 25 years, I believe

Nutrition, Minerals & Disease

everyone needs at least four times the number of minerals they have tested and recommend. It only makes good sense to consume all there are on earth to enhance your chances of good health. Not only does it make good sense, it is good insurance to take as many minerals as possible. Man is made of minerals and there are more than 100 minerals on earth, so why should we believe only 18 minerals is all we need?

All minerals have their own basic cosmic mission on earth. What they can do for the human body is based on their own inherent capabilities, and each one has a purpose in our survival and our ability to live a long and healthful life. Therefore, you must seek out or look for more than the 16 or 18 minerals that are found in most supplements today. Your body needs many more than that if you want to be healthy, so look for mineral supplements that supply at least 70 minerals. This type of mineral composition is available on the market in Plant Derived Mineral form. When you purchase them, make sure the product contains all the minerals mentioned previously, with most, if not all of the following minerals in plant derived form:

Boron, Barium, Beryllium, Bismuth, Bromine, Carbon, Cerium, Cesium, Cobalt, Dysprosium, Erbium, Europium, Fluorine, Gadolinium, Gallium, Holmium, Indium, Iodine, Iridium, Lanthanum, Lithium, Lutetium, Neodymium, Niobium, Osmium, Palladium, Praseodymium, Rubidium, Samarium, Terbium, Thallium, Thorium, Vanadium, Ytterbium, and Yttrium.

Elmer G. Heinrich

There is nothing more basic than minerals! They are the real story of life, and when that story includes the human element, minerals get down to the fundamental work of solving health problems. The essentials of life are made better by looking at the world through the eyes of Plant

Derived Minerals. You never know what life's going to throw at you. Life happens, so be ready! A full spectrum of Plant Derived Minerals offer up to 75 ways to help ensure that you and yours are ready and have a better chance of staying healthy.

Chapter 6

HEART DISEASE, OSTEOPOROSIS, OSTEOARTHRITIS AND BURSITIS

A recently released study shows that over the next five years, an appropriate use of select dietary supplements, would improve the health of key populations and save the United States more than \$30 billion in healthcare costs. The study commissioned by the Dietary Supplement Education Alliance (DSEA), updated research conducted by the Levin Group in 2004 and 2005, which included a systematic literature review of the most rigorous scientific research available relative to health food and supplements. Heart Disease is one of problematic proportions in the United States with almost one million deaths per year and much of the healthcare savings could fall in this category.

A lack of minerals may contribute to a number of abnormal conditions affecting the heart and the blood vessels in the heart. Coronary Artery Disease is the most common type and is the leading cause of heart attacks. When you have CAD, as they call it, your arteries become hard and narrow. Blood has a hard time getting to the heart so the heart does not get all the blood it needs. This can lead to ANGINA, the chest pain or discomfort that occurs when the heart fails to get enough blood.

Elmer G. Heinrich

The American Heart Association has identified several risk factors of heart disease. Some of them can be modified, treated or controlled, and some cannot be. The more risk factors you have, the greater your chance of developing coronary heart disease. Also, the greater the level of each risk factor, the greater the risk! For example, a person with a total cholesterol count of 300 mg/dL has a greater risk than someone with a total cholesterol count of 245 mg/dL, even though everyone with total cholesterol greater than 240 is considered high risk.

Some conditions as well as some lifestyle factors can put people at a higher risk for developing heart disease. Naturally, age can create a higher risk. More than 83% of people who die from coronary heart disease are 65 or older. Men have a greater risk than women, and they have attacks at a younger age than women. Heredity has a lot to do with it. Children of parents with heart disease are more likely to develop it themselves. African Americans normally have more severe high blood pressure than Caucasians and a higher risk of heart disease. Heart disease risk is also higher among Mexican Americans, American Indians, native Hawaiians and some Asian Americans. This is partly due to higher rates of obesity and diabetes.

High Cholesterol is almost always associated with obesity. However, many average weight people and even some very lean people have high cholesterol. Cholesterol is a fatty, waxy substance (lipid) produced by the liver or consumed

Nutrition, Minerals & Disease

from certain foods. It is required by, and has essential functions in the body. The liver makes enough for the body's needs. When there is too much cholesterol in the body because of diet, and the rate at which the cholesterol is processed, it is deposited in the arteries, including those of the heart. This can lead to narrowing of the arteries, heart disease and other complications.

There are two types of cholesterol, one is called "good" and the other is "bad". A higher level of high density lipoprotein cholesterol (HDL) is considered "good" and helps provide protection against heart disease. Higher levels of low-density lipoprotein (LDL) are considered "bad" and can lead to heart disease.

In addition to nutrition and the consumption of more minerals, major risk factors of heart disease can be modified or controlled by changing your lifestyle. If you smoke, quit smoking immediately. Smokers' risk of developing coronary heart disease is 2 to 4 times that of non-smokers. Cigarette smoking is a powerful independent risk factor for sudden cardiac death in patients with coronary heart disease.

Obese and overweight bodies are vulnerable! People who have excess body fat, especially if a lot of it is at the waist, are more likely to develop heart disease and stroke even if they have no other risk factors. Excess weight increases the heart's work. It also raises blood pressure and blood cholesterol and triglycerides levels.

Elmer G. Heinrich

Triglycerides are known as fat. They transport the fat in the blood from one place to another. They also are the storage form for fat. Triglycerides are derived primarily from the

fats you eat or that which was made by your body from excess calories. A high triglycerides level often accompanies high total cholesterol and LDL cholesterol levels and a low HDL level. Excess weight lowers HDL (“good”) cholesterol levels. It can also make diabetes more likely to develop.

Is your LDL cholesterol mostly small or large? Knowing the answer will help you better determine your risk of heart disease. Here’s why: As LDL cholesterol particles become smaller and more compact, their surface coating becomes stickier. This increases the likelihood that they will stick to the insides of your artery walls. Your doctor probably won’t check your LDL particle size, but you can estimate it by dividing your triglyceride reading by your HDL cholesterol level. Researchers at the Albert Einstein College of Medicine found that the larger this number, the smaller your LDL particles. In fact, 83% of people whose ratio was 3.8 or greater had a predominance of small, dense LDL particles, compared with just 11% of those whose ratio was lower.

High blood pressure, in most cases is caused by a lack of nutrition that causes burrs or corrugation, so to speak, inside the arteries. This rough surface slows down the flow and causes buildup which increases the heart’s workload, causing the heart to thicken and become stiffer. It also

Nutrition, Minerals & Disease

increases the risk of stroke, heart attack, kidney failure and congestive heart failure. When high blood pressure exists, along with obesity, smoking, high blood cholesterol levels, or diabetes, the risk of heart attack or stroke increases dramatically.

Other factors contributing to heart disease are excessive alcohol and a lack of physical activity. Drinking too much alcohol can raise blood pressure, cause heart failure, and lead to stroke. It can contribute to high triglycerides, cancer and other diseases and produce irregular heartbeats. Too much alcohol contributes to obesity, alcoholism, suicide and accidents. It is hard to believe, but the risk of heart disease is much lower in people who drink moderate amounts of alcohol, like one drink per day. One drink is defined as 1 ½ ounces for women and 3 ounces for men. It is not recommended that non-drinkers start using alcohol, or that drinker's increase the amount they drink at the present time.

Physical activity is necessary. An inactive lifestyle is a risk factor for coronary heart disease. Regular, moderate-to-vigorous physical activity helps strengthen the heart muscles while helping to prevent heart and blood vessel disease.

Elmer G. Heinrich



“A fast walking gait or jogging provides good exercise for people of all ages”.

The more vigorous the activity, within reason of course, the greater the benefits.

Stress may also be a contributing factor. For example, people under a tremendous amount of stress may begin to overeat, drink alcohol, smoke or do crazy things. Stress or hypertension can trigger DEPRESSION. Studies suggest Saint John’s Wort and omega-3 fatty acids may help, particularly for the milder forms of depression.

As mentioned previously, for twenty-five years we have been monitoring and studying thousands of people who have used the plant derived minerals. Hundreds upon hundreds have reported unbelievable changes after using

Nutrition, Minerals & Disease

the minerals for at least six months. Based on these reports, I am convinced heart disease may be influenced by a mineral deficiency! Did you know we lose more people in the United States each year from heart disease than we have lost in all of our wars combined since the signing of our Declaration of Independence? This is staggering, and the number of deaths in America from heart disease is increasing each year!

The heart surgery industry in America is booming because the lack of nutrition causes burrs or corrugation, so to speak, inside the arteries. Does it also cause burrs or corrugation inside the veins? I'm told that cholesterol (fat) adheres to the walls of arteries. Why is it that the same cholesterol that flows through arteries and supposedly sticks to the walls of arteries also flows through veins and never sticks to its walls? Several Medical Doctors could not answer my question.

Heart disease is the leading cause of death for both men and women in the United States. The latest confirmed statistics available from the Center of Disease Control and Prevention are from 2002. They reveal some interesting facts! In 2002, 796,947 people died of heart disease (51% of them women). That was 29% of all U.S. deaths combined. The age-adjusted death rate was 241 per 100,000 populations.

Coronary heart disease is the principal type of heart disease, and it is estimated that 47% of cardiac deaths in 2002 occurred before emergency services or transport to a hospital.

Elmer G. Heinrich

Heart disease is the leading cause of death for American Indians and Alaska Natives, Blacks, Hispanics and Whites. For Asians and Pacific Islanders, cancer is the leading cause of death, accounting for 26.1% of all deaths. Heart disease is a close second with 26.0%.

Heart disease crude death rates per 100,000 populations for the five largest U.S. racial/ethnic groups are as follows: Hispanics, 72; Asians and Pacific Islanders, 78; American Indians, 80; Blacks, 206; and Whites 259. In 2002, age-adjusted rates for diseases of the heart were 30% higher among African Americans than among whites. Age-adjusted rates are used to compare populations with differing age distributions.

It's easy to understand why the heart industry is booming in the United States. We are a sick group! In 2008, heart disease was projected to cost more than \$270 billion, including health care services, medications and lost productivity. Worldwide, coronary heart disease kills more than 7 million people each year. These figures should instill the fact that our general population needs to be thinking about nutritional supplements.

Your arteries have three layers, each one with a unique job. The innermost layer, the one in contact with the blood as it flows through, is called the intima. It's very slippery, like Teflon, so the blood can easily flow over it. In a normal state, that interior layer, lined with a layer of cells, is perfectly smooth, keeping the blood moving fast and

Nutrition, Minerals & Disease

efficiently. It's also where the initial action of heart disease takes place. The inner lining also helps protect the middle layer, called the media, which supports the structure of the artery. The media is muscular, so it can respond to what's going on in your head or somewhere else in your body. It spasms when you're depressed or anxious and opens up when you exercise to allow more blood through to supply the individual muscles.

The outer layer of your arteries is the adventitia and it's like a sausage casing. It holds your artery together from the outside, within a kind of cellophane wrap. High blood pressure, high blood sugar, the effects of smoking cigarettes and other factors can nick the smooth inner layer of your arteries. Your body tries to repair that nick using cholesterol as a plaster. However, if the proteins carrying the cholesterol are bad (LDL), an inflammatory reaction is triggered that signals for white cells to invade the area. The resulting plaque is irritated and encourages a blood clot to form. That clot can suddenly block the entire artery and lead to a heart attack, stroke, impotency and even memory loss. This is one reason it is so important to get as many minerals as possible. Minerals help keep the arteries clean!

Cardiovascular disease is a problem around the world, but so is joint disease. Joint pain is a daily reality for many people. As we age, the cartilage that cushions our joints breaks down and bones rub together causing pain, stiffness and decreased mobility. According to the Arthritis Foundation, more than 46 million Americans suffer from

Elmer G. Heinrich

arthritis or another chronic joint condition. More than half of those affected are under the age of 65 with more women diagnosed than men. There are more than 100 forms of arthritis and related joint conditions. Some of the more common types are osteoarthritis, rheumatoid arthritis and bursitis.

Risk factors for osteoarthritis include: AGE—Older people have more wear and tear on their joints, simply because they have been utilized more. OBESITY---Being overweight puts more pressure on your knees and hips and can lead to earlier breakdown of your body's cartilage. OVERUSE OR INJURY--People who have jobs or hobbies featuring repetitive motion are more at risk for Osteoarthritis. If you have had a fracture or injury you are also more at risk to develop osteoarthritis later in life at the injury site or area.

GENETICS---Some studies have shown genetics to play a role in the development of osteoarthritis, especially in the hands and feet.

Rheumatoid arthritis is a much more rare form of arthritis, affecting approximately 1 percent of Americans. It is classified as an inflammation of the lining of your joints and it is a chronic disease, meaning it normally does not go away. Rheumatoid arthritis commonly starts with pain and inflammation of the joints found in the fingers, hands or wrists. Other symptoms that may indicate you suffer from Rheumatoid arthritis include: Fatigue. Stiffness. Weakness, flu-like symptoms, muscle pain and the inability to sit for extended periods without pain.

Nutrition, Minerals & Disease

Don't let a diagnosis of one of these symptoms get you down. Now, more than ever, there are good options for people who are diagnosed with these symptoms as well as joint conditions. Two nutrients that have shown to support the reduction of joint discomfort when taken with a full spectrum of Plant Derived Minerals are Glucosamine and Chondroitin. Glucosamine may, in fact, enable your body to produce more cartilage while lubricating the joints. It has been shown to aid or support both pain and inflammation. Adding Chondroitin to the mix, along with the minerals, further enhances the likelihood of an improved condition. Chondroitin is naturally found in your body's cartilage. Adding additional Chondroitin can be extremely beneficial.

Several other supplements have shown to be supportive in reducing joint pain. One is Bromelain. Flax seed oil, which supports reduced inflammation, is also worth exploring. Some studies have shown that vitamin D also helps support the reduction of bone cartilage loss. It promotes Calcium absorption, so adding it to your nutritional routine makes sense for both joint and bone health. There are several good all-in-one joint supplements on the market, so it should be easy to incorporate one into your daily nutritional routine.

Arthritis is a major concern for Americans. According to the Center of Disease Control, arthritis is the leading cause of disability in the USA. That could get worse! The CDC report says that by 2030, 25 million Americans with the disease will be forced to limit their daily activities.

Elmer G. Heinrich

OSTEOPOROSIS is a disease of the skeletal system in which bone mass decreases and bone tissue deteriorates. Losing bone mass and tissue puts individuals with osteoporosis at increased risk of bone fractures. Bones more likely to fracture due to osteoporosis include the wrist, hip and the bones that make up the spine. Osteoporosis is a dangerous disease because most people are unaware they have it until they fracture a bone. Hip and spine fractures are especially troublesome because they severely limit a person's independence and take a long time to heal properly, if they heal at all.

There are a large number of risk factors for osteoporosis. Determining if you are at risk is the first step in prevention. You are at risk if you are female because chances are about 100% you did not get enough minerals at a young age, and women have less bone tissue and lose bone mass faster than men because their bones are smaller. Another reason is menopause. If you blow out more candles on your birthday cake, you are aging and as we age, our bones become less dense and grow weaker, usually from the lack of exercise. If your family has a history of bone fractures, or if you are Caucasian or Asian, you are at increased risk. If you are small in stature, small boned, or naturally thin, you have an increased risk of developing osteoporosis. You are also at risk if you are inactive or have unhealthy habits, including cigarette smoking and excessive alcohol consumption, or if your diet doesn't provide enough minerals, especially calcium.

Nutrition, Minerals & Disease

You could also be at risk for osteoporosis if you take certain medications for chronic illness. Some medicines to treat certain thyroid disorders, rheumatoid arthritis, seizure disorders and gastrointestinal issues can cause osteoporosis. If you are concerned about this, you should ask your doctor to do a bone density test to determine your risk so an appropriate treatment plan can be created.

A good first step in slowing the development of, or possibly even preventing osteoporosis, is accessing your calcium and vitamin D intake. Without sufficient vitamin D, your body cannot properly absorb calcium. Individuals at risk for osteoporosis should consider augmenting their dietary intake of calcium and vitamin D through supplementing.

The second step to take, in slowing or preventing the disease, is spending more time on weight-bearing exercises that fit your body and strength makeup. Weight-bearing exercises could include walking, jogging, hiking and dancing, which is a good one for older people. Any kind of reasonable exercise will help you, regardless of your age. The National Osteoporosis Foundation recommends that all women 65 and older, and men 70 and older, get bone mineral density testing. Men and postmenopausal women, ages 50 to 70 with risk factors and those who have had fractures should also consider testing. Repeat testing is suggested every two years.

RETROACHILLES BURSITIS is the swelling of the bursa, which is located at the back of your heel below the Achilles tendon. It can be caused by poorly fit shoes that repeatedly

Elmer G. Heinrich

rub against the bursa. The main course of action for people diagnosed with bursitis is to rest the affected area and to stop the repetitive motion that causes the discomfort. Supplementing with a complete spectrum of minerals, Glucosamine, Chondroitin and vitamin D is suggested while the bursa area is allowed to rest. Shoulder bursitis and Prepatellar bursitis (knee) are of the same nature and could be treated in the same manner.

Eating a healthy diet, staying fit, omitting stress, eliminating alcohol and cigarettes, while supplementing with a complete spectrum of minerals, will surely change your life. I don't know who wrote this, but it is very true. "We must remember, the clock of life is wound only once and no man has the power to tell just when the hands will stop, at a late or early hour. Now is the only time you own! Live, love and toil with a will. Place no faith in time, for the clock, may soon be still".

Chapter 7

DIABETES AND OBESITY

Up to this point we have mostly addressed major minerals, but what about trace minerals? According to our government, the trace elements that are required for human health are iron, iodine, copper, manganese, zinc, molybdenum, selenium and chromium. My experience with minerals over the last twenty-five years has basically proven that we need many more minerals than those proposed by our government or the World Health Organization. Medical knowledge has grown tremendously over the last two decades, but the medical profession still has not woken up to the fact that humans need a far greater number of minerals than they propose!

Minerals initiate, regulate and control every organ and function in your body. Proper breathing depends on minerals. Mental and physical ability depend on minerals. Heart and blood pressure stabilization is directly related to minerals. So, if minerals are so important and only a few are available in our foods, common sense tells us we should seek out a complete spectrum of a least 70 plant derived minerals. A complete spectrum of minerals strengthens the immune system, making it better and stronger than anything known to man. This enhances appearance, produces energy, fights off disease and common colds, eliminates depression, reduces stress and produces more positive attitudes.

Elmer G. Heinrich

A complete and full complement of all known minerals helps build and creates better function of our bones, our tendons, nucleic acids, aorta, blood and brain. A complete spectrum of minerals also sharpens the mind, brings the past to memory, makes man joyous and above all, preserves youth and delays senility!

Although other factors play a part in high blood pressure, minerals are the key to regulation. When the body or any organ becomes stressed out, it will require more nutrients and oxygen to keep it going. Minerals help the body better utilize the oxygen it receives. When stressed, the heart has to pump blood more forcefully to supply enough blood to the organ that needs it. The stronger the heart is required to pump, the higher the systolic blood pressure will be. The diastolic pressure may also go up. To get a true reading, medical professionals require you to be relaxed or at rest. The blood pressure in a relaxed or rest state is called "basal" blood pressure. People in the hypertension state usually have the average systolic pressure above 140 and the diastolic pressure above 90.

When a person takes in excessive amounts of salt, the body may have to remove the excess to avoid poisoning. The body will need to collect more water because the salt has to be dissolved in liquid. The kidneys will have an additional workload in order to get rid of all the excess salt and water. This means the kidneys will need more energy and nutrients, especially minerals to keep them functioning properly.

Nutrition, Minerals & Disease

During the salt and water elimination process, the systolic pressure will go up because more blood has to be pumped out of the heart. If the kidneys cannot perform properly due to a lack of nutrients, even when the blood pressure is raised, the body stores the salt water and the ankles or legs will swell. Also, all the excess body tissue, especially fat, will require more energy to feed the extra fat in the body. This is the main reason obese people should give strong consideration to losing weight and consuming more minerals. A full spectrum of minerals may help them lose weight because normally, once they get an adequate supply of minerals they don't eat as much.

Mineral insufficiency and trace element insufficiency problems are actually more likely to occur than are vitamin insufficiency situations. Those at increased risk of such insufficiencies include people who eat low calorie diets, the elderly, pregnant women, and people on certain drugs (such as diuretics), vegetarians and those eating foods from areas where the soil is extremely deficient in certain minerals. The soil of Alaska, for example, is very rich in selenium, while the soil in certain parts of China and New Zealand is very poor in selenium. Thus, you can eat foods from those areas, eat a perfectly "balanced" diet, as recommended by most medical doctors, take the average mineral supplement, and still develop severe mineral deficiencies or trace element deficiencies that can only be averted through dietary change and supplementation with a complete spectrum of minerals.

Elmer G. Heinrich

One good example of proof of soil mineral depletion and what additional minerals can do for crops is revealed on the Island of Java in Indonesia. One of the world's most active and dangerous volcanoes called "Merapi" has enriched nearby farmlands for years by spewing volcanic ash over the area. Farmers on Java can harvest three crops of rice in a season. Farmers on the nearby island of Borneo only harvest one or, at best, two crops per year.

Sub-optimal intake can be due to factors other than soil depletion. These factors are as diverse as the effects of acid rain and the over refining, over processing of foods. Our vulnerability to even minute dietary imbalances in minerals can be appreciated by comparing, to begin with, our daily mineral intake (about 1.5 grams) with our total intake of carbohydrates, proteins and lipids (about 500 grams). Thus, our mineral intake represents only about 0.3 percent of our total intake of nutrients, yet minerals are so potent and so important, that without them we would not be able to utilize the other 99.7 percent of foodstuffs and would quickly perish.

There has been a strong tendency on the part of some dietetic and medical professionals to discourage people from taking more than the RDI's (Recommended Daily Intake) for minerals that can be obtained, they say, in the typical American and European diet. Numerous studies have shown repeatedly that this is very poor advice due to the

Nutrition, Minerals & Disease

lack of minerals in foods. Apart from the big, obvious things like love, children and death, most of the really walloping emotional highs and lows of our lives have involved listening to the establishment. This is one case where I believe they are far off base.

It is a proven fact that many, possibly all people on earth are not getting the RDI's from the recognized minerals in their daily diets. Again, this is because most of our raw foods contain a minimal number of minerals, and even become more superficial when they are over processed and over cooked. Americans especially, tend to cook most foods, and most are overcooked which destroys the foods natural enzymes.

Canning kills enzymes and once the enzymes are gone even minerals cannot help them. This places stressful situations upon our resistance to disease. Supplementation, therefore, not only seems advisable, it is advisable! Obviously, everyone should supplement their daily diet with as many minerals as possible so they can be healthy, vibrant and strong throughout their adult lives. Dreams of good health are great but realities of good health are better!

Another recent and well-published test result on food was reported by Dr. David Thomas. Dr. Thomas of the United Kingdom is a healthcare practitioner and independent researcher. He made a comparison of British Government tables, which the Government actually published in 1940 and again in 2002. His findings were published by the Food

Elmer G. Heinrich

Commission in the FOOD NAVIGATOR, which can be reviewed by logging on to www.foodnavigator.com. This report is on food in the UK but believe me, the United States is just as deficient in minerals if not more so!

The report stated "The plummeting mineral content of milk, meat and vegetables over the last 60 years will have grave consequences for the future health of the UK, according to a shocking food analysis". The report said the iron content in 15 different varieties of meat had decreased on average by 47 percent, with some meat products showing a fall as high as 80 percent.

Copper and magnesium, essential for enzyme functioning, also showed substantial losses. Magnesium levels have typically fallen by 60 percent. Dairy products have experienced a 90 percent drop in copper, while the calcium loss in high value Parmesan Cheese was an extraordinary 70 percent.

Dr. Thomas says, "We've lost the plot. Until people wake up to the nutritional situation, things will only get worse"! He goes on to say "We're beginning to see an increase in what was once called adult onset diabetes in kids, and an increase in asthma and hyperactivity. All these have nutritional links". He said, "When I see chronic illnesses such as these, I always think it is amazing what a difference changing diets can do but why shouldn't it be like this in the first place?". Frankly, it's like this because we either weren't aware or didn't care to do anything about this in years past.

Nutrition, Minerals & Disease

Dr. David Thomas was on key when he said there was an amazing increase in adult onset of Diabetes. This is probably one of the most alarming statistics that the world faces today, and I believe it is all caused by a lack of nutrition and especially minerals! Ten years and billions of dollars into the fight against childhood fat, it's clear that the campaign has been a losing battle. In 2005, 9.7 million children in the US had a health problem for which prescription medication had been taken regularly for at least three months. This comes from the Center for Disease Control's "Summary Health Statistics for US Children: National Health Interview Survey, 2005." They said health issues such as obesity, type 2 diabetes and attention deficit hyperactivity disorder (ADHD) continues to rise among children.

According to a report released in September, 2007 by the research group, "Trust for America's Health", one third of children in America are overweight. Other stats show that the percentage of children who are obese has more than tripled since the 1970s. In 2006, nearly 5,000 teens opted for liposuction, according to the American Society of Plastic Surgeons. That's more than three times the number in 1998, when experts first warned of a childhood obesity epidemic. All told, some 17 percent of children are now obese in the United States, which means they're at or above the 95th percentile for weight in relation to height for their age. An additional 17 percent are overweight or over the 85th percentile.

When children are healthy, their minds grow to their full potential as do their bodies and above all, their spirits. That

Elmer G. Heinrich

isn't the case today! In the early 1980s, I used to see one or two kids a year with type 2 diabetes and now I see one or two a month," says Alan Lake, an associate professor of pediatrics at the Johns Hopkins University School of Medicine. He says "evidence now suggests that type 2 diabetes progresses more rapidly in kids, which means we could be soon seeing 20 year olds developing severe heart disease".

High blood pressure already affects more than 2 million youngsters in America! Obesity is hard to outgrow, so about 50 percent of elementary school children and 80 percent of teens that are obese will battle the scales and the greatly increased risk of disease for the rest of their lives. Mothers are going into pregnancy heavier than ever before. Some are gaining excessive weight during pregnancy and they are more likely to develop gestational diabetes, which means they are more likely to have heavy babies with a built in weight problem as they mature.

A number of authorities have warned that today's youth could be the first ever to have a shorter life span than their parents. The cabinet officer for Health and Human Services in the United States said recently, "childhood obesity is a much bigger issue than terrorism" This is outright alarming!

TYPE 2 DIABETES is the most common form of diabetes, as it affects 17 million Americans and is projected to double by 2025. It is characterized by sustained high blood sugar levels. It tends to develop when the body can no longer

Nutrition, Minerals & Disease

produce enough of the hormone insulin/glucose to lower blood sugar to normal levels, or cannot properly use the insulin that the body produces. Diabetes seriously increases the risk of developing cardiovascular disease. Even when glucose (blood sugar) levels are under control, diabetes increases the risk of heart disease and stroke, but the risks are even greater if blood sugar is not well controlled. About 75% of people with diabetes die of some form of heart or blood vessel disease.

Obesity is one major risk factor for type 2 diabetes and its one of the reasons why we've seen diabetes levels skyrocket. Much of the childhood obesity problem can be blamed on parents. Children who constantly see their parents overweight and with eating disorders will tend to be the same as their parents because children emulate their parents. For their children's sake, parents must refrain from over-eating and over committing to junk foods. Studies have shown that children whose parents are overweight or obese are at a high risk of becoming obese themselves.

We're defined by what we pass on to the next generation so for the sake of their family tree, parents who are overweight most of their lives are failing to contribute to their down line. Recently, a study in the New England Journal of Medicine found that, for a child under 10, having an obese parent more than doubled the child's risk of becoming an obese adult. Studies show that if a child remains obese by the age 10 to 14, they have nearly an 80% chance of remaining at a dangerously heavy weight through adulthood.

Elmer G. Heinrich

High intake of calcium and vitamin D, particularly from supplements, may lower the risk of diabetes by one third, according to researchers from Tufts University. The study used data from the large scale, Nurses' Health Study and related the vitamin D and calcium intake of nearly 84,000 registered nurses to their incidence of type 2 diabetes. None of the women were diabetic at the start of the study and few were overweight.

After 20 years of follow-up, the researchers wrote in *DIABETES CARE*, "A combined daily intake of more than 1,200 mg of calcium and more than 800 international units (IU) of vitamin D was associated with a 33 percent lower risk of type 2 diabetes". Both dietary calcium and supplements were associated with significant decreased risks of type 2 diabetes. Women who had total daily intake of calcium greater than 1,200 mg had a 21 percent lower risk compared to women who had intakes less than 600 mg per day. We've got chronic diabetes disease problems the likes of which have never been seen before in the history of humanity. According to this study, it's obvious supplements are beneficial and necessary.

With obesity comes arthritis. The extra weight and the pounding force from routine activities, begins to grind away the cartilage and protective tissue that covers the ends of the bone and acts as a shock absorber. The degeneration of that cartilage is called osteoarthritis, a disease that affects nearly half of those age 65 and older says John Kippel, President of the Atlanta based Arthritis foundation. He says the statistics

Nutrition, Minerals & Disease

don't count millions of others who have the disease and never get a diagnosis.

According to the Centers for Disease Control and Prevention, osteoarthritis cases will virtually explode during the next 25 years, as boomers start to develop the age-related disease. They estimate the number of arthritis cases will rise nearly 40% by 2030.

Today, Arthritis is the leading cause of disability in the USA and many other countries. Arthritis already costs the U. S. economy more than \$86.2 billion a year in lost productivity and direct medical costs. That price tag will rise exponentially if nothing is done to correct the arthritis problem. Nothing can be done if we stay on the same track and run the same course we are on today. Drugs won't correct the problem. That's impossible! The only chance we have is to change our lifestyles and improve nutrition in our bodies, and that can only be done by getting a greater number of minerals into our digestive systems. Matters will only get worse if we don't take health into our own hands and establish corrective measures before it is too late.

The Center of Disease Control says that 25 years from now, one third of the nation's arthritis cases will be people ages 45 to 64. They also predict juvenile rheumatoid arthritis to increase rapidly. Juvenile rheumatoid Arthritis is an autoimmune disease in which a child's body mistakenly attacks healthy cells, specifically the cushioning sinovial cells in the lining around the joints. Doctors don't know what causes the disease, but some experts believe genetic and

Elmer G. Heinrich

environmental factors, such as certain virus-related infections, may play a role.

There are ways to prevent getting arthritis or slowing it down even if you already have the disease. If you have gained a few pounds over the years, try getting rid of them. Even a small weight loss could help a great deal. It appears to be more important to encourage physical activity and limit sedentary. Stay active the low impact, common sense way. Be smart and get involved in activities that don't put extreme pressure on your joints. Walking and biking or swimming and other low impact activities can build muscle that supports the joints. Stay away from or limit soft drink beverages because they contain a significant amount of calories. By all means, get rid of that extra weight and don't allow yourself to gain more than you already have at this time, because each additional pound of fat puts more stress and force on your body's joints.

Chapter 8

VITAMINS, ANTIOXIDANTS, AMINO ACIDS, FIBER AND THE PURPOSE THEY SERVE

This book is directed toward minerals because without them, nothing else could provide the utmost nutrition needed to function and sustain life. Even though vitamins are very ineffective without minerals, they must be included in your diet or you will not be healthy and live a normal life. The following guide may help you in determining the proper vitamins and antioxidants for you and your family's well being.

Antioxidants are substances that protect cells from the damage caused by unstable molecules known as 'free radicals'. The explanation of FREE RADICALS is rather scientific and hard for the average person to understand. The human body is composed of many different types of cells. Cells are composed of many different types of molecules. Molecules consist of one or more atoms of one or more elements joined by chemical bonds which makes them stable. Atoms consist of a nucleus, neutrons, protons and electrons. Some are positively charged and some are negatively charged. Normally, bonds don't split in a way that leaves a molecule with an odd, unpaired electron. But when weak bonds split, charged hydrogen ions called free

Elmer G. Heinrich

radicals are formed. Free radicals are very unstable and react quickly with other compounds, trying to capture the needed electron to gain stability.

Generally, free radicals attack the nearest stable molecule, “stealing” its electron. When the attacked molecule loses its electron, it becomes a free radical itself, beginning a chain reaction that can cascade, resulting in the disruption of a living cell. Some free radicals arise normally during metabolism. Sometimes the body’s immune system’s cells purposefully create them to neutralize viruses and bacteria. However, just to name a few, environmental factors such as ultra violet radiation from the sun, pollution, cigarette smoke, herbicides, alcohol and excess food can spawn free radicals.

Normally, the body can handle free radicals, but if antioxidants are unavailable, or if free radical production becomes excessive, cell damage can occur. Of particular importance is that free radical damage accumulates and accelerates with age, and is known to be the major cause of cancer.

Considerable laboratory evidence from chemical, cell culture and animal studies indicate that antioxidants may diminish the effects of aging and possibly divert or possibly prevent the development of cancer, heart disease, stroke, Alzheimer’s disease, rheumatoid arthritis, cataracts and even depression.

Nutrition, Minerals & Disease

Antioxidants interact with and stabilize free radicals and may prevent some of the damage they otherwise might cause. Antioxidants are nutrients, vitamins, as well as enzymes that assist chemical reactions. Basically, they counteract the damaging, but normal, effects of the physiological process of oxidation in tissue.

Vitamins are plant (organically) grown molecules that often serve as coenzymes. They are required in relatively small amounts compared to amino acids, fatty acids and proteins, but are absolutely essential in a healthy diet. Here is a list of the recommended vitamins and the RDI for each.

Vitamin A	5,000 IU	Vitamin C	60 mg
Vitamin D	400 IU	Vitamin E	30 IU
Vitamin K	80 mcg	Vitamin B1	1.5 mg
Vitamin B	2 1.7 mg	Vitamin B3	20 mg
Vitamin B 6	2.0 mg	Folic Acid	400 mcg
Vitamin B 12	6.0 mcg	Biotin	300 mcg
Vitamin B 5	10 mg		

Vitamin A is stored in the liver and is an excellent antioxidant that helps the eyes, mucous membranes, soft tissue, gums, skin, bone, hair growth and resistance to infections. Vitamin A is necessary for proper vision, especially night vision. This is why pilots in World War II were given carrots to eat daily. The role of Vitamin A has been widely recognized in modern skin care. A wonderful antioxidant, vitamin A, in the form of retinols has been

Elmer G. Heinrich

shown to reduce wrinkles and prevent skin cancer. Today, it is one of the most widely used skin products, found in Retina A and other similar products.

Vitamin A works very well with choline, vitamins C, D, E, F and the mineral zinc. DEFICIENCIES in vitamin A are associated with child blindness, and can lead to dry skin and hair, susceptibility to infections, allergies, fatigue and migraine headaches. Vitamin A is a fat-soluble vitamin that mainly comes from animal sources and the precursor form, beta-carotene as found in plants which typically have intense colors such as dark green leafy vegetables and brightly colored fruits and vegetables such as carrots, sweet potatoes and cantaloupe.

Vitamin B1 is good for the brain and brain waves. It aids in learning while supporting the nervous and circulation systems. It has been proven to very beneficial in the treatment of Bipolar disorders and Dementia. It works very well with folic acid, vitamin B5, vitamin C and a total B-complex. DEFICIENCIES in vitamin B1 are fatigue, nervousness, depression, irritability and digestive disorders.

Vitamin B2 is an oxygenator of the cells and promotes body growth. It is good for the hair, skin, eyes and a good antibody in cell formation. It works well with a B-complex, vitamin C, B6 and niacin. DEFICIENCIES in vitamin B2 can cause skin disorders, vision and growth problems, ingestion and baldness.

Nutrition, Minerals & Disease

Vitamin B3 is extremely beneficial to the nervous and digestive systems, adrenal glands, blood circulation and sugar metabolism. It works well with vitamin C and a vitamin B-complex. DEFICIENCIES in vitamin B3 are associated with nervousness, poor circulation, fatigue, headaches, bad breath and high blood pressure.

Vitamin B5 has been proven to help stress, food metabolism and digestion, steroid hormone synthesis and cell formation. It is very effective when used with vitamin C and a vitamin B-complex. DEFICIENCIES in B5 can cause stress, allergies, arthritis, digestive disorders, hair loss, hypoglycemia and premature aging.

Vitamin B6 is applauded for its contribution to the nervous system, muscles, skin, antibody and blood cell formation, amino acids and fatty acid metabolism. B6 can also clean out your pipes. A new study in the Journal of Nutrition says you can beat back colon cancer by upping your intake of vitamin B6. After studying 81,000 men, Japanese researchers found that consuming more than 1.1 milligrams of B6 daily decreases colon-cancer risk by 30 percent.

Vitamin B6 helps protect your colon from cancerous cell mutations, according to the Journals' study authors. A bowl of good whole grain cereal and two bananas each day will provide the extra hit of B6. It should be used with vitamin C, a vitamin B-complex and potassium. DEFICIENCIES in vitamin B6 can lead to stress, depression, insomnia, irritability, weight gain, clogging of the arteries and hypoglycemia.

Elmer G. Heinrich

Vitamin B12 is necessary for the nervous system, helps store iron, maintains appetite and stimulates bone and muscle growth. Your body uses 300 muscles to balance itself when you are standing still. You would have trouble standing still if you have a sufficient lack of B12. It works well with vitamin C, a vitamin B-complex, calcium and potassium. DEFICIENCIES in B12 cause loss of stamina, fatigue, stress and anemia.

Vitamin C or what is known as ascorbic acid, is a weak sugar acid structurally related to glucose. It is an essential nutrient for humans and a small number of other species. The presence of ascorbate is required for a range of metabolic reactions in all animals and in plants and is made internally by almost all organisms except humans. We must get ours from external sources.

Vitamin C was introduced to Dr. Linus Pauling by biochemist Irwin Stone in 1966. Dr. Pauling introduced Vitamin C to the world, as a great antioxidant, when he penned "Vitamin C and the Common Cold" in 1971. Much has been written about Vitamin C and it is the most popular vitamin supplement consumed in the U. S. and, possibly in the entire world. It has been widely used in skin care products and is proven to reduce the effect of UV rays and to eliminate wrinkles and sunspots. Vitamin C is recognized to lessen oxidative stress; it's a protector of hair, skin, blood cells and vessels, bone, gums and teeth and an infection eliminator. It works well with bioflavonoid and all vitamins and all minerals.

Nutrition, Minerals & Disease

Health problems caused by DEFICIENCIES in vitamin C are numerous including infections, depression, blood or skin disorders, aging disorders, allergies, bruising and scurvy. The RDI for Vitamin C is 90 milligrams per day, but most people far exceed that amount which is proving to be advantageous. In fact, it is recommended that a person, with kidney function problems, take 1,000 mg of vitamin C per day.

Vitamin D, long associated only with its role in bone formation, is actually active throughout the human body, powerfully influencing immune system responses and cell defenses. It can be obtained from food, or manufactured by human skin exposed to sunlight. Measures of vitamin D levels show, however, that many people have too little of it circulating in their blood to protect their health. Clear associations between low vitamin D levels and cancers, autoimmunity, infectious disease and other conditions suggest that current daily intake (RDI) recommendations for this critical nutrient need to be increased substantially.

Vitamin D promotes and stimulates calcium and phosphorus absorption, strong teeth and bones and mineral homeostasis. It should be used with calcium, choline, phosphorus and vitamins, A, C and F. DEFICIENCIES in vitamin D will cause soft bones and teeth, gum disease, muscle weakness, nervousness, arthritis and poor metabolism.

Make sure your teenagers get at least 200 IU of vitamin D daily. Researchers at the Harvard School of Public Health

Elmer G. Heinrich

found that teenagers may be at risk of serious lung disease later in life if they skimp on vitamin D.

Make sure your children get exposed to sufficient amounts of sunshine. In the early 20th century, vitamin D was called the sunshine cure. That was before antibiotics, and it was the only cure known for tuberculosis. No one knew why sunshine worked but it was the only way to restore the health to Tuberculosis patients. It was also found that the only cure in those days, for rickets, was exposure to sunshine alone. Don't forget that vitamin D is made by the skin that is exposed to sunlight, so take advantage of it as necessary! For your information, the medical community now recommends vitamin D to all post menopausal women.

Vitamin E is another good antioxidant that helps circulation, blood and vessel health, oxygenation, lungs, skin and hair health, and is very good for prostate. It works well with vitamin A and C and a B-complex, selenium and manganese. DEFICIENCIES in vitamin E are related to heart disease, stroke, atherosclerosis, cholesterolemia, menopausal problems and prostate size.

Vitamins F, essential fatty acids are composed of two fatty acids known as linoleic acid and alpha-linoleic acid. Fatty acids are needed for normal growth and behavior and help with healthy cell membranes, a well-balanced hormone level and properly working immune system. They are essential for the synthesis of tissue lipids, play an important role in

Nutrition, Minerals & Disease

the regulation of cholesterol levels and are precursors of prostaglandins, hormone like compounds producing various metabolic effects in tissue.

Vitamin K is a fat-soluble vitamin and is essential for the functioning of several proteins involved in blood clotting. There are two naturally occurring forms of vitamin K. Plants synthesize phylloquinone, which is vitamin K1. Bacteria synthesize a range of vitamin K forms which, collectively, are known as vitamin K2, a little known and expensive vitamin. Both K vitamins make a significant contribution to bone growth when utilized with calcium, vitamin D and Strontium.

Vitamin P, more commonly known as bioflavonoids, are a group of water soluble substances which comprise a number of factors including herpseriden, myrecetin, nobiletin, rutin, tangeritin and quercetin. There have been no toxicity symptoms reported with bioflavonoids. Vitamin P was first discovered in the white part of citrus fruits and it is responsible for making the yellow and orange colors we see in fruits. Vitamin P aids in the resistance of infection and prevents oxidation in vitamin C. Unfortunately, it is destroyed by exposure to light or boiling water. Bioflavonoids act as important components of co-enzymes which are necessary for most metabolic reactions within our body. Their role has recently been recognized in the prevention of heart disease, which is why most Doctors recommend CoQ10.

Elmer G. Heinrich

Amino Acids make up protein. Each type of protein has a different amino acid profile which is basically the building blocks of our body, from our genes (DNA) to our organs. So if you don't supply your body with enough protein, you will not develop properly in any area. Amino acids, along with the proper number of minerals, are also necessary for numerous functions in your body.

There are 20 essential amino acids required to make proteins. Without protein, our bodies waste away. This condition is widely recognized in countries where starvation is prevalent such as Africa, where we see children with swollen bellies and are all skin and bones.

Some Amino Acids are created by the body, and some must be supplemented. There are many good brands on the market. Always look for those that contain at least 16 amino acids. The RDI for dietary protein, for active adults, is 0.6 grams per pound of body weight.

FIBER is one of those nutrients that many of us know is important, but remains a bit of a mystery. Exactly what is fiber and what are the best sources of fiber? Basically, the term fiber refers to carbohydrates that cannot be digested.

Fiber is present in all plants that are used for our food, including fruits, vegetables, grains and legumes. However, not all fibers are the same and there are a number of ways to categorize fiber. One is by its source of origin. Fiber from grain is known as cereal fiber. Another way is how easily it dissolves in water. Insoluble fiber does not dissolve in water,

Nutrition, Minerals & Disease

so there can be a big difference when it comes to fibers effect on your risk of developing certain ailments or diseases.

Fiber appears to reduce the risk of developing various conditions, including heart disease, diabetes, diverticular diseases, and constipation and may have some effect on some cancers. Despite what people may think, fiber seems to have little or no effect on colon cancer. You need minerals for this! Fiber does have a great effect on the risk of heart disease. High intake of fiber has been linked to a lower risk of heart disease in a large number of studies. At Harvard, researchers found that a high total intake of fiber was linked to a 40% lower risk of coronary heart disease, compared to a low fiber intake.

Current recommendations suggest that adults consume from 21 to 38 grams of fiber per day, depending on age and gender. Children ages 1 and up should consume at least 19 grams per day, yet the average American adult eats only 15 grams of dietary fiber per day. Therefore, we should all make a sincere effort to consume more fiber each day, because fiber is also known to reduce the risk of many health problems including obesity, type 2 diabetes and Diverticulitis, an inflammation of the intestines.

A person who eats 2,500 calories each day should get at least 35 grams of fiber daily, while a person who eats 1,700 calories each day needs somewhat less or about 24 grams. A child who eats 1,300 calories per day needs about 18 grams of fiber.

Elmer G. Heinrich

There are many sources of fiber, but the best source for soluble fiber is oatmeal, oat bran, nuts and seeds, legumes, dried peas, beans and lentils. The best sources of insoluble fiber are whole grains, whole wheat bread, barley, brown rice, whole grain breakfast cereals and wheat bran.

Biotin helps utilize other B vitamins, aids krebs cycle (energy) in synthesis of fats and proteins and cell production. It works well with a B-complex. DEFICIENCIES of Biotin lead to exhaustion, muscle pain, depression and dry hair and eyes.

Choline is a good protein and fat metabolizer and benefits nerve impulse transmissions. It is best when used with a vitamin B complex. DEFICIENCIES of choline can cause atherosclerosis, high blood pressure, liver ailments and tinnitus.

Folic acid is required for growth, reproduction and protein synthesis. It also works well with a vitamin B-complex and is required to absorb B12. DEFICIENCIES of Folic Acid will cause a B12 deficiency, fatigue, stress and menstrual disorders.

Inositol is known for metabolism of fats and cholesterol. Inositol is good for hair, brain, eyes and weight control. Like many others, it works well with a B-complex, vitamin C and phosphorus. DEFICIENCIES of Inositol can cause atherosclerosis, constipation, skin and hair problems, insomnia and weight gain.

Nutrition, Minerals & Disease

PABA is a natural sunscreen, helps hair and skin while being very effective at protein metabolism. It works well with vitamins A, C, D, E and the mineral, phosphorus. **DEFICIENCIES** in PABA can cause gray hair, skin tags and fatigue.

Elmer G. Heinrich

Chapter 9

THE TOXIC MINERALS BELIEF

We've all heard about toxic metals (toxic metallic minerals) and most people have been led to believe the so called toxic minerals are bad regardless of their source. This is not necessarily true, as I will demonstrate further on. We know that heavy metals cause a variety of illnesses, which is why we are so careful to avoid them. We know they are in some paints (lead), fish and tooth fillings (mercury) and many different pollutants, but did you know that most supplements are metallic based or minerals directly from the earth? Needless to say, too many or too much of this type of minerals can be harmful. As we know from an earlier chapter, plant derived minerals are non-toxic, negatively charged and hydrophilic, which can be easily and possibly 100% absorbed by the body.

A metallic mineral and a plant mineral have the same name but they can be as different as day and night. Let's take aluminum as an example. Aluminum, as found in the earth is a metallic mineral. It has been criticized beyond belief. Granted, metallic aluminum, like that which can be dissolved or leached from aluminum pans or utensils may be extremely harmful and I truly believe it is. However, it has never been scientifically proven that aluminum caused

Elmer G. Heinrich

legionnaires disease years ago. What about aluminum from food? Yes, don't be surprised! Nearly every food grown from the earth is saturated with aluminum!

Foods also contain other "thought to be" toxic minerals as do plant derived colloidal minerals. Questions have been raised about the presence of aluminum, cadmium, lead, mercury and other supposedly toxic minerals in the MagZuma's Plant Derived Colloidal Minerals, just the same as they have been raised about these minerals in food. These questions are certainly reasonable and there are theories on both sides of the issue. However, experimental trials with measurements of toxic mineral levels over time are a more accurate way of answering these questions than theories, however reasonable they may seem.

MagZuma's Plant Derived colloidal Minerals have been consumed by humans since 1932 and there has never been a documented or reported side effect, illness, toxic reaction or death from their use. That's seventy-seven plus years with nothing but positive results, and now these plant derived minerals are sold to extremely satisfied customers in forty-eight countries.

Gary Price Todd, M. D. a Certified Ophthalmologist who practiced in Waynesville, North Carolina, conducted his own personal toxicity trial study on some of his patients. Dr. Todd used the MagZuma's Minerals in his tests for more than five years. He asked his study group to take three ounces of the the liquid minerals each day, a potent dose, along with three grams of vitamin C and a multiple

Nutrition, Minerals & Disease

vitamin supplement. He chose to “follow” aluminum, cadmium, lead and mercury levels in hair specimens over time. He believed hair level tests of potentially toxic minerals are more accurate than blood tests, as our bodies “clear” these minerals from the bloodstream relatively fast.

Dr. Todd reported that at three months time, levels of aluminum, lead and cadmium had all risen slightly. Mercury was not significantly changed. At four to six months time, levels of aluminum, lead, cadmium and mercury had all decreased dramatically. In a different group of individuals, measured before treatment and at eight and sixteen months, levels of aluminum, cadmium and lead all declined. Mercury in this group was not at detectable levels either before or after treatment.

Dr. Todd points out that successful clearing of potentially toxic metallic minerals (as well as other potentially toxic substances) from our bodies, first requires “mobilization” of these minerals from the “storage” sites such as bones, teeth, etc. If this “mobilization” is successful, the potentially toxic minerals are then cleared from the body and measured levels decline over time. This occurred with every individual that used the MagZuma’s 75 Minerals in Dr. Todd’s study. Dr. Todd actually wrote a paper titled “Toxic Mineral Elimination by Mineral Substitution”. He described the minerals as acting as a chelating agent to detoxify and remove poisonous metal agents from the body by converting them to a chemically inert form before excretion.

Elmer G. Heinrich

I want to be more specific about aluminum. All aluminum that comes from food is pre-assimilated by the plant, and it is naturally bonded or attached to hydrogen in the form of sulfate. MagZuma's plant derived minerals are naturally rich in sulfate. Naturally occurring aluminum sulfate minerals are called alums, which are used in styptics and antiseptics. We all know aluminum hydroxide is used extensively as food additives throughout the world. Therefore, if aluminum is harmful, why have you lived so long, and why is it used in food processing or as ingredients in deodorizers, antacids, and face makeup, and nearly without exception in many municipal water systems throughout the world?

Alum sulfate increases stomach acidity and improves digestion and the absorption of nutrients, stimulates gastric and pancreatic secretion and has a mild diuretic effect. Incidentally, the World Health Organization estimates that the average adult dietary aluminum intake ranges between 10 and 15 milligrams (mg) daily. See if you agree after reading the next several pages.

Aluminum is one of the most abundant minerals on earth, second only to silica. It is in virtually everything we touch, most of the air we breathe, most water we drink and in most food we eat. I am particularly alarmed to learn Government Officials in some countries either are not aware of or want to suppress the fact that aluminum is also one of, if not the most abundant minerals in many of our foods!

One Scandinavian country used to say it was unlawful to

Nutrition, Minerals & Disease

consume more than 2 mg of aluminum per day, regardless of the source! We spoke to several well-known laboratory and food chemists about this country's legal limits. Needless to say, they were quite amused by this. Can you imagine an entire country, in this advanced age, being so uniformed about food? Apparently, the U. S. Government is aware of aluminum in food because the U. S. does not have an established limit. If we did and it was small we would have a hard time staying alive.

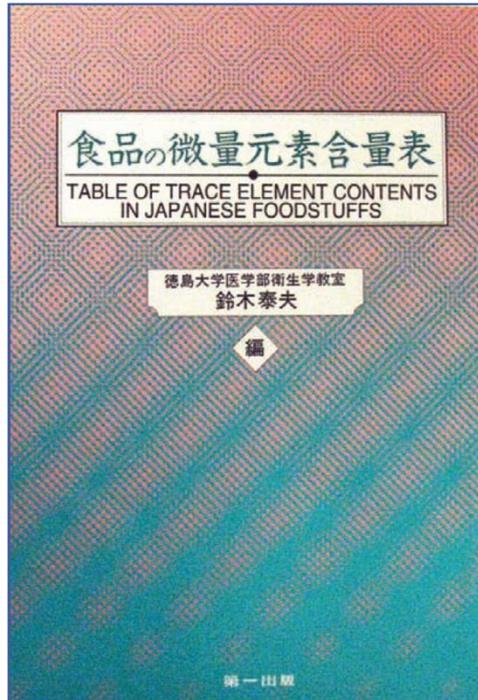
We were able to obtain copies of the results of lab tests for aluminum in certain plant foods. The results came from the A & L Laboratory Agronomy handbook used by many agronomists worldwide. The page headings state "Plant Analysis Guide Nutrient Sufficiency Ranges". I understand the tests are made on plant petals, vines and even the fruit or nut, depending on the type of plant bearing the food. The amounts are listed in parts per billion (PPB). Just so you know, PPB and MCG/L (micrograms per liter) are considered one and the same. The test results have a low amount and a high amount that were obtained from different tests on the same food or plant species. The averages are listed on the following page.

Elmer G. Heinrich

Plant Or Food	Aluminum In PPB	Plant Or Food	Aluminum In PPB
Bananas	97,000	Peas	45,000
Coffee	97,000	Peppers	75,000
Pineapple	100,000	Potatoes	100,000
Oil Palm	98,000	Root Crops	140,000
Asparagus	90,000	Tomatoes	90,000
Beans	165,000	Corn (at tasseling)	140,000
Brussles Sprouts	65,000	Mint	140,000
Celery	190,000	Peanuts	75,000
Cucumbers	90,000	Small Grains	135,000
Head Crops (lettuce)	90,000	Soybeans	75,000
Leaf Crops	50,000	Wheat (high yield)	140,000
Melons	65,000		

I suppose you are surprised as I was the first time this was brought to my attention. I was even more astounded recently when we were visited by one of our Japanese distributors and their Ph.D. Food Chemist. He gave us a book published by the Japanese, listing the minerals found in every conceivable food.

Nutrition, Minerals & Disease



“This book lists the analysis of more than 2,000 edible foods and most if not all contained aluminum”.

This book is available. Contact your local bookstore and ask for ISBN #1 56959 904-1). The categories in this book include many species of fish, fowl, all edible animal meats, nuts and berries, fruits, vegetables, and all types of beverages. All total, there are more than two thousand listings and every one contained aluminum.

Elmer G. Heinrich

I was not surprised to see that a total of only twenty-eight combined minerals were found in these two thousand edible foods. This is a good example of the mineral deficiencies throughout the world! Had these tests been done several thousand years ago, they may have found at least 75 minerals in the test subjects. Many of these foods also contained cadmium, arsenic and lead. On the following page, you will see a few of the listings that were not included on the previous page. The amounts are relative to micrograms per only three and one half ounces (3 1/2 oz.) of each food item.

Nutrition, Minerals & Disease

JFDA Aluminum Amounts in (3 1/2 oz) Foods

Plant Or Food	Aluminum In PPB	Plant Or Food	Aluminum In PPB
Round Herring Sardines	34,000	Bologna	1,900
Scallops	6,900	Pork Products	2,400
Shrimps	1,300	Liver Paste	1,100
Condensed Skim Milk	670	Green Asparagus	610
Skim Milk Powder	1,200	Turnip	1,200
Cheddar Cheese	2,000	Pumpkin & Squash	1,500
Sugukina	3,600	Royal Fern	19,000
Radish	1,500	Eggplant	13,000
Apricots	1,000	Avocados	390
Figs	1,600	Sencha Tea	100,000
Chili Powder 6,000		Bancha Tea 332,000	
Curry	23,000	Oolong Tea	247,000
Cocoa	17,000	Allspice powder	7,300
Clove Powder	14,000	Black Pepper	8,100
Horseradish powder	3,900	Cinnamon Powder	7,900
Sage Powder	64,000	Nutmeg	113,000

It is interesting to learn that a glass of skimmed milk contains as much aluminum as the recommended adult weekly dose of the mineral liquid made from the MagZuma Powdered Minerals. Please review tea again. Today, everyone is touting the benefits of tea. Note that three ounces of Bancha Green tea contains more aluminum than five gallons of milk.

Elmer G. Heinrich

The most interesting fact is that all of the consumables listed contain minerals that are negatively charged by Mother Nature. All metallic minerals, including those “washed in” minerals, like those from the Great Salt Lake, are either neutral or have a positive electrical charge from Mother Nature. This zeta potential is easily verifiable and indisputable. Plant minerals like those from a tomato, cucumber or potato are negatively charged and easily digestible.

The way I calculate the amounts listed on the Japanese report, people allowed no more than 2 mg of aluminum per day could not eat more than one thin slice (cut off the end) of a banana each day. People allowed 4 mg could eat no more than a small potato each day. And what about salads? Review the list again and make your own decision. Apparently, plant derived aluminum, which is bonded to hydrogen, is not harmful, don't you think?

I had the opportunity to speak to many people while participating in a National Health Foods show in Anaheim, California in early 1995. I directed a simple question to more than forty people on an individual basis. Several had Ph.D.'s in food chemistry, at least eight of them were certified nutritionists, two were medical doctors, four were chiropractors and the balance was health food store owners. My question to each was “would you eat food if you knew it contained aluminum, arsenic, lead or nickel?” Without hesitation each person replied “absolutely not!”

Nutrition, Minerals & Disease

I was shocked to learn that so many superbly educated medical and nutritional people were unaware that these minerals can be found in nearly all the foods we eat. To prove my point, we contracted Coors Analytical Laboratories of Golden, Colorado, a well-known reputable, mineral testing laboratory to perform a spectrographic test for total mineral content on several well-known foods. The lab purchased these food items from a Midwest supermarket. The test results follow.

Elmer G. Heinrich

Broccoli	Grapes	Almonds
Aluminum	Aluminum	Aluminum
Boron	Barium	Barium
Calcium	Boron	Boron
Chlorine	Calcium	Calcium
Copper	Chlorine	Chlorine
Iron	Chromium	Chromium
Magnesium	Copper	Copper
Manganese	Iron	Flourine
Nickel	Lithium	Iron
Phosphorus	Magnesium	Magnesium
Potassium	Manganese	Manganese
Silicon	Nickel	Nickel
Sodium	Phosphorus	Phosphorus
Strontium	Potassium	Potassium
Sulfur	Rubidium	Rubidium
Titanium	Silicon	Silicon
Zinc	Sodium	Strontium
	Strontium	Sulfur
	Sulfur	Titanium
	Titanium	Zinc

Nutrition, Minerals & Disease

Apples	Carrots	Tomatoes
Aluminum	Aluminum	Arsenic
Arsenic	Barium	barium
Barium	Boron	Boron
Boron	Bromine	Bromine
Calcium	Calcium	Calcium
Chlorine	Chlorine	Chlorine
Copper	Copper	Copper
Fluorine	Fluorine	Iron
Iron	Iron	Lithium
Lead	Lithium	Magnesium
Magnesium	Magnesium	Manganese
Manganese	Manganese	Nickel
Nickel	Nickel	Phosphorus
Phosphorus	Potassium	Potassium
Silicon	Phosphorus	Selenium
Sodium	Rubidium	Silicon
Sulfur	Silicon	Strontium
Titanium	Sodium	Sulfur
Vanadium	Strontium	Titanium
Zinc	Sulfur	Zinc
	Titanium	
	Zinc	

Nearly all plants contain aluminum, and if your mineral supplement contains little or no aluminum, it is not plant derived. If it is not plant derived, it is also not negatively charged. Therefore, it probably is not very well assimilated or absorbed by your body. According to food chemistry, plant derived minerals are 100% absorbable. If this is true, comparing any metallic mineral to a colloidal plant derived mineral would be like comparing sawdust to oatmeal. Pure

Elmer G. Heinrich

plant derived colloidal minerals are the result of plants converting hydrophobic metallic minerals to hydrophilic (water soluble) minerals through the root system, as they grow, through a process known to science as photosynthesis.

Photosynthesis is the conversion of light energy into chemical energy by living organisms. The raw materials for this natural process are carbon dioxide and water. The energy source is sunlight and the end products include glucose and oxygen. Through this process, the metallic mineral is assimilated or digested by the plant; therefore the human body can more easily assimilate it. This natural process basically side steps the normal digestive time of about 15 hours as required for the small amount of metallic minerals to be utilized by the body.

Many nutritional experts know very little or don't appear to know anything about plant derived minerals. They group plant derived minerals with metallic minerals that come from oyster shell, calcium carbonate, limestone, soil and clay and sea salts. Supposedly, high amounts of some of these metallic elements have toxic effects on the body. Again, Gary Price Todd, M. D., said the human body is not designed to absorb or assimilate and use metallic minerals. He said humans were designed to eat mineral rich plants, not the earth in which they grow!

Doctor Todd also said "Our bodies are similar to electric generators. There is electric conductivity between the cells and this conductivity is vital to cellular functions but this conductivity can't be transmitted if minerals are inadequate

Nutrition, Minerals & Disease

in the body fluids between and inside the cell. We live and die at the cellular level so we need to take heed at what might be killing us. We must focus on wellness instead of treatment! You hear about epidemics. We are seeing an epidemic of chronic disease throughout the world and much of this may be related to nutrition.”

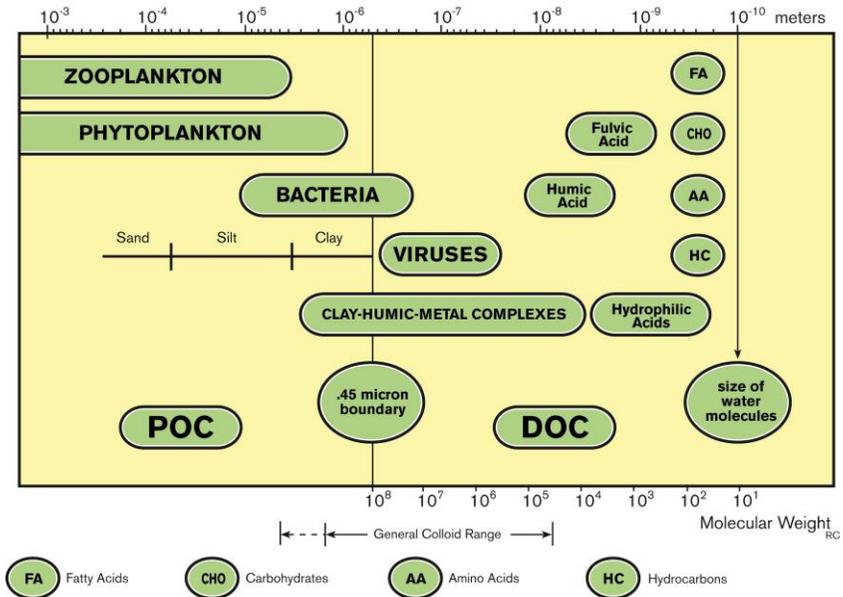
Nearly fifty years ago, health practitioners and chemists in the health food industry realized that humans could not assimilate or absorb more than 5% or maybe 8% of the metallic minerals they consumed. This was an industry wide problem. Chelated minerals were developed in the laboratory. This process involved wrapping amino acids or protein around metallic minerals to help the body metabolize them. This process did help the problem because these added dissolvers did increase the assimilation to what is thought to be about 40%. However, chelated or not, the fact remains, they are still metallic minerals of hydrophobic nature.

Plant minerals like those obtained from tomatoes, broccoli, potatoes, oranges or any other food grown from the earth are different than metallic minerals. Their size and molecular weight is much smaller than metallic minerals and in most cases, the plant minerals are attached to a hydrogen molecule, which makes them different even though they possess the same name. I predict that the scientific community will change the name of plant minerals in the future. I believe this will occur because plant minerals are composed differently and function differently than metal elements.

Elmer G. Heinrich

As mentioned earlier, plant minerals like those from fruits and vegetables are enzymatically alive. They have been pre-digested by the plant as the plant was growing. Expert Nutritional Doctors say this pre-digestion allows the plant minerals to reach the cellular level and go to work immediately due to their small size and because no bodily digestion is required. The small particle size of these minerals is the key!

The MagZuma colloidal Minerals were particle sized by Dr. Ranville of the Colorado School of Mines. Please review Dr. Ranville's logarithm scale below.



Nutrition, Minerals & Disease

Basically, the scale reveals that clay, silt and hydrophobic metallic minerals, on average, are considerably larger than hydrophilic acids or hydrophilic plant minerals. The figures at the top from left to right are measurements in microns. As an example, 104 is 10 times smaller than 103, and 109 is 10 times smaller than 108, etc. The exponents of 10 clearly indicate that bacteria, viruses, clay and humic metal complexes are considerably larger than hydrophilic complexes such as the hydrophilic plant derived minerals.

These pure plant minerals can be pumped through a pharmaceutical grade, .01 micron (absolute) filter. Most metallic minerals will not pass through this small membrane. Only the water passes through. As indicated, a water molecule is only slightly smaller than hydrophilic complexes.

The small size and water solubility is one of the reasons so many nutritionists believe the colloidal plant minerals are much easier to assimilate and absorb than metallic minerals. The small size of a plant mineral gives it much more surface area. Therefore, the hydrochloric acid in the stomach comes in contact with considerably more surface area, allowing for much more and possibly 100% assimilation.

The bottom portion of the scale relates to the weight of the particle, which is measured in atomic mass units or AMU's or Daltons. A Dalton is a measurement of molecules and atoms. When reviewing the scale, it is plain to see that the molecular weight of a hydrophilic mineral is considerably

Elmer G. Heinrich

less than metallic complexes. In short, this clearly indicates there is as much difference in, generally known, “colloidal minerals” or “metallic minerals” and “MagZuma’s plant derived minerals”, as day and night. When you study the organic carbon continuum (logarithm scale), it is easy to understand why water-soluble plant minerals are considered to be much more effective than metallic minerals.

In addition to being water-soluble, plant derived mineral extracts that have been predigested by the plant are naturally acidic. This alone makes important elements like calcium and iron more easily absorbable. As revealed in the preceding logarithm scale, a plant mineral is as much as several thousand, and with some, at least a hundred thousand, and others as much as a million times smaller than the smallest metallic mineral.

The average plant derived mineral can be measured in nanometers and the smallest in picometers. On average, they are less than 0.00001 micron in size that could conceivably be 1/10,000th the size of a red blood cell. Their small size gives them an enormous surface area. It has been calculated that 1200 milligrams of colloidal plant derived minerals would have a total surface area of approximately 55 acres of land. That’s trillions of tiny electrically charged minerals.

The surface area calculation is inconceivable to most people. They just don’t understand it. Let me explain. Let’s assume you measure the outer surface of a basketball. Deflate the

Nutrition, Minerals & Disease

basketball and fill it with marbles, then measure the surface area of all the marbles. You have increased the surface area within the basketball by about 1 million times. Remove the marbles and fill the basketball with buckshot or BB's. You have again increased the surface area by approximately 20 million times. Now, remove the buckshot and fill the void with sugar granules. You have again increased the total surface area by approximately twenty million times. Remove the sugar granules and fill the basketball with the ultra microscopic mineral powder that comes from dehydrated liquid colloidal plant sourced minerals and you have again increased the surface area by approximately another 50 million times. This explains the calculated 55 acres due to the smallness of plant derived minerals.

Experts in the Medical and Nutritional fields have said they believe that plant minerals are so small they go directly to the cellular level. Most importantly, they say they are immediately effective, like minerals from a tomato, because the body doesn't have to digest them. They have been pre-digested by the plant.

All plants, fruits and vegetables contain converted or assimilated metallic minerals, which become negatively charged through the plant's synthesizing process. In order for minerals to be quickly and properly absorbed through the intestinal membrane, they must be negatively charged. When you eat plants or a plant's fruit, you are eating plant derived minerals in an already combined and electrochemically neutralized form.

Elmer G. Heinrich

These negatively charged, water-soluble minerals are non-toxic in reasonable dosage. For example, iodine in plant derived form is one of the elements for good health. And this is really interesting; if you drank even 2 grains of free iodine, it would kill you. But in its plant derived form, iodine is not only harmless, it is beneficial. The same is true for plant derived arsenic, lead, aluminum and other minerals considered toxic in their metallic form. If they came from a plant they are no longer toxic because they have been bonded to a hydrogen molecule when synthesized by the plant. A full spectrum of plant minerals will greatly enhance your chances of good health if you stretch a lot, exercise often, and if you sensibly select your foods and drinks and consume them in balance and moderation.

Chapter 10

A SAFE & SANE WAY TO EAT

We would all prefer to be able to get our nutrition from our food chain without the need for supplementation. Unfortunately, as it stands today, this is not possible because our arable level is sick and anemic from overuse and can no longer provide everything our bodies need. Additionally, this is not possible due to the depleted mineral status of our foods and also due to losses that occur during processing, storage and cooking. If you want optimal health, supplementing is necessary and I fully recommend you establish a regiment to consume a full spectrum of plant derived minerals daily because vitamins, enzymes and other specialty nutrients are more effective after you have most, if not all, the minerals your body needs.

I agree with Michelle Tonkin, a Naturopathic Doctor who recommends ten super foods that improve health and vitality. She says they can help us increase energy, improve immunity and invoke positive change. Here is what she recommends:

SPIRULINA is a micro alga that is found in sunny climates and alkaline waters around the world. It is high in Gamma Linolenic Acid (GLA), Vitamin B-12, Iron, Essential amino acids, the Nucleic Acids RNA and DNA, Chlorophyll, and Protein.

Elmer G. Heinrich

Spirulina is a naturally digestible food that aids in protecting the immune system as well as cholesterol reduction and mineral absorption. Those suffering from unstable glucose levels may benefit from taking Spirulina because of its high protein levels. All in all, Spirulina provides the body with a powerhouse of nutrients needed for strength and energy.

COLOSTRUM is a thin, yellowish fluid secreted by the mammary glands of mothers in the first days after giving birth, before the production of milk begins. Colostrum contains high levels of growth and immune factors and protein that help to protect the newborn against infection. Supplemental colostrum can boost the immune system, help the body to burn fat and build lean muscle. It also has been shown to accelerate healing and increase stamina and vitality. The best supplemental colostrum is from cows that have been organically fed.

CHLORELLA is tiny, single-celled water grown algae that contains an enormous amount of readily available chlorophyll. It contains protein, carbohydrates, all of the B vitamins, vitamin C and E, amino acids, and some rare trace minerals. Chlorella is one of the few edible species of water grown algae. Like Spirulina, it is almost a complete food by itself.

FISH OIL is a good source of omega-3 essential fatty acids (EFA's) and vitamin D. Omega-3 is important for cardiac health, as the body requires EFA's for rebuilding and

Nutrition, Minerals & Disease

producing new cells. These EFA's also help the production of prostaglandins. Prostaglandins are hormone like substances that act as chemical messengers and regulators in various processes of the body. Vitamin D is essential for the body to properly absorb calcium and magnesium, which are necessary for the health of every lining cell. EFA's are becoming more popular, as people are beginning to understand the need for the essential and proper healthy fats.

MAITAKE is a mushroom that grows wild in Japan as well as some wooded areas in eastern North America. Maitake is an adaptogen, meaning that it helps the body to adapt to stress and normalizes bodily functions. In laboratory studies, it was shown to inhibit the growth of cancerous tumors, kill HIV and enhance the activity of key immune cells. It may also be helpful for diabetes, chronic fatigue syndrome, obesity and high blood pressure. Maitake can either be eaten as a food or taken in a supplement form.

GREEN PAPAYA is an excellent source of vitamins, minerals and enzymes. It naturally contains more vitamin A than carrots, and more vitamin C than oranges, as well as an abundance of vitamins B and E. The enzymes that papaya contains help digest proteins, carbohydrates and fats. Eaten with or after a meal, green papaya helps to lighten the burden of the body's digestive tract and increases energy.

Elmer G. Heinrich

GARLIC is a Superfood that can be found in most any grocery store. It contains many sulfur compounds, a tribute to its healing properties. It helps protect the body against infection by enhancing immune function and has also been reported to help regulate blood sugar levels, lower blood pressure and improve circulation. Raw garlic is best, but odorless supplements are also available.

GREEN TEA is considered a miracle by millions around the world. An ancient Chinese Proverb said it all. "Better to be deprived of food for three days, than green tea for one". Green tea has been used as a medicine in China for more than 4,000 years. They have used it to treat everything from headaches to depression.

Today, scientific research in both Asia and the west is providing hard evidence for the health benefits long associated with drinking green tea. For example, in 1994, the journal of the National Cancer Institute published the results of an epidemiological study indicating that drinking green tea reduced the risk of esophageal cancer in Chinese men and women by nearly 60%. University of Purdue researchers recently concluded that a compound in green tea inhibits the growth of cancer cells. There is also research indicating that drinking green tea lowers total cholesterol levels as well as improving the ratio of good (HDL) cholesterol to bad (LDL) cholesterol.

Nutrition, Minerals & Disease

Green tea contains powerful antioxidants that help to protect the body against free radical damage. It is also known to stimulate the immune system, help regulate blood sugar levels, combat mental fatigue, and shows promise as a natural weight loss aid. There is much evidence that suggests green tea drinkers may have lower chances of getting heart disease and, as mentioned above, contracting certain types of cancer. The only negative side effect reported from drinking green tea is insomnia due to the fact it contains caffeine. However, it has much less caffeine than coffee.

ROYAL JELLY is a thick, milky substance that is secreted by glands of nurse bees between their sixth and twelfth days of life. When honey and pollen are combined and refined by nurse bees, the substance royal jelly is created. Royal jelly also contains amino acids, minerals, enzymes, antibacterial and antibiotic properties as well as vitamins A, C, D and E. It is useful in liver disease, pancreatitis, insomnia, stomach ulcers, kidney disease, bone fractures and strengthening the immune system.

RED YEAST RICE is a food product that is created by fermenting rice with a strain of red yeast (*Monascus purpureus* went yeast). It has long been used in China and Japan as a remedy for digestive ailments and poor circulation. Recently, red yeast rice extract, taken in supplemental form, has been found to improve the ratio of “good to bad” cholesterol. The cholesterol lowering compounds found in red yeast rice are known as statins.

Elmer G. Heinrich

Studies have shown that statins not only lower cholesterol levels, but may also reduce the risk of heart attack or stroke.

In addition to the Superfoods, consider **LICORICE**. It is one of the world's oldest known medicines. The root of the licorice plant has been prescribed since antiquity. Historians describe its use in treating colds and asthma and healing wounds. Herbalists in China and India add licorice to their compounds and their over the counter remedies for sore throats. Scientists worldwide are testing its potential. One team found that glycyrrhizic acid, a compound in licorice, kills cells infected with the virus that causes Kaposi's sarcoma, a cancer. They said it also inhibits the growth of the SARS virus and has been tested with success against Japanese encephalitis, chronic hepatitis and HIV.

There's no doubt you can improve your health, even without supplements, if you choose your foods wisely and consume them in reasonable amounts. You could begin by adhering to the following suggestions: Eliminate to whatever degree possible, **White Sugar and White Flour** products, as well as products to which salt has been added. Also eliminate fried foods as much as possible.

Your diet should include two or more fruits per day. Be sure to wash the fruit thoroughly to remove the insecticide and pesticide residues. Fruit and vegetables that must be cooked should be cooked minimally by steaming or cooking in a microwave oven. I am aware of the controversy over microwaves. However, I still prefer the microwave if glass bowls or dishes are used instead of plastic. Do not use

Nutrition, Minerals & Disease

plastic or styrofoam containers in the microwave because toxins may contaminate the contents.

FAT consists of carbon, hydrogen and oxygen, and in general, fats belong to the group of molecules called lipids. Dietary fat is essential for the body to function properly. However, any animal or fowl fat should be trimmed from meats before cooking. Since the fat in poultry is in the skin, remove the skin before consuming. Hamburger and other ground meat should be purchased as fresh as possible, used as soon as practical, and should be purchased in the lowest fat form available. Do not freeze hamburger unless absolutely necessary! All fats are calorie dense and carry some risk, besides obesity. Try to keep your total daily fat intake down to a maximum of about 30% of your total calories.

EGGS provide good nutrition and should not be neglected. Forget the bugaboo that they raise your blood cholesterol. Eggs cooked without breaking the yolk sack do not materially raise cholesterol levels. However, it is recommended that you do not consume more than three or four egg yolks per week. Scrambled eggs or eggs cooked as an omelet should be avoided because the scrambling creates free radicals.

VEGETABLE OILS are essential. Seed vegetables should supply this oil. However, consuming one tablespoon (1/2 ounce) of fresh safflower oil per day is recommended to assure that you are getting essential fatty acids. I believe Safflower is the best, but there are other alternatives.

Elmer G. Heinrich

SEA SALT is preferred over regular table salt. Herbal mixtures are available which enhance flavor. Less sea salt than regular salt is needed to enhance flavor.

AVOID MARGARINE AND ALL HYDROGENATED FATS. These fats interfere with the body synthesis of essential prostaglandins and also alter the cells metabolism. Persons who consume these fats have a remarkably increased risk of cancer and perhaps also an increased risk of stroke or heart attack according to Dr. Gary Price Todd. Butter is neutral in this regard. Mono-unsaturated fats (olive oil, peanut oil) are very safe. Try not to maintain a high consumption of polyunsaturated extracted vegetable fats. They are not natural for humans, especially in partially hydrogenated form.

FRUITS AND VEGETABLES are necessary. You should consume two generous servings per day of dark yellow or dark green vegetables or fruit. The especially good ones are spinach, broccoli, kale, sweet potatoes, pumpkin, squash, peaches, apricots, cantaloupe and watermelon. Each of these are an excellent source of beta-carotene, which has been proven to help in the prevention of cancer.

Include at least one serving of the cabbage family each day, either raw or lightly cooked. These include cabbage, broccoli, brussel sprouts, turnips, rutabagas and cauliflower. Also include onions and garlic as much as possible. Two bulbs of garlic a day may keep your neighbor away, but it will also keep some diseases away. When attempting to get as many minerals as possible from your grocery store,

Nutrition, Minerals & Disease

always look for foods that grow from trees. Since trees have deeper roots than cereal or other arable plants, they can tap the sub soil, getting more minerals from the earth. Foods from trees, such as nuts, fruit and leaves, generally have a more reliable mineral spectrum due to their deeper root system.

Apples are highly recommended for daily consumption. Apples help stave off Alzheimer's disease, according to researcher Chang Lee of Cornell University. He says apples contain quercetin, a powerful antioxidant that protects the brain cells from degeneration in rats, and might do the same in humans. According to new research from Germany, you should eat the skin since it's especially rich in disease fighting compounds. This research says apples protect against colon cancer. When the natural fiber in apples ferments in the colon, it produces chemicals that help fight the formation of cancer cells.

SEEDS AND GRAINS that reproduce themselves should be eaten as much as possible. These include beans, corn, peas, peanuts, various other nuts, sunflower seeds, wheat, barley, pumpkin seed and so forth. Many seeds, such as mung beans and alfalfa, taste better sprouted and used in a salad.

When you purchase your breakfast cereal, try to get those that contain several grains. Beans are best cooked as a mixture of bean types since each one has a slightly different

Elmer G. Heinrich

mixture of amino acids, so a combination of beans provides a more complete source of protein. If you garden, grow soybeans and pick them when full before shelling. Soybeans freeze well and taste like a cross between boiled peanuts and lima beans.

MEAT should be included in your diet at least once a day. I have no objection to red meat, but I do recommend that the fat be trimmed, even before cooking. Hamburger should be purchased fresh and cooked as soon as possible. As I mentioned earlier, try not to freeze hamburger before cooking. Many people eat liver for vitamin A. It may be best that you avoid liver because it has been proven to contain high cholesterol levels and toxins. After all, the liver is the purification system in the animal's body, and every toxic thing taken in by the body has passed through the liver. In my opinion, it is not advisable to eat any organ from any animal.

Vegetarians will choose to avoid meat. However, they can still get the needed protein if they eat a variety of vegetables and nuts. Since poultry is an excellent source of protein, it should be eaten often. Poultry has its fat in the skin, so always remove as much skin as possible. Baked chicken is much better for you than fried chicken. Fish, especially, should be eaten at least two or three times per week. It is best baked or broiled rather than fried, to reduce fat.

Fish grill very well just like hamburgers. Certain fish provide an essential fatty acid that appears to reduce the risk

Nutrition, Minerals & Disease

of heart disease. These include tuna, salmon, trout, sardines, herring, cod, haddock and mackerel.

DAIRY PRODUCTS should be served one or two times per day. I will not endorse homogenized milk since there is evidence, according to Dr. Gary Price Todd, that the small fat particles in homogenized milk may pass through the intestine into the blood stream without digestion, possibly causing allergic reactions. Ideal dairy products include yogurt, cottage cheese and regular hard cheese. The hard cheese has less fat and more protein.

WATER is often neglected as a nutrient. You've often heard that you should drink 8 glasses of water per day. Basically, that is only one-half gallon per day. You should double that to be healthy if you are between 19 and 40 years of age. In fact, the RDI for water in this age group is 3.7 liters per day, which is one gallon. When your water intake has been low and you become dehydrated, your attention and concentration can decrease by as much as 13%. Ideally, your water should be either pure spring water or well water from aquifers that have not been contaminated by fertilizers, pesticides, insecticides or industrial wastes. I know pristine aquifers are hard to find anymore.

Whole house water filters (those that filter all of the incoming water) are very important as far as bathing is concerned. Few people understand this, but the skin of your body is your largest organ, and it absorbs nearly everything that it contacts. I have actually viewed tests whereby a 200 pound man would absorb four to five pounds while sitting

Elmer G. Heinrich

or swimming in a pool for thirty minutes. If the pool water contained chlorine, you can bet some of the chlorine was absorbed by the skin along with the water.

I am not an advocate of chlorine, but realize it is necessary for use in municipal water systems because municipal water lines are old and filthy. Chlorine must be used to make sure the water is bacteria and virus free by the time it reaches your tap. At this point it needs to be removed, and whole house type water filters will remove it in large volume. For health reasons, you should never drink or bathe in chlorine saturated water, period!

I don't recommend distilled water for extended periods. Drinking distilled water on a daily basis is potentially dangerous. Distilled water is very active because the dissolved minerals have been removed, so it is seeking minerals and will literally leach minerals from your bones. It is excellent for short periods because it will actively absorb toxic substances from the body and eliminate them while cleansing the body.

Fasting, using distilled water can also be very dangerous because of the rapid loss of electrolytes (sodium, potassium, chloride) and trace minerals like magnesium. These deficiencies can cause heart beat irregularities and high blood pressure. Never cook your food in distilled water because it pulls the minerals out of the food and reduces the nutrient value.

Nutrition, Minerals & Disease

Water is a unique commodity that everyone takes for granted. It is most dense at 39 degrees Fahrenheit and at this temperature it weighs 8.34 pounds per U. S. gallon and there are 7.48 gallons in one cubic foot. Its lubricity is astounding and it is a great dissolver of nearly everything, especially anything that is water soluble.

Good water is a catch 22 today. Make a special effort to utilize contaminant free water at all times. Do the best you can and drink at least 12 to sixteen glasses of water each day. Water is necessary along with minerals to detoxify and provide the catalyst for our blood.

Elmer G. Heinrich

Chapter 11

THE DEPLETION CONTINUES WORLDWIDE

As a member of today's society, you and I are the most health conscious and well-informed generations in history. We know that being proactive about wellness is an essential part of our International life style. All of us should seek out products that keep us healthy by producing beneficial results without harmful side effects like those produced by most drugs. This is the reason we should become proactive and concerned about the mineral depletion of our soils. Our soils are in dreadful shape!

These mineral losses are causing, and will continue to cause, havoc with the health of all people on earth. If we don't find some way to correct this situation, we will need, on a percentage basis, twice as many hospitals, per capita, in the next seventy-five years as we have at this time. Can you imagine the cost to a country's Government for health care one hundred years from now? The population will continue to grow, minerals will continue to become more depleted and people will continue to get sicker and have more ailments due to a poorer food chain.

All of us, the average people of the world, should prompt and encourage our Government officials to take notice of the mineral deficiencies that exist. This information can no

Elmer G. Heinrich

longer be withheld. It must be addressed and steps must be taken and guidelines must be set to make the public aware of the problem. We must look for ways to slow the soil mineral depletion process.

I am disgusted to learn the World Health Organization and many within the medical establishment, don't pay heed to the importance of minerals in human health. Is this because there are billions of dollars made on illness and disease? Do the existing health organizations and practitioners really believe drugs are going to make us healthy?

Even though medicine and drugs are necessary in many adverse health situations, there is still a passive mistrust of the medical industry. Medicine has a long history of paternalism, even secrecy of keeping patients in the dark about details of their diagnosis and treatment, and many times about mistakes that occur. After all, admitting an error could lead to loss of patient trust, a damaged reputation, job sanctions or a malpractice suit. So be careful, know your doctor and ask questions, and above all, use common horse sense about what is occurring or what has occurred.

Drug companies are reaping unbelievable profits while, every year, nearly 150,000 people die, in the United States from prescription drugs. When will this catastrophe stop? When will our elected officials realize that the practices of insurance companies and drug companies put profits ahead of public health? Their practices are similar to those of the tobacco companies. While we're on this subject, let's ask

Nutrition, Minerals & Disease

another question. Why do drug companies spend billions advertising their drugs on radio and T.V.? After all, the doctor does the prescribing, not the patient, so why don't they just advertise to the doctors? By saving advertising dollars they could lower the cost of drugs dramatically. We're all at risk of being spoon-fed through advertising by the drug industry.

More importantly, how do we know all drugs are safe? As everyone knows, some drugs have caused serious problems! Supposedly, the producers and marketers have tested them and found the risk of taking them to be less than the conditions for which they were prescribed. People take for granted that all drugs are tested on the right class of people with the disease or ailment for which the drug is intended.

Consume all the minerals your body needs everyday and you won't have to be as concerned as to whether or not drugs are safe!

Mineral depletion is not something that suddenly occurred! It was already being recognized 100 years ago. Dr. Alexis Carrel, winner of the Nobel Prize in Medicine in 1912 said, "Soil is the basis of all human life and our only hope for a healthy world. All of life will be either healthy or unhealthy according to the fertility of the soil. Minerals in the soil control the metabolism of cells in plants, animals and man... Diseases are created chiefly by destroying the harmony reigning among mineral substances present in infinitesimal amounts in air, water and food, but most importantly in soil".

Elmer G. Heinrich

The U. S. Department of Agriculture published this quote in 1977. "In the future, we will not be able to rely anymore on our premise that the consumption of a varied balanced diet will provide all the essential trace minerals because such a diet will be very difficult to obtain for millions of people".

I wonder why we have not heard much about this before. I also wonder why we have not heard much about the topic of soil mineral depletion that was agreed upon during THE EARTH SUMMIT held in Rio De Janeiro in 1992. The consensus from analytical tests concluded the soil mineral content during the last 100 years (1892 to 1992) declined in specific countries as follows and was published as the;

WORLD'S MOST IMPOVERISHED SOIL

U. S. and Canada---85% Reduction

South America---76% Reduction

All of Asia---76% Reduction

Europe---72% Reduction

Australia---55% Reduction

The summit concluded the main causes of mineral depletion in soil were, 1. Water cycle and soil erosion, 2. Aggressive farming, 3. Fertilizers and Pesticides.

Now that we know the few metallic minerals we recognize are scarcer than ever, we need to consider a full spectrum of Hydrophilic plant minerals and a source of these that contains at least 70 minerals.

Nutrition, Minerals & Disease

I know how important this vast number of minerals can be for good health because I have been consuming a full spectrum of 75 minerals, daily, for thirty years while consulting with others who have used them nearly as long as I have. I know, as I have said before, the use of numerous plant derived minerals with their infinitesimal amounts, sharpen the mind, bring the past into memory, make man joyous, and above all, preserve youth and delays senility.

It is so gratifying for me to attend one of my school reunions and see how much healthier I am than my former classmates. And, how much healthier I am than I was twenty-five years ago. What's even more gratifying is that I know my improved health has come from the full spectrum of plant minerals. As you've already heard, plants can make vitamins but they cannot make minerals. We must obtain our minerals from sources other than plants, but we know there are not many available due to the mineral depletion of our soil. Even if there were still 75 minerals in the soil and we were able to get them, they would still be metallic minerals and, as mentioned earlier, according to the experts, our digestive systems only assimilate about 8 percent of the metallic minerals we consume.

The world's finest laboratories will never be able to develop synthetic foods that will sustain the human body or replace the body's need for minerals. Also, the world's finest laboratories and brightest chemists will never be able to develop or duplicate plant derived minerals. IT JUST ISN'T POSSIBLE!

Elmer G. Heinrich

Man was made to live off the land! Our foods must come from Mother Nature, but Mother Nature is nearly exhausted as far as nutritional value is concerned. So, if we can't get many minerals from modern day plants, foods or the world's finest laboratories, where do we get them? I believe the answer is MagZuma's Plant Derived Colloidal minerals in their product called Perfect Plant™ Minerals.



What is Organic Vegetate that contains the colloidal minerals? This is an organic shale can best be described as a blend of numerous plants that grew nearly 90 million years ago. This prehistoric vegetative matter, for some unknown reason, congregated in a large area of western central United States.

Nutrition, Minerals & Disease

This vegetate consists of numerous plants that grew at a time when the top soil of the earth still contained 80 of more minerals for the plants to draw upon. It has been encapsulated under a thick layer of earth or sandstone, protecting it from the elements that would have leached out many of the minerals had it been closer to the surface.

This Organic Vegetate is mined under the watchful eyes of The Federal Bureau of Land Management. The vegetate generates a lot of curiosity because occasionally you can actually see small impressions of leaves, stems and berries in the material. After mining it is placed in large food grade tanks and covered with room temperature, pure reverse osmosis water to leach out no less than approximately 75 pure plant derived minerals. This vast array of minerals is the most complete full spectrum of plant minerals available today. In addition to being consumed, this comprehensive blend of minerals provides incredible nutritional benefit when used in food beverages, supplements or in formulations and recipes of processed foods.

These minerals also blend very well with animal feeds to enhance nutritional value beyond anything imaginable! The powdered plant derived minerals can be easily added to the animal watering system by a micro-metering pump or by adding the powdered minerals to the animal feed. There have been meaningful tests completed by Massey University in New Zealand, utilizing the colloidal plant derived minerals in animal feed. The results were outstanding, which indicates animals are just as deficient

Elmer G. Heinrich

in minerals as humans. These minerals

Nutrition, Minerals & Disease

also contribute significantly to plant growth and increased nutritional value when used in minute amounts as soil mineralizer or plant foliate.

In Japan, a number of small acreage farmers have experienced tremendous increase in yield and Brix (sugar) content on vegetables by adding only 40grams of powdered colloidal plant minerals to 1,000 liters of water and using this mixture as a soil mineralizer, in addition to their normal fertilizer. I have spoken to some of these farmers who said the Brix content went from, a five year norm of 8, up to 14, the first year the mineralizer was used.

I have studied the effects of pure plant minerals for more than thirty years. The results were amazing! I've had personal experiences that would nearly make one believe in miracles. We have heard of similar experiences through thousands of phone calls and letters from plant mineral customers who proclaim unbelievable cures, alleviations and astonishing benefits from the use of this full spectrum of plant minerals. However, we are not allowed to publish this information.

I am not allowed to tell you the truth about the benefits of these minerals. By law, it must be suppressed or we could be accused of practicing medicine without a license. Isn't this ridiculous? You could have the best health improvement product on earth, that could save millions of people, but you aren't allowed to publish its merits if you're not a member of the drug society. Frankly, I believe the suppression of

Elmer G. Heinrich

information that might prove useful, to mankind, is contrary to the maturity and health of any free society. Even though we are not allowed to tell people the truth, our trial and error tests and observations of the reactions and testimonials from thousands of people have convinced us that nothing is more beneficial than the pure colloidal plant derived minerals, especially because its composition has a low pH, lots of sulfur and 75 minerals.

Nothing warms the soul like the sense of satisfaction that these minerals have really helped improve someone's health. I have witnessed grown women and men bent over and weeping, in front of large audiences, while telling their story about how the plant minerals changed their lives.

The Organic Vegetate minerals are acidic, which helps raise the acid level in the digestive area, which in turn promotes better food assimilation. As mentioned previously, a high acid level inhibits anaerobic bacteria and viral replication. In my opinion, the main reason the plant minerals provide such tremendous benefit is because they contain an unusually high amount of sulfur. Sulfur also aids in the utilization of calcium. As an example, many middle- aged women have reported some interesting facts. They were severely calcium deficient when they began to consume these minerals. After using the MagZuma minerals at the rate of 1200 milligrams (4 capsules) per day for more than a year, they were no longer calcium deficient. This occurred without the aid of additional calcium intake. Maybe this occurred because of the high amount of sulfur.

Nutrition, Minerals & Disease

It is my opinion that we humans may not require nearly as much calcium as assumed if we supplemented our diets with a complete spectrum of minerals that come from plants. I believe this to also be true with respect to the RDI of other minerals. We may not need nearly as much of the other nutrients, or minerals, as previously assumed if we were using an infinitesimal amount of nearly all the minerals found on earth.

Now that we have reviewed and gained a little knowledge about mineral depletion, let's think about just how important minerals may be for long-term survival. We may begin by asking this question. Just how important are minerals for good health? And, do minerals prevent disease? Let me recite a now famous statement from Dr. Linus Pauling, two-time Nobel Laureate. He said, in his opinion, **“One could trace every sickness, every disease and every ailment to a mineral deficiency!”** He also said **“Nothing is more important than minerals to maintain a strong immune system”**. If these statements are true, and I believe they are, “The Root of All Disease” is a lack of minerals!

The Future: The past 30 years, and many thousands of satisfied consumers of plant derived minerals, have antidotally sustained my observations regarding mineral deficiency. In the future, we will be funding medical research to substantiate our findings and to hopefully, and finally, tell the world the important and untold truth about a full spectrum of Pure Plant Derived Minerals.

Elmer G. Heinrich

Chapter 12

SENSIBLE TIDBITS, ANTIDOTES AND OBSERVATIONS

All of us need to slow down and think about our life and health and what we need to do to have a long and pain free existence. We know we've been put on this earth to do well and to benefit one another for the well-being of mankind. Few of us stop to realize the importance of good health as we stroll through life, until after it is lost and many times, lost beyond the point of return. Five thousand people are dying around the world, every day, from tuberculosis; one million are dying every year from malaria! Five million die every year from heart disease. Behind each one of these statistics is someone's daughter, someone's son, a mother, a father, a sister or brother.

Without good health, we are not able to complete the mission that was intended of us, so other than family and a belief in God, health is the most important.

As you develop your own regiment for maintaining your personal health and longevity, you might want to consider eating more bananas. Read about this nearly "perfect fruit" and then consider some of the tidbits, antidotes and observations and suggestions that follow.

Nutrition, Minerals & Disease

From all my research of minerals, soil depletion of minerals, nutrients and fruits and vegetables, I found that **BANANAS** surpassed all other foods for many reasons. I was so impressed with everything I learned that I felt it necessary to devote one chapter of this book to this outstanding fruit. We have tested many fruits and vegetables during the last twenty-five years and have never found more than 22 minerals in anything except bananas, which contained on average around 31 minerals. I suppose this is because the banana tree roots go very deep into the subsoil which enables them to draw upon more minerals.

Bananas contain three natural sugars that are combined with fiber. They are sucrose, fructose and glucose. A banana gives an instant and sustained boost of energy. Research has proven that just two bananas provide enough energy for a strenuous 90-minute workout. No wonder the banana is the number one fruit with the world's leading athletes.

Energy isn't the only way a banana can help us keep fit. It can also help overcome or prevent a substantial number of illnesses and conditions, making it a must to add to your daily diet, along with a complete spectrum of plant derived minerals. Review some of the following that bananas are known for:

DEPRESSION: According to a recent survey undertaken by MIND amongst people suffering from depression, many felt much better after eating a banana. This is because bananas contain tryptophan, a type of protein that the body

Elmer G. Heinrich

Converts into serotonin, known to make you relax, improve your mood, and generally make you feel happier.

PMS: Forget the pills! Eat a banana. The vitamin B6 it contains regulates blood glucose levels, which can affect your mood.

ANEMIA: High in Iron, bananas can stimulate the production of hemoglobin in the blood, and this helps in some cases of anemia.

BLOOD PRESSURE: This unique tropical fruit is extremely high in potassium yet low in salt, making it perfect to beat high blood pressure. So much so, that the U.S. Food and Drug Administration has just allowed the banana industry to make official claims for the fruit's ability to reduce the risk of high blood pressure and stroke.

CONSTIPATION: Because they are very high in fiber, including bananas in your diet can help restore normal bowel action, helping to overcome the problem without resorting to laxatives.

HANGOVERS: One of the quickest ways of curing a hangover is to make a banana milkshake, with 600 mgs of plant derived minerals, sweetened with honey. The banana calms the stomach and, with the help of the minerals and honey, builds up depleted blood sugar levels, while the milk soothes and re-hydrates your system.

Elmer G. Heinrich

HEARTBURN: Bananas have a natural antacid effect in the body, so if you suffer from heartburn, try eating a banana for soothing relief.

MORNING SICKNESS: Snacking on bananas between meals helps to keep blood sugar levels up and help avoid morning sickness.

MOSQUITO BITES: Before reaching for the insect bite cream for mosquito, chigger, yellow jacket or no-see-um bites, try rubbing the affected area with the inside of a banana skin. You will find it amazingly successful at reducing the swelling and irritation.

SEASONAL AFFECTIVE DISORDER (SAD): Bananas can help SAD sufferers because they contain the natural mood enhancer tryptophan.

SMOKING & TOBACCO USE: Bananas can also help people trying to give up smoking. The vitamins B6 and B12 they contain, as well as the potassium and magnesium found in them, help the body recover from the effects of nicotine withdrawal.

STROKES: According to research in the New England Journal of Medicine, eating bananas as part of a regular diet can cut the risk of death by strokes by as much as 40%.

WARTS: Those of us keen on natural alternatives swear that if you want to kill off a wart, take a piece of banana skin and place it on the wart, with the yellow side out. Carefully hold

Nutrition, Minerals & Disease

the skin in place with an elastic bandage or surgical tape. Change the banana skin once a day for three days and the wart will be gone.

BANANAS: Never put your bananas in the refrigerator. Leave them in the open at room temperature. And oh, by the way, if you want a quick shine on your leather shoes, take the inside of the banana skin and rub it directly on the shoes. Polish them with a dry cloth to obtain one of the best shines you can get, free of charge!

As you can see, a banana really is a natural remedy for many ills. When you compare it to an apple, it has four times the protein, twice the carbohydrate, three times the phosphorus, five times the vitamin A and iron and twice the other vitamins and minerals. Its richness in potassium makes it one of the best value foods around, so maybe it's time to change that well-known phrase to; "A banana a day keeps the doctor away".

Adding light therapy to your workout routine will boost your fat burn. Canadian researchers discovered that overweight adults who exercised for 90 minutes weekly on a light-box-equipped stationary bike lost 2 percent of their total body fat in just six weeks.

EGGS: "The Breakfast of Champion Dieters". Eggs do it, say Louisiana State University researchers. When 152 overweight adults ate a two-egg breakfast daily for 2 months, they lost 65 percent more weight than did a control group who consumed a breakfast equal in calories but lower

Elmer G. Heinrich

in protein. Two eggs contain 12 grams of protein and according to the study author Nikhil Dhurandhar, Ph.D., that's enough to increase satiety by up to 50 percent and subsequently, lighten your lunch intake by about 164 calories.

UNDERSTANDING UNITS OF MEASURE

Most people do not understand the amount of a milligram (mg) or a microgram (mcg) or a nanogram (ng). These are units of measure in the metric system. The Recommended or Referenced Daily Intake (RDI) for most nutrients is measured in either micrograms or milligrams or IU's, which stand for International Units. (IU's cannot be converted to micrograms or milligrams because IU's measure potency, not mass or weight). 1,000 micrograms = 1 milligram and 1,000 milligrams = 1 gram. One milligram is 1 thousandth of a gram and/or 1 part per million and is considered to be 1 part per liter. A milligram is approximately 450,000 times smaller than a pound and 28,000 times smaller than an ounce. If you had one million gallons of milk and added one gallon of chocolate, you would have a one million to one mixture, which is equivalent to 1 mg per liter. A microgram is 1 millionth of a gram or 1 part per billion, which is practically mind boggling. To put micrograms into perspective, think about this; -- a billion seconds ago it was 1976—a billion minutes ago, it was 100 years after the death of Jesus—a billion hours ago, our ancestors were living in the Stone Age—a billion days ago, no one walked on the earth on two feet. This should give you some idea of the potency of some of the nutrients found in good health food supplements.

Nutrition, Minerals & Disease

Now, let's take our time and try to imagine the smallness or infinitesimal amount of a nanogram, which is 1 billionth of a gram or 1 part per trillion. Some companies have been known to spruce up their nutritional facts panels by listing some of their supposed minerals at 1 or 2 ng per liter, which is ludicrous. Let's put nanograms into perspective. If you had a tank the size of an american football field that was 46 feet deep, filled with water, the tank would contain approximately 15,525,000 gallons or approximately 10 trillion drops of water at 39 degrees fahrenheit. If you added just 10 drops of water to that tank, you have added the equivalent of 1 nanogram. This is nearly inconceivable so it's a laughing matter to have nanograms listed on a nutritional facts panel.

If you like Mexican food, you probably like flour tortillas. If you do, make sure your tortilla is made of blue corn. It won't blow your diet, according to another new study in the Journal of the Science of Food and Agriculture. Compared with white corn tortillas, scientists found that the darker wraps have a significantly lower glycemic index, meaning they don't raise blood sugar as quickly. This is good because spikes in blood sugar signal your body to store fat. A blue corn tortilla wrap contains fewer carbohydrates, 20 percent more protein and an extra gram of fat, a combination that slows the absorption of sugar into the bloodstream, say the scientists. What's more, the tortilla's blue hue is due to the presence of anthocyanins which are natural antioxidants that may protect against Cancer.

Elmer G. Heinrich

SUGAR: The big secret! The simple carbohydrate has long been friend, not foe to outdoor athletes, who use the sugar in fruit (fructose) or cookies (sucrose) as instant-fuel for hardworking muscles. But new research shows that a prevalent form of manufactured sugar, which is found in everything from energy bars to sports drinks may not be so sweet after all. “High fructose corn syrup (HFCS) gives you an overdose of the type of sugar that your body is not set up to process in large amounts: Fructose”, says Martin Mills, M. D., the associate director of preventive medicine for the physicians Committee for Responsible Medicine. “It’s basic math: An apple contains only about 4 grams of fructose, but a 12-ounce soda contains 50”.

Formed by chemically rearranging cornstarch molecules into fructose, HFCS is processed by the muscles, but not by the liver (unlike glucose, which can be processed by both). Unless you are exercising to excess, the HFCS in a 32-ounce sports drink or a large soft drink yields far more fructose than your muscles can handle. The leftovers, researchers suspect, are assimilated into fat cells. And since fructose does not stimulate insulin and leptin secretion, which cue the central nervous system to register a feeling of fullness, it can also lead to overeating and overdrinking. “HFCS is highly inefficient for athletes,” says triathlete Brendan Brazier, Author of *Thrive*. “It has calories but no nutrients, and the stress of processing it will make your recovery longer”.

Nutrition, Minerals & Disease

Men, do you want to ace your next prostate exam? Eating flaxseed may protect your sex gland from cancer, say researchers at Duke University. When prostate cancer patients ate 3 tablespoons of flaxseed daily for 30 days, their cancer cells grew about 50 percent slower than those of patients who went seedless. Flaxseed is loaded with a form of Omega 3 fatty acid that may inhibit cancer cells from forming, says study author Wendy Demark-Wahnefried, Ph.D.

OXYGEN: The key to intestinal cleansing is Oxygen! Many people today are unknowingly poisoning their bodies into a state of poor health with a steady diet of greasy, fried foods, dead processed foods devoid of life-sustaining nutrition and poor food combinations that can cause foods to ferment and putrefy in the intestines. Over time, an unhealthy diet can put a heavy strain on the body's intestinal system because it's the primary route to eliminate excess metabolic wastes. In many cases, a poor diet can turn the intestines into a toxic waste dump. Oxygen supplements could help this problem. There are several on the market that are very effective. OxyZuma is a product I am familiar with that contains a proprietary ingredient called anaerocidal oxygen, which is derived from calcium peroxide and includes CoQ10 and Vitamin B12.

If you can't find an oxygen supplement, you should do at least 30 minutes of aerobic activity each day, or seek out an oxygen bar to breathe in their oxygen cocktails once a week.

Elmer G. Heinrich

ALKALIZATION: Recently, there have been several network marketing companies selling products to alkalize the body, and thousands of people have fallen for their sales pitch. They even have several doctors and health officials endorsing their products and advising people to alkalize their bodies. Before you attempt this, let me say, hold no hope of alkalizing your body because it won't happen! The pH of the body remains at a constant 7.35 to 7.45 while we are alive. Anything, above or below that, results in death.

The kidneys are one of the major organs in control of the body's pH, reacting to minor fluctuations, either acid or alkaline, by diluting and then dumping the appropriate product in the urine. The majority of waste products of internal metabolism are acid, so the urine is normally acid because the kidneys are doing their job. Ingesting a high acid or alkaline diet does not either acidify or alkalize the body because of the pH regulation by the kidneys.

FATTY ACIDS LOWER LDL: There is more than one reason to drink milk and eat fish. British researchers found that drinking milk reduces your risk of developing metabolic syndrome, a cluster of conditions that doubles your risk of a heart attack. After tracking the diets of 2,375 men for 20 years, scientists determined that those who drank at least 16 ounces of milk a day were 60 percent less likely to develop the syndrome than men who drank less. The effect is due to several factors, including calcium's impact on blood pressure and how fatty acids in can help make LDL particles less likely to damage arteries.

Nutrition, Minerals & Disease

ALZHEIMERS: If you want to preserve your memory, you may be able to keep your brain young by eating a Brazil nut every day. Chinese scientists who examined 2,000 older adults found that people with the least amount of selenium in their diets had the cognitive function of people 10 years older than they were. Selenium spurs antioxidant activity that may protect the brain against stress and DNA damage, says study author Sujuan Gao, Ph.D. Beets and cremini mushrooms are solid sources of selenium, but nothing beats Brazil nuts.

MIGRAINS: Would you like to melt that migraine headache? If yes, move the red pepper to your medicine cabinet. Cayenne pepper can make your headache vanish in short order. Scientists at Seattle's Bastyr University report that capsaicin, the compound that gives chilies their heat, effectively cuts off the neuron-transmitters in the brain that trigger headache pain. Eating spicy foods will not do the trick. Instead, the study authors suggest dissolving $\frac{1}{4}$ teaspoon of cayenne powder in 4 ounces of warm water. Then dip a cotton swab into the spicy solution and apply it to the inside of your nostrils. The initial application and subsequent smell will burn, but by the time the heat subsides, so will the pounding headache.

AVOID PESTICIDES & INSECTICIDES: Various pesticides and insecticides used on most agro crops today. These contribute to serious health problems over a long term, so you should thoroughly wash your fruits and vegetables before to avoid allergies and other toxic problems.

Elmer G. Heinrich

CHOCOLATE: Will you be brushing your teeth with dessert? Probably not! However, “Theobromine”, a compound that makes dark chocolate bitter, may help prevent tooth decay better than fluoride does and in the next two years you will probably see toothpaste on the market containing theobromine. After Tulane University researchers treated molars with both substances, the theobromine coated teeth got harder, making them more resistant to cavities. It also has many more health benefits. According to The American Journal of Clinical Nutrition, theobromine was once used successfully as a treatment for circulatory problems including arteriosclerosis, certain vascular diseases, angina pectoris and hypertension. Theobromine is a water insoluble, crystalline, bitter powder that was first isolated from the seeds of the cacao tree and later synthesized from xanthine. It is predicted to be an up and coming nutrient as research continues. Yes, it is found in all chocolate but sadly, eating chocolate itself won’t provide the theobromine benefit.

SATURATE FAT: Saturated Fat does have some advantages. Just like other nutrients, the fat you eat shouldn’t come from candy bars, cookies and cake. Instead, it should be consumed from whole, natural foods and especially vegetables. Monosaturated fats are the best. Monosaturated fats come from vegetables and can be found to the greatest extent in canola, olive and peanut oils, avocados, olives and any nuts and seeds.

It’s important to remember that calories still matter. Here are some foods that can be very beneficial if eaten correctly.

Nutrition, Minerals & Disease

When it comes to Dairy Fat, you may want to choose milk, cheese and sour cream, based on the flavor you like best, not on the fat content. Cornell University researchers found that people were likely to eat more calories from fat-free foods than from the regular versions.

The fat from a Beef Fat rib eye steak might add calories to your meal, but it also triggers your body to produce CCK, a satiety hormone that helps you feel full longer. You should not eat battered Chicken Fat, but leaving the chicken skin on a roasted chicken breast makes it taste better and it provides half of your daily requirement of selenium, an essential mineral that wards off cancer. Downing a basket of bread slathered with Butter (Fat) isn't healthy, but research shows a pat of butter on your vegetables helps you assimilate their nutrients better. Also, a recent scientific review found that Egg Yolk (Fat) consumption doesn't raise disease risk, and that nutrients in the yolk are actually beneficial to your health. However, many nutritional experts say it is still advisable not to consume more than two or at most, three yolks per week.

WORLD'S HEALTHIEST FOODS: This decade old list of healthy foods has changed somewhat due to a lack of minerals in the soil. The "Food Pyramid" was originally developed for the dairy industry, and it was always based on the richest sources of essential nutrients from what was thought to be needed for optimal health. It was also based on "nutrient density" of the food, which was used to determine the highest nutritional value. That density has subsided greatly! Scientists have a hard time updating and

Elmer G. Heinrich

compiling this list today due to a significant decline in mineral content in the foods we are accustomed to.

It is interesting how statements made years ago went unheralded for so long before they became so powerfully understood! This is the case with two-time Nobel Laureate, Dr. Linus Pauling. He said, "You can trace every sickness, every disease and every ailment, to a mineral deficiency". This statement will become more meaningful each and every year hereafter because of the diminishing minerals in our soils.

Are you one of those people who dream a lot? Dreams are powerful and they help shape your personality! Your brain is the human computerized director of your every action, your thoughts and your sub-conscious ambitions. Your brain allows you to dream, and dreams offer clarity to a confusing world. However, you can't dream if you can't sleep well and you can't sleep well if you are unhealthy. Begin to improve your health today! Seek out the supplements you need and take them every day. Daily supplements are as necessary as eating your daily meals. Get healthy so you can begin to dream powerful dreams. Dream for a healthy life, dream for a healthy family and dream for a healthy world!

PHARMACEUTICALS: The last tidbit in this chapter is very alarming to me. According to the Palm Beach Post on March 11, 2008, traces of pharmaceuticals are showing up in our waterways. A five month Associated Press investigation had determined that trace amounts of many of the pharmaceuticals we take to stay healthy are seeping

Nutrition, Minerals & Disease

into drinking water supplies, and a growing body of research indicates that this could harm humans. People aren't the only ones who consume that water. There is more and more evidence that some animals that live in or drink from streams and lakes are also seriously affected.

Pharmaceuticals in the water are being blamed for severe reproductive problems in many types of fish. The endangered razorback sucker and male fathead minnow have been found with lower sperm counts and damaged sperm. Some walleyes and male carp have become what are called feminized fish, producing egg yolk proteins typically made only by females. Meanwhile, female fish have developed male genital organs. Also, there are skewed sex ratios in some aquatic populations and sexually abnormal bass that produce cells for both sperm and eggs. Experts believe this has occurred because of the positive test findings of an array of pharmaceuticals in drinking water such as analgesics, antibiotics, antidepressants, antihistamines, anti-hypertension drugs and anti-seizure medications.

In several recent studies of soil, fertilized with livestock manure or with the sludge product from waste water treatment plants, American scientists found earthworms had accumulated those same compounds, while vegetables, including corn, lettuce and potatoes had absorbed antibiotics. "These results raise potential human health concerns" the researchers wrote. All of us need to be very concerned about this problem, and it will get worse.

Elmer G. Heinrich

As of now, more than 100 pharmaceuticals have been detected in surface water throughout the world. "It's inescapable" says Sudeep Chandra, an assistant professor at University of Nevada, Reno. "There's enough global information now to confirm these contaminants are affecting organisms and wildlife." And of course, if they affect organisms and wildlife, they have to affect humans.

Chapter 13

WHAT KIND OF MINERALS SHOULD WE CONSUME?

Regardless who you are or how healthy you think you are, you can rest assured you need more minerals! So, what kind of minerals should you look for? I recommend Plant Derived Minerals from MagZuma because they contain five times more minerals than you can purchase from your local super market! These minerals are the purest and most natural food supplement God put on earth and they are the minerals I have referenced throughout this book.

The Organic vegetate is mined from underground or even from high wall mining, utilizing the guidelines, procedures and safety regulations established by State and Federal mining authorities.

The mined vegetate, from which these minerals are leached, looks much like hard peat moss, and is made up of numerous plants that apparently grew in large rainforests during the Cretaceous period. This ancient assemblage of flora is thought to have been an assortment of entire plant communities consisting of as many as 600 or more plants, shrubs and horsetails that may have looked like giant asparagus. Many of these may be extinct today. The quantity

Elmer G. Heinrich

of Organic Vegetate available has been estimated to be nearly a 2,000 year supply, if every person on earth, or to be on earth, was consuming these minerals daily.



The vegetate is placed in large food grade tanks and covered with pure, contaminant free (reverse osmosis) water. It is allowed to sit undisturbed for days, during which time the minute plant minerals leach out of the vegetate and become part of the liquid, in water soluble form. When the specific gravity reaches 40,000 mg per quart, the liquid is drained off and filtered through a series of filters, the

Nutrition, Minerals & Disease

smallest being .02 micron which is similar to pumping the liquid through a book about one inch thick.

The liquid minerals can be concentrated up to 220,000 milligrams per liter. Unfortunately, the pure plant derived liquid minerals do not have a pleasant taste. This can be circumvented by removing the water through spray drying, after which only the pure plant mineral powder (solids) remain. This, "Certified Kosher" powder contains the same 75 minerals that were in the liquid before evaporation.

The full spectrum of 75 Plant Derived Colloidal Minerals are sold to dozens of private label companies, and thousands and even millions of people in approximately 100 countries under several trademarked names. These powdered minerals are utilized in nutritional supplements, most specifically Perfect Plant Minerals, cosmetics and lotions, sport drinks, all sorts of processed foods, drinking water, pet and animal foods and soil mineralizers.

There is no uncertainty among agronomy and soil experts that earth's minerals are going away rapidly! This is alarming and should be a signal of danger to all of us that we face a severe deficiency in nutritional value in our foods of the future. Our great, great grandchildren will have a problem staying healthy or even staying alive if our foods continue to deteriorate nutritionally at the same rate as during the last 100 years. If the mineral depletion of soil continues near its present rate, I doubt if earth grown foods will contain more than seven minerals two or three hundred years from now.

Elmer G. Heinrich

We hear about global warming and nuclear warfare and this concerns all mankind. However, few people are concerned about the depletion of minerals in the soils that produce the plant food we eat. One startling fact we should be aware of is, the more soils become depleted, the sicker we will become. AND, of course the sicker we become the more drugs will be sold, a greater number of hospitals per capita will be needed and health care costs will be astronomical.

We need to convey the need for people to consume more minerals than what can be obtained from today's foods. Most of the world doesn't know much about mineral depletion in soils, so I believe it's the obligation of those who have the knowledge to persuade their friends, neighbors and associates to study the mineral depletion problem. Science isn't on our side yet, but it will be; when we quit being politically supportive of the large, election campaign contributing, drug companies and begin worrying about the health of our future generations.

We cannot save every life with minerals and nutrition, but we need to put forth the effort to steer everyone in the right direction. All of us have been told the story of the Garden of Eden; that pristine paradise created for the use and benefit of mankind. In it, we were told, was everything man needed: just the right temperature, just the right environment and just the right food. Plants grown from soil rich in nutrients did nourish early man with all the nutrients required for optimum health. That is not the case today.

Nutrition, Minerals & Disease

Once you understand the importance of minerals, it doesn't matter what nationality you are or your religion or your age. All that counts is your ability to get a complete spectrum of minerals every day of your life! You must teach your family, and we need to teach the world that those who don't supplement with at least 65 trace minerals, daily, are on a treadmill where, younger than normal, death is eternally waiting.

To be healthy is to live the dream. The dream of a long and pain free life, and I am convinced a full spectrum of plant minerals will do just that. I'm also convinced that once these minerals reach the digestive systems of millions of people, mineral health will forever be measured by entirely new standards; those established by a full spectrum of at least 70, or more, plant derived minerals. These plant derived minerals will make a definitive health statement to those fortunate enough to consume them regularly. As we contemplate what has been said, we must remember these minerals are not formulated in some lab by a chemist; they come naturally from a magnificent formula, by design, from Mother Nature.

As I end this book, I suppose you might wonder why I have referred to Dr. Gary Price Todd throughout. I believe Dr. Todd was the foremost expert on minerals in general, and plant minerals in particular. Dr. Todd was a brilliant M.D. and certified ophthalmologist who wrote the book "Health, Nutrition and Disease" of which millions of copies were sold. He was on the same speaking circuit as Dr. Linus

Elmer G. Heinrich

Pauling for several years, always talking about the importance of minerals. Unfortunately, he became incapacitated and met an untimely death after slipping on wet leaves and hitting his head on a large stone in the yard of his mountainous home in North Carolina. This was a great loss to the nutritional movement and to the determined exposure of plant derived minerals.

Dr. Todd worked with, tested and experimented with the MagZuma Minerals for five years. He was constantly amazed by the improvement he saw from his patients who used the minerals. He was a devout Christian, and he truly believed God had been saving the Organic Vegetate and allowing discovery only when it was most needed. He really felt certain the biblical passage from Genesis 1:29-30 was describing plant mineral Vegetate.

And God said, "Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in which is the fruit of the tree yielding seed; to you it shall be for meat.

And to every beast of the earth, and to every fowl of the air, and to everything that creepeth upon the earth, wherein there is life, I have given every green herb for meat": and it was so.

Genesis 1:29-30

Nutrition, Minerals & Disease

Dr. Todd knew more about minerals and their effect on body chemistry than any one person I ever met in the medical or nutritional field. He was feverishly adept at explaining what these minerals would do for humans and then proving it through many of his patients.

I was present on June 15, 1986, in Tulsa, Oklahoma, when Dr. Todd spoke to 250 people during a health seminar. When referring to The Plant Derived Colloidal Minerals, he said "I don't believe any of you fully understand or know the magnitude or merit and usefulness of this great product".

He went on to say, "I am convinced that if each adult, in Tulsa, would begin consuming 1200 milligrams of this mineral each day, beginning today, by the end of this year, half of the hospitals in this city would be closed!" This was one of the most powerful statements I have ever heard in my life. He said, if you consume these minerals, you will **"Die Young, Late In Life"**.

Elmer G. Heinrich

References;

1. The Complete Book of Minerals for Health: Rodale Press, 1981
2. The Natural Way: February/March 1994
3. Gary Price Todd, M.D., 1994
4. Kurt W. Donsbach, D.C., N.D., Ph.D.
5. Dr. James Ranville, Ph.D., 1994
6. National Institute of Health
7. Jonathan V. Wright, M.D.
8. Dr. R. A. McCance
9. E. M. Widdowson
10. The London Daily Mail, 2006
11. The Food Navigator, 2006
12. Dr. Lachman /Health Keepers, Volume 9, issue 1
13. Avalanche Technology Group, Australia
14. Reuters and Company, UK
15. National Geographic, December, 2006
16. Steve Solomon/Soilhealth.org
17. A. R. Williams, Health magazine
18. U. S. News and World Report, Sept. 2007
19. USA Today.com/Health, 2006-06-20
20. Nutrition Industry Executive, May 2006
21. The Soil and Health Library, 10-2006
22. Hunter Yost, M.D., Internet
23. Herb World News online, Internet-Bioflavonoid
24. National Geographic, June 2007, Page 82, January 08, Page 41
25. Vitamin Retailer magazine, Sept. 2007, pages 12, 28
26. Scientific American, Page 62, November 2007
27. Men's Health magazine, November 2007
28. National Geographic, Adventure, September 2006
29. Natural History, November 1994
30. Direct Selling News, July 2006
31. Peter L. Slavin, M.D., Massachusetts General Hospital
32. David F. Torchiana, M.D., Massachusetts General Hospital
33. Center of Disease Control and Prevention—Internet
34. www.fda.gov
35. www.cdc.gov/heartdisease/facts.htm

Nutrition, Minerals & Disease

36. Lisa Mosing, MS, RD, FADA, June 27, 2006
37. www.lbl.gov/Science-Articles/Archives/pauling-and-vitamin-c.html
38. Harvard School of Public Health: Nutrition source 10-28-07

Elmer G. Heinrich

The Perfect Mineral Cleansing Diet

Eat All You Want Every Day

This Cleansing Diet is Not Just another Diet Fad!

How many “Bioengineered” diets have you tried in your attempt to lose weight and keep it off? Was it two, six, or maybe ten? Some people have tried dozens and they are still overweight. Not only have they spent a large amount of money, they have also suffered through a great deal of anxiety and frustration. Anyone can lose weight if they quit eating or drastically reduce their food intake. However, this sort of action promotes fatigue and increases cravings, which in turn promotes nervousness, tension, and many other abnormalities. Most, if not all of the people who have tried the average diet are still overweight because the weight went back on after they discontinued the diet.

Would you attempt a diet plan that allows you to eat normal foods and to eat as much as you want? Not only will this diet plan allow you to eat as much of these following foods as you like, you may also be improving your health. Many diets burn off excess weight but lack the ability to stimulate the body to properly discard the wastes and toxins created by dieting. This cleansing diet will not only help you

Elmer G. Heinrich

lose weight, it will cleanse your system because of the negative polarity of the plant derived minerals and because the foods eaten require more calories to burn than they release in calorie value. You will notice this diet may also condition your body for weight stabilization in the future.

The catalyst for this diet is a full spectrum of 75 plant derived colloidal minerals that need to be consumed during the dieting period. Take 6 capsules or add 3,600 mgs of 75 plant derived mineral powder to a hot or cold beverage each day of this diet.

Don't be fooled as not all colloidal minerals are created equally. Not all are plant derived and even then most are diluted 50% to 75%. To get the maximum benefit and your money's worth, I suggest you purchase Perfect Plant® Minerals from www.magzuma.com. No other mineral product compares to this full-strength formula made from a 40,000ppm Concentrate of 75 plant-derived minerals. This is one of the best and most complete full-spectrum mineral formula in the world that also provides essential CoQ10 and Vitamin B12. One bottle of Perfect Plant Minerals provides a greater spectrum and more minerals than the average adult consumes in six months of eating fruits and vegetables.

When utilizing the TPM Diet, you may eat as much of the recommended food as you desire so long as you consume 3,600 mgs of the plant minerals daily as outlined. It is important that you follow the plan as closely as possible in order to flush your system of toxins and impurities that circumvent a nutritionally responsible body, and an

Nutrition, Minerals & Disease

enthusiastic and motivated feeling of well being. **Begin your weight reduction now!**

Monday or Day #1: Eat only fruit today – You may eat all the melon and other fruits you want with the exception of bananas. (Do not eat bananas.) Be sure to consume one ounce of the minerals with breakfast, lunch and dinner. Always consume 1,200 mgs of plant minerals 3 times each day of the diet, and you may eat 4 or 5 times daily if you prefer. *Drink plenty of Water

Tuesday or Day #2: Eat only vegetables today – Don't forget your minerals at breakfast, lunch and dinner. Eat your favorite choice of all the fresh, raw or cooked vegetables you want. Stuff yourself!! If you eat cooked vegetables, we prefer they be prepared in a microwave oven, but only in glass, not plastic. If necessary, use salt-free seasoning. Avoid corn, peas and salad dressings other than vinegar and oil. *Drink plenty of Water.

Wednesday or Day #3: Eat fruit and vegetables today – You may stuff yourself, as often as you desire, with your favorite fruit and vegetables with the exception of bananas, peas and corn. Restrict the salt, and if salad dressing is necessary, use only vinegar and oil. Be sure to consume 1,200 mgs of plant minerals 3 times each day of this diet. This will supplement your daily nutrition with 3,600 milligrams of at least 63 trace minerals and 7 major minerals. Today you should consume at least 12 glasses of hot water with lemon throughout Day 3.

Elmer G. Heinrich

Thursday or Day #4: Drink low fat milk and eat only bananas today – during the 4th day, your body will need an extra portion of carbohydrates and proteins which are supplied by bananas, low fat milk or cottage cheese. Eat all you want! Don't forget to take your minerals today. *Drink plenty of Water

Friday or Day #5: Eat tomatoes and lean beef today – Day #5 is slim day. Take your normal 3,600 mgs of minerals and eat as many tomatoes as often as possible while eliminating salt. Eat no more than 12 ounces of lean beef such as roast or un-basted, grilled steak. Beef may be substituted with baked or broiled fish. *Drink plenty of Water

Saturday or Day #6: Eat vegetables and chicken today – Eat as many vegetables as possible, avoiding salt, salad dressing, potatoes, peas and corn. You may actually eat as much chicken breasts as you desire. Chicken may be substituted with baked or broiled fish, or eliminated altogether. Remember to take 1,200 mgs of your minerals 3 times today. *Drink plenty of Water

Sunday or Day #7: Eat only vegetables today – Eat as many fresh, raw or cooked vegetables as often as possible. Don't be afraid to stuff yourself! Yes, don't forget your minerals. *Drink plenty of Water

***Water:** During the TPM Cleansing Diet, you should drink at least 12 and preferably 16 glasses of chlorine free water each day. Hot water with lemon is by far the best if you want excellent results.

Nutrition, Minerals & Disease

Other Beverages: Do not consume any kind of alcohol during your diet. If you must drink coffee, make sure it's decaffeinated and unsweetened. Any tea without sugar will suffice. If fruit or vegetable juices are consumed, make sure they are unsweetened and then only consumed on fruit or vegetable days.

Congratulations! Your 7-Day detox is complete and your body will love you for it. Now you should continue eating a healthy diet, try to exercise 2 to 3 times per week and take a daily dose of 1,200 mgs of full-strength plant derived minerals to maintain the optimal foundation for your health and well-being. Remember that minerals are the key components and building blocks of your blood, hair, skin, bones, and organs. If you are missing any of these vital minerals your body's ability to rejuvenate itself will slow down. If this occurs you may also observe signs of low energy and more rapid aging. So don't forget to take your minerals!

DISCLAIMER: The TPM plant derived mineral diet may be repeated as often as you like. However, please check with your health care provider before beginning any diet. You may experience nausea, bowel movements, weakness and other unusual feelings during the cleansing and detoxification. This is normal and expected but should be short lived until you start to feel revived and refreshed days after you finish the diet.