

Optimal Health

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JANUARY FOCUS:
Over one million women worldwide are diagnosed with breast cancer every year. (pg. 3)

IN THIS ISSUE

- Healthcare Disconnect.....1
- Reducing Healthcare Costs.....2
- The Med Files.....2
- Running On All Cylinders.....3
- FOCUS: Breast Cancer**
- About Breast Cancer.....3
- The Therapeutic Effect Of Amino Acids.....4-5
- Carcinogen Culture.....6
- Plastic: Friend Or Foe?.....7
- Why Does8
- Declining Nutrient Content....8
- Moments.....8
- Living For 'Ever'.....8



Healthcare Disconnect: A National Concern

In healthcare today, there is a disconnect between What We Know and What We Do. As a result, I am concerned that we are failing to meet some of the most important problems in public health.

In this era of evidence-based medicine, physicians are demanding large scale, long-term randomized clinical trials of nutrient interventions as proof of their efficacy and safety in the prevention and treatment of disease. While there are thousands of valid research studies, there are in fact very few such randomized clinical studies and very few are planned for the future. Science prefers simplicity. Research rarely considers mixtures of substances, and their potential to act synergistically - their sum possibly being more therapeutic than each substance individually.

When it comes to natural therapeutics, many medical practitioners will argue that we do not have all the evidence. Therefore, much of conventional medicine assumes that the appropriate response is that no therapeutic nutrient recommendations can be made due to insufficient evidence. From a scientific point of view, they are correct. We never have enough proof in science, and we can always do more research. That's what science is all about; science is inherently uncertain.

But this is irresponsible. Do you wait until you have enough dead bodies before taking action? We have sufficient evidence to justify action. We do not have absolute proof. We have pieces of a jigsaw puzzle, enough pieces

to start to see the whole picture. We ignore it at our peril. We must use our best medical and scientific judgment on the totality of available evidence about natural therapeutics, including basic research and observational studies as well as clinical trials. Why would we want to ignore

the data derived from in-vitro and cell culture experiments, animal models, case reports, population-based studies, and millennia of traditional medical and dietary practices and presume that a single research approach, randomized clinical trials, is the only way we can come to know about the value of nutritional intervention? Holding out for this single "gold standard" is not only too limiting to a full understanding of the impact of nutrient supplementation on chronic disease but holds out the false promise that all necessary trials will be done in our lifetime or even in our grandchildren's lifetimes.

And while

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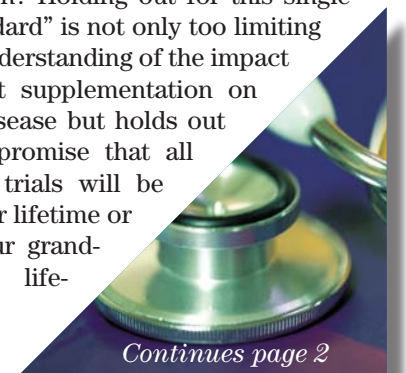


FIRST WORDS

"OPTIMAL HEALTH" is written and produced by staff, associates and friends of Immune System Management Inc.

It is our philosophy that diverse healthcare modalities can work in conjunction with each other as part of a unified team rather than in competition. Such an integrated approach ultimately will lead to safer and more effective healthcare. Optimal Health acts as a gathering place and forum for comments and articles from medical professionals, educators and researchers from all healthcare specialties to the ultimate benefit of both the patient and the healthcare provider. We aim to share up-to-date news, information and diverse views for the growing integrative, alternative and complementary medicine movement, particularly as it applies to cancer and other chronic diseases. Your comments and article contributions are welcome.

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Reducing Healthcare Costs

Ask yourself this question: Where is the profit in prevention and natural therapeutics? Simply, there is none (although there are plenty of savings as shown below). Is the absence of profit why there is so little emphasis in prevention and natural therapeutics?

The dietary supplement industry is continually characterized as some giant behemoth that must be curbed. The N.A. dietary supplement industry was responsible for about \$20 billion in sales last year. For comparison, the sales of just **one** class of drugs, statins for cholesterol, nearly equal the entire annual sales of ALL dietary supplements.

It is also important to keep in mind that most people are failing to meet even the most basic population based Recommended Daily Allowances for nutrients.

Widespread use of natural healthcare products could result in a magnitude of savings to the healthcare system measured in the billions of dollars. Examples of healthcare savings:

- **\$3.26 billion** savings from daily use of a plant sterol that could reduce risk of heart disease by 20%
- **\$6 billion** savings from daily use of omega 3 fatty acids, flaxseed and folic acid to reduce cardiovascular disease
- **\$1 billion** savings from treating allergies with self-care products versus prescriptions \$16 million
- **\$13.9 billion** savings over 5 years, through daily use of a calcium/ vitamin D supplement by people 65 and over
- **\$1.3 billion** savings over 5 years if 17% of women of child-bearing age took folic acid daily to reduce neural tube defects

Source: Dr. Bruce Holub, "Functional Foods and Nutraceuticals: The Pharmacy for Disease Prevention & management Reducing the Risk and Costs of Diseases in Canada" Agriculture and Agri-Food Canada, 2002 and "An Evidence-Based Study of Five Dietary Supplements" The Lewin Group 2002.



(Continued from page 1)

tens of billions of dollars have been spent searching for 'the cure', with few breakthroughs, only a very small portion of this funding has been earmarked for nutritional prevention and therapeutics – even though ultimately this is far and away our best bet for beating cancer.

Unfortunately, there is an enormous disconnect between what we have established in nutrition science and the actual practice of healthcare. There is a gap between what we know and the health state of the nation. We see a population that is carrying a burden of chronic disease that should be readily preventable by applying our current knowledge.

Relying on healthcare providers to educate everyone about nutritional therapeutics is also just too much of a bottleneck. As a key healthcare provider, the physician can and should play a major role in correcting this situation, but there is a regrettable lack of natural medicine education and current nutritional therapy information among many physicians. We face the fundamental problem that our whole healthcare system is geared principally towards repair and recovery as opposed to health promotion and disease

prevention. There is a great deal of discussion regarding preventive medicine, but one need only review how medical care is insured and reimbursed to see how little recognition is granted to the value of health promotion.

The search must be continued for therapeutic measures to relieve and to cure those who have already become victims of cancer. However, it is a disservice to humanity to hold out the hope that the solution will come suddenly. It will come slowly, one step at a time. Meanwhile, as we pour our billions into research and invest all our hopes in vast programs to find cures for established causes of cancer, we are neglecting the golden opportunity to naturally prevent and therapeutically assist even while we seek to cure.

Science has its limits and often cannot give us a crystal clear picture. But this should not paralyze us. Our knowledge of the causes of and cures for cancer may be imperfect, but we have no excuse for delaying application of the nutritional therapeutic and preventive knowledge we now have, both for our own benefit in our later years, and the benefit of our children and grandchildren.

*William O'Neill,
Founder of ISM*

THE MED FILES

Are Pharmaceuticals Safer than Natural Nutraceuticals?

Harvard Medical School in a joint effort with the FDA and the Institute of Medicine, released a report that said: "Unlike drugs, which must be proven safe before they can be sold, the current law allows sale of supplements unless the Food and Drug Administration can prove them harmful." The assumption is that prescription drugs are safer than supplements because they have undergone an FDA approval process.

But a review of data from the US Poison Control Centers indicates vitamin and mineral supplements are linked with few if any deaths over the past few years.

For comparison, just the use of non-steroidal pain relievers like aspirin and ibuprofen cause an estimated 16,000 deaths annually. It has been estimated that side effects from properly used prescription drugs, administered in hospitals, result in over 100,000 deaths annually.

Public Citizen, the Ralph Nader Group, indicates 181 FDA-approved drugs should be recalled because they are not as safe as other drugs or are ineffective. An FDA drug reviewer, Dr. David Graham, had to publish his report on the hidden dangers of Vioxx outside of the country in the British Medical Journal. His job was later threatened for not following FDA protocol even though an estimated 139,000 Americans died prematurely from the use of Vioxx.

The pharmaceutical approval process does not guarantee safety.



Natural Perspectives

Running On All Cylinders

"Natural Perspectives" is a series of articles on natural healthcare.

Failing health is like an untuned motor in a car. The more you ignore it, the more it breaks down.

Unlike the car motor, the human body has one advantage, namely, the body strives to maintain homeostasis or balance. If the body falls into a disease state, it will produce signs and symptoms to say, "I need help", as it tries to correct itself. As a result of this need, the body will display five classifications of symptoms; with each stage of disease causing more degeneration.

1. **ADJUSTMENT** – These symptoms are minor for the body. They usually disappear without intervention. This is the initial effort by the body to keep itself in homeostatic balance. Such symptoms include fever and headaches.
2. **DISCHARGE** – This is the body's attempt to rid itself of useless or noxious matter through secondary elimination channels. These include sneezing, coughing, skin



eruptions or mucous discharge. Most of these symptoms can be easily treated with diet and natural remedies.

3. **ACCUMULATION** – This stage happens if the secondary elimination organs are unable to adequately rid themselves of toxins. This includes cysts, benign growths, excess weight, fatty deposits and stones. At this point, more in-depth attention must be given to the body.
4. **MALFUNCTION** - This occurs when accumulation short-circuits the chemistry of the body's electrical system. As a result, the organs and immune system work less efficiently. Conditions such as diabetes,

early cancer, heart attacks or fibrillations, hepatitis or kidney failure are examples of this stage.

5. **STRUCTURAL CHANGE** – Eventually, the very shape of the organ or other body tissues begin to change shape, sometimes irreversibly. This includes such conditions as arthritis, cirrhosis, cataracts, and enlargement of the heart, ruptured appendix, late cancer and advanced arteriosclerosis.

The first two stages of classification are normal body reactions to pathogens such as virus, bacteria, mold, fungus or chemical toxins. The last three stages represent more stress on the body partly due to nutritional deficiencies.

In each stage, the body can begin recovery if the immune system is strong. One of the better ways to strengthen the immune system is through enhanced nutritional supplementation.

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FOCUS: BREAST CANCER

About Breast Cancer

Over one million women worldwide are diagnosed with breast cancer every year. The highest incidence rates are found in the Netherlands and the US. China has the lowest incidence and mortality rate of the disease.

The National Cancer Institute estimates that 13% of American women will develop breast cancer during their lives.

While cancer is 'primarily a disease of the elderly,' according to Canadian Cancer Statistics, 22% of breast cancer cases occur in women under age 50 and 66% of cases are in women under 70. This represents 4,250 Canadian women under 50



who are diagnosed with breast cancer every year. There are nearly 13,000 diagnosed who are under 70.

Low-fat diets cut breast cancer recurrence

Cutting fat intake to 20 per cent of the daily total calories could reduce the risk of breast cancer recurrence by about 25 per cent, researchers from the US have reported.

The Women's Intervention Nutrition Study (WINS), a randomised, phase-III trial of 2,437 women previously treated for early-stage breast cancer, looked at the effects of a low-fat diet with a target of 15 per cent of the cal-

oric intake from fats, or a normal diet (30 per cent of calories from fat).

Several epidemiological, animal and population-based studies have also associated high-fat diets with higher rates of breast cancer.

Indeed, a study published in Breast Cancer Research (2005, Vol. 7, pp. R833-R843) reported that young women who lost weight reduced their risk of breast cancer by 50 per cent. However, women who gained weight had a 65 per cent higher risk of breast cancer.

Source: R.T. Chlebowski et al., Journal of the National Cancer Institute December 20, 2006, Volume 98, Pages 1767-1776. "Dietary fat reduction and breast cancer outcome: interim efficacy results from the Women's Intervention Nutrition Study (WINS)"

EDITOR'S NOTE: Watch for upcoming articles on "Proper Fats In Your Diet."



FOCUS: BREAST CANCER

THE THERAPEUTIC EFFECT OF AMINO ACIDS IN BREAST CANCER PATIENTS: A Case Series Study

As presented at The 3rd Annual Natural Health Product Research Conference, March 3-5, 2006
Toronto, Ontario; sponsored by the Natural Health Product Research Society of Canada

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ABSTRACT

Background:

1. Changes in plasma amino acid patterns reflect changes in protein metabolism that occur with different pathological conditions.
2. Many cancer symptoms may be the repercussion of a disturbance/irregularity in protein.
3. Breast cancer patients demonstrate imbalances in blood plasma amino acid composition.
4. Over a seven-year period in a clinical setting, hundreds of cancer patients have been administered patient-specific orthomolecular supplementation.

Objectives:

1. Identify blood plasma amino acid patterns in breast cancer patients in comparison to standardized optimal norms.
2. Administer a patient-specific orthomolecular therapeutic.
3. Observe the symptomatic and biochemical impact of the intervention.

Conclusions:

1. Breast cancer symptoms correlate with disturbances in the host's protein metabolism.
2. Normalization of imbalanced plasma amino acid profiles by the administration of patient-specific amino acid formulas can positively influence the clinical management of the cancer.

Methodology:

- Blood plasma concentrations of 28 amino acids were profiled using HPLC in 91 Breast cancer patients.

Study Participants (n=91):

- average of 6.5 years since diagnosis (range 1-15)
- average of 3.0 years on nutritional program (range 1-7)
- total blood assays performed = 309
- average assays/patient = 3.4
- 90% of subjects had undergone chemo, radio &/or surgery

A. To standardize nutritional variables, subjects daily self-administered:

1. multi-macronutrient, vitamin and minerals as well as a variety of non-essential nutrients, such as certain phytochemicals, antioxidants and enzymes.
2. a broad-based breast specific supplement containing various compounds including alpha lipoic acid, betaine, epigallocatechin (green tea extract), lycopene, and other enzymes and B, C and E vitamins
3. essential fatty acids

B. Patient-specific supplementation:

- reflected individual circumstances compared to standard norms
- a daily total of 10 grams of protein as a general source of amino acids along with additional patient-specific supplementation of deficient amino acids, typically; taurine, histidine and occasionally leucine, lysine, thiamin.
- Therapeutic cycle was repeated for each subject while cancer and collateral medical symptoms were qualitatively and quantitatively monitored through multiple case studies.

Chart A:
Participant Age Distribution (n=91)

Age	%age
35-50.....	27.5%
51-55.....	15.4%
56-60.....	15.4%
61-65.....	15.4%
66-70.....	14.3%
71-75.....	7.7%
76-81.....	4.4%
	100.0%

Chart B:
Participant Disease Stage

II	1%
III	44%
IV	55%

Chart C:
Amino Acid Composition of Protein Supplement

Aspartic Acid	10.8%
Threonine.....	7.3%
Serine	4.8%
Glutamic Acid	17.2%
Glycine	1.6%
Alanine.....	4.8%
Valine.....	5.7
Isoleucine	6.6%
Leucine.....	10.2%
Tyrosine.....	2.9%
Phenylalanine.....	2.8%
Histidine.....	1.9%
Lysine	8.0%
Arginine	2.0%
Proline.....	7.1%
Cysteine	2.5%
Methionine.....	2.0%
Tryptophan.....	1.7%



FOCUS: BREAST CANCER

Results:

Post-intervention, the following observations were made:

1. Plasma amino acid profiles demonstrate correlative movement with intervention
2. Subjects demonstrate significant positive response rates, stabilization, and improvement in quality of life without side effect or adverse events
3. There is beneficial management of collateral damage from radiotherapy and chemotherapy

UNITS = NMOL/ML	STARTING	ENDING	DIFFERENCE
Taurine	91.7	111.9	20.2
Isoleucine	56.4	59.4	3.0
Leucine	112.7	130.7	18.0
Lysine	219.2	225.8	6.6
Arginine	82.3	93.0	10.7
Histidine	78.1	84.7	6.6
Glutamine	565.3	592.4	27.1
Alanine	396.9	419.7	22.8
Glycine	287.5	338.2	50.7
Valine	210.2	233.9	23.7

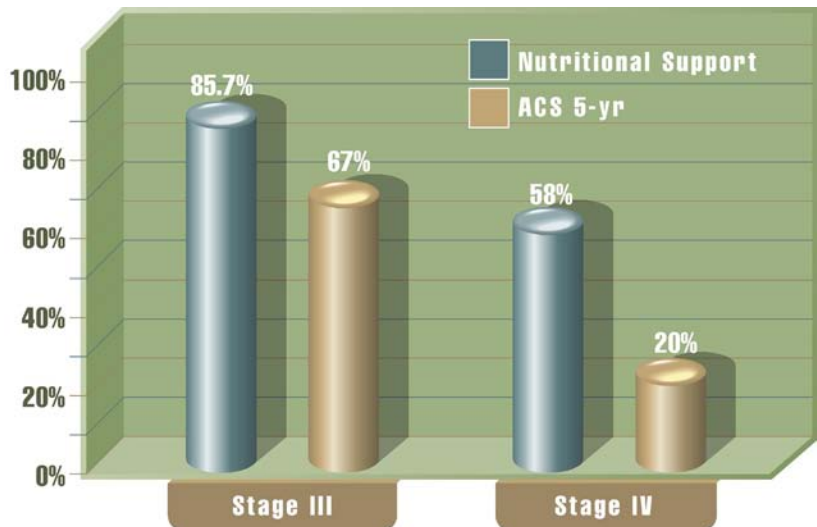
Chart D:
Significant Starting/Ending Amino Acid Changes in Blood Plasma

(maximum difference during assay period)

Quality of Life:

- In all surviving subjects (n = 63 = 69%), participants indicated overall improvement. Many indicated a reduction in the side effects of conventional treatment. Similarly, despite the loss of 31% of the subjects, many survived longer than had been anticipated by their doctors and reported enjoying a higher quality of life.

Chart E:
Survival: During the 7-year period patient survival appears to be ahead of that which might be typically anticipated.



Study Limitations

- (A) Supplementation was self-administered by the participants. Compliance, while encouraged could not be mandated.
- (B) There was no control of the environmental variables for each participant (i.e., eating habits, smoking, level of activity, etc).
- (C) It would be at least 10 to 15 years after the last patient was enrolled before a

possible conclusion could be drawn regarding survival.

- (D) There is difficulty in quantitatively measuring endpoints such as remission, stabilization or immune response.
- (E) There will always be uncertainty surrounding how to assess the relative contribution of each nutritive product.
- (F) Amino acid adequacy is much better

defined in growing and healthy organisms than during illness.

Disclosure:

William O'Neill is the founder and Dr. Ken Lin is the Lab Director for Immune System Management Inc., the corporate entity that has sponsored this research.



CARCINOGEN CULTURE

“What percentage of cancers are environmental?”

If you were asked the question, “What percentage of cancers are environmental?”, what would your answer be – 10%? 30%? 55%? Not even close. The correct response is that breast cancer is at least 75 per cent environmental, and many other cancers are estimated at well over 90 per cent. **1,2**

While all cancer is ‘genetic’, it can happen two ways – either we inherit it, or it is caused by other factors that occur during the course of our lives. Only a small fraction of cancers – about one to 15 percent, depending on the type of cancer – are inherited via defective genes from our parents. The rest result from injuries to our genes during our own lifetime. **6**

Genes can be damaged when routine errors occur during cell division but gene damage is primarily due to ‘sabotage’ by carcinogens. This process can happen through numerous pathways and it is a highly complex process. The human body is equipped with mechanisms to fend off both mistakes in cell reproduction and carcinogens. But after many insults, these protective mechanisms can break down or become overwhelmed. Fortunately, the carcinogenic process is lengthy and complicated, often requiring decades to unfold.

It is also capable of being arrested at many points along the way.

A cell that has been sufficiently damaged takes on fearsome properties – it becomes more sensitive to hormones, it can spread

“But gene damage is primarily due to ‘sabotage’ by carcinogens”

and invade other parts of the body, and it develops a knack for attracting blood vessels to nourish the growing tumor. It is now a cancer and, left alone, it will multiply (grow) until it kills its host. Very few things have the ability to initiate cancer and promote it and make it progress. Things that can do this are called ‘complete carcinogens.’ Radiation is a ‘complete carcinogen’ (including cosmic radiation from outer space, which we cannot avoid) but most carcinogens are not – most carcinogens either initiate cancer or promote it or cause it to progress.

Since the Second World War, about 100,000 novel chemicals have been created in laboratories, then introduced into a huge range of new products and processes – a lot that are a familiar part of our daily lives. Many of these synthetic compounds have made their way into our air, water, food and soil – then into the blood and tissue of humans and other species just about everywhere in the world.

There is also reliable evidence that many of these new chemicals have contributed to the increase in several cancers including non-Hodgkin’s lymphoma, multiple myeloma, childhood leukemias and breast and prostate cancers. **3**

Plastics, pesticides, refrigerants, insulators, paints, dyes, detergents, degreasers, deodorants, cosmetics - these

are just a few of the many synthetic products introduced over the last 60 years. But into our world also means into ourselves. Most North Americans today carry at least 500 measurable chemicals in their body that were never in anyone’s body before the 1920s. **4** A recent ‘body burden’ study in the US showed that a typical middle-aged, non-smoking citizen has an average of 53 known carcinogens in his or her blood and urine. **5**

And how many of these synthetics are carcinogenic? The Citizens’ Guide to Human Cancer, estimates that there are “667 chemicals, substances, mixtures, agents and medical treatments, which have been identified as ‘known to cause human cancer..’ the four main ones are in the manufacture of plastics, pharmaceuticals, pesticides

and dyes.” This list is the tip of an even larger iceberg, since many thousands of other chemicals, in daily use, have not been examined for their cancer causing potential.

Despite this knowledge, we continue to poison our environments at alarming rates. A June 2003 report revealed that the pollution of Canada’s air, water and soil had increased by more than 20 percent since 1995. **4**

The articles that will appear in ‘Carcinogen Culture’ will provide information about many novel human substances and processes linked to cancer, and offer suggestions to help make our lives healthier. The primary purpose of this series is to focus attention on carcinogens we are all involuntarily exposed to in our daily environments. By involuntary, we mean carcinogens we don’t choose. These are not naturally occurring cancer agents over which we may have little control, but synthetic substances in our food and water, in the air we breathe, in consumer products we use, and in chemicals at our workplaces. Our exposure to them is often unknown or ignored, and in many instances, entirely avoidable.

With that background, on to our first article of many more to come...





PLASTIC: FRIEND OR FOE

Liam O'Neill

Recent research has raised questions concerning the safety of so-called food-safe plastics, those plastics allowed by the Government

to come in contact with food. It is feared that under certain conditions some chemicals used to make plastics could leach into the contents of food containers at rates that pose threats to

one's health. These findings are disturbing, in a day and age when plastic has become the dominant packaging choice for manufacturers. You have likely noticed in recent years a dearth of glass bottles on the shelves of your supermarket, and a plethora of plastic ones. You might be surprised to learn that milk cartons also are typically coated with plastic on the inside; traditionally they were coated with wax, and food cans are generally lined with plastic as well.

The plastic type chiefly under fire is a polycarbonate called Lexan, or # 7 plastic, the same plastic used to line cans, make CD cases, headlight covers and Nalgene Bottles. It is also used in dental sealants and epoxy resins. This plastic possesses particularly useful characteristics such as toughness, optical clarity and resistance to heat and odor retention, which render it suitable for numerous packaging and container applications.

Bisphenol A, or BPA, is the chemical component used to construct polycarbonate plastics and is the wayfaring chemical in

question. It has been proven that exposure to acidic or basic beverages, heat, repeated washing, and wear and tear can all lead to the leaching of BPA (Vom Saal

926). Whether the amount leached is substantial enough to cause harm to humans is still unclear, thus scientific debates range from one extreme to the other.

Some suggest avoiding plastic at all

costs for food contact uses, and to seek out glass, ceramic or stainless steel alternatives instead. Others maintain that the amount of plastic migration is so minimal that there is no cause for concern. Supporters of BPA conclude that the "potential

human exposure to BPA is more than 400 times lower than the maximum acceptable reference dose" which is set by the U.S. Environmental Protection Agency. They insist that this minimal level of exposure to BPA poses no known risk

to human health. More to the point, they maintain that BPA is not a carcinogen and that there is no substantial evidence that BPA induces cancer at any level of expo-

sure (Human Health and Safety: Consumer Safety).

Dr. Frederick Vom Saal, professor of Biology at the University of Missouri, argues from the other corner. He conducted an extensive study of the effects of low but constant doses of BPA in rats (lower than the reference dose). His study links BPA with prostate cancer, adverse effects on male reproduction, altered immune system function, and an increased chance for certain cancers; he also notes that other studies have linked BPA levels to Ovarian disease. Vom Saal questions whether the reference dose for BPA is set too high.

Plastics types are differentiated from each other by their recycling codes, ranging from #1 to #7. With so many different types of plastic available, and the inherent practicality of the material, it is natural to

ask which type is the safest to use. As of yet, #2 plastic seems to be the winner, and has not been found to leach any harmful substances into food. ISM uses #2 plastic for all their nutritional supplements. These containers will not leach any chemicals

into your supplements and are suitable for reuse, but should be thoroughly cleaned by hand (we recommend all plastic dishes containers and utensils not be machine washed).

"It has been proven that exposure to acidic or basic beverages, heat, repeated washing, and wear and tear can all lead to the leaching of BPA"



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WHY DOES...

...ISM Place Such Emphasis on Individualized medicine?

A simplistic response would be to quote James L. D'Adamo, N.D., D.N.B., originator of the famed Blood Type Diet, founder and director of the D'Adamo Institute for the Advancement of Natural Therapies, a certified naturopath for 50 years:

"I believed that no two people on the face of the earth were alike; no two people have the same fingerprints, lip prints, or voice prints. No two blades of grass or snowflakes are alike. Because I felt that all people were different from one another, I did not think it was logical that they should eat the same foods. It became clear to me that since each person was housed in a special body with different strengths, weaknesses, and nutritional requirements, the only way to maintain health or cure illness was to accommodate to that particular patient's specific needs"

Imagine if just 10 per cent of cancers in Canada were prevented – this year alone, more than 14,000 people would escape this terrible disease. Now imagine over 50 per cent, which most cancer experts agree is attainable with the knowledge we now have...



LIVING FOR 'EVER'

Are our bodies expendable? Or for that matter, our minds? What about that something that seems to go beyond body and mind; what about spirit, that mysterious indefinable which permeates so much that we hold to be of value? Are these things that we fully expect to use up and discard? If we are living only for the temporary and don't ever expect to achieve more, then we have resigned ourselves to an expendable future where we are prepared to wear out, lose our teeth, flexibility, memory, and much more.

The expectation of becoming ever more is often abandoned in the face of grave illness



Declining Nutrient Content

The physiological importance of minerals and trace elements cannot be overstated. They often act as the catalyst for the other nutrients the body uses to develop and maintain good health. Magnesium for instance is known to be required to be present in the metabolic pathway of 300 enzyme reactions whilst zinc is required in 200 enzyme reactions.

In spite of what Mother taught you about the benefits of eating broccoli, data collected by the federal government shows that the nutritional content of America's vegetables and fruits has declined over the last 50 years – in some cases dramatically. Donald Davis, a biochemist at the University of Texas in Austin, reports that of 13 major nutrients in fruits and vegetables tracked by the U.S. Department of Agriculture over the past 40 years, six showed noticeable declines.

The six declining nutrients included protein, calcium, phosphorus, iron, riboflavin and vitamin C. The declines ranged from 6 percent for protein, 15 percent for iron, 20 percent for vitamin C, and 38 percent for riboflavin. The trend in agriculture toward encouraging crops that grow the fastest and biggest is a reason for the decline. The last five decades have been marked by the "Green Revolution," which has seen a marked increase in U.S. production and yields as farmers have turned to the fastest-growing and greatest-producing plants. The trade-off is that the faster-growing plants aren't able to acquire the nutrients that their slower-growing cousins can, either by synthesis or from the soil. Other changes in agriculture during the last 50 years include the widespread use of pesticides, plant growth regulators, and highly soluble sources of plant nutrients, along with decreased use of humus-containing fertilizers.

But fruits and vegetables are not the only products becoming less nutritious. Dr David Thomas, a primary healthcare practitioner and independent researcher recently made a comparison of government nutritional tables published in the UK in 1940, and again in 2002. For example, the iron content in 15 different varieties of meat had decreased on average by 47 percent, with some products showing a fall as high as 80 per cent, while the iron content of milk had dropped by over 60 per cent. Copper and magnesium, essential for enzyme functioning, also showed losses in meat products. Magnesium levels have typically fallen by 10 per cent while copper levels have fallen by 60 per cent. Processed and manufactured food has resulted in increasingly denatured products, with no micronutrients.

Hence a balanced diet from a wide variety of food sources and supported with targeted supplementation is critical to good health.



Moments

Doctors at a hospital in Washington have gone on strike. Health officials say they will find out what the doctors' demands are as soon as they can get a pharmacist over there to read the picket signs.



End Words

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