

Moringa benefits

Moringa and alkaline body

Here are the benefits of continuous intake of Moringa Tea:

1. Increases the Natural Defenses of the body
2. Provides nourishment to the eyes and the brain.
3. Promotes metabolism with bio-available ingredients
4. Promotes the Cell structure of the body
5. Promotes natural Serum cholesterol.
6. Lowers the appearance of wrinkles and fine lines.
7. Promotes the normal functioning of the liver and the kidney.
8. Beautifies the skin
9. Promotes energy
10. Promotes proper digestion
11. Acts as an antioxidant
12. Takes care of the immune system of the body
13. Promotes healthy circulatory system
14. It is an anti-inflammatory
15. Gives a feeling of general wellness
16. Supports the normal sugar levels of the body.

Moringa leaf boosts your energy in a natural manner, and is a remarkable source of nutrition. This energy promotion does not happen because of sugar, so it lasts for a long time. Individuals ingesting it say that their ulcers are healed, tumors restricted, there are reduction in the arthritis pains and inflammations, controlled blood pressure, the skin problems are restored, and finally they have stronger defenses against diseases.

Another property of the Moringa leaf is its soothing ability, because of which it can lower the blood pressure and promotes good sleep. It can also purify water since it has a detoxifying effect. Also a coagulant agent, Moringa can attach itself to hazardous bacteria and other materials, a process that is surmised to occur in the body too. The happy outcome is more sustained energy without any over-activity, balanced hormone and gland system, controlled blood pressure, and a rested nervous system.

The Bridge to Better Health is through Better Nutrition

You cannot have good health if you do not consume food that is nutritional. How does nutrition, with its vitamins, minerals and other nutritional compounds promote a healthier lifestyle? Professor Mike Golden, who works with United Nations agencies involved in malnutrition, says much of **the problem with nutrition is not the quantity of food, but the quality of food we eat**, with people needing about 40 different nutrients to be healthy.

Organic nutrients include carbohydrates, proteins or amino acids, lipids, and vitamins. Inorganic nutrients include minerals. Water is sometimes included in a listing of nutrients. **Vitamin A** acts as a shield against eye disease, skin disease, heart ailments, diarrhea, and many other ailments. **Vitamin C** fights a host of illnesses including colds and the flu while supporting the cardiovascular system. **Calcium** is necessary in building strong bones and teeth, plus it helps prevent osteoporosis.

The **combination of vitamin D and calcium** brings a remarkable reduction in cancer risk. **Potassium** is essential for the functioning of the brain and nerves, and significantly lowers the risk of a stroke. Finally, **proteins** are necessary for the basic building blocks – **amino acids** – of all of our body cells.

Interaction between nutritional compounds is necessary for health in all ways. Vitamins cannot function without minerals. Without minerals, your body can't function. **Vitamins, minerals, and other nutrients are best absorbed** and used by the body **when they are derived from natural sources** (plants and animals) and are present in naturally occurring complex compounds, **not as separate compounds as formulated in pills**. A new review involving dozens of studies of the antioxidant vitamins A, E and C, confirms this, finding the popular supplements don't help you live longer. As a result, some **researchers now believe antioxidants work only when they are in food**. Alice Lichtenstein, a professor of nutrition science and policy at Tufts University, not involved with the review, says **the study's main message is: "Rely on food to get your nutrients."**

Health begins in the Individual Cell

Wellness exists and disease begins in the individual cell

The human body requires 20 amino acids to grow, build, and maintain cells. Amino acids are the building blocks of protein. Amino acids relate to proteins as letters of the alphabet relate to words.

The proteins in **Moringa TEA gives 18 of the 20 known amino acids**, including all eight amino acids classified as essential. These essential amino acids cannot be synthesized by the body and must come from a person's diet, usually from red meat or dairy products. These foods are not available in many parts of the world and are lacking in the diets of vegetarians, elderly people, and children.

Moringa, with its **90+ verifiable nutrients**, not only **contains all these elements**, but also has significant portions of Vitamins B, B1, B2, B3, D, and E, polyphenols (antioxidants), other minerals, fiber, **and is one of the highest, naturally occurring sources of chlorophyll**.

Inflammation as Potent as Cholesterol

Independent studies that appeared in the **New England Journal of Medicine say inflammation is as potent as cholesterol**. An article in Men's Health (Dec 2004), Bonfires of the Arteries, concurs, reporting that **"inflammation is the slow burn that sparks thousands of heart attack and strokes every year"**.

According to Paul Ridker, MD, a professor of medicine at Harvard Medical School, “Half of all heart attacks and strokes in the United States each year occur among people with essentially normal cholesterol levels”. Dr. Ridker continued, “There is more to heart disease than just lipids. **A heart attack occurs when plaque ruptures inside your vessels. Rupturing is not dependent just on how much plaque is present, but also on the level of inflammation**”.

According to a 2003 report from the University of South Florida, chronic inflammation partly due to an estrogen deficiency may render postmenopausal women vulnerable to degenerative conditions such as **arthritis, osteoporosis, atherosclerosis, and Alzheimer’s disease**.

Low-grade inflammation is also underneath aging and age-related disease, according to dermatologist Nicholas V. Perricone, MD. Perricone says, “The skin is always getting inflamed by sun, weather, pollution, and products because it is our interface between the environment and our body. **So the best ways to decrease disease risk and slow the aging process is to take nutrients with powerful anti-inflammatory activity on a regular basis**. Through a three-tier approach involving diet, supplements, and creams, we can control the rate at which we age”.

Moringa contains 36 anti-inflammatories.

Moringa and Skin Health

Moringa contains a recently discovered cytokinin (plant hormones that induce cell division, growth, and delay aging of cells). Moringa Tea has **named** this unique compound **Moringa YSP**. In recent clinical tests, this naturally occurring substance increased both the growth and yield of agricultural products and, **when added to the diets** of dairy cattle, significantly **increased their milk production and furthermore promoted more rapid cellular regeneration**. Clinical studies have shown Moringa YSP **produces anti-aging properties in humans**. The human skin life cycle is approximately 300 days. Every minute more than 40,000 individual skin cells die. With the use of **Moringa YSP** the human skin cycle was altered by the fact that new skin cells grew faster than the older cells died. This resulted in **an amazing reduction of wrinkles on the face and other parts of the body**.

Zeatin, one of the compounds in Moringa YSP, is a supreme anti-oxidant with powerful anti-aging properties. Zeatin **slows the aging process** by helping the body replace cells at a faster rate than they age, giving a more youthful appearance to the skin. A 2004 study by Senetec PLC shows that Zeatin does not interfere with the genetic control of cellular lifespan, that it **promotes maintenance of small cell size (key determinant of youthful skin)**, and prevents the accumulation of macromolecular damage in the cell. It was also found the Zeatin increases the activity of anti-oxidants to counter act the damage caused by free radicals during cell aging and protects healthy cells from the stress of daily life. **Moringa has several thousand times more Zeatin than any other known plant**.

Dietary and Health Benefits of Moringa

Until recently, only a smattering of research had been completed in India, its bordering countries, and in parts of Africa. Even less research had been done in the West. Then, not long ago, the University of Leicester in England performed a number of studies. The results from these **studies** along with the limited number of studies conducted in the United States **confirm the dietary and health benefits of the Moringa**, with some of the results showing to lower cholesterol, assist the respiratory system and minimize the effects of asthma. **Moringa has no known impurities or adverse reactions when consumed**.

While some of the benefits of the Moringa plant have been tapped by various impoverished civilizations, the plant's nutritional potential was not "discovered" by modern societies until the late nineteenth century. The indigenous knowledge and use of Moringa is referenced in more than 80 countries and known in over 200 local languages, has over 300 references to it in ayurvedic medicine. Even with the known value of this plant, little has been done to introduce its amazing benefits to the world.

Amino Acids

Amino Acids: Can't Live Without Them

What are they and exactly what do they do for us?

You can't live without them. You're unhealthy with too few of them. But in the right amounts they keep your body systems strong.

Amino acids are the building blocks of protein. Just as different letters of the alphabet are used to form different words, so are different amino acids used to build different proteins.

The human body is capable of manufacturing only 12 of the 20 different amino acids needed to build proteins used to grow, repair, and maintain cells. The other eight are known as **essential amino acids** because since the body cannot manufacture them, they **must come from a person's diet**, usually red meat or dairy products.

This is not as simple as it sounds since **frequently the full range of amino acids a body needs to be healthy are lacking in our food.** As one pharmacist noted, "I see a lot of overweight people, but they're all malnourished."

Wellness exists and disease begins in the individual cell

Cells go through regeneration as often as every couple of days. Our skin is totally replaced every 27 days and our skeleton is renewed every two years. Every day billions of cells replace the ones that came before. Every regeneration must be a perfect copy. This process of regeneration is threatened by many things: pollution in the air, water, and soil, radiation from the sun, stress, lifestyle choices, and even the ingredients in our over processed foods. One thing is certain; to be healthy a body needs the tiny biomolecules called amino acids. As small as they are, **amino acids play a big role in a body's healthy nutrition.** In the right bio-available amounts, they fortify the body against the most common health concerns, and have been shown in studies to combat the aging process.

Because **Moringa Tea, is naturally packed with 18 of the 20 amino acids** which are highly absorbable and absolutely crucial to good health. According to clinical pharmacologist, Dr. Monica G. Marcu, "**Amino acids are best absorbed from a complex, naturally occurring food or plant source.**" Ann Hirsch, PhD, Professor of Botany at University of California, Los Angeles, concurs saying, "**One of the things that impresses me most about Moringa is the fact that it has the full complement of the essential amino acids that humans beings need; there are eight of them that we cannot synthesize, so we have to get them from our food.**" Moringa is one of very few plants that contain all eight essential amino acids;

All Eight Essential Amino Acids

Here is a list of the complete range of naturally occurring amino acids found in Moringa and a brief explanation of why our bodies require them:

- **ISOLEUCINE** builds proteins and enzymes and it provides ingredients used to create other essential biochemical components in your body, some of which **promote energy and stimulate the brain to keep you alert.**
- **LEUCINE** works with isoleucine to build proteins and enzymes which **enhance your body's energy and alertness.**
- **LYSINE** insures your body absorbs the right amount of calcium. It also **helps form collagen** used in your bone cartilage and connective tissues. And lysine **aids in the production of antibodies, hormones, and enzymes.** Recent studies have shown lysine **improves the balance of nutrients that reduce viral growth.**
- **METHIONINE** primarily supplies sulfur to your body. It is **known to prevent hair, skin, and nail problems** while **lowering cholesterol levels** as it increases your liver's production of lecithin. Methionine **reduces liver fat and protects the kidneys, which reduces bladder irritation.**
- **PHENYLALANINE** produces the chemical needed to transmit signals between your nerve cells and your brain. It can help **keep you alert, reduce your hunger pains, plus improve your memory and your mood.**
- **THREONINE** is an important part of collagen, elastin, and enamel proteins. Not only does it **assist metabolism,** threonine helps **prevent fat build-up in the liver while boosting your body's digestive and intestinal tracts.**
- **TRYPTOPHAN** supports your immune system, **alleviates insomnia, reduces anxiety, depression, and the symptoms of migraine headaches.** It also is **beneficial in decreasing the risk of artery and heart spasms** as it works with lysine to **reduce cholesterol levels.**
- **VALINE** is important in **promoting a sharp mind, coordinated muscles, and a calm mood.**

Ten Non-Essential Amino Acids

These non-essential amino acids, which can be manufactured by your body with the help of proper nutrition, are also found abundantly in Moringa:

- **ALANINE** is important when it comes to **building energy** in your muscle tissue, brain, and central nervous system. It **strengthens your immune system** by producing antibodies. Alanine also **helps in the healthy metabolism of sugars and organic acids in your body.**
- **ARGININE** has been shown in studies to **cause the release of the growth hormones considered crucial for optimal muscle growth and tissue repair.** It also **improves immune responses to bacteria, viruses, and tumor cells while promoting the healing of your body's wounds.**
- **ASPARTIC ACID** helps rid your body of ammonia created by cellular waste. When the ammonia enters your circulatory system it can act as **a highly toxic substance which can damage your central nervous system.** Recent studies have also shown that aspartic acid may **decrease fatigue and increase endurance.**
- **CYSTINE** functions as an antioxidant and is a powerful aid to the body in **protecting against radiation and pollution.** It can help **slow the aging process, deactivate free radicals, and neutralize toxins.** It

also aids in protein synthesis and presents cellular change. It is necessary for the **formation of new skin cells, which aids in the recovery from burns and surgical operations.**

- **GLUTAMIC ACID** is food for the brain. It **improves mental capacities, helps speed the healing of ulcers, reduces fatigue, and curbs your sugar cravings.**
- **GLYCINE** promotes the release of oxygen required in the cell-making process. It is also important in the manufacturing of hormones responsible for a **strong immune system.**
- **HISTIDINE** is used in the **treatment of rheumatoid arthritis, allergies, ulcers, and anemia.** A lack of histidine may lead to poor hearing.
- **SERINE** is important in storing glucose in the liver and muscles. Its antibodies help **strengthen your body's immune system. Plus, it synthesizes fatty acid sheaths around nerve fibers.**
- **PROLINE** is extremely important for the **proper function of your joints and tendons.** It also helps **maintain and strengthen heart muscles.**
- **TRYROSINE** transmits nerve impulses to your brain. It **helps overcome depression; improves memory; increases mental alertness; plus promotes the healthy functioning of the thyroid, adrenal, and pituitary glands.**

Chlorophyll

Benefits of Chlorophyll **Natural healer**

- **Neutralizes toxins**
- **Flushes toxins from the body**
- **Purifies the liver**
- **Removes heavy metals pollutants**
- **Helps strengthen the immune system**
- **Assists in building red blood cells**
- **Rejuvenates at cellular level**
- **Reduces the ph level in the body.**

Chlorophyll **One of the phytonutrients in Moringa**

Chlorophyll, the green pigment of plants, is an alkalizing compound found in plants that helps offset the acidifying effect of the typical high-fat, high-protein Western diet. Because chlorophyll is not known to be an essential nutrient, a “deficiency” does not exist. People who do not eat plenty of green foods lack chlorophyll in their diets.

“Chlorophyll is involved in the most important chemical reaction on earth, photosynthesis. Our lives would not be possible without it. Chlorophyll is the master chemical at the base of all of our food supply and oxygen production.

Chlorophyll, often referred to as “the blood of plants”, is closely related to hemoglobin – the red pigment of red blood cells responsible for oxygen transport in many animals. The main difference between the two molecules is the metallic element in the center. In human blood hemoglobin consists of iron, while in chlorophyll, the metallic element is magnesium. Some people believe that this resemblance helps the chlorophyll to be better absorbed and used to “build up” blood and fight anemia. Some scientists and nutritionists do not believe it is absorbed internally (to reach the blood) but rather that it may act locally to support the health of the mouth, stomach and intestinal tract.

In either case, there is much evidence that chlorophyll could cure or ease acute infection of the respiratory tract and sinuses, chronic ulcers, and bad breath; it also accelerates wound healing and has been shown in animal studies to nullify the cancer-inducing effects of a variety of environmental (including food) toxins. Other studies have shown that chlorophyll supports liver function and detoxification of the body.

Moringa is one of the very few foods that contain chlorophyll together with so many other nutrients (vitamins, minerals, proteins, beneficial fats), and has a great taste. Dark green vegetables and herbs like Romaine lettuce, spinach, or parsley are excellent sources of chlorophyll, but they do not provide many of the other nutrients of Moringa.”

*Excerpt from
Miracle Tree,
by Monica Marcu, Pharmagologist*

Phytonutrients

**Moringa, is loaded with phytonutrients;
but what are phytonutrients and where are they found?**

Phytonutrients

The term “*phyto*” originated from a Greek word meaning plant. Phytonutrients are certain organic components of plants, and these components are thought to promote human health. Fruits, vegetables, grains, legumes, nuts, and teas are rich sources of phytonutrients. Unlike the traditional nutrients (protein, fat, vitamins, minerals), phytonutrients are not “essential” for life, so some people prefer the term “phytochemical.”

Rui Hai Liu, M.D., Ph.D., Associate Professor of Food Science at Cornell University, has examined antioxidant activity in various fruits. Dr. Liu estimates there are probably thousands of phytonutrients in plant foods, and that each one works with others to perform many protective functions. These include stimulating the immune system, warding off damage from free radicals and putting the brakes on cell growth.

What are the major classes of phytonutrients?

Some of the common classes of phytonutrients include:

Carotenoids

Flavonoids (Polyphenols), including Isoflavones (Phytoestrogens)

Inositol Phosphates (Phytates)

Lignans (Phytoestrogens)

Isothiocyanates and Indoles

Phenols and Cyclic Compounds

Saponins

Sulfides and Thiols

Terpenes

About Carotenoids

Of all the phytonutrients, the most known about are carotenoids, the red, orange, and yellow pigments in fruits and vegetables. The carotenoids most commonly found in vegetables (and in plasma) are listed below along with common sources of these compounds. Fruits and vegetables that are high in carotenoids appear to protect humans against certain cancers, heart disease, and age-related macular degeneration.

Carotenoid Common Food Source

alpha-carotene carrots, moringa

beta-carotene leafy green and yellow vegetables (eg. broccoli, sweet potato, pumpkin, carrots, moringa)

beta-cryptoxanthin citrus, peaches, apricots

lutein leafy greens such as kale, spinach, turnip greens, moringa

lycopene tomato products, pink grapefruit, watermelon, guava *

zeaxanthin eggs, citrus, green vegetables, moringa

About Polyphenols

Polyphenolic compounds are natural components of a wide variety of plants; they are also known as secondary plant metabolites. Food sources rich in polyphenols include onion, apple, tea, red wine, red grapes, grape juice, strawberries, raspberries, blueberries, cranberries, and certain nuts. The average polyphenol/ flavonoid intake in the U.S. has not been determined with precision, in large part, because there is presently no U.S. national food database for these compounds (USDA scientists and their colleagues are in the process of developing a database for foods rich in polyphenols). Scientists at the Food Composition Laboratory, Beltsville Human Nutrition Research Center are currently developing new methodology for the accurate measurement of polyphenols in foods. Polyphenols can be classified as nonflavonoids and flavonoids. The flavonoids quercetin and catechins are the most extensively studied polyphenols relative to absorption and metabolism.

Nonflavonoids Sources

ellagic acid strawberries, blueberries, raspberries coumarins

Flavonoids Sources

anthocyanins Fruits

catechins tea, wine

flavanones citrus

flavones Fruits and vegetables

flavonols Fruits, vegetables, tea, wine

isoflavones soybeans

How do phytonutrients protect against disease?

The following are commonly proposed mechanisms by which phytonutrients may protect human health. More research is needed to firmly establish the mechanisms of action of the various phytochemicals. Phytonutrients may:

Serve as antioxidants

Enhance immune response

Enhance cell-to-cell communication

Alter estrogen metabolism

Convert to vitamin A (beta-carotene is metabolized to vitamin A)

Cause cancer cells to die (apoptosis)

Repair DNA damage caused by smoking and other toxic exposures

Detoxify carcinogens through the activation of the cytochrome P450 and phase II enzyme systems

What is the present status of the art of phytonutrients research?

Population studies have linked fruit and vegetable consumption with lowering the risk for chronic diseases including specific cancers and heart disease. While media and consumer interest in phytonutrients and functional foods is far ahead of established proof that documents the health benefits of these foods or food components for humans, phytonutrient research is experiencing remarkable growth. For now, it appears that an effective strategy for reducing risk of cancer and heart disease is to increase consumption of phytonutrient-rich foods including fruits, vegetables, grains and teas.

Moringa Main Ingredient

Moringa Oleifera, most nutrient rich plant discovered to date

Vitamins, minerals, supreme anti-oxidants, essential amino acids, plus other amazing ingredients

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- **Nutritional powerhouse** Moringa has gram for gram
 - 7 times the vitamin C in oranges
 - 4 times the vitamin A in carrots
 - 4 times the calcium in milk (with no lactose)
 - 3 times the potassium in bananas
 - 2 times the protein in yogurt
- Moringa YSP (naturally occurring nutrient compound)
 - **Found only in Moringa**
 - The only 100% natural metabolic trigger
 - Most powerful of all anti-oxidants
 - Promotes healthy veins and arteries
 - Anti-inflammatory agents
 - Anti-aging compounds.
 - Collagen (helps maintain healthy skin)
- **Chlorophyll**
 - More found in Moringa than any other plant
 - 4 times the amount in wheat grass
 - Natural healer
 - Rejuvenates the body at the cellular level
 - Strengthens the immune system
 - Naturally cleanses the body of toxins
 - reduces the ph level of the body

Vitamins and Minerals

Vitamins and Minerals

**Perform many vital functions for the body;
but what are they, and what exactly do they do for us?**

What are vitamins and minerals?

Vitamins and minerals perform many vital functions for the body and can lower your risk for many chronic diseases and cancers. These substances are **essential to normal metabolism, growth and development, and regulation of the functioning of your body's cells and tissues.** Vitamins and minerals are obtained from food, except for vitamin D and vitamin K, which the body can synthesize. Minerals are simple chemical elements and are an essential part of your body's functioning. Minerals cannot be synthesized by your body and must be obtained through the food you eat.

What is a vitamin or mineral deficiency?

A deficiency of a vitamin or mineral can result if you are not getting enough of it in your diet, your ordinary nutritional needs increase, or you are unable to absorb the nutrients from the food you eat. A deficiency **or lack of a vitamin or mineral in your diet can lead to a nutritional deficiency disease**, such as rickets. There are complex interactions among vitamins and minerals, and a deficiency or excess of one affects others.

What is the difference between a water soluble vitamin and a fat soluble vitamin?

A water soluble vitamin (vitamin B and C) can not be stored by the body and must be replenished every day. A vitamin that is stored by the body is known as a fat soluble (vitamin A, D, E, and K). Over time fat soluble vitamins can build up to toxic levels.

What are the Daily Recommended Allowances (RDAs)?

Two agencies, the National Academy of Sciences and the U.S. Food and Drug Administration, have both issued standards for meeting the nutritional needs of men, women, and children. Expressed as RDA, they generally indicate **the amount** of a particular nutrient that is **needed to avoid nutritional diseases**.

What are antioxidant vitamins and why are they important?

Our bodies are actually battlegrounds for infection and diseases. **Normal body functions**, such as breathing or physical activity, and other lifestyle habits, such as smoking, **produce substances called free radicals that attack healthy cells. When these healthy cells are weakened, they are more susceptible to cardiovascular disease and certain types of cancers.** Antioxidants, such as vitamins C and E, and carotenoids, which include beta-carotene and lutein, help protect healthy cells from damage caused by free radicals.

We have vitamins A, B, C, D, E, AND K.
Whatever happened to vitamins F-J?
Vitamins are named in the order of discovery. Later research found vitamins F-J closely related to other vitamins, mainly the B complex group, and were re-assigned.

A Partial List of the Vitamins and Minerals in Moringa:

Vitamins
As defined by A.D.A.M. Inc.

- **Vitamin A (Beta carotene)**
- **Definition:** Vitamin A is a fat-soluble vitamin.
- **Function:** Vitamin A (retinol) essential in the formation and maintenance of healthy teeth, skeletal and soft tissue, mucous membranes, and skin. It may also be required for reproduction and lactation. It is also known as retinol because it generates the pigments in the retina. Vitamin A promotes good vision, especially in dim light. When Vitamin A is manufactured by plants, it is present in the form of a precursor called beta carotene. Beta carotene is an anti-oxidant—a substance that protects the body against disease and premature aging by fighting the cell-damaging chemicals called free radicals. Vegetable sources of beta-carotene are fat and cholesterol free (not so with vitamin A from dairy and meat products). The body regulates the conversion of beta-carotene to Vitamin A based on the body's needs. The more intense the color of a fruit or vegetable, the higher the beta-carotene content.
Deficiency: Vitamin A deficiency can increase the susceptibility to infectious diseases, as well as cause vision problems.
- **Vitamin B1 (Thiamine)**
- **Definition:** Vitamin B1, one of the B vitamins, a group of water-soluble vitamins that participate in many of the chemical reactions in the body. Thiamine is important in the production of energy.
- **Function:** Thiamine helps the body cells convert carbohydrates into energy. It is also essential for the functioning of the heart, muscles, and nervous system.
Deficiency: A deficiency of thiamine can cause weakness, fatigue, psychosis, and nerve damage.
- **Vitamin B2 (Riboflavin)**
- **Definition:** A water-soluble vitamin required by the body for health, growth and reproduction; one of the B-complex vitamins.

- **Function:** Riboflavin works with the other B vitamins. It is important for body growth and red cell production, and helps in releasing energy from carbohydrates. Because riboflavin is destroyed by exposure to light, foods with riboflavin should not be stored in glass containers that are exposed to light.
Deficiency: Deficiency symptoms include dry and cracked skin and eyes that are sensitive to bright light.
- **Vitamin B3 (Niacin)** **Definition:** Niacin (vitamin B3)
is a water-soluble vitamin required by the body for health, growth and reproduction; part of the vitamin B complex.
Function: Niacin assists in the functioning of the digestive system, skin, and nerves. It is also important for the conversion of food to energy.
Deficiency: A deficiency of niacin causes pellagra. The symptoms include inflamed skin, digestive problems, and mental impairment.
- **Vitamin B6 (Pyridoxine)**
- **Definition:** A water-soluble vitamin, part of the B complex.
- **Function:** Vitamin B6 plays a role in the synthesis of antibodies in the immune system. It helps maintain normal nerve function and acts in the formation of red blood cells. It is also required for the chemical reactions of proteins. The higher the protein intake, the more need for vitamin B6.
Deficiency: Deficiency of this vitamin is not common in the United States.
- Vitamin B7 (Biotin, formerly vitamin H)
Definition: Biotin, a water-soluble vitamin, helps the body break down and use food. Biotin is part of the B vitamin complex.
Function: Biotin is essential for the metabolism of proteins and carbohydrates (like the other B vitamins), and in the synthesis of hormones and cholesterol.
- **Deficiency:** There is no known dietary deficiency of Biotin.
- **Vitamin C (Ascorbic acid)**
- **Definition:** A water-soluble vitamin that is necessary for normal growth and development.
Function: Vitamin C promotes healthy teeth and gums, helps in the absorption of iron, aids in the maintenance of normal connective tissue, and promotes wound healing. It also helps the body's immune system.
Deficiency: A deficiency of vitamin C causes the disease scurvy, which is rare in the U.S.
- **Vitamin D (Cholecalciferol)** **Definition:** Vitamin D is a fat-
soluble vitamin that is used in the absorption of calcium.
Function: Vitamin D promotes the body's absorption of calcium, which is essential for the normal development of healthy teeth and bones. It also helps maintain adequate blood levels of the minerals calcium and phosphorus. Vitamin D is also known as the "sunshine vitamin" because the body manufactures the vitamin after being exposed to sunshine. Ten to 15 minutes of sunshine 3 times weekly is adequate to produce the body's requirement of vitamin D.
- **Deficiency:** A vitamin D deficiency leads to soft bones (rickets).
- **Vitamin E (Tocopherol)** **Definition:** Vitamin E is a fat-
soluble vitamin; it is one of the vitamins that act as antioxidants.
Function: Vitamin E is an antioxidant that protects body tissue from the damage of oxidation. It is

important in the formation of red blood cells and the use of vitamin K.

Deficiency: There is no known dietary deficiency of vitamin E.

- **Vitamin K**

- **Definition:** Vitamin K is a fat-soluble vitamin that plays an important role in blood clotting.

Function: Vitamin K is known as the clotting vitamin, because without it blood would not clot. Some studies indicate that it helps in maintaining strong bones in the elderly. Vitamin K is also made by the bacteria that line the gastrointestinal tract.

Deficiency: Vitamin K deficiency is very rare. It occurs when there is an inability to absorb the vitamin from the intestinal tract, and can also occur after prolonged treatment with oral antibiotics.

Minerals

As defined by A.D.A.M. Inc.

- **Calcium in Diet**

- **Definition:** The most plentiful mineral found in the human body; calcium accounts for 1.5% to 2% of an adult's total body weight. The teeth and the bones contain the majority of the body's calcium (about 99%). Calcium in these tissues is concentrated in the form of calcium phosphate salts. Body tissues, blood, and other body fluids contain the remaining calcium (1%).

Function: Calcium is one of the most important minerals for the growth, maintenance, and reproduction of the human body. The bones in the human body incorporate calcium into their structure. Bones, like other tissues in the body, are continually being reabsorbed and re-formed. Teeth are also calcified tissues. They incorporate calcium in their structure in a manner similar to bones. Calcium is essential for the formation of and maintenance of healthy teeth. Calcium has other functions in addition to maintaining healthy teeth and bones. Blood coagulation, transmission of nerve impulses, muscle contraction and relaxation, normal heart beat, stimulation of hormone secretion, activation of enzyme reactions, as well as other functions, all require small amounts of calcium.

Deficiency: Low intakes of calcium for prolonged periods of time can lead to calcium deficiency. This condition leads to osteoporosis, loss of the jaw bone (and secondary oral health problems), hypertension, and other disorders.

- **Copper in Diet**

- **Definition:** An essential trace mineral that is present in all of the body tissues.

Function: Copper, along with iron, helps in the formation of red blood cells. It also helps in keeping the blood vessels, nerves, immune system, and bones healthy.

Deficiency: Dietary deficiency of copper is not very common in humans.

- **Iron in Diet**

- **Definition:** Iron is an important trace mineral that is found in every cell of the body, usually combined with protein.

Function: The mineral iron is an essential nutrient for humans because it is part of blood cells, which carry oxygen to all body cells. About 30% of the iron in our bodies is in storage to be readily available to replace lost iron. Iron is essential to the formation of hemoglobin and myoglobin, which carry the oxygen in the blood and the muscle. It also makes up part of many proteins and enzymes in the body.

Deficiency: Iron deficiency is the most common nutritional deficiency worldwide. Although full-blown anemia is rarely evident, partial deficiency is widespread. Initial symptoms of iron deficiency anemia are fatigue and lack of energy. Dizziness, weight loss, and lowered immunity can also occur. Other symptoms of decreased iron stores include shortness of breath, irritability, and/or lethargy.

- **Potassium in Diet**

- **Definition:** Potassium is a mineral that is involved in both electrical and cellular function in the body. (In the body it is classified as an electrolyte).
Function: Potassium is a very important mineral to the human body. It assists in the regulation of the acid-base and water balance in the blood and the body tissues. It assists in protein synthesis from amino acids and in carbohydrate metabolism. It is necessary for the building of muscle and for normal body growth.
Deficiency: A deficiency of potassium can occur in people with chronic disease or as a result of the aging process. The most common symptom of potassium depletion is fatigue. Other common problems associated with reduced potassium levels are hypertension, congestive heart failure, cardiac arrhythmias, and depression. Other symptoms include slow reflexes, muscle weakness, and dry skin. A variety of conditions can cause the loss of potassium from the body. The most common of these conditions are vomiting, diarrhea, and other gastrointestinal problems.

- Magnesium
- **Definition:** Magnesium is an essential mineral for human nutrition.
- **Function:** Magnesium in the body serves several important metabolic functions. It plays a role in the production and transport of energy. It is also important for the contraction and relaxation of muscles. Magnesium is involved in the synthesis of protein, and it assists in the functioning of certain enzymes in the body. Toxic symptoms from increased magnesium intake are not common because the body eliminates excess amounts. Magnesium excess almost always occurs only when magnesium is supplemented as a medication.
- **Deficiency:** Deficiency symptoms have three categories:
 - Early symptoms include irritability, anorexia, fatigue, insomnia, and muscle twitching. Other symptoms include poor memory, apathy, confusion, and reduced ability to learn.
 - Moderate deficiency symptoms consist of rapid heartbeat and other cardiovascular changes.
 - Severe deficiency of magnesium could lead to tingling, numbness, sustained contraction of the muscles, and hallucinations and delirium.

- Manganese
- **Definition:** Manganese is required by the body for normal growth and health.
- **Function:** Manganese helps your body break down fats, carbohydrates, and proteins. It does so as part of several enzymes.
- **Deficiency:** Manganese deficiency has not been reported in humans.
- Phosphorous
Definition: Phosphorus is a mineral that makes up 1% of the total body weight. It is present in every cell of the body, with 85% of the body's phosphorus being found in the bones and teeth.
Function: The main function of phosphorus is in the formation of bones and teeth. It plays an important role in the body's utilization of carbohydrates and fats and in the synthesis of protein for the growth, maintenance, and repair of cells and tissues. It is also crucial for the production of ATP, a molecule the body uses to store energy. Phosphorus works with the B vitamins. It also assists in the contraction of muscles, in the functioning of kidneys, in maintaining the regularity of the heartbeat, and in nerve conduction.
Deficiency: There is generally no deficiency of phosphorus because it is so readily available in the food supply. Excessively high levels of phosphorus in the blood, although rare, can combine with calcium to

form deposits in soft tissues such as muscle. High levels of phosphorus in blood only occur in people with severe kidney disease or severe dysfunction of their calcium regulation.

- Zinc

Definition: Zinc is an important trace mineral. This element is second only to iron in its concentration in the body.

Function: Zinc plays an important role in the proper functioning of the immune system in the body. It is required for the enzyme activities necessary for cell division, cell growth, and wound healing. It plays a role in the acuity of the senses of smell and taste. Zinc is also involved in the metabolism of carbohydrates. Low-protein diets and vegetarian diets tend to be low in zinc.

Deficiency: Symptoms associated with zinc deficiency include the following:

- Slow growth
- Poor appetite
- Decrease in wound healing
- Loss of hair
- Impaired sense of taste
- Impaired sense of smell
- Hypogonadism in males
- More frequent infections
- Inability or difficulty in adapting vision to the dark
- Various skin lesions

Fatty Acids – Omega Oils

Not all fats are created equal. Research has shown **it is the type of fat** not the amount of fat **we consume that is important**. There are four basic types of fat that the body takes from food: cholesterol, saturated fat, monounsaturated fat and polyunsaturated essential fatty acids. The polyunsaturated essential fatty acids are the one's the body uses to build itself. A particularly bad fifth group of fats are the man-made hydrogenated trans-fats that are found in just about all processed foods containing shortening or oil.

Animal sources contain mostly saturated fats. Many plant derived fats are unsaturated fats. Saturated fats increase the occurrence of among other things, chronic diseases, inflammation, heart problems and strokes. **Unsaturated fats** on the other hand **not only nourish the body, they protect against many diseases and fight inflammation and infections**.

Fat Groups:

- **Saturated fats:** Solid at room temperature. Found in meat, dairy products, and certain vegetable oils, such as palm and coconut oils.
- **Trans fats:** Solid at room temperature. Processed fats not found in nature that are used to make shelf-stable shortenings such as Crisco, fast-food French fries, many types of margarine, and commercial baked goods such as doughnuts and cookies.
- **Monounsaturated fats:** Liquid at room temperature. Includes olive oil, peanut oil, and canola oil. Also found in peanuts, cashews, many other nuts, and avocados.
- **Polyunsaturated fats:** Liquid at room temperature. Includes plant oils, such as corn and soybean. Also found in seeds, legumes, whole grains, and fatty fish, such as salmon and tuna. Omega-3 fatty acids and omega-6 fatty

acids are polyunsaturated fats. The former is found in oily cold-water fish, walnuts, flaxseed, wheat germ, and canola oil; the latter in corn, safflower, sunflower, and soybean oil.

What are Fatty Acids?

Fats and oils in foods are made up of basic units called fatty acids. The oils and fats that people eat are nearly always mixtures of 3 types of fatty acids— monounsaturated, polyunsaturated, or saturated fats, with one type predominating. Two specific types of polyunsaturated fatty acids, linoleic (omega 6) and alpha-linolenic (omega 3), are called essential fatty acids (EFAs). They must be present in the diet in adequate amounts because they are literally essential to life and health. Seven critical functions of essential fats are:

- Developing and maintaining gray matter in the brain
- Achieving optimal growth
- Maintaining the integrity of cell membranes
- Keeping skin healthy
- Proper visual development
- Maintaining a healthy nervous system
- Regulation of blood pressure, blood clotting and the body's inflammatory response

Omega-9, Oleic Acid

One of the best types of fats is oleic acid (Omega-9). Omega 9, a monounsaturated oil (MUFA), is not an essential fatty acid as the body can synthesize it from other nutritional compounds that are consumed. It occurs naturally in greater quantities than any other fatty acid. Oleic acid is the main fat in olive oil. Olive oil is well known for its health benefits, with science clearly linking oleic acid to lower cardiovascular risk, lower blood levels of cholesterol and lower levels of blood glucose. Olive oil is about 75% oleic acid, **Moringa Oleifera follows closely having about 73% oleic acid.** (Oleifera is a Latin term meaning oil containing). Oleic acid comprises about 55% in Canola oil and about 20% in sunflower oil. Studies suggest that in countries with higher obesity prevalence, it is the shift from MUFA (such as olive oil) to PUFA (vegetable oils) that particularly appears to be associated with the risk of obesity.

EFAs

EFAs belong to the class of fatty acids called polyunsaturated fatty acids (PUFAs). The unsaturated fats, Omega 3 (alpha-linolenic acid) and Omega 6, (linoleic acid) are considered **Essential Fatty Acids** because they are needed to maintain life. Like essential amino acids, they cannot be manufactured by the body and so must come from the food we eat. In addition to providing energy, Essential Fatty Acids are part of the structure of every cell in our bodies. Together, omega-3 and omega-6 fatty acids play a crucial role in brain function as well as normal growth and development.

Omega 6, Linoleic Acid

With respect to fatty acids – balance appears to be important. Human beings evolved on a diet with a ratio of omega-6 to omega-3 essential fatty acids (EFAs) of approximately 1:1. Western diets are woefully deficient in omega-3 fatty acids, and have excessive amounts of omega-6 fatty acids with the ratio being 15:1-17:1.

In today's world, cereals – mainly wheat, corn and rice – predominate, leading to a relative deficiency of omega 3 fats compared with omega 6 fats. This imbalance is worsened by the consumption of meat from intensively reared animals fed grain relatively rich in omega 6 fats rather than wild plants with a high omega 3 fat content.

Even farmed fish contain lower amounts of omega 3 than those living wild. The wide use of polyunsaturated oils (linoleic acid is the major polyunsaturated fatty acid in vegetable oils) also exacerbates the ratio imbalance.

Research shows the proper ratio of Omega-6 to Omega-3 fatty acids is a key factor in preventing many of the modern chronic diseases including coronary heart disease, cardiac arrhythmias, high blood pressure, some cancers, macular denegeration, inflammatory and auto-immune disorders. Bringing the fats into proper proportion may actually relieve those conditions, as the right balance of omega-6 to omega-3 fatty acids enables the body to reduce inflammation, lower blood pressure, prevent irregular heart beats and promote healthy blood flow. For a healthy balance, it is recommended that the ratio be less than 5:1.

Omega 3, Alpha-linolenic Acid

Over 2,000 scientific studies have demonstrated the wide range of problems associated with Omega-3 deficiencies. **The American diet is almost devoid of Omega 3's**, as there are few sources of Omega 3 except for certain types of fish. In fact, researchers believe that about **60%** of Americans are deficient in Omega-3 fatty acids, and about **20%** have so little that test methods cannot even detect any in their blood.

Just as muscles are made of protein and bones are made of calcium, the human brain is more than 60% structural fat. But it is not just any fat that our brains are made of. It has to be certain types of fats, and we no longer eat these types of fats like we used to. Instead, we eat man-made trans-fats and excessive amounts of saturated fats and vegetable oils, all of which interfere with our body's attempt to utilize the small amount of Omega-3 fats that it gets.

A Purdue University study has showed that children low in Omega-3 essential fatty acids are significantly more likely to be hyperactive, have learning disorders, and to display behavioral problems. According to Dr. Joseph Mercola, Omega-3 deficiencies have also been tied to many conditions, including the following: allergies, arthritis, cancer, eczema, diabetes, depression, dyslexia, eczema, heart diseases, inflammatory diseases, memory problems, and violence.

the following is an excerpt from the article

The Dark Side of Good Fats

By Dean Ornish, M.D.

....."Omega-3 fatty acids are found in cold-water fish (mackerel, herring, salmon, trout, sardines and albacore tuna), as well as oils from canola, soybean, flaxseed and walnuts. (In contrast, olive oil does not contain much of the omega-3 fatty acids.) In smaller concentrations, they are present in dark green leafy vegetables like kale and collard greens.

Omega-3 fatty acids may reduce triglycerides (a form of fat), lower blood pressure and decrease inflammation (thereby reducing arthritis and other inflammatory illnesses), as well as autoimmune diseases such as lupus. They can help to prevent excessive blood clots from forming which, in turn, may decrease the risk of a heart attack and stroke. They may help prevent irregular heartbeats.

When given to pregnant women and lactating mothers, omega-3 fatty acids (which are an important part of your brain) may actually increase your baby's IQ by six points or more and may reduce the incidence of allergic disease in the offspring. They also may reduce depression and may help prevent dementia. Some studies suggest that the omega-3 fatty acids may even reduce the risk of prostate cancer, breast cancer, and colon cancer.

The omega-3 fatty acids stabilize the rhythm of your heart by effectively removing hyper-excitable cells (cells that are only barely receiving enough blood flow) from functioning, thereby reducing the likelihood of irregular heartbeats and sudden cardiac death. For most people, this is a very good thing and accounts for most of the large reduction in the likelihood of sudden cardiac death.

However, a recent British Medical Journal analysis of nearly 100 studies of omega-3 fatty acids found mixed benefits. In most people they were beneficial, but not so for everyone. For those with congestive heart failure, chronic recurrent angina or evidence that the heart is receiving insufficient blood flow, it may be prudent to avoid taking omega-3 fatty acids or eating foods that contain them, and they should talk to their doctor.”

Diet and Nutrition

Under-nourishment and over-eating both have harmful consequences on the health of the individual”

Ditta B. Sambou, Belfort State Clinic

Supplementation

No longer a matter of Choice

Diet and nutrition go hand in hand. A better diet leads to better nutrition, and **one important component of better nutrition is supplementation.** Why? The body doesn't absorb every nutrient consumed, making it nearly impossible to get all the right nutrients all of the time. What's the best supplement? The one that works. Who needs to supplement their diet? Everyone! **Research has shown that when supplement use increases, the use of prescription drugs goes down.** According to the **American Medical Association, supplementation is no longer a matter of choice, as people who do not supplement their diets are at higher risk for degenerative diseases;** and **Dr. John Klippel, president of the Arthritis Foundation, stated “There are lots of choices that people need to make and supplements are one of them.**

Without the proper nutrients needed to do their job, our bodies are fighting a losing battle to keep us healthy, the result being sickness and disease. A hundred years ago people died primarily from infectious diseases such as influenza, pneumonia, and diphtheria. Today the **leading causes of death and disability are heart disease, cancer, osteoporosis, arthritis, and other degenerative diseases.** In large part this change is **due to how we eat** (fast foods, over-processed foods), **what we eat** (partially hydrogenated oils, high fructose corn syrup), and **the quality of what we eat.** The Center for Disease Control reports that **5 out of every 10 deaths are due to poor diet.** The CDC says that translates to **almost 400,000 Americans dying every year due to obesity from poor nutrition or lack of exercise.**

The publication *What We Eat in America: NHANES 2001-2002*, based on a federal dietary survey of almost 9,000 people, shows that almost a third of us are getting too little Vitamin C, almost half too little vitamin A, more than half too little magnesium, 92 to 97% too little fiber and potassium, and 93% too little vitamin E. Moringa is high in all of these vitamins.

A 1991 study done by the British, and a more recent one done by the University of Texas based on USDA data, show that the **food grown today is less nutritious than that grown 60 years ago,** due to soil depletion, fertilizers, and high yield varieties. While fertilizers cause plants to grow bigger and faster, they do nothing to increase the plant's ability to absorb nutrients at a faster rate. Research has also found that plants have a fixed amount of energy and varieties with high yields may not have the energy to absorb enough nutrients from the soil to fully supply that high yield. These studies show that onions have 75% less calcium, potatoes 35% less calcium and 45% less iron, spinach 60% less iron, cabbage 71% less iron, and carrots 75% less magnesium than they did in 1940.

10% Absorption rate on most Vitamins

As a result of growing less nutritious foods, most of the food we eat today is fortified with calcium and vitamins. Unfortunately most of the calcium used is not the type that is readily absorbed by our bodies, nor do our bodies recognize most of the synthetic vitamins that are added. Dr. Barnet G. Meltzer, M.D., a well known authority in the field of Preventative Medicine and Clinical Nutrition, says **liquid supplementation is superior to tablets, capsules, and powders**; one reason being that the binders used to make pills are not readily broken down by the body's digestive system. According to Dr. Meltzer, while vitamin pills have only about 10% absorption (15-19% absorption for chelated vitamins), **liquid supplementation has minimum of 85% nutritional absorption**. Dr. Monica Marcu, Pharmacologist, concurs, saying liquid nutrition is better used by the body than solid nutrition.

Vitamins and other nutrients are best absorbed and used by the body when they are derived from natural sources (plants and animals) and are present in naturally occurring complex compounds, not as separate compounds as formulated in pills.

According to R. Bianchi, a globally recognized food and beverage formulator, out of the approximately 35,000 food products in the grocery store only 1200 to 1500 of the food products have nutrients we can fully absorb. Moringa ysp Tea is 100% bio-available. That means **100% of the nutrients in Moringa Tea are absorbed**. The nutrients are not processed through the digestive system, but rather are absorbed directly into the blood stream, a plus for young children, the elderly, or anyone else whose digestive system may be compromised. Moringa Tea has been formulated to be taken on an empty stomach, with the nutrients being absorbed in about 20 minutes. If taken 20-30 minutes before eating, Moringa Tea will help the body better absorb the nutrients contained within the food. Moringa Tea contains no stimulants, artificial ingredients or preservatives. A small amount of cane sugar (about 1/5 of a teaspoon) has been added to aid in osmotic absorption of the nutrients and enhance the natural flavor.

Diet and Cancer

The CDC reports that **35% of cancer deaths result from dietary risk factors**. A study completed in 2006, by the British arm of EPIC (European Prospective Investigation into Cancer and Nutrition), which compared the diets of 500,000 people in 10 countries to discover how diet is linked to cancer, showed that **diet is second only to tobacco, as a leading cause of cancer**, and, along with alcohol, **is responsible for nearly a third of cancer cases in developed countries**. It also revealed that diabetics have three times the normal risk of developing colorectal cancer, which kills more than 490,000 people worldwide each year.

Getting enough vitamin D and calcium brings a remarkable reduction in cancer risk, a recent 4-year study at Creighton University found. Women who took the combo reduced their overall risk by up to 77%. According to lead researcher Joan Lappe, PhD, RN, a professor of nursing and medicine, "Vitamin D enhances your body's immune response — which is the first line of defense against cancer".

The ph Effect

Everything we eat affects the ph of our bodies, either raising the ph or lowering it. **The body, which prefers an alkaline state**, should have a ph of about 7.3. Processed foods create an acidic state in our bodies that over time is very susceptible to disease. For example, **cancer flourishes in an acidic environment, but not in an alkaline one**. The majority of cancer patients possess a very low body ph (6.0 or lower). Soda pop, with a ph ranging from about 2.7-3.0 is extremely acidic. The ph level of pop can more than double by the time it has passed through the body. It does this by stealing precious minerals and fluids that may already be in short supply. The proper ph level is critical in maintaining good health. **Chlorophyll is very effective in**

reversing the pH level in the body, and Moringa has the one of the highest levels of chlorophyll, along with an abundance of other beneficial nutrients. Moringa Tea is pH neutral.

Fruit Juice and Alzheimer's

At a recent Alzheimer's prevention conference, experts looked at the research involving lifestyle choices that may protect the brain. The newest information focusing on nutrition indicates eating fish (**Omega-3 oils**) three times a week **seems to prevent Alzheimer's disease**. It was also found that **people who drink fruit juice not made from juice concentrates**, at least three times a week, are four times **less likely to develop Alzheimer's than non-juice drinkers**. The theory is that unconcentrated juice contains high levels of anti-oxidants that may play a brain-protective role. **Moringa contains both Omega-3 oils and many supreme anti-oxidants**.

Obesity and HFCS

Obesity in America is at epidemic proportions. A 2007 study from the Johns Hopkins Bloomberg School of Public Health concluded that 66 percent of adults and 16 percent of children are overweight or obese. Studies have shown that the obesity rates in the US exactly follow the trend and time line of the introduction of High Fructose Corn Syrup (HFCS) into our diet. Obese people are at greater risk for serious conditions like heart disease and diabetes (the CDC reports a 15% increase in Type 2 diabetes from 2005 -2007 due to obesity) —not to mention the social stigma associated with being larger than their peers. While most people believe that they gain weight due to heredity, eating too much, or because of aging, the major reasons people gain weight include **High Fructose Corn Syrup, nutrient deficiency, and changes in body composition**.

Moringa Oleifera,

Most nutritious plant discovered to date

While no one food gives us all the nutrition we need, Moringa Oleifera, comes closer than anything else. Moringa, with its **90 plus nutritional compounds**, is the most nutrient rich plant discovered to date.

Diitta B. Sambou, a midwife in Senegal Africa where Moringa is being used to combat malnutrition in pregnant women and babies, says **under-nourishment and over-eating both have harmful consequences on the health of the individual**. State of the World 2000, published by World watch Institute, reports that the number of people who are overfed and undernourished (a staggering 1.2 billion) now equals the number of those who are starving from lack of food. Looking at the chart below in reverse shows some of the consequences of poor nutrition.

Pain Relief

COX-2 Inhibitors

COX-2 is short for cyclooxygenase-2, one of the key enzymes that helps the body produce the inflammatory hormonelike compounds prostaglandins and cytokines. COX-2 is activated by injury and inflammation and is essential for fighting infections and healing injuries, but when the body produces too much, the result is chronic inflammation and pain.

Recent news of synthetic COX-2 inhibitors (ie Celebrex, Vioxx) and non-steroidal anti-inflammatory drugs (NSAIDS) has not been good news for consumers. In 2005, the Food and Drug Administration (FDA) advisory panel concluded that some well-known COX-2 inhibitor drugs significantly raise the risk of heart attack and stroke. The FDA issued safety concerns and additionally noted that **little is known about the long-term safety of many other synthetic drugs taken for arthritis, pain and inflammation**.

There have also been new warnings about the short-term use of over-the-counter ibuprofen, aspirin and acetaminophen pain and anti-inflammatory drugs, because users run a greater risk of gastro-intestinal bleeding, liver and kidney damage and peptic ulcers. While synthetic COX-2 inhibitors and NSAIDS offer some relief, their benefits may be countered by dangerous side effects. “There are many problems that a simple pill can’t or won’t fix”, says Sara Walker, Professor of Internal Medicine at the University of Missouri. **Synthetic medicines need to be handled with care, especially when considering whether the risks outweigh the pain relief they provide.**

When properly nourished, the human body is able to counter many of the daily aches and pains that life, exercise and age routinely bring. **The Moringa Oleifera plant contains tremendous phytonutrients that directly support the body’s efforts to inhibit and modulate enzymes that manifest joint pain and age or exercise induced aches and pains.** The United States Department of Agriculture has studied and identified **natural COX-2 inhibitors** such as caffeoylquinic acid, kaempferol, and quercetin, all abundantly, **placed by Mother Nature, in the Moringa plant.**

These natural compounds within the Moringa plant support a healthy, active lifestyle that enhance the body’s ability to relieve pain, inflammation and many other health concerns affecting the body’s various systems. Moringa’s natural COX-2 inhibitors assist the body to selectively block the COX-2 enzyme, impeding the production of the chemical messengers (prostaglandins) that cause pain and swelling.

Along with these natural COX-2 inhibitors and thanks to Mother Nature’s wisdom, **Moringa also provides the body additional documented pain-relieving nutrients** that include: arginine, beta-sitosterol, calcium, chlorophyll, copper, cystine, omega 3, omega 6, omega 9, fiber, glutathione, histidine, indole acetic acid, isoleucine, leucine, magnesium, oleic-acid, phenylalanine, potassium, rutin, selenium, stigmasterol, sulfur, thiamin, tryptophan, tyrosine, vitamin A, vitamin C, vitamin E (alpha-tocopherol, delta-tocopherol, gamma-tocopherol), zeatin, and zinc. **In addition, Moringa’s abundantly bio-active compounds, such as carotenoids, flavonoids and polyphenols have been researched regarding their ability to naturally reduce inflammation, promote joint and bone health and they have been found to be both effective and fast-acting.**

This proper nourishment provided by the Moringa plant contributes to a healthy and happy life, especially when complemented by weight management through exercise and diet that also significantly reduces pressure on weight-bearing joints. According to **Dr. John Klippel, president of the Arthritis Foundation**, “Supplements continue to be an important option for some people. We’re reminding people there are **lots of choices** that people need to make **and supplements are one of them.**”

Skin Health

In 2004, consumers spent \$44.6 billion on anti-aging products and services, with that amount expected to nearly double by 2009. Skin care products dominate the anti-aging retail market, controlling 52% of retail sales. The force behind this anti-aging boom is the routine of applying and reapplying topical agents. However, these topical remedies for sagging skin are not permanent as the skin regenerates itself every 28 days, requiring continued use of topical agents to maintain their effectiveness.

The cellular turnover cycle that was 28 days in your youth expands to close to 35 days by your 40s. With new skin equaling younger-looking skin, the goal is to speed things up.

A more natural way to support skin health by regenerating new skin cells without the dermabrasion and chemical peels of topical agents is with Cytokinins. **Cytokinins are plant hormones that promote cellular growth and delay the aging process.** Cytokinins stimulate cell division, delay the aging and destruction of tissues, protect against cell oxidation, and postpone cell death. Studies are now showing that the potent, protective, anti-aging effects of Cytokinins work the same way in human skin. **When the diet includes these plant nutrients, the body as a whole can fight aging, starting at the cellular level. The most potent Cytokinin is Zeatin.**

A study conducted at the University of Aarhus, Denmark, in 2004 evaluated the effects of Zeatin on cultured human skin fibroblasts over their life span in lab culture. The results showed that not only does Zeatin not interfere with the genetic control of cellular life span of a cell, but that it also helps promote small cell size, a key component to more youthful skin. Zeatin also helps with the structural and functional integrity of the cell, and prevents accumulation of macromolecular damage in the cell. The study also found that **Zeatin increases the activity of some antioxidant enzymes counteracting the free radical-induced oxidative damage incurred during cell aging.** By preventing damage, antioxidants allow your skin to focus on building new collagen and other tasks (such as getting rid of old skin cells) that keep it looking young.

Dr. Monica Marcu, Pharm. PhD, concurs, “Cytokinins have proven to delay biochemical modifications associated with aging in culture human cells. Zeatin protects the skin. When human skin cells are nourished with Zeatin, they retain their functions longer and are more resistant to environmental stresses.”

Found in most plants, **Zeatin is more abundant in one plant than any other, Moringa Oleifera.** Moringa Oleifera not only contains thousands of times more Zeatin than any other known plant, it is also the most nutritious plant discovered to date with over 90 nutritional compounds, including 46 antioxidants and 36 anti-inflammatories.

Dr. Lydia Marero, of the Food and Nutrition Research Institute (FNRI), also believes Moringa could be the new anti-aging alternative. Dr. Marero says, “Because of its high content of vitamins A, C, and E, which are very potent antioxidants, **Moringa is a very good quencher of unstable free radicals** that can react with the damage of molecules that cause aging”.

Aging of the skin is not the only result of skin damage. Skin cancer rates and deaths are increasing dramatically around the world. One in five Americans will develop skin cancer during their lifetime, and one American dies from it every hour.

This may be in part due to ozone depletion which seems to be leaving us more vulnerable to damage from ultraviolet (UV) radiation. This radiation causes formation of highly reactive “free radicals” within our bodies, damaging our cells in ways that increase the chance for cancer to develop. The best defense against the free radical damage of *oxidation* is a diet rich in anti-oxidant vitamins and minerals (and plenty of water!). Research suggests that certain antioxidants—vitamin C, vitamin E, selenium, and vitamin A (in the form of beta carotene rich foods)—nourish and protect skin to extend its youthful appearance. According to Karen Collins, RD, along with sun protection, a healthy diet may help. She further stated, “In theory, antioxidants like beta-carotene and other carotenoids might stabilize free radicals and end the damaging chain reactions they start.”

Underneath aging and age-related disease is low-grade inflammation, according to dermatologist Nicholas V. Perricone, MD. He continues, “The skin is always getting inflamed by sun, weather, pollution, and products because it is our interface between the environment and our body. So the best ways to decrease disease risk and slow the aging process is to take nutrients with powerful anti-inflammatory activity on a regular basis. Through a three-tier approach involving diet, supplements, and creams, we can control the rate at which we

age”. Combining a good diet with the right dietary supplement will not only help keep your skin healthy, but also looking years younger.

While the skin is the largest system of the body and requires proper nourishment to delay the visible signs of aging, aging isn’t just skin deep. Every system, that is every cell of the body, ages every minute of every day. There is no magic fountain of youth. However, by providing proper nourishment, along with antioxidants with anti-aging compounds at the cellular level, anti-aging of all systems of the body can be slowed; minimizing the visible signs of aging skin and lowering the risk of degenerative (age related) diseases.

Obesity and Health

Under-nourishment and over-eating, both have harmful consequences on the health of the individual”

Ditta B. Sambou, Belfort State Clinic

State of the World 2000, published by World watch Institute, reports that the **number of people who are overfed and undernourished (a staggering 1.2 billion) now equals the number of those who are starving from lack of food.**

Obese people are at greater risk for serious conditions like diabetes and heart disease—not to mention the social stigma associated with being larger than their peers.

While most people believe that they gain weight due to heredity, eating too much, or because of aging, **the major reasons people gain weight include:**

- **High Fructose Corn Syrup** – Obesity in America is at epidemic proportions, with 75% of the population expected to be overweight by 2015. Studies have shown that the obesity rates in the US exactly follow the trend and time line of the introduction of High Fructose Corn Syrup (HFCS) into our diet. Between 1970 and 1990 consumption **increased by more than 1000%** mostly due to the soda drink manufacturers switching to HFCS as their sweetener. A 2004 report showed that Americans eat 132 calories of HFCS every day with the figure closer to 300 calories for the top 20 of people. **HFCS is chemically altered corn starch** that is in just about everything we eat. It is added to food for two reasons: one, to lower the cost, and the other to bulk up the food so the consumer thinks he is getting more for his money. However, **the body doesn’t recognize chemically altered products** and either flushes them out of the body or **stores them as fat**. HFCS also **blocks the absorption of nutrients** from the food it is in. **HFCS is banned in Great Britain** and is soon to be banned in Europe. Unlike other carbohydrates, the main sweetener in beverages — high-fructose corn syrup — does not spur production of insulin to make the body “process” calories. It also does not spur leptin, a substance that helps moderate appetite. For these reasons, beverages are not as satisfying as foods containing similar amounts of calories and fly under the radar of the body’s normal weight-regulating mechanisms. According to New York University biologist Marion Nestle, an expert on nutrition and food policy, “If I were advising someone **to lose weight, I’d start with soft drinks and juice drinks**. Get rid of them.” The reason behind that recommendation is soft drinks and juice drinks contain HFCS. Dr. Terrill Bravender concurs. According to Dr. Bravender, pediatric obesity specialist at Duke University, Durham, NC, “The average person gets 10% of their total calories from sugared beverages, with 7.5 % from sodas. **By cutting out sodas, the average person would lose two pounds a month.**”
- **Nutrient deficiency** – Most people eat too much cooked, processed and nutrient deficient food. In fact, we **Americans are the most overfed and under-nourished people in the world!** According to one pharmacist, “I see a lot of overweight people who are all malnourished”. **When you eat nutrient-**

deficient food, your stomach may be full, but **your body continues to send out the ‘I’m hungry’ signal**. This leads to overeating and weight gain.

- **Changes in body composition** – As people age, they gradually lose lean muscle mass and develop more fat, a process known as sarcopenia. **Poor food choices and lack of exercise can accelerate this condition**. This is significant because it takes between 25 and 50 calories per day to maintain a pound of lean muscle, whereas it only takes **2 calories per day to maintain a pound of fat**. Over time, this means that the body processes fewer and fewer calories, which in turn leads to weight gain.

According to their BMIs, **two-thirds of adult American women fall into the overweight or obese category**. A 2007 report from the Centers for Disease Control found that the prevalence of obesity among U.S. adults doubled between 1980 and 2004. Compared to women of a generation ago, we’re 24 pounds heavier on average, and there’s been an especially alarming increase in those at the upper end of the scale (not just obese, defined as a BMI of 30 or higher, but significantly obese, with a BMI above 35). **High BMIs are associated with increased risk of diabetes, high blood pressure, some cancers and heart problems**. According to Nancy Snyderman, MD, medical consultant for NBC, **more people will die from obesity by mid century than from all cancers combined**.

Dr. Walter C. Willett of the Harvard School of Public Health, stated at the annual meeting of the American Association for the Advancement of Science, **being obese is currently associated with about 14 percent of cancer deaths in men and 20 percent in women**, compared with about 30 percent each for smoking. He continued saying research is producing **increasing evidence associating opacity with a variety of cancers, including breast, colorectal, liver, pancreas and gallbladder**.

Recently researchers analyzed a variety of published medical reports on obesity from 1980 to 2005 plus World Health Organization data, and concluded that the prevalence of childhood obesity **increased** in almost all the countries for which data was available; a trend **fueled by** among other factors, **more sedentary lives and the increasing availability of junk food**.

According to Dr. Richard, Carmona, former US surgeon general and currently chairing the Strategies to Overcome and Prevent Obesity Alliance, **“the rise in childhood obesity coincides with the rise in related conditions such as type 2 diabetes and high blood pressure”**. He continued, **“these are middle aged diseases, and we are seeing them in elementary children”**.

The public health consequences of the trend alarm experts, says Dr. Phillip Thomas, a surgeon who works with obese patients. **Because obese children tend to carry the problem into adulthood**, Thomas and other **doctors say they will be sicker as they get older**, suffering from degenerative diseases such as heart disease, stroke, and other ailments stemming from their weight. Dr. Thomas continued, **“This is going to be the first generation that’s going to have a shorter life expectancy than their parents”**.

Health Foods

By definition, health foods are foods believed to be highly beneficial to health, especially a food grown organically and free of chemicals.

In 2005, almost two-thirds of American consumers bought some type of organic food or beverage. **Why buy organic?** In the past we only had to wash a little dirt off our produce in order to feel we were eating clean food. Now, however, we have to worry about hormones, pesticides, chemical fertilizers, and genetic modification.

According to government research, an apple can have as many as 36 different pesticides sprayed on it. **Organically grown translates to cleaner water and air due to farming methods that rely on natural pest control.**

Having bad health affects not only ourselves, but those we love as well. **Organic means healthier environments, healthier communities, and healthier families.**

Moringa couldn't fit the definition of a health food any better than if it had been written for it, as Moringa ysp Tea base ingredient, Moringa, is not only **organically grown** and tested to be **free of chemicals**; is also **not irradiated**. Moringa Tea delivers synergy. Synergy means that the whole is greater than the sum of its parts.

Moringa is the **only enzymatically ALIVE beverage** on the market. With Moringa, it almost doesn't matter what nutrients your body is lacking; because with the **90+ nutrients** naturally occurring in Moringa, you're going to get them. The **vitamins, minerals, amino acids, and omega-3 oils** are just the beginning of the phytonutrients found in Moringa.

Moringa also gives you Z-Atin, the **stimulant-free natural trigger for your metabolism** that launches your body into absorption mode. Moringa has been formulated to provide you with the **highest degree of effective absorbability**. The **Moringa** is organically grown, shade dried and powdered to **maintain the maximum nutritive value**, and is **tested to be pesticide free**. Give your body the nutritional nudge it needs with a healthy food supplement.

Moringa Tea

Formulated to provide you with highest degree of effective absorbability (bioavailability)

The nourishment found in Moringa includes:

- **Active Adults:** on-the-go lifestyle. Working 8-10 hours a day and trying to keep up with other activities.
- **Senior Adults:** lessened ability to absorb nutrients, lower metabolism, and less energy.
- **Children:** hard to get them to eat right even if you cook healthy food for them; they often snub vegetables.
- **Parents:** no time to think about their own nutrition; too busy.
- **Teenagers:** immortal attitude, don't think about and don't care about what fast food does to them; not worried about the future.
- **Athletes:** need extra protein and other nutrients for their training regimen.
- **Travelers:** fatigue; most meals are fast food.
- **Overweight But Undernourished:** even when food is plentiful, it doesn't always provide proper nutrition.
- **Vegetarians:** sometimes it's hard to get the right kind of protein in the right amounts.
- **Lactating Mothers:** Moringa has been shown to increase milk supply.

Every-Body Needs Moringa

"Let your Foods be your medicines, and your medicines your food."

Hippocrates c.460 – 377 BC

Father of Modern Medicine

MORINGA Improves the effectiveness of balanced nutrients in the body including the treasure trove of nutrients you're already getting just by drinking Moringa YSP. Moringa YSP literally sets your nutritional process in motion. Created by one of the world's foremost nutritionist, Moringa YSP is the perfect balanced, natural combination of zeatin, quercetin, beta-sitosterol, caffeoylquinic acid, and kaempferol, naturally found in *Moringa Oleifera*.

Each one of Moringa's components has its own benefits. Moringa ysp uses just the right amount of each natural ingredient to maximize the effect of the herbal medicine. Combined, they work synergistically to trigger your metabolism for real nutrient absorption.

Zeatin

A supreme antioxidant with powerful anti-aging properties, zeatin is becoming more and more sought after. Zeatin defends cells against free radical damage and protects healthy cells during life's stresses. The way it helps to slow the aging process is by helping the body replace dying cells more rapidly while fortifying living cells. It can also help promote normal brain and neuronal function and transmissions. So, it's no surprise zeatin is being tested for its positive effect on various conditions. Nowhere can you find a greater abundance of zeatin than in the Moringa plant. In fact, Moringa has several thousand times more zeatin than any other known plant.

Quercetin

The quercetin in Moringa YSP is a vital flavonoid with antioxidant properties. It is one of the best naturally occurring anti-inflammatory agents available, and is currently being tested at the Mayo Clinic in the treatment of certain types of conditions. Quercetin can improve the function of the body's capillaries and connective tissues, alleviating bruising while promoting healthy veins and arteries. In addition, quercetin improves the body's absorption of vitamin C and has anti-viral properties that minimize the symptoms of respiratory and sinus problems. This potent flavonoid also helps to maintain your body's collagen, which keeps skin firm and healthy.

Beta-Sitosterol

We all know someone with a cholesterol problem. Beta-sitosterol is the component in Moringa YSP that can help. Because it's part of the sterol family, beta-sitosterol's structure is similar enough to that of cholesterol that it can trick the body into blocking "bad" cholesterol absorption from food. Beta-sitosterol also normalizes blood sugar, enhances the immune system, and acts as a supreme anti-inflammatory agent.

Caffeoylquinic Acid

Mother Nature also provided caffeoylquinic acid and kaempferol to Moringa and these are included in Moringa YSP proprietary formula. Caffeoylquinic acid exhibits significant anti-inflammatory activity and kaempferol is proven to encourage health cell growth and function.

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