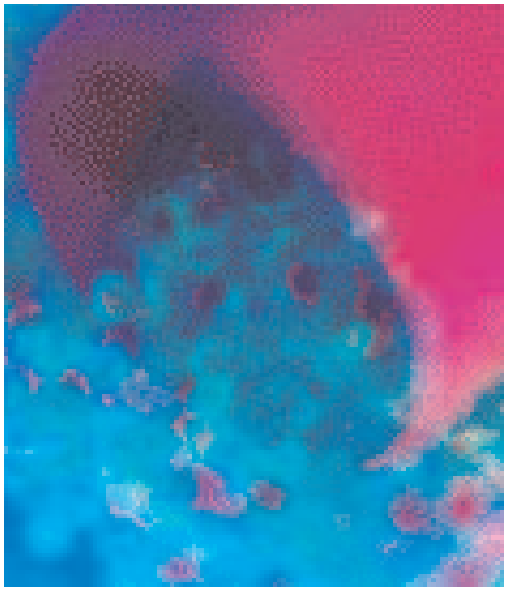
ENIVA®

NATURE'S NUTRITIONAL DESIGN & ENIVA

I. Nature's State

In nature, most minerals are found bound to other substances. This has to be the case since individual minerals possess an electrical charge. Minerals are called 'cations' because of their positive electrical charge. Minerals bind to other substances called 'anions,' which possess a negative charge. In order for minerals to be stable in nature as a solid material, they must be electrically balanced and bound with other substances. In fact, some minerals when all alone and not electrically balanced (like potassium, calcium, and sodium) will cause an explosion if added to water directly. This is because they are unstable and highly reactive when not electrically balanced.

With a few minor exceptions, like gold, minerals are almost always found in nature in their most original form as compounds, therefore being electrically balanced and stable. The individual mineral ions create bonds with other substances to create compounds. It is these compounds that serve as the **starting point** for using minerals for nutrition by plants, animals, and the Eniva mineral products.



II. Uptake

These mineral compounds are found in nature as mineral deposits. It is these deposits that are used by plants for uptake of minerals and other phytonutrients to nourish the plant for growth. However, these soil deposits may need to be first modified in order for the plant to be able to use them. The sun, rain,water and bacteria in the soil, along with fungi and the plant root structures, combine to produce one of the greatest miracles of nature- the conversion and modification of mineral and soil deposits into minerals that are bio-available to both plants and people.

How are these raw mineral compounds modified? First off, these compounds must be modified for uptake into the plant. This can be accomplished by the dissociation (mild breaking) of bonds the individual minerals may have formed with other substances in the soil. It is important to note that the majority of the components in the mineral compound are taken up into the plant, not just the isolated mineral. The bonds may be broken, but the electrical balance must remain.

Once in the plant, these minerals can be further modified in many ways. One of the most common ways is by adding substances (ligands) to the mineral to make it more bio-available for the plant to use. Other minerals may recombine with the substances they were found with in the soil. Still others may be free within the plant as ions, but still electrically balanced by their counterpart ion. Scientists are unaware of all the methodologies by which plants are able to modify the nutrients they uptake, but are learning more each year.

Each of the different modifications made to minerals affect different minerals in different ways. In addition, some modifications may work better for some minerals than others in terms of their bio-availability. The challenge for scientists and those interested in nutrition is to discover those forms most bio-available to the body. However, no matter the form of the mineral found in the plant, it will always share one common characteristic – it is within a water matrix in the plant. This allows the mineral to flow within the nutritional delivery system of the plant. Just like humans, plants have cells that require nourishment. This nutrition must be delivered in a water-soluble medium for the cells to use.

Many of us are familiar with the concept of juicing. We put a carrot into a powerful blender and out the other end comes carrot juice. There is one very important fact to note in this process- the final product that comes out of the juicer is a liquid. Where did it and its water components come from? The inside of the carrot. In fact, water is the universal solvent for the delivery of nutrition in all species of life and is the main component of human blood!

III. From the Plant to Us

The presence of nutrients in plants has been known for centuries. The natural order of life is for nutrients to be derived from the soils, taken up by plants, and then eaten by humans. In this way, nutrients are delivered from the earth to the human body. The process of liberating nutrients from plant materials is one of the main focuses of the digestive process.

No matter what we put into our bodies, the goal is always the same- liquefaction. What is this? This is the process of digestion that takes the food we eat, liberates the nutritional components, and puts this whole base in a water-soluble form the body can then uptake and use for metabolism. Remember, it is not what one eats that impacts health, it is what is able to be put into a form that can be delivered to the various body tissues. In order for the nutrients to be in this 'deliverable form' the nutrients must be compatible with water. In fact, the body even has a way of making fats, which are normally insoluble, hydro-soluble through the use of digestive helpers called micelles. These micelles allow the fat to possess water-soluble characteristics!

One key fact that truly differentiates Eniva products is that one's body does not have to wade through the process of digestion and assimilation in order for the nutrients to be ready to be used by the body. They are already in a liberated form that is water-soluble. This allows them start absorption immediately in the body through the bucchal (cheek) mucosa, sublingually (under the tongue), and in the stomach, in addition to normal absorption in the intestines. Remember, one of the main focuses of digestion is to liberate nutrients from the food we eat and then make them water-soluble.

IV. Absorption and Bioavailability

There are two main issues for nutrients to be used by the body for metabolism. First, the nutrient must be able to be absorbed into the body. Once these nutrients are absorbed in the body, they can again be modified for body metabolism. Through cellular enzymes and other co-factors, many minerals are complexed with other substances in the body to help it function. Some minerals remain free and others 'go to work.'

However, in order for a mineral or other nutrient to be absorbed into the body through the intestines or other body linings, it must possess certain characteristics. The three main characteristics for absorption are 1) being in a water-soluble form, and therefore 2) possessing a charged or ionic component to aid this solubility, and 3) being an appropriate size. The Eniva mineral products meet these three criteria.

Once the nutrient has been absorbed into the body, the second consideration is bio-availability. This term describes the ability of a nutrient to be utilized by the cell and organs of the body for cellular metabolism. Again, the three characteristics listed above are important in this process, especially size and how the nutrient's polar (ionic) component influences its interaction with other enzymes and cofactors in the body.

An excellent analogy is the scenario of someone trying to 'raid the neighbor's refrigerator.' First, someone must be able to get into the house. This is similar to the concept of nutrient absorption. Secondly, once inside the house the individual must then get into the kitchen to get to the food. This is similar to the concept of bio-availability. In order for the individual to accomplish this task,

many factors come into play: The individual must be able to be recognized by the owner of the house so the owner will let him/her in, the individual may need to interact with the owners of the house to convince them to allow the individual to get food from the kitchen, and the individual must be the appropriate size to fit through the front door and then the entrance to the kitchen. In a similar fashion, minerals and other nutrients go through a multi-step process in order to be used for metabolism by the body.

An Aqueous Form: The Desired Form

If you think about visiting the physician in an emergency situation, note the drugs and medicines used are started immediately, or intravenously. When injecting medicine into the blood, it is delivered in an aqueous (or water-soluble) form. This is done because it is the fastest and easiest route of administration in this scenario. Furthermore, it is in the preferred form for delivery to the rest of the body's tissues. As stated from the textbook

Introduction to Pharmaceutical Dosage:

"Drugs or nutrients administered in solution are generally absorbed much more rapidly than those administered in solid form, since the process of dissolution is not required."

In applying this to nutritional supplements, the same logical thought process can be used. Not only are the nutrients in the preferred delivery system for the body, the delay characteristics (or how quickly they are digested and able to be used by the body) is dramatically reduced over traditional supplements. As further stated in Introduction to Pharmaceutical Dosage:

"A liquid preparation is more convenient to administer to those who are unable to swallow tablets or capsules or have difficulties swallowing them. In addition, solutions have the advantage over solid dosage forms in that they do not have the delay characteristic of solid dosage forms but are presented to the body in a form most conducive for absorption into the bloodstream upon administration."

From:

Introduction to Pharmaceutical Dosage Forms

Howard C. Ansel, Ph.D.

The Eniva nutritional products are focused on this aqueous design. By providing the body with nutrients that are immediately bio-available, their use in the body and their ability to positively affect health is greatly increased.

I. How are the Eniva Nutritional Products Made?

In terms of the Eniva mineral products, Eniva uses minerals found in their natural earthen state (mineral compounds) and use them as the starting raw material for the products. These raw materials used are guaranteed for purity (99.9%) and are of pharmaceutical (USP) grade.

These raw materials then enter into an exciting process in the Eniva (Class 10,000) laboratory where they undergo ionic change. They are entered into a very special and proprietary process to create an energy-activated, polar, aqueous, and bio-available mineral species the body can effectively use. The true focus of the science used in the Eniva process is to create a product that is easily absorbed and bio-available to the human body.

II. What is the Size of the Eniva Mineral Products?

In looking at the periodic table of the elements on pages 38 and 39, it is important to note that size increases as one moves from the top to bottom and from right to left. In general, this means the smallest elements are at the top right and the largest elements are found at the bottom left.

In reading the table, one will notice there are also different numbers present in different locations next to the element symbols. The numbers and symbols present in position letter:

(a) represent the elemental symbol

(b) represent the number of protons present in the nucleus of the element (called the Atomic Number)

(c) the total weight of the element (called Atomic Weight), and

(d) the usual ionic charge of the element in its charged state

Note that no element has the same numbers. This

means that each element is a little different than another. This also means that no two elements are the same size. The size of the element varies upon is position in the periodic table. In fact, the elements are just like people – although some may share similar characteristics, no two are exactly the same.

In looking to providing nutrition to the human body, minerals can be found in multiple forms. The Eniva mineral products focus on using minerals that possess an ionic and/or polar nature. As such, their size can range from below angstrom sized to hundreds of angstroms.

Please find below a figures describing atomic size of various elements. The figure is from The Chemical World (a college chemistry text), by Kotz, Joesten, Wood and Moore, published in 1994.

Truly, the size depends on the specific mineral and its position in the periodic table. Due to the water-soluble nature of the Eniva minerals, their size is more appropriate for easy assimilation and use in the body's metabolism.

Some common measurements:

1 kilometer = 1000 meters = 0.621 miles

1 meter = 100 centimeters

1 centimeter = 10 millimeters

1 nanometer = 1 x 10-9 meter

1 picometer = 1 x 10 10-12 meter

1 Angstrom =1 x 10-10 meter

*It is interesting to note that scientific testing for extremely small particles is very difficult. In large, much that is known about atomic and ionic theory is based upon mathematical formulation and experimentation from brilliant mathematicians and chemists.