

Trace Minerals: Natural Balance, Perfect Solution

Balance is important to all areas of our lives and nutrition, but it is particularly crucial when it comes to minerals and trace minerals:

There are 92 elements found in nature and an additional 22 theoretical and/or observed elements. In addition, there are hundreds of isotopes of the elements, any one of which may play an as yet undiscovered role in human health... It becomes increasingly evident when studying the relationship of minerals to human health that keeping the level of minerals in balance in every tissue, fluid, cell and organ in the human body may be the key to maintaining human health.¹

Keeping minerals in proper balance throughout the body while providing all of them in sufficient quantities needed for optimum health is complex. This is further complicated when using a bullet approach based on the latest research that finds specific deficiencies and then supplements the diet with just that particular nutrient:

Imbalanced interactions cause many problems when we consistently consume single processed or refined minerals that are out of proportion with other minerals and trace minerals. This is particularly evident when it comes to the most commonly refined material that many people incorporate into their diet to excess, sodium chloride and its effects on hypertension.

These relationships can, however, have an equally profound benefit on human health when minerals are consumed in proper ratios. Certain minerals and trace minerals, when found in proper balance, can serve additional non-classical roles such as acting as antioxidants. Minerals and trace minerals can also help each other in the process of assimilation and add additional safety buffers for minerals that have the potential of being toxic to human health.¹

Within the blood stream, lymphatic fluid, cells and extra-cellular fluid, minerals and trace minerals can be found completely



disassociated into solution, which can also be called their electrolyte or ionic form. In this state, they all have specific positive or negative electrical signatures that create a dynamic equilibrium. The body can use minor changes in this equilibrium to create proper osmotic pressure and move nutrients to the areas that need them most, as well as create electrical impulses which run the entire nervous system.²

This same equilibrium can also be found in the seas around the world where minerals and trace minerals have collected and become concentrated in liquid, ionic form over millions of years. It is astounding to realize that the dynamic equilibrium which takes place with liquid ionic materials and trace minerals has created the same basic balance in sea water that is found in healthy blood plasma and lymphatic fluid.

The dynamic equilibrium of minerals and trace minerals found in sea water is incredibly complex and has evolved over millions of years using natural forces which are, as yet, not fully understood by scientists. Scientists, working in the laboratory have never been able to create sea water form first principles and even if it were

possible it would cost thousands of pounds a bottle. Utah's Great Salt Lake, where Trace Minerals Research harvests *Reduced Sodium Concentrace® Trace Mineral Drops*, is the largest body of concentrated sea water in the world and is particularly rich in certain minerals and trace minerals like magnesium, lithium, and boron which are vitally important to human health. "The Great Salt Lake (has) concentrated many of the same minerals found in the sea through geothermal and evaporative processes.

These natural sources of the elements can provide a rich source of the minerals compatible to human physiological needs."¹

Also, because of it's high concentration, the dynamic equilibrium has caused the Great Salt Lake to be uniquely low in certain toxic, heavy metals.

Today, Trace Minerals Research uses the naturally balanced, naturally occurring minerals and trace minerals from Utah's Great Salt Lake as the basis for all of their products.

These products have been developed to work with the body and its natural balances to provide many nutrients that are often lacking in modern diets.

Summary of Changes in the Mineral Content of Vegetables, Fruit and Meat between 1940 and 1991

Year of Analysis	Mineral (27 Varieties)	Vegetables (17 Varieties)	Fruit
1940	Sodium		
1991	(Na)	Less 49%	Less 29%
1940	Potassium		
1991	(K)	Less 16%	Less 19%
1940	Phosphorous		
1991	(P)	Plus 9%	Plus 2%
1940	Magnesium		
1991	(Mg)	Less 24%	Less 16%
1940	Calcium		
1991	(Ca)	Less 46%	Less 16%
1940	Iron		
1991	(Fe)	Less 27%	Less 24%
1940	Copper		
1991	(Cu)	Less 76%	Less 20%

These statistics have been calculated by comparing and contrasting data first published in 1940 by McCance and Widdowson - 'Chemical Composition of Food', which was commissioned by the Medical Research Council - with that data published by the same authors in 1991 - 'The Composition of Food, which was commissioned by the Royal Society of Chemistry and the Ministry of Agriculture Fisheries and Food. © Copyright D.E. Thomas 1/2000

References

1 Schauss, Alexander. *Minerals and Human Health: The Rational for Optimal and Balanced Trace Element Levels*. Life Science Press: 1995, pp. 1,5.

2 American Medical Association, *The American Medical Association's Encyclopedia of Medicine*. Editor, Charles B Clayman. Random House: 1989, pp. 396, 605, 752.

Like Your Body, It Only Lights Up With Ionic Trace Minerals

Every second of your day your body relies on ionic minerals and trace minerals to conduct and generate billions of tiny electrical impulses. Without these impulses, not a single muscle would be able to function. Your brain also would not function and the cells would not be able to use osmosis to balance water pressure and absorb nutrients. In fact "many vital body processes depend on the movement of ions across cell membranes.² Recent research indicates that minerals may play a significant role against a variety of degenerative diseases and processes. They may also prevent and reduce injury from environmental pollutants and enhance the ability to work and learn.

They can also protect the body from the effects of toxic minerals."¹

The "power" of electrolyte trace minerals

The form of different minerals also plays a key role in how well they are transported through the circulatory system and the aqueous micro-environment of the cells. "Whatever the nutritional potential of a food, its contribution is non-existent if it does not pass the test of absorption."¹

Those minerals that your body is unable to break down to their ionic form are likely to pass from the body unassimilated, and for all nutritional intents and be considered as never having been eaten. Authors Rosenberg and Solomons offer the following insight: "Insofar as minerals in the diet are often bound to proteins, complexed with organic molecules in food, or otherwise imbedded in the matrix of food-stuffs, the mechanical processes of mastication, dissolution, dispersion and digestion are important preparative steps to absorption. Moreover, at the conclusion

of the aforementioned reductive processes, minerals generally emerge in the intestinal lumen as charged ions, e.g. Fe^{++} , Zn^{++} , PO_4^{--} , Cl^- , Mg^{++} . "Minerals should be ionic to be readily absorbed through transfer in the small intestine."¹ Minerals that are absorbed in their ionic form are in true liquid

solution and have either positive or negative charges. They also have unique properties that distinguish them from each other and allow them to freely take part in biochemical communication throughout the body. These communications help nutrients move to those areas of the body that are in most need of their help. "Imbalances of any of these ions or certain trace ions in the body... can lead to dysfunction in the conduction of electrical messages. This dysfunction quickly leads to a general body disturbance and loss of ability to maintain somewhat stable internal conditions."⁴

The light bulb demonstration that Trace Minerals Research uses, is a simple yet effective scientific procedure to show how well different minerals break down into ionic solution in water and their concentration in that form. The experiment uses a broken circuit from the electrical cord that is connected to two probes which are then inserted into distilled water. When a mineral is placed in the water, it will connect the circuit and light the bulb in direct relation to how well it breaks down into ionic solutions and its concentration in ionic form. If a mineral does not break down in water, it will not light the light bulb.

Ionic trace minerals make all the difference

This information has been gathered for Trace Minerals Research through independent analysis by some of the world's best analytical laboratories and may be obtained by contacting Trace Minerals (UK) Ltd. direct.

ConcenTrace from Trace Minerals is a natural mineral and trace mineral supplement that is very low in sodium, yet rich in magnesium, boron, selenium, lithium, chloride and other trace minerals. Most importantly, it is in ionic form. Because of these qualities coupled with the fact that minerals and trace minerals act as catalysts for other nutrients, vitamins, hormones and neurological functions, Trace Minerals Research uses *Reduced Sodium ConcenTrace Trace Mineral Drops* as a base ingredient in all of their products. Through special proprietary processes developed from over 30 years of experience, Trace Minerals Research is able to produce tableted products that break down in water and release their minerals and trace minerals back into liquid solution, ie ionic form.

The rapid availability of Trace Minerals *ConcenTrace* has helped create a superior line of products with superior results. For more information on these products please contact your local health food shop or Trace Minerals (UK) Ltd direct.



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