HEALTHY SKIN STARTS WITH Minerals
Minerals are the skin and body's fundamental building blocks. Making up five per cent of human skin and body weight, mineral matter is vital to all mental and physical processes, and for total well-being. Indeed it is as essential as our need for oxygen to sustain life.

Healthy skin starts with minerals
From the earth we have come, and to the earth we will go — as human beings we are an extension of the earth and its matter. The earth’s mantle and crust are made up of minerals and oxygen. As important as vitamins, amino acids, proteins and carbohydrates etc. are, they cannot be properly metabolised and assimilated without the correct balance of minerals. Vitamin C-rich citrus, beta carotene-rich vegetables, antioxidant-rich berries and lycopene-rich tomatoes, for example, are a result of balanced mineral-rich soils, not because the farmer has fed the soils with vitamins.

Likewise, a healthy skin and body starts with the use of minerals, which act as catalysts for many biological reactions and are necessary for transmission of messages and uptake of essential nutrients. Vitamins simply cannot be properly assimilated without the correct balance of minerals. For example; calcium is needed for vitamin C utilisation, zinc for vitamin A, magnesium for B complex vitamins, selenium for vitamin E absorption, etc.

The positive impact of essential minerals on the functions and condition of the skin
There are many scientific and medical studies on the impact of essential minerals on the condition of the skin. Minerals such as magnesium, calcium, potassium, sodium, zinc, sulphur, copper, selenium, iron, manganese etc., have been shown to have positive dermatological effects by a variety of mechanisms. They have been shown to be crucial in protecting the skin and its DNA against free-radicals, UV radiation and other environmental aggressions, maintaining hydration levels, slowing down cell degradation/cell ageing, correcting and reprogramming healthy skin cell behaviour, and treating/healing various skin disorders.

The actions of minerals on the skin are many and varied, and as such they have a profound effect on the skin’s key functions as follows:

Cell Communicators: This is the most important function of minerals in the skin and body. Cell communicators have the ability to tell a skin cell to how to look, act, and behave

Matoyla Kollaras discusses the importance of minerals and trace minerals in the skin.
better, like a normal healthy skin cell would, boost the skin’s own natural functions, or to stop other substances from telling the cell to behave badly or abnormally. Furthermore, acting as cell communicators, minerals assimilate the actions of other vital nutrients such as vitamin, enzymes, amino acids etc. (Magnesium and calcium)

**Stimulation**: Minerals stimulate the skin’s metabolic processes and thereby biosynthesis of proteins such as collagen, elastin, hyaluronic acid, filaggrin, keratin etc. (Sulphur, zinc, copper, potassium and magnesium)

**Hydration**: Minerals restore and maintain hydration levels of the skin and help prevent TEWL. Like hyaluronic acid, minerals are hydrophilic and hygroscopic and so extremely important water-binding agents. (Sodium, potassium and magnesium)

**Detoxification**: Minerals help toxins and metabolic waste to pass out of skin cells, and recycle damaged proteins into amino acids that can be re-utilised to produce necessary proteins like collagen, elastin etc.

**Electrolytes**: Minerals are the electrolytes of the body — they carry the electrical current through the body. There is much proof that the body is run electrically, and minerals are the conductor of these currents. They provide the necessary charge or “ionisation” of positive or negative electrical molecules. Ions keep the ‘human battery’, including the skin, charged. If there is deficiency of one or more minerals, the skin and body will run down very rapidly. (Potassium, sodium, calcium and magnesium)

**Anti-oxidants**: Help fight damage and fortify the entire skin structure against free-radical attack and UV aggressions. (All minerals have anti-oxidants benefits)

**Anti-inflammatory agents**: Acting as anti-inflammatory agents, minerals help reduce cell damage from inflammation, redness, swelling, pain, soothe irritated skin, and improve over-all skin health, thus preventing disease and premature ageing. (Zinc, magnesium, selenium, manganese and copper)

**Immunity**: Working together with skin-deep immune cells such as Langerhans cells and T-cells, minerals act as the first line of defence against microbial infections, cell and DNA damage and degradation, and skin disease. (Zinc, manganese, boron, sulphur, selenium, copper and magnesium)

**Nutrition**: Minerals provide nutrition to the skin via osmosis. When we apply a high concentration of minerals to the skin, we are able to activate the skin’s own osmotic pump. As a result, we are drawing blood, oxygen, fluids and nutrition from deep within the skin up to the outer layers of the epidermis where it is needed most. The skin is not a digestive system order; therefore the only food supply that is beneficial is its own blood and fluid supply. By stimulating the skin’s osmotic pump, we can do just that; we can feed the skin from within, as per its natural physiology function. (Calcium, magnesium, potassium, sodium and iron)

**Natural Moisturising Factors (NMF)**: Minerals act as effective and vital NMFs. One of the primary elements in keeping skin healthy is making sure the structure of the epidermis and stratum corneum (outer layer of skin) is intact. The repairing components that do this are often called natural moisturising factor (NMF) or ingredients that mimic the structure and function of healthy skin. (Magnesium and calcium)

**Restore pH**: Minerals are very important in keeping the blood and tissue fluids from becoming too acid or too alkaline. They allow other nutrients to pass into the bloodstream, and aid in transporting nutrients to the cells. They also draw chemicals in and out of the cells. A slight change in the blood concentration of important minerals can rapidly endanger life.

**Minerals help the skin to help itself**

Working with the skin’s own natural functions, and not against it, these vital elements are immediately recognised and accepted by the skin, as fundamental to its health and longevity. Minerals therefore strengthen the matrix of the skin, support immunity, stimulate and regulate metabolic function, maintain a correct status quo and balance, help prevent and treat skin disorders and disease, slow down ageing and repair DNA damage and provide profound therapeutic benefits.

**Minerals — a must**

The body cannot create a single mineral — it depends on external sources. Our major sources of minerals are, of course, food and fluids. However, low levels of dietary minerals are at epidemic levels across the Western world. Most food is already deficient in minerals due to poor, exhausted soils and poor farming practices. Furthermore, a low plant-based but high animal protein diet has seen mineral levels drop further. As a result skin has also become deficient in these life-giving elements. Coincidently, we have also seen an increase in skin sensitivity and disease in the last two decades. Could mineral deficiency being playing a significant role in increased skin problems therapists are faced with?

Food and fluid are our primary sources of minerals; however we can also provide good levels of minerals to the skin via topical application — skin care. Scientific studies have proven that topically-applied minerals have the ability to penetrate to the basal layer and indeed be absorbed into the bloodstream.

Healthy, youthful skin depends on optimum levels of minerals. Therefore, healthy skin starts with mineral-rich skin care and a mineral-rich diet. Minerals are the constituents that allow assimilation of all other nutrients. They also provide long-term improvement in the well-being, vitality and appearance of the skin. Having the proper balance of minerals in the skin and body can make the difference between disease and optimum health.

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