

Dead Sea EDOM Line health effects

THE SKIN

The problem of skin aging is not considered a medical problem. Since dermatology is restricted to medical treatment in cases of skin diseases, the branch of cosmetics deals with the maintenance and improvement of skin condition. Cosmetics use a large variety of active ingredients and EDOM line adds the minerals and mud of the Dead Sea to those ingredients and makes its products more useful and effective. As we all know, skin ages mainly due to the gradual and constant loss of its liquid content; in other words, it gradually dries out. As a consequence it becomes and looks "tired", older and wrinkled. As a partial solution to this problem, the cosmetic industry has developed a variety of "moisturizing preparations". The problem is that these preparations are absorbed by the skin to only a limited extent, and do not reach all layers of the skin. This difficulty is due mainly to the skin structure and function.

In order to simplify the explanation, let us talk only about two layers: the epidermis and the dermis.

The epidermis is the skin's outer layer, which is composed of five layers of flat cells. It grows on the basis of the dermis and is nourished by it. The epidermis is the skin layer that can be affected by cosmetics and then can affect the appearance of the skin. The epidermis renews itself constantly by cell division (mitosis). As the live cells are pushed outward from the base layer, they dry up and flatten out until they reach the horny layer where they are stored as dead cells. This covering of dead cells (the horny layer or stratum corneum), serves as the body's main protection. (The outer cells must be dead since live cells cannot exist if they are exposed to air and water). The epidermis contains as we already mentioned, five layers of cells. These cells are at various levels of maturity that renew themselves each 21-40 days by the mitosis process.

Under the dead cells (the stratum corneum), we find the stratum granulosum. These two layers are covered by sebum and they constantly move outward. They are called the barrier layer because they prevent the penetration of external substances into the skin and the loss of water from the skin.

In the stratum granulosum, there is a negative electric field which acts as another means of protection. Substances carrying a negative electric charge (anions) are repulsed by it. Only cations, the carriers of a positive electrical charge, are accepted. They are trapped and held inside it. The minerals in EDOM line are cations.

In order to overcome these barriers and penetrate into the skin, we use lipid emulsion containing water. It overcomes the fatty barrier and enhances absorption through the epidermis, creating hydration. We also use substances that affect absorption through the duct of the sebaceous glands and the duct of hair roots. It means that the skin is only partially impenetrable.

THE SKIN TYPE

When we use cosmetics, it is necessary to look at the type of the skin, its condition etc. The sebaceous glands produce the sebum, which is a viscous mixture of fatty acids, waxy substances, cholesterol and celluloid (cellular waste). The sebum is secreted on the skin through the pores. On the face, the sebaceous glands are concentrated in the T area, along the width of the forehead and down along the nose

to the chin. Hyperactivity of the sebaceous glands causes oily skin and their hypo activity causes dry skin. Acne is a condition connected to the activity of the sebaceous glands.

THE pH

PH is a measure of the acidity or alkalinity of a substance in the form of a diluted solution. The sebum contains among other ingredients fatty acids. The concentration of the fatty acids on the skin produces the acidic covering. This is a natural sheath against inflammation. The natural bacteria of the skin are capable of existing and functioning in pH level from 4.5 to 7, and this is why it is so important to keep the pH level neutral. Since the sebum must flow through the outer layers of the skin in order to produce the acidic covering, the factor of time plays a role in the renewal of the covering if it is damaged. These reasons led to the production of cosmetics with a balanced pH. **Thus is EDOM cosmetics.**

MINERALS AND THE SKIN

The Dead Sea is the largest source of minerals in the world, with up to 32% concentration of minerals and with the largest variety of minerals.

It is a fact that the human body is composed of 4-5% minerals. These are elements that are essential to the bodily functions. Each mineral has a specific role in the body, but most activities are in the cell metabolism. As the body loses minerals during aging, it is essential for its skin to obtain additional minerals. EDOM cosmetics use the Dead Sea minerals to improve the skin metabolism and thus its appearance. The main minerals are magnesium, calcium, potassium, sodium, sulphate, bromine, chlorine and bicarbonate.

Magnesium is a building block for the skin's structural elements and the enzymes that control the skin's metabolism. If there is a magnesium deficiency, aging of the skin is accelerated. In the waters of the Dead Sea there are 40 grams of magnesium per 1 liter of waters. It is an active mineral in stress situations and in this connection protects the heart muscle.

Calcium is of great importance for the normal development of the skeleton and the nails and plays a role in the skin's metabolism. It is also important for clotting of the blood and is necessary for the healing of wounds and the prevention of infection.

Iron affects the production of melanin and is a carrier of oxygen in the hemoglobin, and oxygen is required for all the body's metabolic functions. Iron also participates in the production of a number of enzymes.

Sodium and Chlorine are the main carriers of osmotic pressure, which prevents the escape of water from blood vessels to the adjacent tissue.

Phosphorus is necessary for building bones, nails and teeth.

Cell keratinization and the maturation of keratin are linked to the existence of hydrogen and **sulphur**. Without this mineral, there is no normal keratinization of the skin. (Keratinization is the process in which the cells move outward and die, producing a substance called keratin).

The epidermis in its upper section is horny, lacking water and its own food supply. It is fed by diffusion and osmosis. By concentrating minerals in the upper layer, we increase the drop in concentration and enhance hydration through a process of osmotic pressure. Osmotic pressure is the transfer of nutrient solutions dissolved in a liquid, from the place where they are found in high concentration, to a place in which their concentration is low, through a semi permeable membrane, without any investment of energy.

As a matter of fact, as we mentioned before, all treatment aimed at giving the skin a young appearance, are based on the principle of stimulation. By stimulating the skin, improving its metabolism, enriching cells with oxygen - the tissue functions better. And what is more suitable than minerals? They are natural, the skin is used to them and needs them as their level in the body decreases during aging. Therefore they are the most suitable materials to restore vitality to aging cells. Without this vitality, no stimulating products, no matter how sophisticated, will benefit the cells. The reason for that is, that anti-aging treatment is not only a question of stimulating the skin with various preparations, but first and foremost the revitalization of skin tissue, especially restoration of the cell's metabolic capability and responsiveness. **WE CAN DO THIS EASILY WITH MINERALS.** Without this precondition, there is no way to rejuvenate the skin.

THE LEVEL OF WATER IN THE SKIN

Our bodies consist of 75% water. A newly born cell is 60% water. As the cell rises, it loses most of its water. It is then composed only of 10-15% water. It has a protective capability but no suppleness. Dry tissue means a wrinkle.

In wrinkled skin, there can be no flow and supply of nutrients. Dry skin produces cells of poorer quality and the result is skin that does not function well and correctly.

In order to be able to penetrate into the skin, the substances of the cosmetics must be recognized by the body and small enough in molecular size to penetrate the skin.

These two conditions apply to minerals, which penetrate down to the basal layer where the new cells are born. That is where it is important to improve metabolism in order to obtain cells that function better. Since, as we mentioned, the upper layer has only 10-15% moisture, a high mineral level can improve hydration and metabolism. EDOM products are based on Dead Sea minerals that stimulate the skin and improve metabolism, thus giving the skin better tone and a well-cared appearance.

In addition to stimulating the skin, some of the products deeply clean the skin and relax tension in the face and in the body muscles. The appearance of the skin is therefore healthier and lovely. The products also include other active ingredients like vitamins, moisture substances, sunscreens, essential oils etc.

CHEMISTRY & HEALTH EFFECTS

The sea is called "dead" because its high salinity means no fish or macroscopic aquatic organisms can live in it, although bacteria and microbial fungi are present.

The salinity of the Dead Sea varies according to depth with the surface water being approximately 15% saline (5 times the average ocean salinity) and water near the bottom being saturated, such that salt precipitates out of solution onto the sea floor.

The mineral content of the Dead Sea is significantly different from that of ocean water, consisting of approximately 53% magnesium chloride, 37% potassium chloride and

8% sodium chloride (table salt) with the remainder comprised of various trace elements.

The concentration of SO₄ ions is very low, and the bromine ions concentration is the highest of all waters on Earth. Chlorides neutralize most of the calcium ions in the Dead Sea and its surroundings. While in other seas NaCl is 97%, in the Dead Sea the quantity of the NaCl is only 12-18 percent. The water temperature goes from 19 degrees Celsius in February to 31 degrees Celsius in August.

The water of the Dead Sea contains 21 minerals including magnesium, calcium, bromine and potassium. Twelve of these are found in no other sea or ocean, and some are recognized for imparting a relaxed feeling, nourishing the skin, activating the circulatory system and for easing rheumatic discomfort and metabolic disorders. Comparison between the chemical composition of the Dead Sea to other lakes and oceans show that the salt's concentration in the Dead Sea is 31.5%. Because of its unusually high concentration of salt, anyone can float in the Dead Sea easily because of natural buoyancy.

The Dead Sea area has become a major center for health research and treatment for several reasons. The mineral content of the waters, the very low content of pollens and other allergens in the atmosphere, the reduced ultraviolet component of solar radiation, and the higher atmospheric pressure at this great depth each have specific health effects. For example persons suffering reduced respiratory function from diseases such as cystic fibrosis, seem to benefit from the increased atmospheric pressure.

Sunlight at the Dead Sea is high in therapeutic UVA rays and low in burning UVB, so extended exposure is safe and low-risk. The filtering effect comes from a thick atmosphere: the Dead Sea is about 1,200 feet below sea level and the ozone layer above it is minimally depleted. The Dead Sea is the only place on Earth where you can sunbathe for extended periods with little or no sunburn because harmful ultraviolet rays are filtered through three natural layers: an extra atmospheric layer, an evaporation layer that exists above the Dead Sea, and a rather thick ozone layer.